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Radiant Heat Testing of the H1224A Shipping/Storage Container

D. C. Harding, J. G. Bobbe, D. R. Stenberg, M. Arviso

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Abstract

H1224A weapons containers have been used for years by the Departments of Energy and Defense to transport and store W78 warhead midsections. Although designed to protect the midsections only from low-energy impacts, a recent transportation risk assessment effort has identified a need to evaluate the container's ability to protect weapons in more severe accident environments. Four radiant heat tests were performed: two each on an H1224A container (with a Mk12a Mod 6c mass mock-up midsection inside) and two on a low-cost simulated H1224A container (with a hollow Mk12 aeroshell midsections inside). For each unit tested, temperatures were recorded at numerous points throughout the container and midsection during a 4-hour 121° C (250° F) and 30-minute 1010° C (1850° F) radiant environment. Measured peak temperatures experienced by the inner walls of the midsections as a result of exposure to the high-temperature radiant envoronment ranged from 650° C to 980° C (1200° F to 1800° F) for the H1224A container and 770° C to 990 °C (1420° F to 1810° F) for the simulated container. The majority of both containers were completely destroyed during the high-temperature test. Temperature profiles will be used to benchmark analytical models and predict warhead midsection temperatures over a wide range of the thermal accident conditions.

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Table of Contents

List of Figures

List of Tables

Nomenclature

RV	Re-entry Vehicle midsection mass mock-up
WR	War Reserve
STS	Stockpile-to-Target Sequence
NAWC	Simulated H1224A container by Naval Air Warfare Center at China Lake, California
m	Mass
ε	emissivity
α	absorptivity

Radiant Heat Testing of the H1224A Shipping/Storage Container

1. Introduction

Based on the results of recent congressional and Department of Defense studies [1-3], the Defense Nuclear Agency (DNA) has commenced a program to assess the safety of the Minuteman III/W78/W87 weapon system. A probabilistic risk assessment methodlogy is being used to assess the safety of the weapon system. The Minuteman III Weapon System Safety Assessment (WSSA) requires determination of the potential physical environments surrounding the W78 and W87 re-entry vehicles caused by credible accidents during air and ground transportation. Radiant heat testing of the H1224A storage/shipping container is necessary to quantify the thermal protection provided by the container. In addition, the test will facilitate the development of analytical models which will be used to predict the weapon response during potential C-141 aircraft and ground transportation thermal accident scenarios associated with the W78's Stockpile-to-Target Sequence (STS) [4].

The aluminum H1224A storage/shipping container is approximately 1.4 m (54 in.) high and 0.82 m (33 in.) in diameter with a flexible polyurethane foam lining for cushioning (see Figure 1.1). An H1223B fore plate and aft cover provide additional RV component protection. The container's original design intent was to protect W78 re-entry vehicle (RV) midsections from vibrational loads encountered during shipping and handling, as well as providing protection against weather during storage. Previous thermal testing of H1224A containers was conducted only to evaluate steady-state thermal gradients at ambient temperatures, including internal heat generation from the W78 midsection [5,6]. Although not designed to provide significant protection of the RV during fuel fire accidents, the WSSA requires quantification of temperature and heat flux levels experienced by the RV during severe thermal accident conditions. Test data is to be used to validate computer models used to predict the fire-induced response of the RV.

This report summarized results of a series of four radiant heat tests, a 4-hour low-temperature thermal soak and a 30-minute high-temperature fuel fire simulation using both the actual H1224A container and a simulated H1224A container. Thermocouple instrumentation was used to record radiant shroud (a nearly black body painted inconel cylinder heated to test temperature by radiant heat lamps), outer container shell, inner container, and re-entry vehicle (RV) temperatures during radiant heat testing. Computer modelling can be used to predict weapon response throughout the range of accident conditions, including long stand-off distance and all-engulfing fuel fire environments.

Test results are described in terms of measured container and RV temperature histories for each of the four radiant heat tests. Raw thermocouple data are included in the appendices.

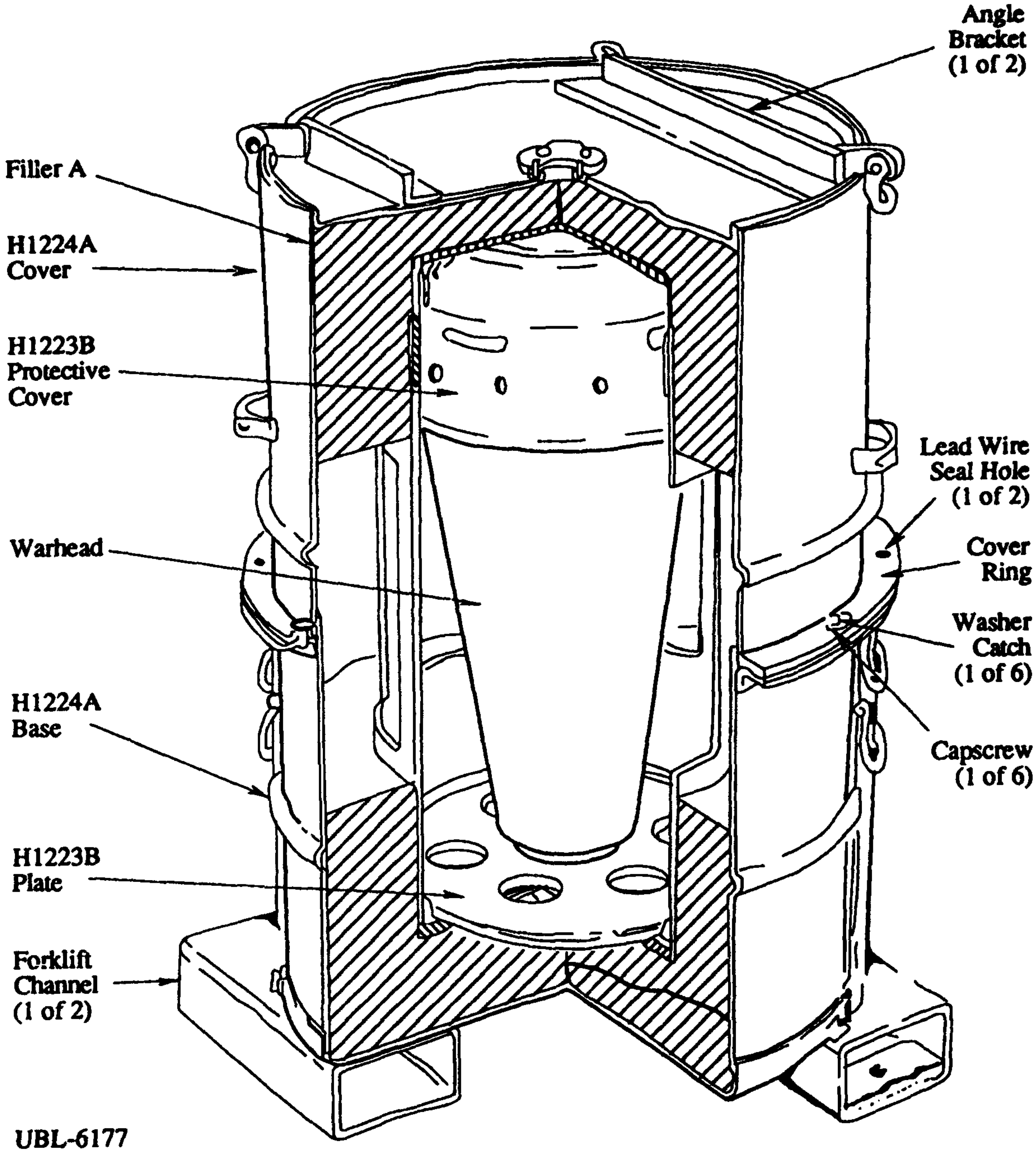


Figure 1.1 W78 midsection inside H1224A shipping/storage container

2. Radiant Heat Test Parameters

Radiant heat test temperatures and durations for the two tests were selected based upon 1) a test yielding results most likely to benchmark finite element code predictions and leave test hardware undamaged for a second test, and 2) a simulated all-engulfing aircraft fuel fire, defined by U.S. Nuclear Regulatory Commission (NRC) regulations for plutonium air transport packages [7]. Laboratory oven testing of the Last-a-Foam TF-5070-10 flexible polyurethane foam insert material showed that decomposition, in the form of slight off-gassing, begins at temperatures of approximately 150° C (300° F) [8]. To avoid degradation of the container before the simulated fuel fire test, a radiant temperature of 121° C (250° F) was selected, for a rather long duration of 4 hours to allow internal container temperature to approach a steady state condition.

After completion of the slow thermal soak test, the container was allowed to cool down to "steady state" ambient temperature (defined as less than 1° C per hour change, or less than 3° C difference between ambient and RV aeroshell inner surface) before being subjected to the 30-minute 1010° C (1850° F) simulated fuel fire radiant heat test. Additionally, a simulated H1224A container fabricated by the Naval Air Warfare Center (NAWC) at China Lake, California was subjected to the same sequential lower-temperature thermal soak, cool down, and simulated fuel fire test to compare its performance to that of an actual H1224A container. The NAWC container ("NAWC" refers to the simulated H1224A container) will be used in actual fuel fire tests at the China Lake test facility. The four radiant heat tests are outlined below in Table 2.1.

Table 2.1 Test Matrix for H1224A Radiant Heat Testing

Test	Container	Radiant Shroud Temperature	Duration
1	H1224A	121° C (250° F)	4 hours
2	H1224A	1010° C (1850° F)	30 min.
3	NAWC	121° C (250° F)	4 hours
4	NAWC	1010° C (1850° F)	30 min.

The Area III Radiant Heat Test Facility at Sandia National Labs was used to conduct these four radiant heat tests. Twelve water-cooled variable-power 250,000-watt, 0.3 m x 1.2 m (12 in. x 48 in.) radiant heat lamp arrays surrounded a 1.0 m (40 in.) diameter, 1.6 m (62 in.) tall inconel shroud. The shroud is coated with Pyromarc 2500 flat black high-emissivity paint. The near-black body shroud (ε=~0.95) provided a more uniform surface, with known emmissive power, from which heat radiated inward toward the upright H1224A or NAWC container. The container rested on a stand above the facility floor, reducing conduction with a relatively cold surface. A 4800-watt heated inconel top cover provided radiant heat from above the container and reflected upper cylindrical shroud body heat back into the container (see Figure 2.1). A top cover center vent hole allowed volatiles to escape during testing. Large fans located on the roof of the Facility removed smoke and other volatiles from the test fixture.

Control of the radiant heat lamp array was provided by six thermocouples located inside and at the midplane of the cylindrical shroud; thus each temperature control thermocouple controls two radiant heat lamp arrays. A photograph of the test set-up is shown in Figure 2.2. Thermal insulating fabric can be seen near the floor, protecting thermocouple lead wires from excess heat. Water cooling lines are visible on the outside of the heat lamp arrays.

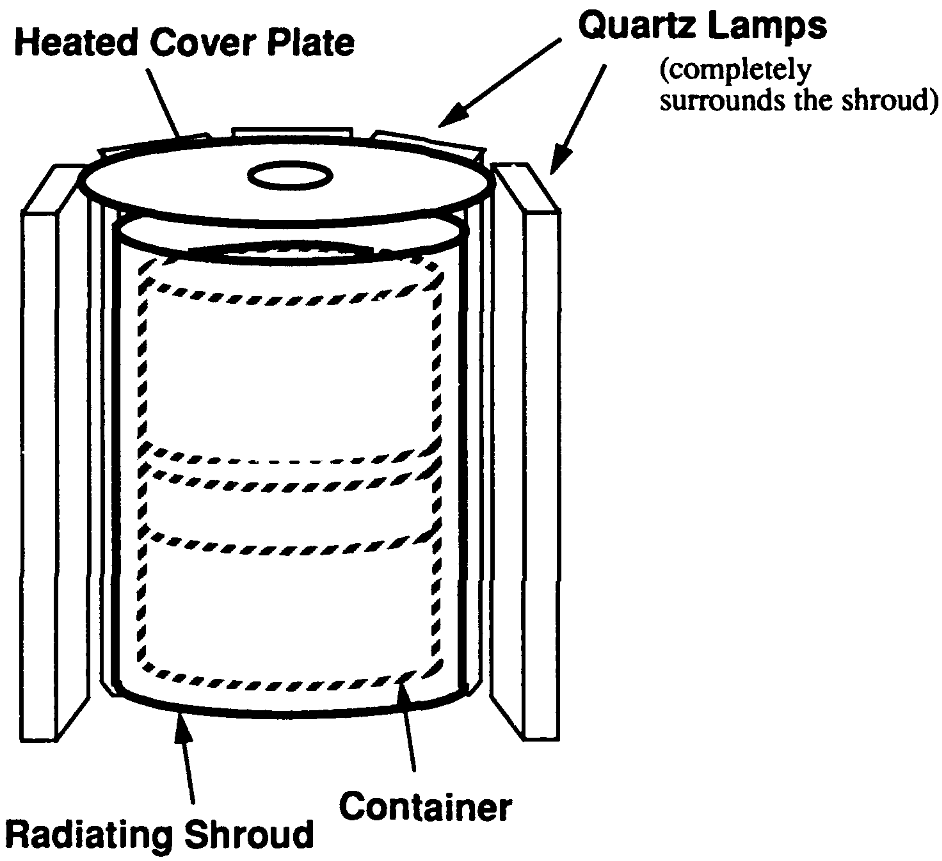


Figure 2.1 Radiant heat test schematic

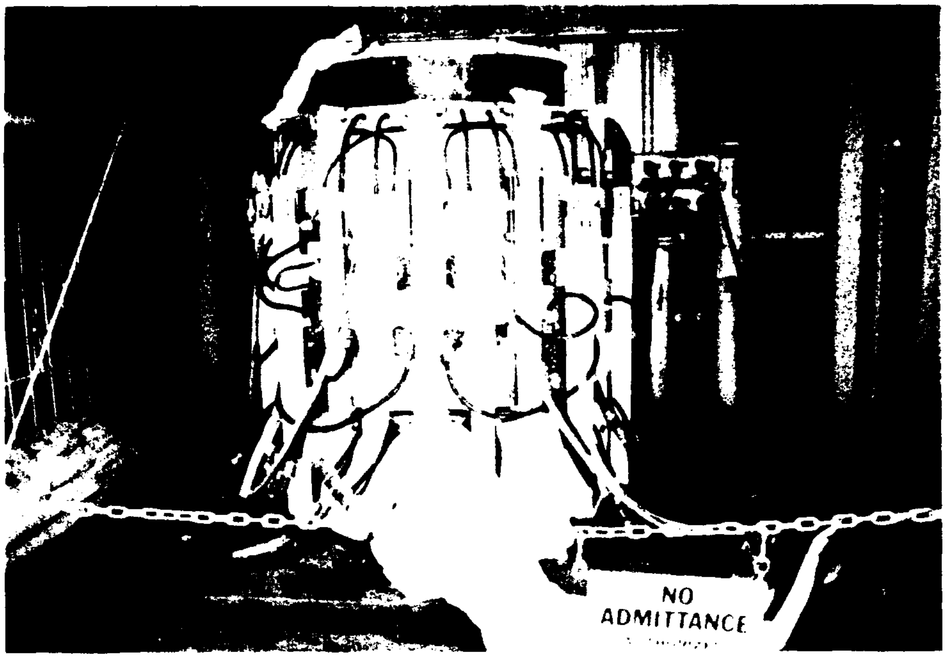


Figure 2.2 Radiant heat test set-up

3. Test Hardware

The H1224A shipping/storage container basically consists of a 2.3 mm (0.091 in.) thick 6061-T4 aluminum cylindrical outer shell approximately 1.4 m (54 in.) high and 0.82 m (33 in.) in diameter with a flexible polyurethane foam insert to center and protect the RV [9] (see Figures 1.1 and 3.1). Fork lift channels are welded to the base for ease of handling. Its weight is approximately 145 kg (320 lb) without the RV inside. Flexible polyurethane foam provides vibration and light shock isolation. The General Plastics Last-a-Foam TF-5070 inserts are approximately 0.12 m (4.8 in.) thick have the capability of deforming and "bouncing back", unlike typical rigid closed-cell polyurethane foam.

The H1224A's cylindrical outer container shell is assembled in two halves, the base and the cover, by tightening bolts around a thin steel flange at the mid-body level. The entire outer container shell, including forklift channels, is coated with a white glossy zinc chromate enamel paint. A thin silicone rubber gasket provides a light weather seal between the base and cover outer shell sections. Filler A and filler B denote the upper and lower foam inserts, the lower of which is 20 mm (0.8 in.) taller than the upper. A 3.2 mm (0.125 in.) thick cylindrical aluminum inner container assembly holds the RV midsection and assists with load spreading to the flexible foam inserts. The inner container assembly includes a 3.2 mm (0.125) in.) aluminum bottom plate welded circumferentially to the cylinder, but is open at the top end for insertion of the RV midsection. A 19 mm (0.75 in.) thick plywood load spreader rests between the lower foam insert and the inner container assembly (see Figure 3.2).

The "H1223B assembly" consists of two parts in the H1224A container: 1) the aft RV midsection protective cover and 2) the fore (nose end) plate (with necessary threaded rings and bolts). The 13 mm (0.05 in.) 6064-T6 aluminum fore plate is threaded into the nose of the RV midsection acting as a load spreader and a balance, keeping the RV upright. The aft protective cover is (0.28 in.) thick forged 6061-T6 aluminum and threads onto the aft end of the RV midsection protecting critical components, as shown in Figure 3.3. After insertion of the RV midsection inand partially assembled into the container in Figure 3.4.

The H1224A container is actually a modification to the original H1224 container designed for the W62 warhead midsection. Most parts internal to the outer container shell differ between the two, but the only outer container shell difference is the addition of four tie-down loops (just below the original H1224 loops) and 9.5 x 76 x 178 mm (3/8 x 3 x 7 in.) reinforcements inside the ends and at the bottom of the aluminum forklift channels. For radiant heat testing purposes, therefore, H1224 container outer shells are essentially identical to H1224A outer shells and were used interchangeably in these tests due to limited availability of the newer H1224A outer shells for testing. Most of the test units arrived at Sandia with a number of small dents, which were "hammered out" in order to better replicate the performance of actual WR (war reserve) dent-free units.

The W78 warhead midsection was simulated in the H1224A radiant heat test using a Mk12a Mod6c midsection. The aeroshell/heatshield consists of an approximately 13 mm (1/2 in.) carbon fiber reinforced phenolic over a thin aluminum substrate. A series of fore and aft weighted plates simulate the inertial properties of a W78 physics package, bolted to the aeroshell at points shown in Figure 3.5. To eliminate circulating convective cells between the weight plate groups, 2.5 cm-thick (1 in.) Kaowool silica-based insulating blanket (128 kg/m^3 or 8 lb/ft^3) was packed lightly between plate groups, as shown in Figure 3.6a. Similarly, the entire volume of the Mk12 aeroshell (used in the NAWC test unit), which had no weight plates, was filled with insulating blanket, as shown in Figure 3.6b.

The W78 warhead midsection was simulated in the NAWC radiant heat test using a hollow W62 Mk12 midsection aeroshell, identical to that proposed (by DNA) for future use by China Lake in fuel fire tests. The aeroshell/heatshield consists of an approximately 13 mm (0.5 in.) carbon fiber reinforced phenolic over a thin aluminum substrate. The Mk12 aeroshell is virtually identical to that of the Mk12a except for the addition of four small radar windows near the aft end and slight differences in the aluminum substrate shape (see Figure 3.7). To eliminate convective cells, insulating blanket was used to fill the interior of the aeroshell.

The NAWC container's outer shell is shown in Figure 3.8. The container is similar in length, diameter, and thickness to the H1224A, but with a joint at the top instead of middle, and left unpainted. The NAWC inner container is shown in Figure 3.9. The NAWC container was tested in an unpainted state, since this was the configuration specified by China Lake to be tested in open pool fires. The foam inserts and RV fore and aft covers used for the NAWC tests were similar to those used in the H1224A radiant heat tests.

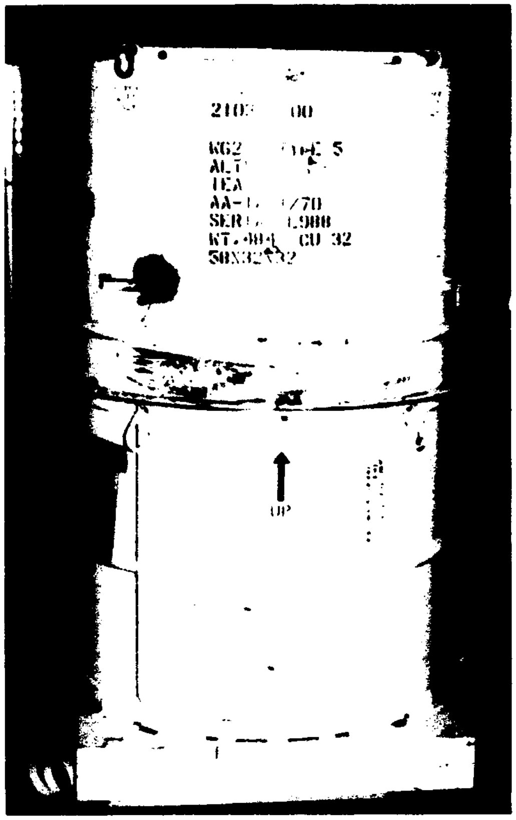


Figure 3.1 H1224 / H1224A container body photograph

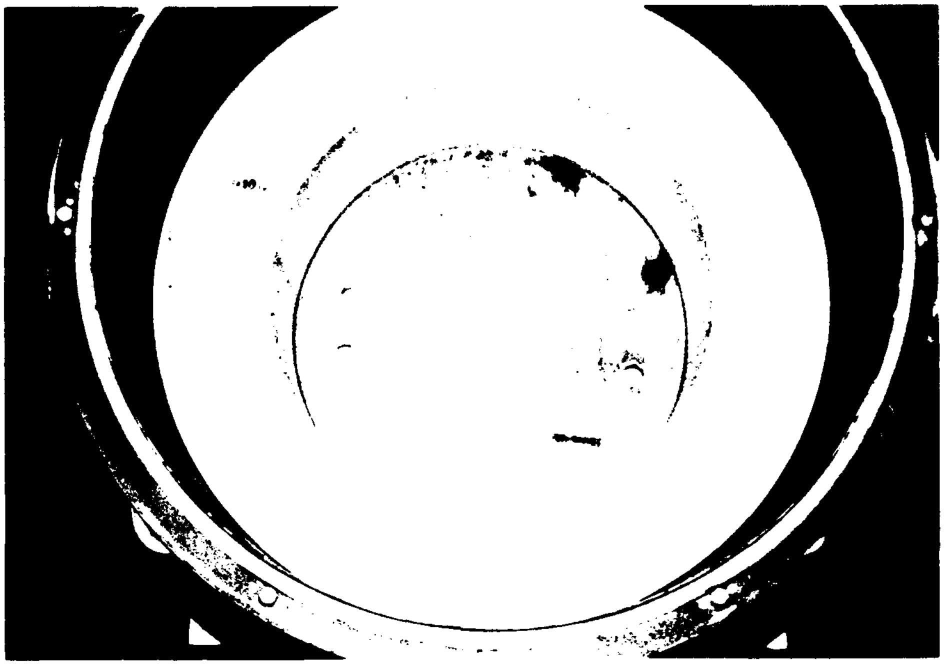


Figure 3.2 H1224A lower flexible foam insert and plywood load spreader

Figure 3.3 RV midsection with threaded fore plate and aft cover

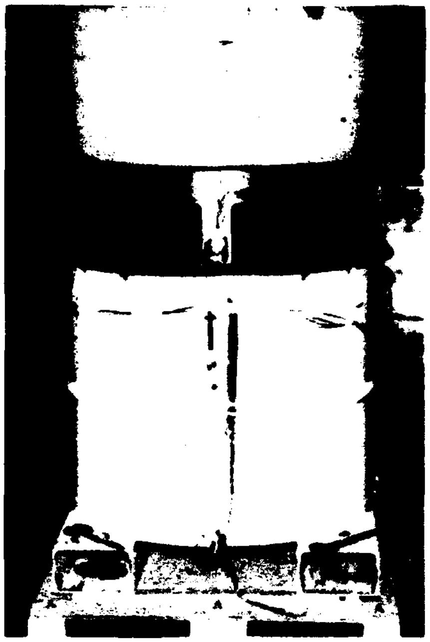


Figure 3.4 RV midsection inside inner container and foam and H1224A outer shell

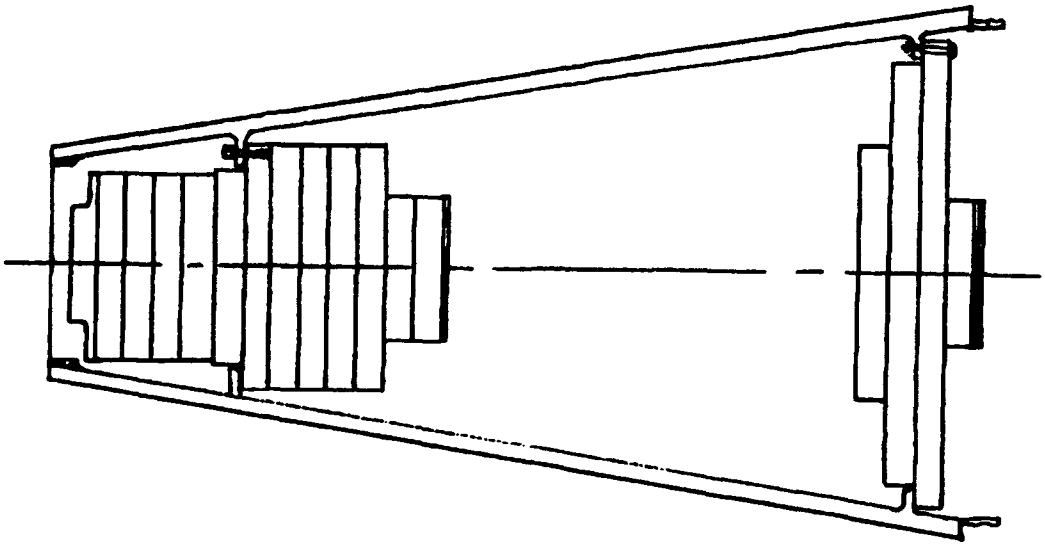


Figure 3.5 Mk12a Mod6c schematic with internal weight plates

Figure 3.6a Insulation material inside Mk12a aeroshell

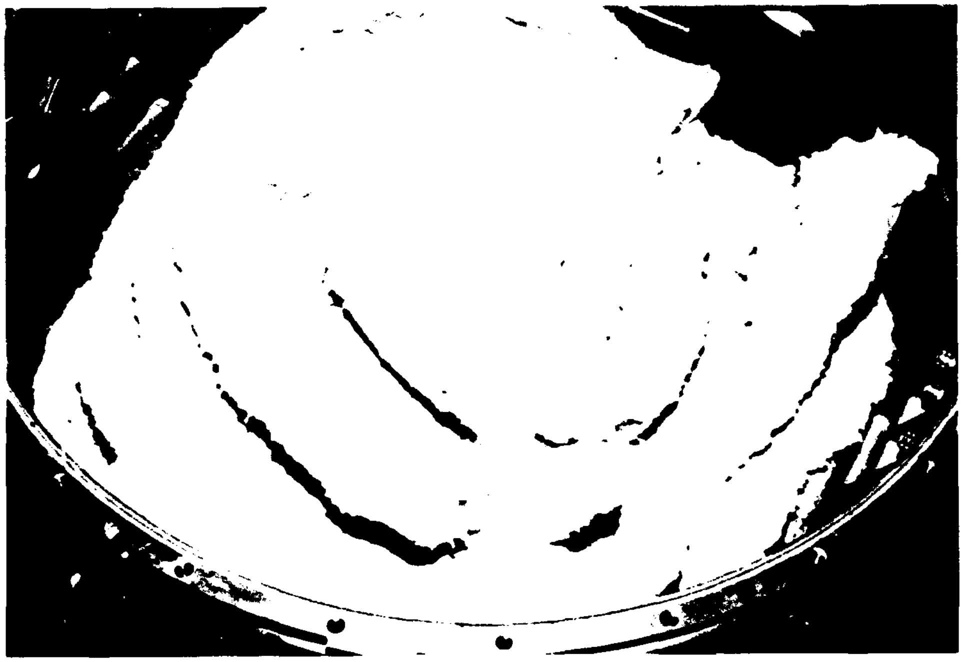


Figure 3.6b Insulation material inside Mk12 aeroshell

Figure 3.7a Mk12 (W62) hollow aeroshell

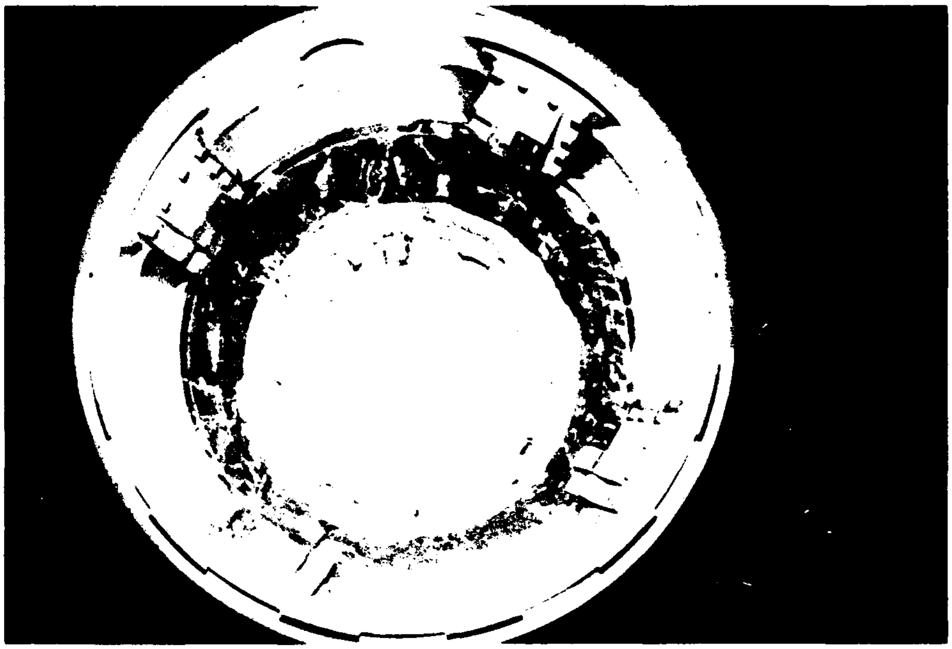


Figure 3.7b Mk12 (W62) hollow aeroshell (inside view)

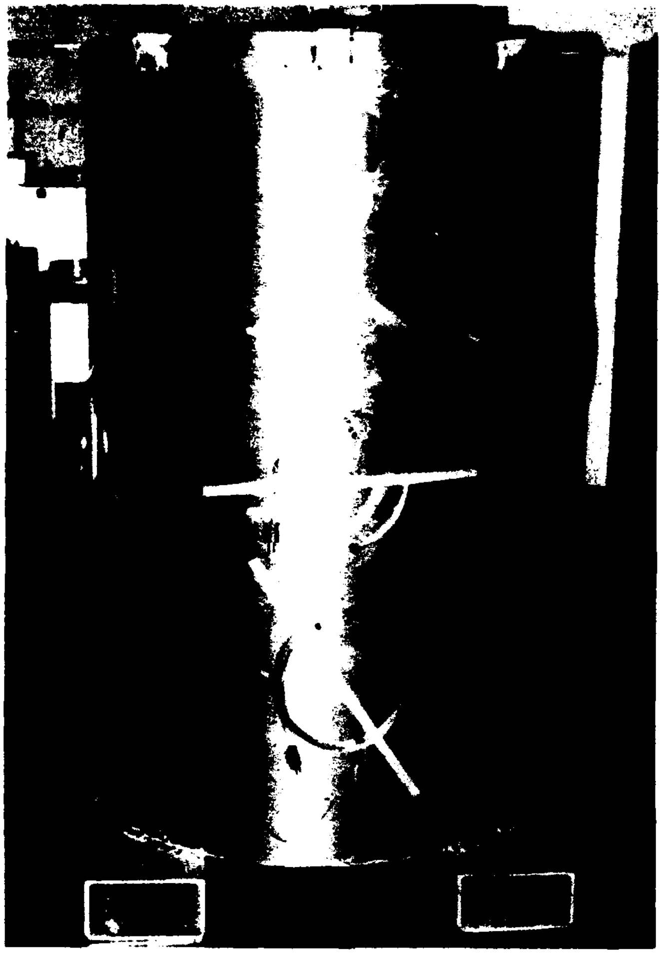


Figure 3.8 Outer shell of NAWC container (simulated H1224A container)

Figure 3.9 NAWC inner container

4. Instrumentation

Thermocouples and photometrics were used in each of the four radiant heat tests to provide quantitative experimental data necessary for determining overall thermal response of the H1224A and NAWC simulated shipping/storage containers and to validate analytical model predictions. Container and RV thermocouple locations were chosen to record thermal wavefront propagation both radially and axially from the outer container surface into the RV midsection aeroshell. Locations include five levels on the outer container shell, five levels along the inner container (including top of aft cover and fore plate), three levels along the inner substrate of the aeroshell, and one thermocouple each in the fore and aft weight plate groups of the Mk12a Mod6c. Thermocouple locations are shown in Figure 4.1 and Table 4.1, at axisymmetric angular locations specified. Also, 21 thermocouples were attached to the shroud (both cylindrical body and top cover) to quantify input heat load, are shown in Figure 4.2 denoted by the prefix "S". (0° in the Figure denotes the location closest to the front of the test facility, and in the center of most test photographs.)

All thermocouples used in the radiant heat tests were 6 m (20 ft) long, 1.6 mm (0.063 in.) diameter Type K chromel-alumel (Inconel sheathed, Alloy 600) ungrounded thermocouples manufactured by Watlow Gordon, Inc. [10]. All thermocouples were factory calibrated to be ±0.75% or ±2.2° C throughout the temperature ranges used in these tests.

Thermocouples were attached to the aluminum surfaces of the outer container shell, inner container assembly, and the aeroshell's inner substrate using small #6 steel self tapping screws and flat washers. Each washer weighs approximately 0.6 g (0.021 oz.) and each weighs 0.7 g (0.025 oz.). The end of the thermocouple was looped around the screw and under the washer, providing a balance between local thermal contact and attachment strength. A second screw and washer secures each thermocouple a few inches back of the sensing tip (see Figure 4.8). Other thermocouple attachment methods were investigated, such as spot welding and using ceramic adhesive. These methods were tested and compared to the screw/washer method using aluminum sheet and a brazing torch. Only the screw/washer method proved durable enough to maintain attachment up to the aluminum melt temperature.

The additional thermal mass of a screw and washer was compared against that of the container's outer aluminum shell. A 1 cm^2 area of container shell weighs approximately 0.62 g versus the 0.6 g washer and 0.7 g screw. An analysis of this 1 cm^2 area of container shell with and without the screw/washer subjected to the 1010° C (1850° F) simulated fuel fire radiant heat environment was performed. The results showed that approximately 0.25 seconds of additional time was required to increase the temperature of the aluminum shell/screw/washer by 5 °K, both near ambient and near the melt temperature of aluminum. This very slightly reduced response time of the local temperature measurement point was deemed acceptable compared with the benefits of the attachment method's durability.

Some areas of the Mk12 aeroshell substrate were covered with a layer of epoxy. As shown in Figure 4.3, some of the epoxy was locally removed to allow direct thermocouple/aluminum substrate contact. Thermocouples measuring fore and aft weight plate group temperatures inside the Mk12a Mod6c midsection were placed inside 1.6-2.2 mm (0.063-0.090 in.) holes drilled to the approximate center of fore and aft weight plate groups, respectively, and fixed in place with ceramic epoxy (see Figure 4.4). RV aeroshell substrate thermocouples were routed outside the aeroshell through a 10 mm (0.4 in.) hole at its midpoint (Figure 4.5). Finally, thermocouples are routed outside the container shell through a 50 mm (2 in.) hole just below midplane. The hole was subsequently filled with fibrous insulation as shown in Figure 4.6.

Radiating shroud and container thermocouples were monitored through instrumentation cables attached to the container. Instrumentation data acquisition was provided by Sandia's MIDAS system [11,12], a self-contained mobile data collection and processing facility. Electrical signals proportional to temperature at specific locations on the container were recorded digitally on both primary and secondary, or backup, systems. Thermocouple readings were taken at intervals of once every 4 seconds throughout each test (until steady state was reached after cool-down), then transferred to a computer workstation for data analysis and reduction in the form of graphical plots. All raw and reduced-time-window data plots are included in the Appendices.

The uncertainty band associated with this thermocouple data is approximately 15 percent. The primary contributors to the uncertainty include the thermocouples themselves including their attachment method, accuracy of the data acquisition system, and the ability to record and reduce the data. The small mass of the screws and washers used to attach the thermocouples may cause a relatively small time delay in local temperature response, but was necessary to keep them in place as long as possible during testing.

A reference channel in the data acquisition system produced a voltage signal (reference temperature) similar to that of a thermocouple during testing to verify correct voltage/temperature translations within the data acquisition system. Two ambient temperature measuring thermocouples (channels A1 and A2) were located approximately 3 m (10 ft) from the radiant heat test unit to gauge steady state conditions after cool down.

The tests were recorded photometrically by video and still-photography cameras to capture flame and smoke generation histories. Photographs showing more detailed mounting locations of thermocouples for the H1224A and NAWC radiant heat tests are presented in Figures 4.7 through 4.11.

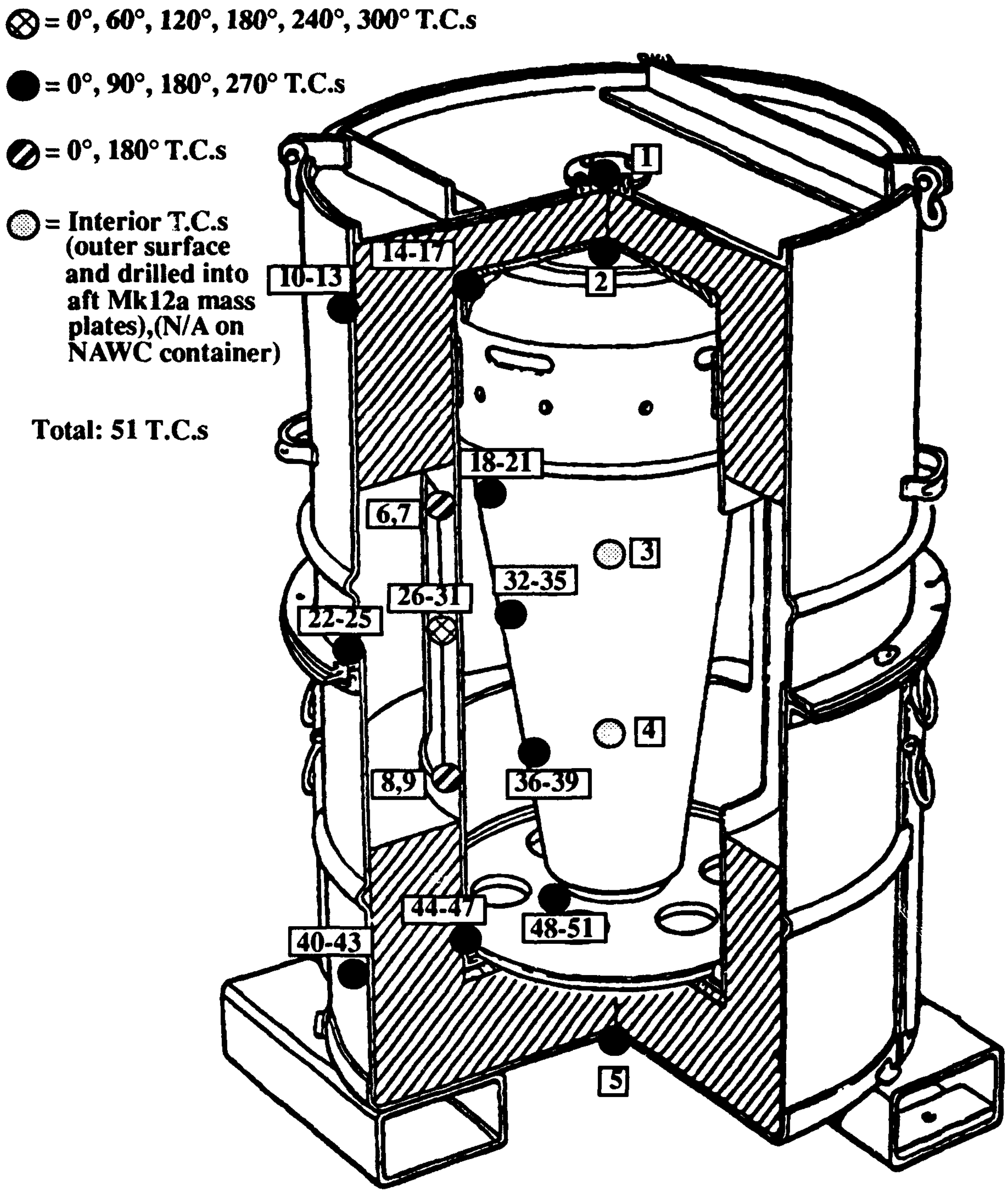


Figure 4.1 Thermocouple locations on container and RV for radiant heat tests

Note: T.C.s 18-21, 32-35, and 36-39 are mounted to the inner aluminum substrate surface of the aeroshell.

TABLE 4.1
RADIANT HEAT TEST THERMOCOUPLE LOCATIONS

T.C. Desig.	Fig. 1 Desig.	Type/Catalog Number	Location
TC1		K	Top, Center
TC2		"	Mk 12a Aft Threaded Cover, Center
TC3		"	Mk12a Aft Weight Plate, Center
TC4		"	Mk12a Inner Aft Weight Plate, Center
TC5		"	Container Bottom, Center
TC6		"	Inner Container, 4" Up from Center, 0°
TC7		"	Inner Container, 4" Up from Center, 180°
TC8		"	Inner Container, 4" Down from Center, 0°
TC9		"	Inner Container, 4" Down from Center, 180°
TC10		"	Container Side, 8" Down from Top, 0°
TC11		"	Container Side, 8" Down from Top, 90°
TC12		"	Container Side, 8" Down from Top, 180°
TC13		"	Container Side, 8" Down from Top, 270°
TC14		"	Aft Cover, Side, 0°
TC15		"	Aft Cover, Side, 90°
TC16		"	Aft Cover, Side, 180°
TC17		"	Aft Cover, Side, 270°
TC18		"	Mk12a Inner Surface, at Top of Window, 0°
TC19		"	Mk12a Inner Surface, at Top of Window, 90°
TC20		"	Mk12a Inner Surface, at Top of Window, 180°
TC21		"	Mk12a Inner Surface, at Top of Window, 270°
TC22		"	Container Side, Midway Down from Top, 0°
TC23		"	Container Side, Midway Down from Top, 90°
TC24		"	Container Side, Midway Down from Top, 180°
TC25		"	Container Side, Midway Down from Top, 270°
TC26		"	Inner Container, Midway Up, 0°

TABLE 4.1 (Cont'd)
RADIANT HEAT TEST THERMOCOUPLE LOCATIONS

T.C. Desig.	Fig. 1 Desig.	Type/Catalog Number	Location
TC27		K	Inner Container, Midway Up, 60°
TC28		“	Inner Container, Midway Up,12 0°
TC29		"	Inner Container, Midway Up, 180°
TC30		"	Inner Container, Midway Up, 240°
TC31		"	Inner Container, Midway Up, 300°
TC32		"	Mk12a Inner Surface, at Middle of Window, 0°
TC33		“	Mk12a Inner Surface, at Middle of Window, 90°
TC34		“	Mk12a Inner Surface, at Middle of Window, 180°
TC35		“	Mk12a Inner Surface, at Middle of Window, 270°
TC36		“	Mk12a Inner Surface, at Bottom of Window, 0°
TC37		“	Mk12a Inner Surface, at Bottom of Window, 90°
TC38		“	Mk12a Inner Surface, at Bottom of Window, 180°
TC39		“	Mk12a Inner Surface, at Bottom of Window, 270°
TC40		“	Container Surface, 5" Up from Fork Rails, 0°
TC41		"	Container Surface, 5" Up from Fork Rails, 90°
TC42		"	Container Surface, 5" Up from Fork Rails,18 0°
TC43		“	Container Surface, 5" Up from Fork Rails, 270°
TC44		“	Inner Container, 1" Up from Bottom, 0°
TC45		“	Inner Container, 1" Up from Bottom, 90°
TC46		“	Inner Container, 1" Up from Bottom, 180°
TC47		“	Inner Container, 1" Up from Bottom, 270°
TC48		“	Fore Threaded Cover, 1/2" from Threads, 0°
TC49		“	Fore Threaded Cover, 1/2" from Threads, 90°
TC50		“	Fore Threaded Cover, 1/2" from Threads, 180°
TC51		"	Fore Threaded Cover, 1/2" from Threads, 270°

NOTE: Thermocouples 3 and 4 should be positioned through drilled 0.067" holes in the aeroshell adjacent to the inner edge of the fore and aft groups of steel mass plates, respectively.

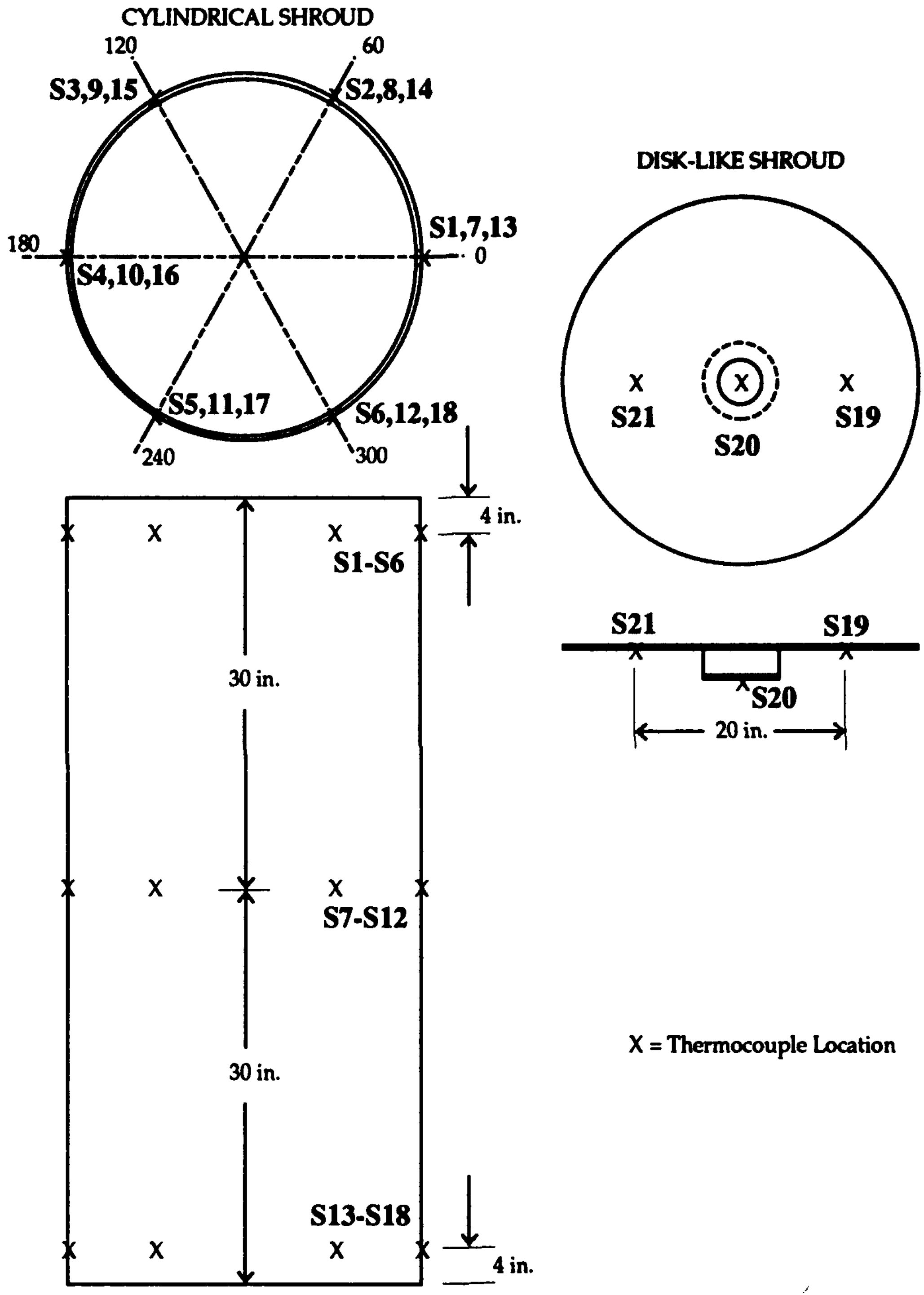


Figure 4.2 Thermocouple locations on radiating shrouds

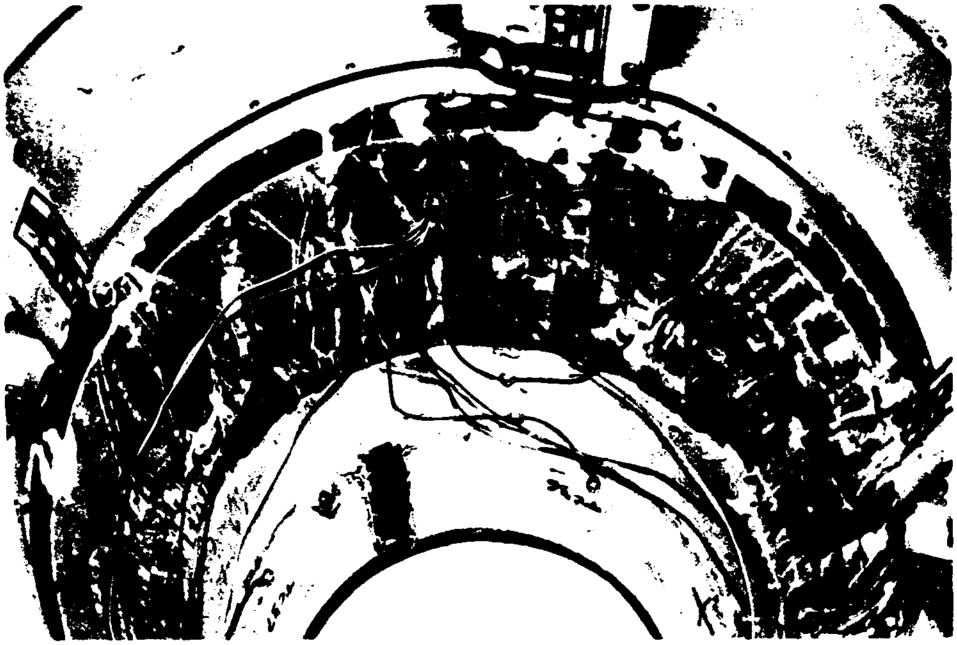


Figure 4.3 Localized cleaning of Mk12 aluminum substrate surface under thermocouple

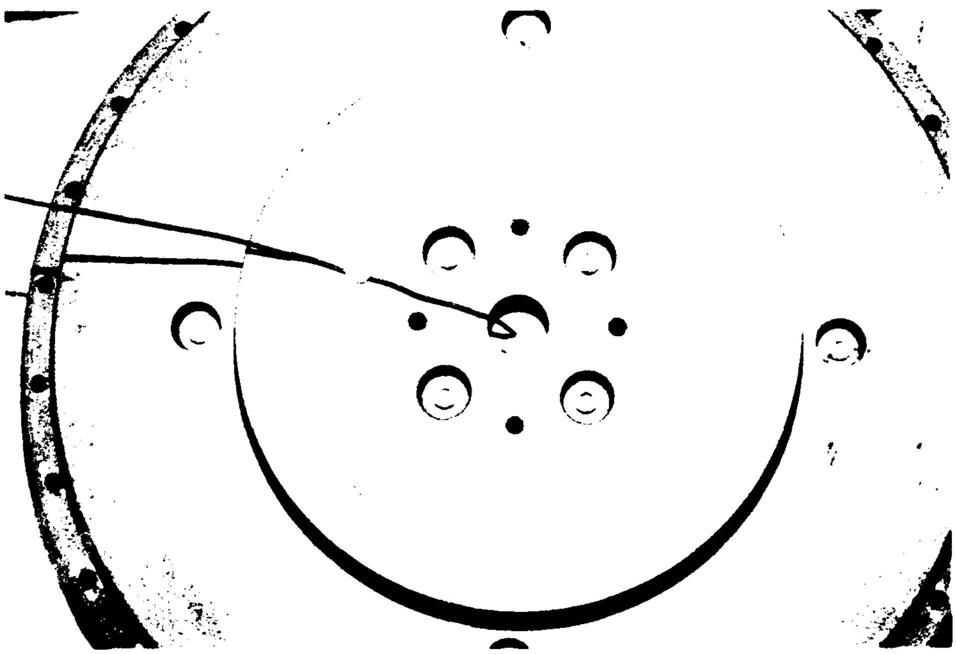


Figure 4.4 Thermocouple fixed inside aft weight plate group with ceramic epoxy

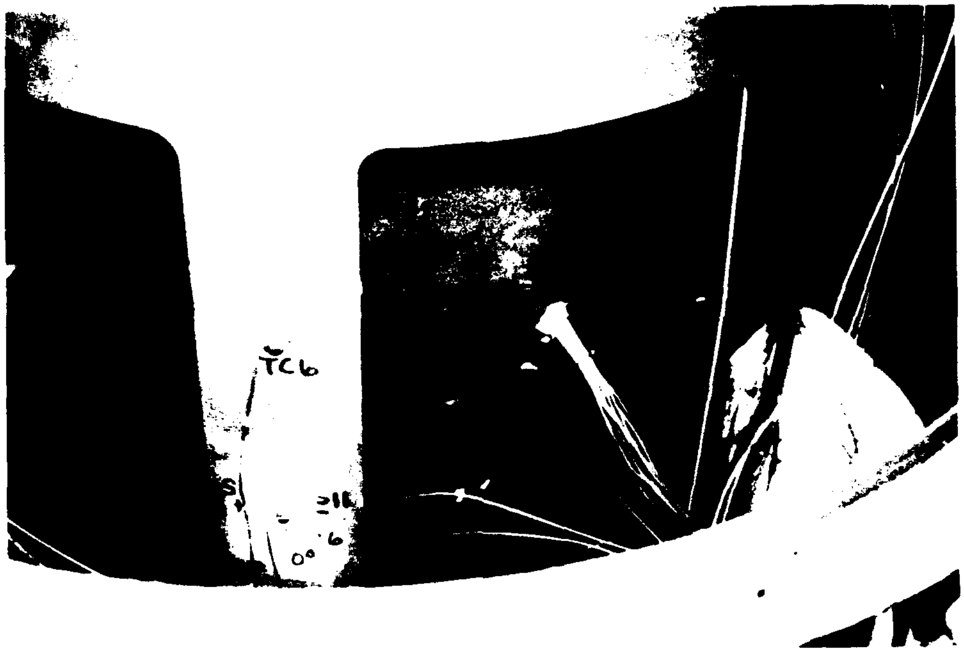


Figure 4.5 Thermocouples exiting RV aeroshell

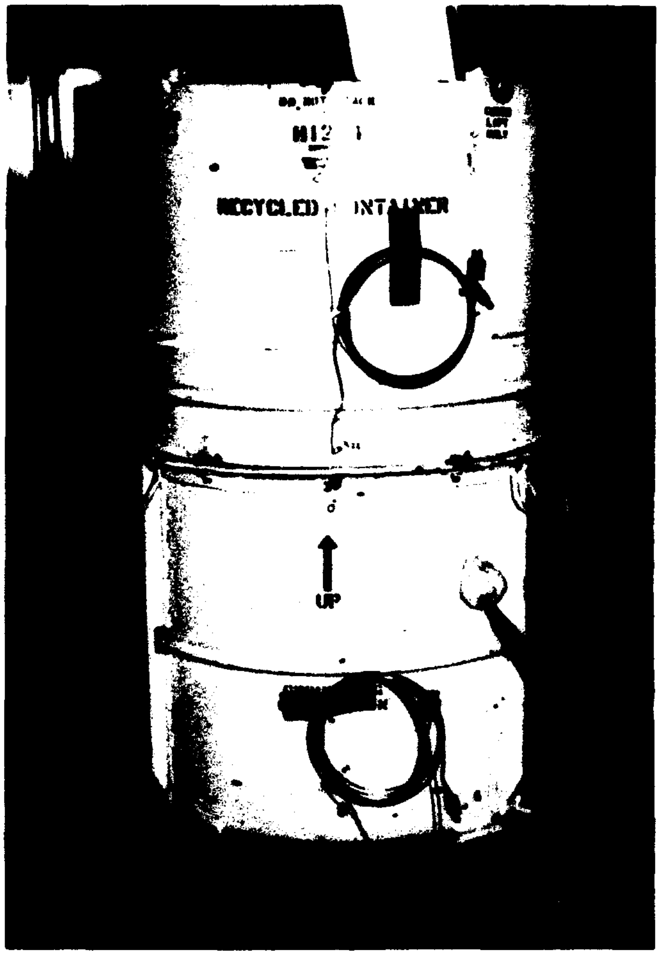


Figure 4.6 Thermocouples exiting outer container shell

Figure 4.7 Thermocouples attached to aluminum substrate of Mk12a aeroshell

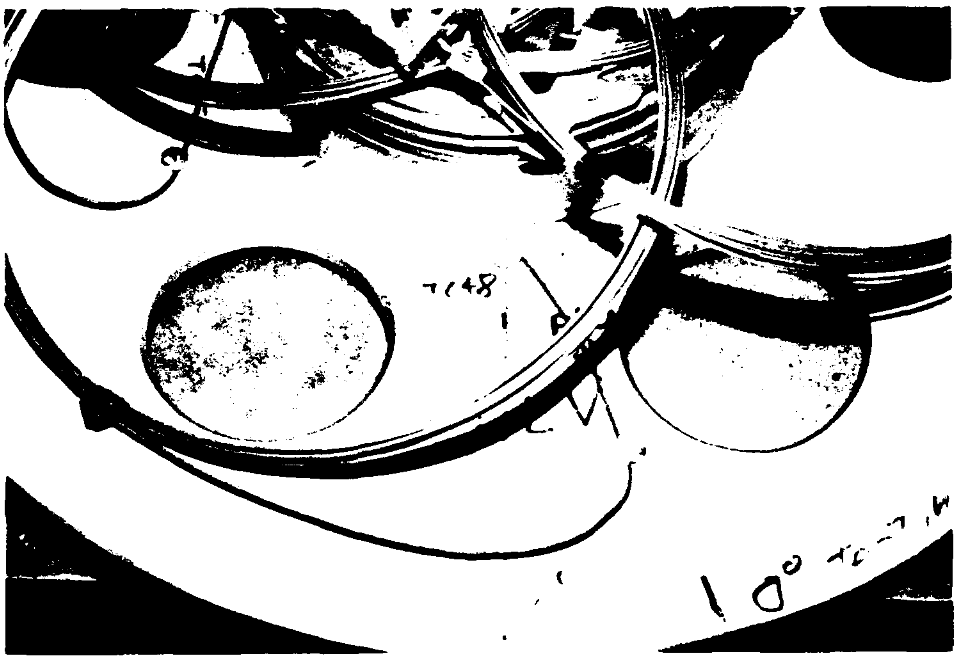


Figure 4.8 Thermocouples attached to RV fore plate

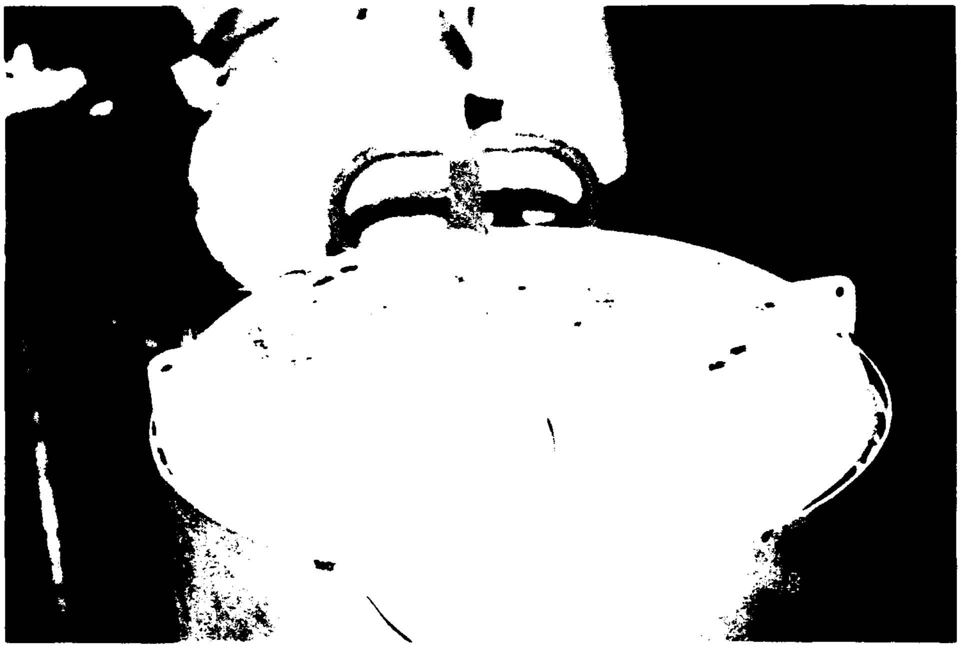


Figure 4.9 Thermocouples attached to RV aft cover

Figure 4.10 Thermocouples on NAWC outer shell and exit hole

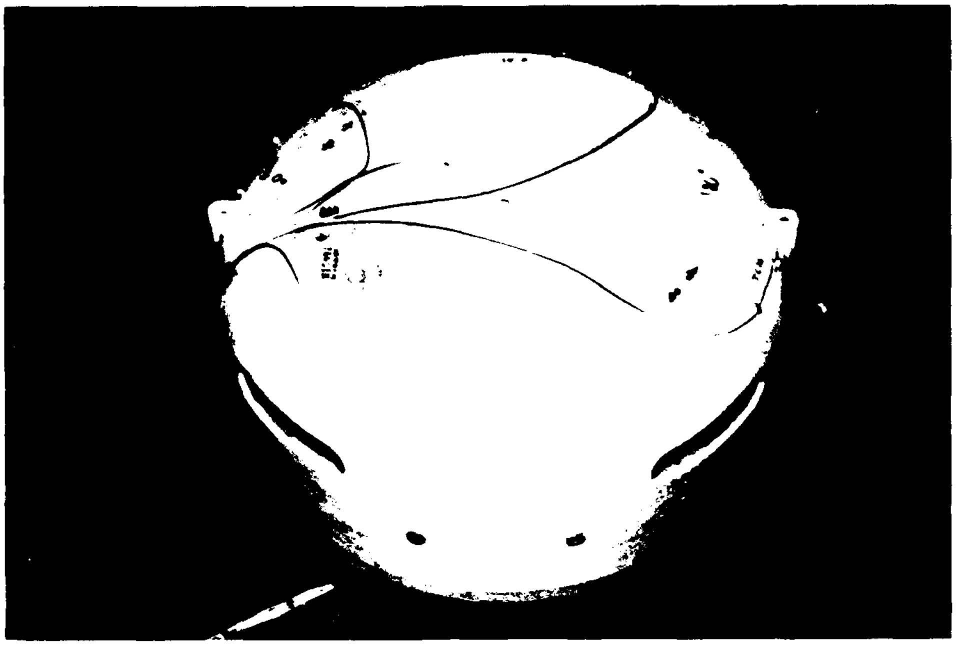


Figure 4.11 Thermocouples on aft cover of Mk12 aeroshell

5. Results

5.1 H1224A 4-Hour Low-Temperature Radiant Heat Test

The long-duration, low-temperature H1224A radiant heat test was performed on September 2, 1993 at the Radiant Heat Test Facility of Sandia National Laboratories. The radiating shroud temperature at midplane was maintained (controlled using midplane thermocouples) at 121° C (250° F) for the duration of the 4-hour test. Temperatures on the container's outer shell, inner container, Mk12a aeroshell, and fore and aft weight plates (as well as the shroud) were monitored beyond the 4-hour slow soak period. Temperatures were recorded until the innermost thermocouples in the RV's fore and aft weight plates peaked and reached a steady state condition.

As intended, during the low-temperature radiant heat test, no degradation of the container occurred. The white zinc chromate enamel paint covering the outer container shell also suffered no thermal degradation due to the low-level heat application. Thus, no post-test photographs are presented in this section.

A temperature history summary plot of mid-plane shroud, outer container shell, inner container, RV aeroshell inner surface, and aft weight plate temperatures is shown in Figure 5.1.1. Although only one temperature point in each layer (shroud, outer shell, etc.) is shown, other comparable thermocouples around the circumference of each layer recorded similar temperatures. The aft weight plate group reached its peak temperature of 43° C (110° F) about 5.6 hours after the beginning of the test. The fore weight plate group reached its peak temperature of 35.5° C (96° F) about 7.5 hours after the beginning of the test. The aft section of the Mk12a aeroshell substrate reached its peak temperature of 48° C (118° F) about 4.2 hours after the beginning of the test, and the fore section of the Mk12a aeroshell substrate reached its peak temperature of 45° C (113° F) about 4.2 hours after the beginning of the test.Individual thermocouple temperature histories for the 4-hour 121° C radiant heat test of the H1224A container are presented in Appendix A. Peak temperatures are compared for each of the four tests in Table 5.1.

Although the midpoint of the shroud was maintained at a constant 121° C during the 4-hour test, thermocouples near the top of the shroud around its circumference (S1-S6 in Figure 4.2) recorded temperatures of approximately 80° C (176° F). Thermocouples on the lower shroud (S13-S18) recorded temperatures of about 38° C (100° F). The top shroud cover plate's center thermocouple (S20) recorded steady test temperatures of approximately 76° C (169° F). This variation is due to edge effects in the application of radiant heat from the lamp arrays to the shroud. Near the top and bottom, the radiation view factor between the lamp array and shroud becomes less than 1.0 (>0.8 at the array edge), unlike near the center or midplane of the shroud. The upper shroud temperatures are greater than the lower ones due to heated air rising between the lamps and shroud. The top cover shroud does not reach the target test temperature due its relatively weak heat source from above.

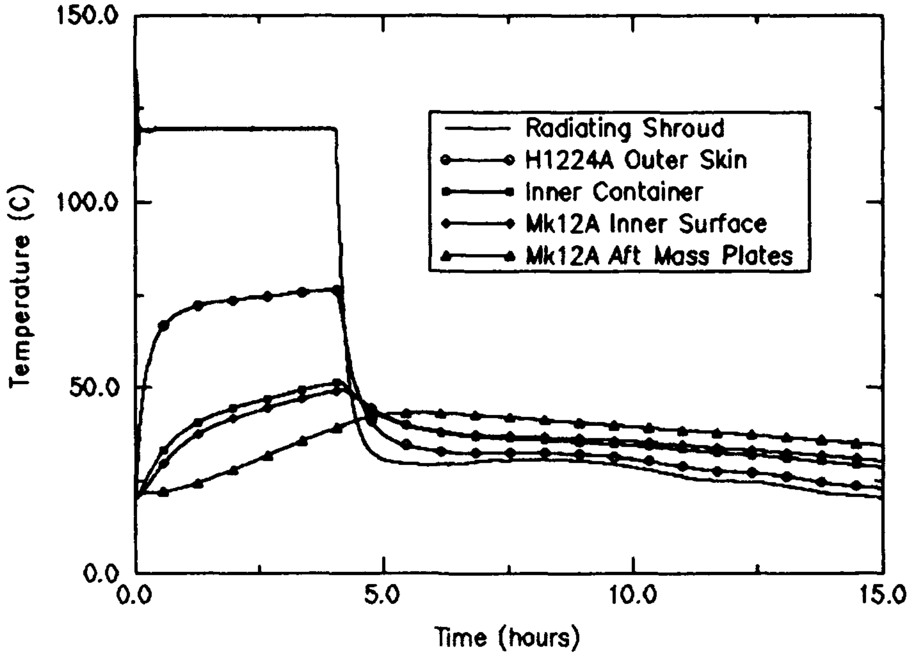


Figure 5.1.1 Summary of 4-hour, 121° C H1224A radiant heat test temperature results

5.2 H1224A 30-Minute High-Temperature Radiant Heat Test

The 30-minute, high-temperature H1224A container radiant heat test was performed on September 3, 1993 at the Radiant Heat Test Facility of Sandia National Laboratories. The radiating shroud temperature at midplane was maintained (controlled using midplane thermocouples) at 1010° C (1850° F) for the duration of the 30-minute test. Temperatures on the container's outer shell, inner container, Mk12a aeroshell, and fore and aft weight plates (as well as the shroud) were recorded until the innermost thermocouples inside the RV aeroshell reached a steady state condition.

The pre-test setup of the H1224A test is shown in Figure 5.2.1. The lamps initially ramped up to nearly peak power in an attempt to bring the temperature-controlling shroud thermocouples up to their required 1010° C, as shown in Figure 5.2.2, about 10 seconds into the test. The light smoke being generated in Figure 5.2.2 is probably degradation of the zinc chromate paint on the outer surface of the container. As shown in Figure 5.2.3, darker smoke from foam degredation could be seen after only about 45 seconds into the test. After about 4 minutes, combustion of the foam volatiles near the vents outside the radiant shroud peaked, as shown in Figure 5.2.4. An example of the volume of smoke generation is presented in Figure 5.2.5, showing light brown smoke forced out the top of the test facility by four exhaust fans. This smoke generation remained approximately constant from about 7 to 22 minutes into the test, with characteristic burning of foam volatiles, as shown in Figure 5.2.6.

Volatile gas generation and exterior burning of these gasses continued up to about 24 minutes into the test (see Figure 5.2.7), when the flames were nearly extinguished. After power to the lamps was terminated (30 minutes into the test) only a very small volume of thin, dark smoke was visible, as may be detected in the photograph, Figure 5.2.8.

Most of the H1224A container melted away, leaving the carbon phenolic aeroshell leaning against the inside of the inconel radiant shroud, as shown in Figure 5.2.9. Temperatures near the very bottom of the container obviously did not reach the 660° C (1220° F) melt temperature of aluminum since the radiant heat arrays didn't fully cover this section of the shroud. The remaining lower few centimeters, including the forklift channels and the steel middle flange collar, are shown in Figure 5.2.10. Some highly oxidized aluminum flakes are evident in the Figure on top of the RV aeroshell's aft end. Both groups of weight plates inside the Mk12a Mod6c midsection detached from the aeroshell when its aluminum substrate melted (see Figure 5.2.11).

Temperature histories for the midplane shroud thermocouples are shown in Figures 5.2.12, highlighting the uniformity in thermocouples S7-S12. The subsequent temperature profiles of the H1224A outer container shell at midplane level are shown in Figure 5.2.13

A temperature history summary plot of mid-plane shroud, outer container shell, inner container, RV aeroshell inner surface, and aft RV weight plate group temperatures is shown in Figure 5.2.14. Although only one temperature point in each layer (shroud, outer shell, etc.) is shown, other comparable thermocouples around the circumference of each layer recorded similar temperatures. Peak temperatures near the inner container reached approximately 1075° C (1970° F), suggesting that combustion or some other exothermic reaction may be taking place inside the container. Aluminum components of the container melt at about 660° C (1220° F), so thermocouples may detach as melting occurs. The aft weight plate group reached its peak temperature of 415° C (779° F) about 1.4 hours after the beginning of the test. The fore weight plate group reached its peak temperature of 395° C (743° F) about 0.8 hours after the beginning of the test. The Mk12a fore aeroshell substrate thermocouples reached its peak temperature of 900-985° C (1650-1800° F) 35 minutes after the beginning of the test. The Mk12a aft aeroshell substrate thermocouples reached its peak temperature of 650-800° C (1200-1470° F) 37 minutes after the beginning of the test. Individual thermocouple temperature histories for the 30-minute 1010° C radiant heat test of the H1224A container are in Appendix B. Peak temperatures are compared for each of the four tests in Table 5.1.

Although the midpoint of the shroud was maintained at a constant 1010° C during the 30-minute test, thermocouples near the top of the shroud around its circumference (S1-S6 in Figure 4.2) recorded temperatures of approximately 700° C (1300° F). The lower shroud circumferential thermocouples (S13-S18) also recorded relatively steady temperatures of about 600° C (1100° F) during the test. The top shroud cover plate's center thermocouple (S20) recorded varying test temperatures of approximately 760-930° C (1400-1700° F). The variation top to bottom is due to edge effects in the application of radiant heat from the lamp arrays to the shroud.

Figure 5.2.1 H1224A radiant heat test: pre test

Figure 5.2.2 H1224A radiant heat test: T+10 seconds

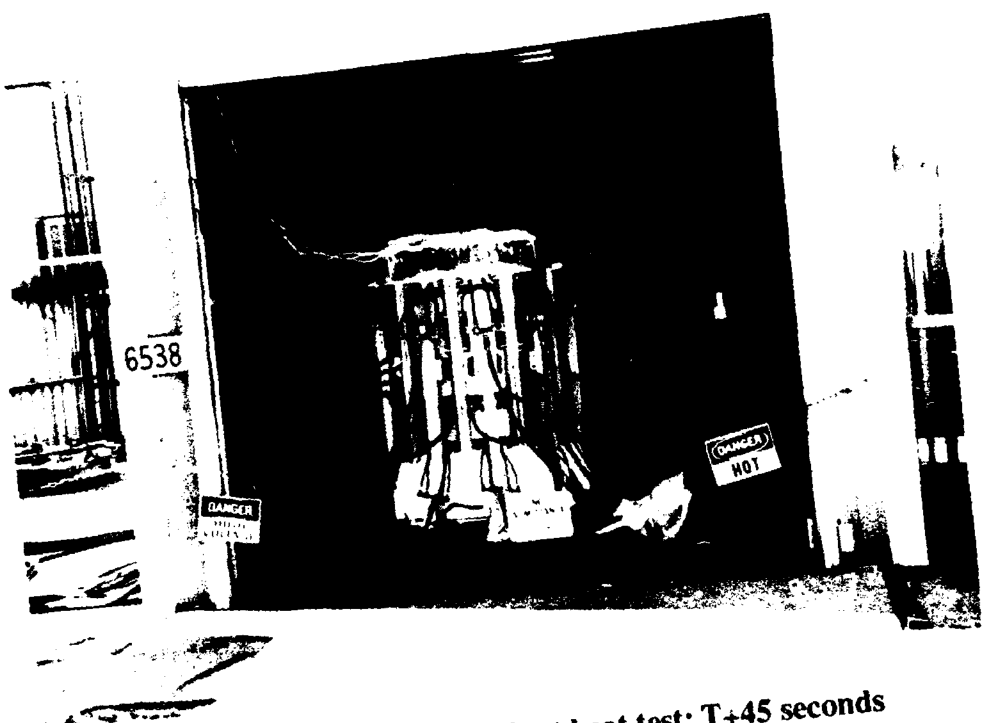


Figure 5.2.3 H1224A radiant heat test: T+45 seconds

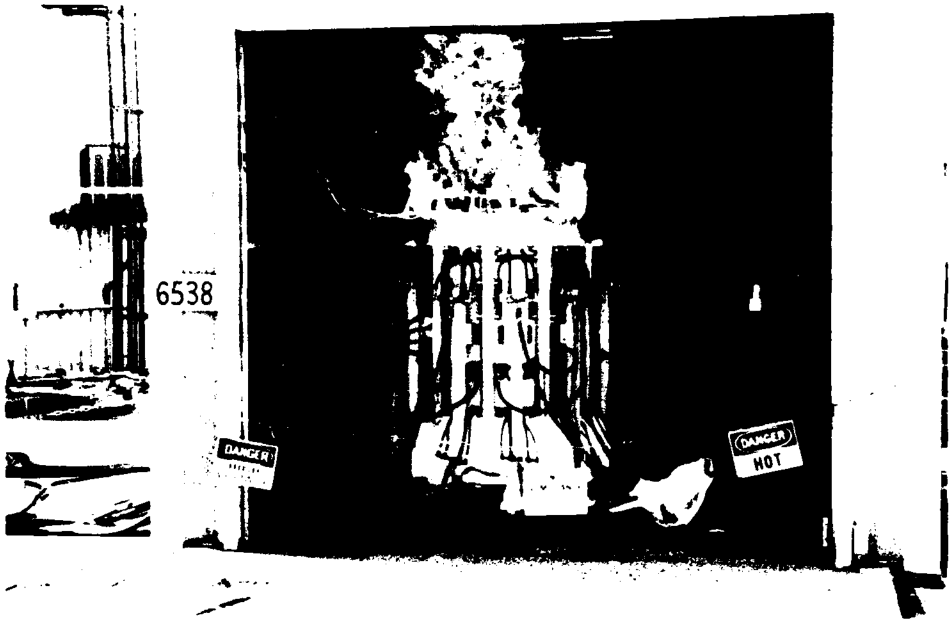


Figure 5.2.4 H1224A radiant heat test: T+4 minutes

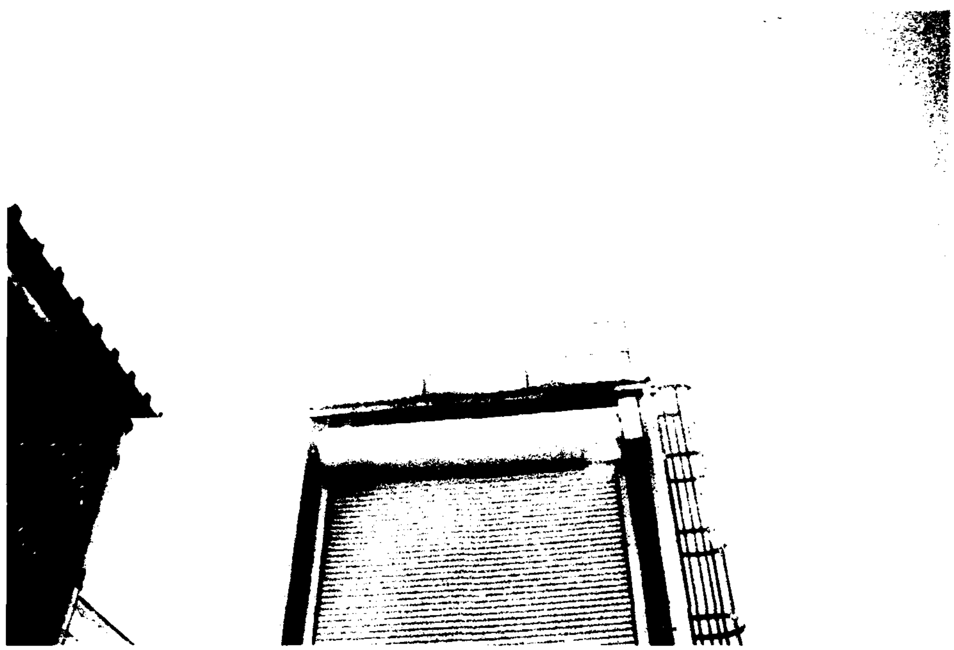


Figure 5.2.5 Smoke exhausted from fans during H1224A radiant heat test

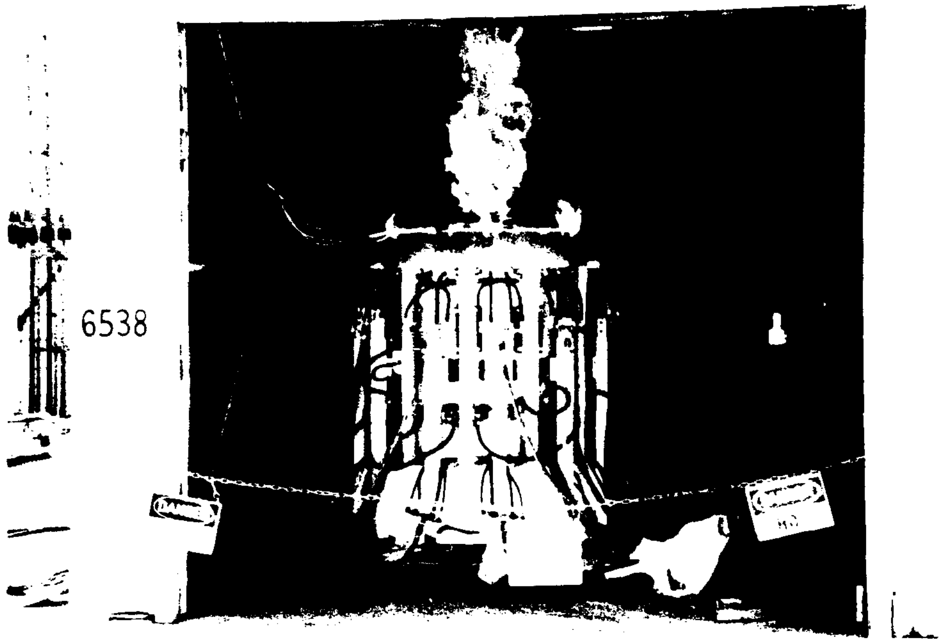


Figure 5.2.6 H1224A radiant heat test: T+8 minutes

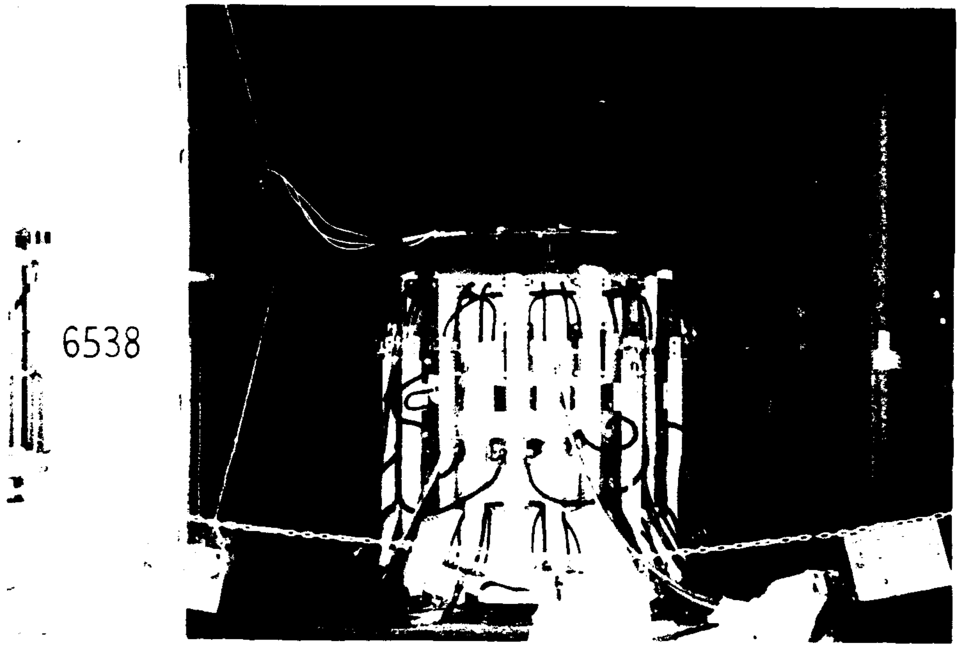


Figure 5.2.7 H1224A radiant heat test: T+24 minutes

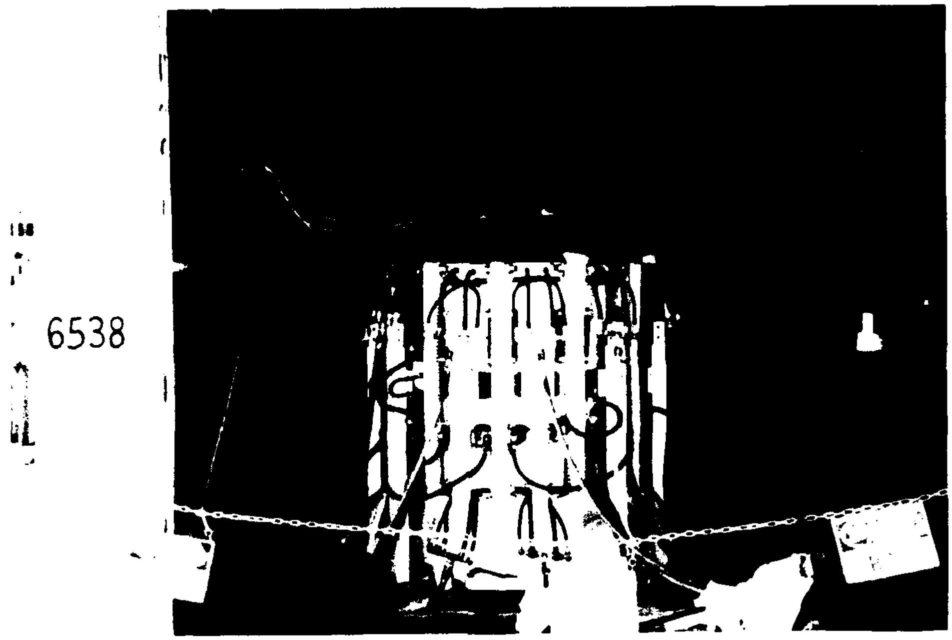


Figure 5.2.8 H1224A radiant heat test: T+30 minutes

Figure 5.2.9 H1224A radiant heat test: post test, RV against shroud

Figure 5.2.10 H1224A radiant heat test: post test, container remains

Figure 5.2.11 H1224A RV aft weight plates and part of aluminum substrate

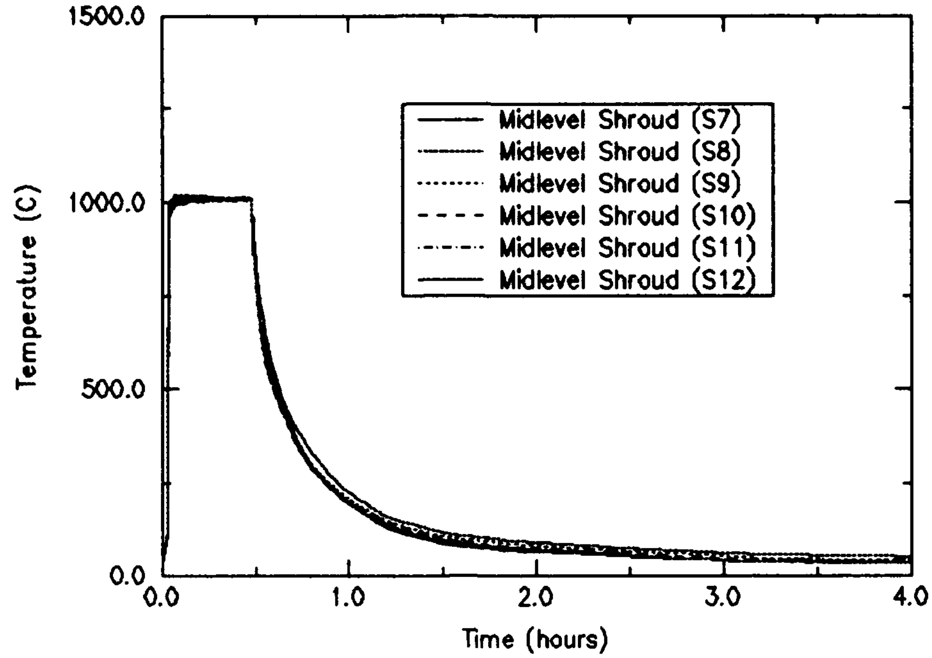


Figure 5.2.12 H1224A 30-minute radiant heat test shroud temperatures

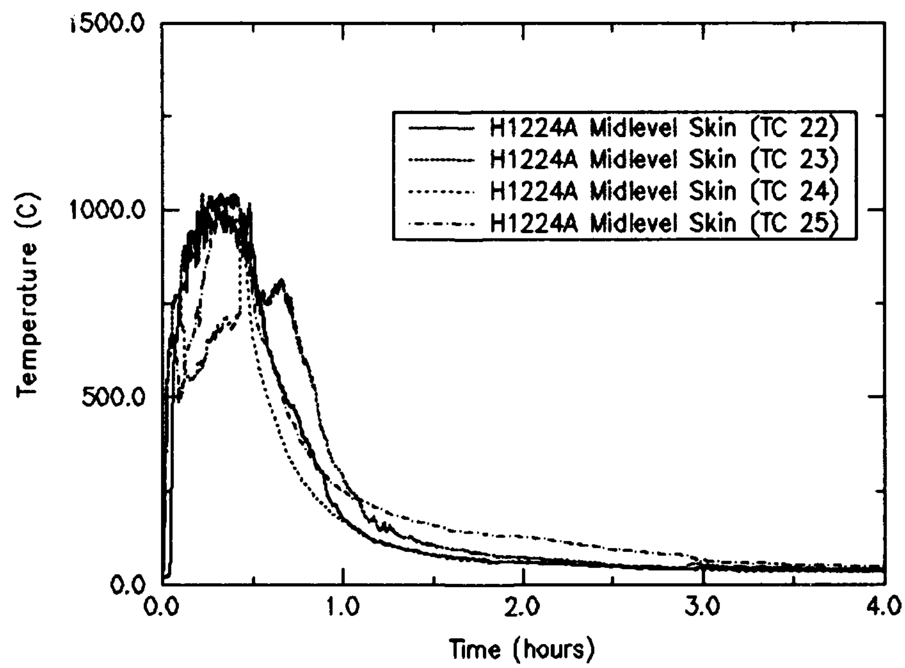


Figure 5.2.13 H1224A 30-minute radiant heat test container skin temperatures (midplane)

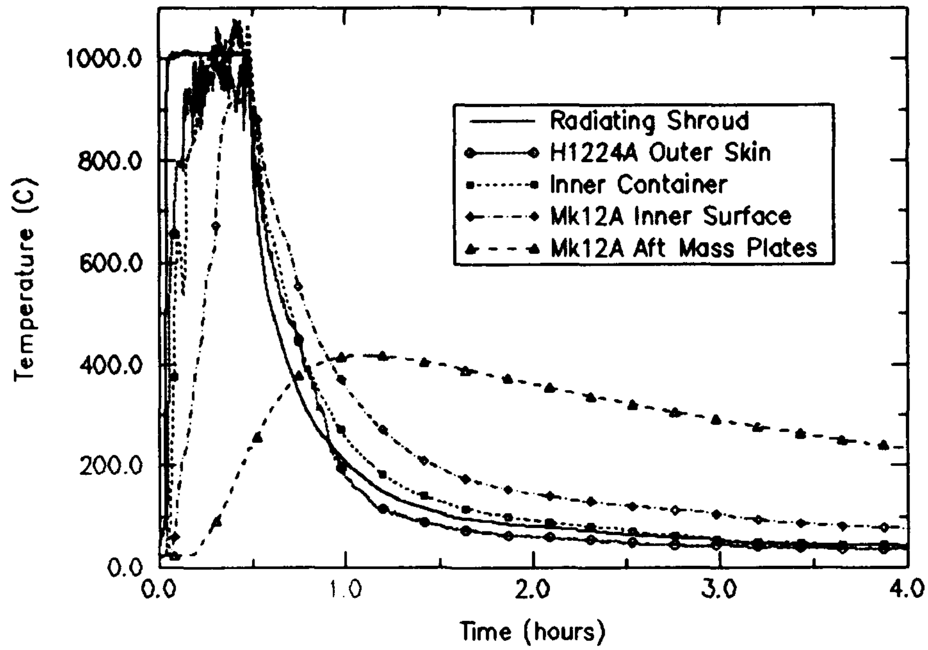


Figure 5.2.14 Summary of 30-minute, 1010° C H1224A radiant heat test temperature results

5.3 NAWC 4-Hour Low-Temperature Radiant Heat Test

The long-duration, low-temperature NAWC (simulated H1224A container) radiant heat test was performed on September 8, 1993 at the Radiant Heat Test Facility of Sandia National Laboratories. The radiating shroud temperature at midplane was maintained (controlled using midplane thermocouples) at 121° C (250° F) for the duration of the 4-hour test. Temperatures on the container's outer shell, inner container, and Mk12 aeroshell (as well as the shroud) were recorded until the innermost thermocouples inside the RV aeroshell reached a steady state condition.

During the low-temperature radiant heat test, no degradation of the container occurred, as intended. Thus, no post-test photographs are presented in this section.

A temperature history summary plot of mid-plane shroud, outer container shell, inner container, and RV aeroshell inner surface temperatures is shown in Figure 5.3.1. Although only one temperature point in each layer (shroud, outer shell, etc.) is shown, other comparable thermocouples around the circumference of each layer recorded similar temperatures. The Mk12 fore aeroshell substrate reached a peak of 32° C (90° F) about 4.8 hours after the beginning of the test. The Mk12 aft aeroshell substrate reached a peak of 32.5° C (90.5° F) about 4.8 hours after the beginning of the test. Individual thermocouple temperature histories for the 4-hour 121° C radiant heat test of the NAWC container are presented in Appendix C. Peak temperatures are compared for each of the four tests in Table 5.1.

Although the midpoint of the shroud was maintained at a constant 121° C during the 4-hour test, thermocouples near the top of the shroud around its circumference (S1-S6 in Figure 4.2) recorded constant temperatures of approximately 80° C (176° F). The lower shroud circumferential thermocouples (S13-S18) recorded relatively constant temperatures of only 45° C (113° F). The top shroud cover plate's center thermocouple (S20) recorded steady test temperatures of approximately 76° C (169° F). This variation is due to edge effects in the application of radiant heat from the lamp arrays to the shroud.

A comparison of the 4-hour low-temperature radiant heat testing of H1224A and NAWC containers is shown in Figure 5.3.2, which presents the significant differences in heating of both the outer container skin and the RV aeroshell substrate. The radiant heat source (radiating shroud temperature profile) was essentially identical for each test, but peak outer midplane skin temperatures were approximately 76° C (169° F) for the H1224A container versus only 47° C (117° F) for the NAWC container. Peak midplane aeroshell temperatures were approximately 50° C (122° F) for the H1224A test versus only 32° C (90° F) for the NAWC test.

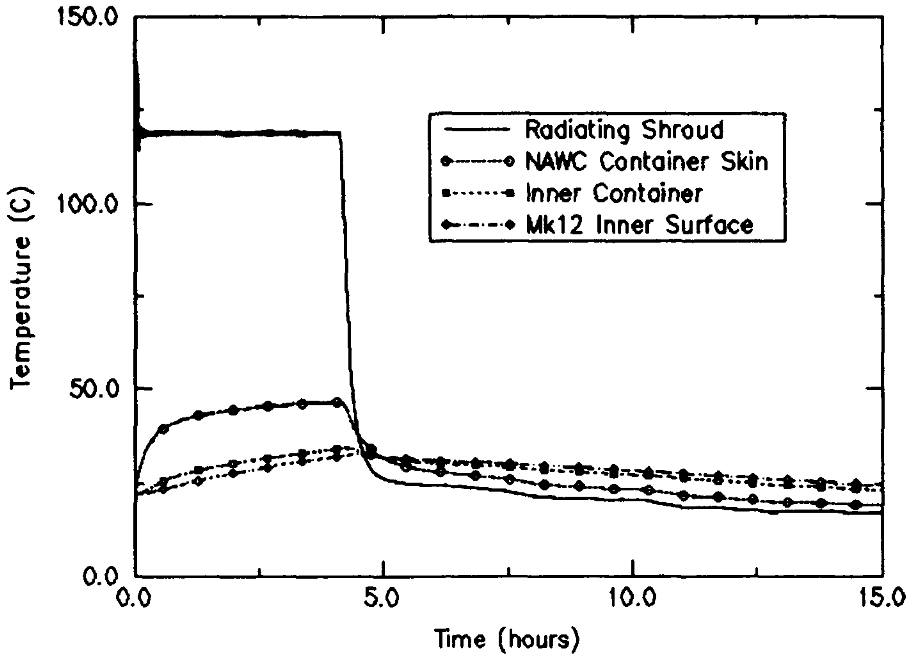


Figure 5.3.1 Summary of 4-hour, 121° C NAWC radiant heat test temperature results

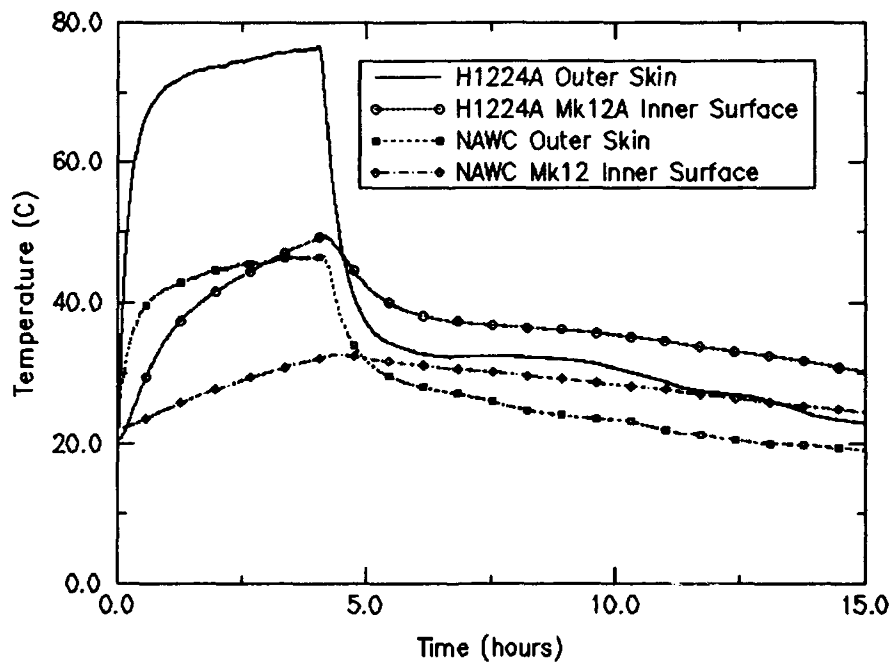


Figure 5.3.2 Comparison of H1224A and NAWC 4-hour radiant heat test results

5.4 NAWC 30-Minute High-Temperature Radiant Heat Test

The 30-minute, high-temperature NAWC (simulated H1224A container) radiant heat test was performed on September 9, 1993 at the Radiant Heat Test Facility of Sandia National Laboratories. The radiating shroud temperature at midplane was maintained (controlled using midplane thermocouples) at 1010° C (1850° F) for the duration of the 30-minute test. Temperatures on the container's outer shell, inner container, and Mk12 aeroshell (as well as the shroud) were recorded until the innermost thermocouples inside the RV aeroshell reached a steady state condition.

The pre-test setup was virtually identical to that of the H1224A test, with the exception of additional insulating cloth around the top and bottom of the lamp arrays to avoid thermal degradation of rubber water hoses (see Figure 5.4.1). As power was applied to the lamp arrays at the beginning of the test, the lamps initially ramped up to nearly peak power in an attempt to bring the temperature-controlling shroud thermocouples up to their required 1010° C, as shown in Figure 5.4.2, about 10 seconds into the test. As shown in Figure 5.4.3, no smoke from foam degredation could yet be seen, even though the shroud had been up to test temperature for approximately 6 minutes. After about 7 minutes of high-temperature heat application, off-gassed volatiles began to burn near the vents outside the radiant shroud, as shown in Figure 5.4.4. The generation of volatile gasses continued to increase, as did their burning, seen in Figure 5.4.5 at approximately 8 minutes into the test.

Unfortunately, a mishap occurred about 11 minutes into the radiant heat test. Melting aluminum from the NAWC container came in contact with two of the lamp array temperature-controlling shroud thermocouples (S11 and S12 at 240° and 300°, respectively, with 0° closest to viewer of test). The molten aluminum began to corrode the inconel-sheathed thermocouples and deteriorating their junction, causing sporadic temperature readings. This caused the temperature control system to supply excessive power to these two pairs of lamp arrays, as shown by the bright areas of the shroud in Figure 5.4.6, which thus caused failure of many individual bulbs in those arrays (note the subsequent darker shroud areas in Figure 5.4.7).

Volatile gas generation and exterior burning of these gasses continued through the end of the test (see Figure 5.4.8, 29 minutes into the test). Even after application of radiant heat ceased, the surrounding air temperature was sufficient to promote burning of the generated off-gasses, as shown in Figure 5.4.9, 2 minutes after cessation of radiant lamp power. Deterioration of the radiant shroud due to corrosion and failure of individual radiant lamps is shown in the post-test photograph, Figure 5.4.10.

Similar to the H1224A radiant heat test, most of the NAWC container was melted away, as shown in Figure 5.4.11. The carbon phenolic aeroshell, however, appears in this photograph to have survived the radiant heat test quite well. The aluminum RV aft cover melted away completely, as can be seen in Figure 5.4.12, exposing the RV's interior insulating blanket mentioned in Chapter 4. After removal of the insulation, significant melting of the aeroshell's aluminum substrate is shown in Figure 5.4.13.

Temperature histories for the midplane shroud thermocouples are shown in Figures 5.4.14 and 5.4.15, highlighting the uniformity in thermocouples S7-S10 and the sporadic readings in S11 and S12 during deterioration due to corrosion. The subsequent temperature profiles of the NAWC outer container shell is shown in Figure 5.4.16, whose variation is not significantly greater than that observed in the outer shell of the H1224A high-temperature test (Figure 5.2.13).

A temperature history summary plot of mid-plane shroud, outer container shell, inner container, and RV aeroshell inner surface temperatures is shown in Figure 5.4.17. Although only one temperature point in each layer (shroud, outer shell, etc.) is shown, other comparable thermocouples around the circumference of each layer recorded similar temperatures (except those around shroud mentioned earlier). The Mk12 fore aeroshell substrate thermocouples reached a peak of 910-990° C (1670-1810° F) about 38 minutes after the beginning of the test. The Mk12 aft aeroshell substrate thermocouples reached a peak of 750-950° C (1380-1750° F) about 40 minutes after the beginning of the test. As mentioned previously, aluminum components of the container, including the aeroshell aluminum substrate, melt at about 660° C (1220° F), so thermocouples may not be in contact with aluminum as melting occurs. Individual thermocouple temperature histories for the 30-minute 1010° C radiant heat test of the NAWC container are presented in Appendix D.

Although the midpoint of the shroud was maintained at a constant 1010° C during the 30-minute test, thermocouples near the top of the shroud around its circumference (S1-S6 in Figure 4.2) recorded constant temperatures of approximately 700° C (1300° F). The lower shroud circumferential thermocouples (S13-S18) also recorded relatively constant temperatures of about 700° C (1300° F). The top shroud cover plate's center thermocouple (S20) recorded steady test temperatures of approximately 1000° C (1830° F). This variation is due to edge effects in the application of radiant heat from the lamp arrays to the shroud.

A comparison of the 30-minute high-temperature radiant heat testing of H1224A and NAWC containers is shown in Figure 5.4.18, which presents the significant differences in heating of both the outer container skin and the RV aeroshell substrate. The radiant heat source (radiating shroud temperature profile) was essentially identical for each test, but peak outer midplane skin thermocouple temperatures were approximately 1000° C (1830° F) for the H1224A container versus 970° C (1780° F) for the NAWC container, with a slight time delay between the two. Peak midplane aeroshell thermocouple temperatures were approximately 930° C (1700° F) for the H1224A test versus a slightly higher 970° C (1780° F) for the NAWC test.

A summary of peak temperatures measured on the fore and aft sections of the Mk12a Mod6c and Mk12 aeroshells (and weight plate groups) for each test is presented in Table 5.1.

Figure 5.4.1 NAWC radiant heat test: pre test

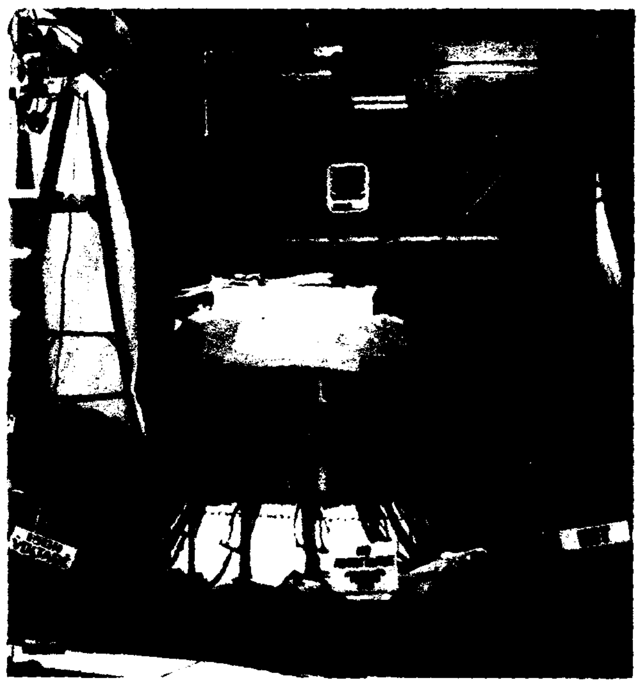


Figure 5.4.2 NAWC radiant heat test: T+10 seconds

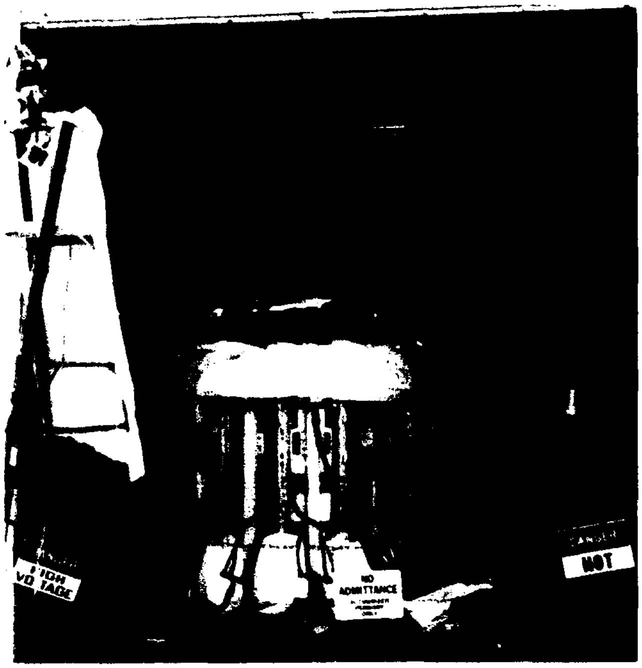


Figure 5.4.3 NAWC radiant heat test: T+6 minutes

Figure 5.4.4 NAWC radiant heat test: T+7 minutes

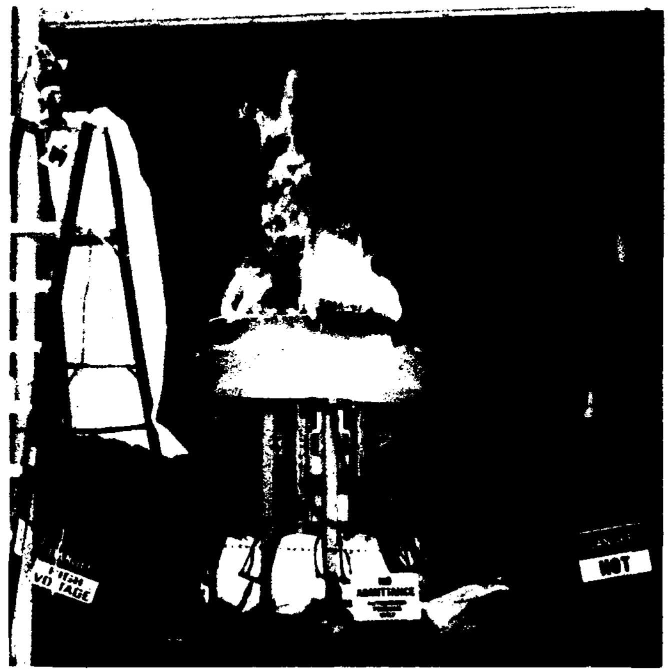


Figure 5.4.5 NAWC radiant heat test: T+8 minutes

Figure 5.4.6 NAWC radiant heat test: T+11 minutes

Figure 5.4.7 NAWC radiant heat test: T+17 minutes

Figure 5.4.8 NAWC radiant heat test: T+29 minutes

Figure 5.4.9 NAWC radiant heat test: T+32 minutes

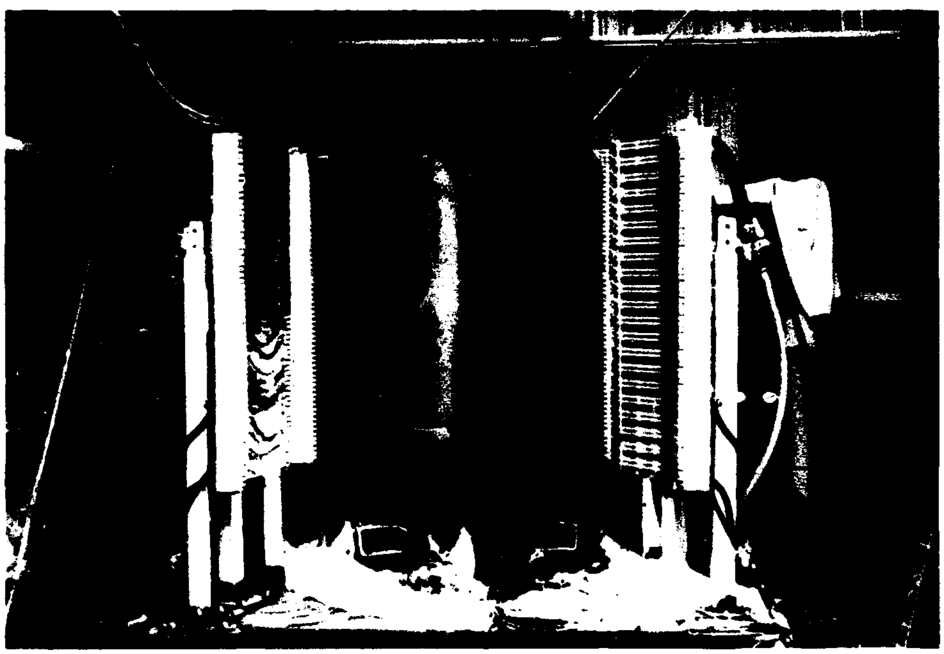


Figure 5.4.10 NAWC radiant heat test: shroud and lamp array post-test damage

Figure 5.4.11 NAWC radiant heat test: post-test remains of RV and container

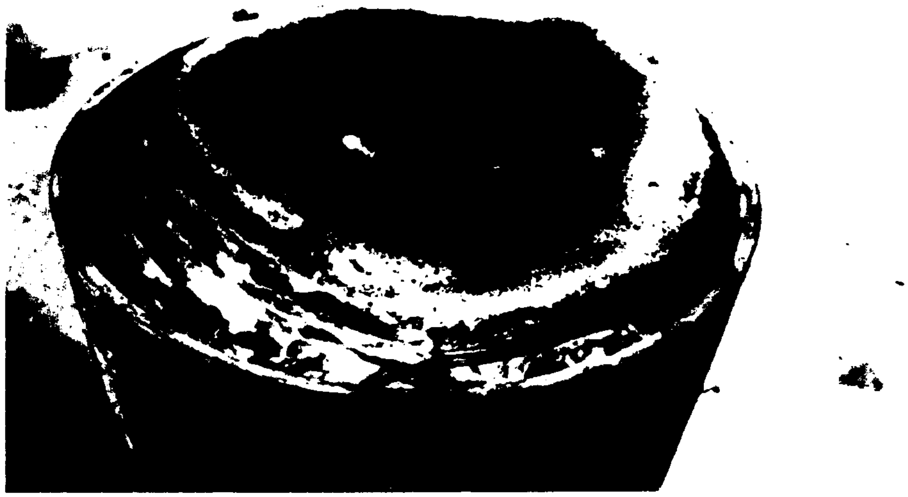


Figure 5.4.12 NAWC radiant heat test: aft end of RV after test

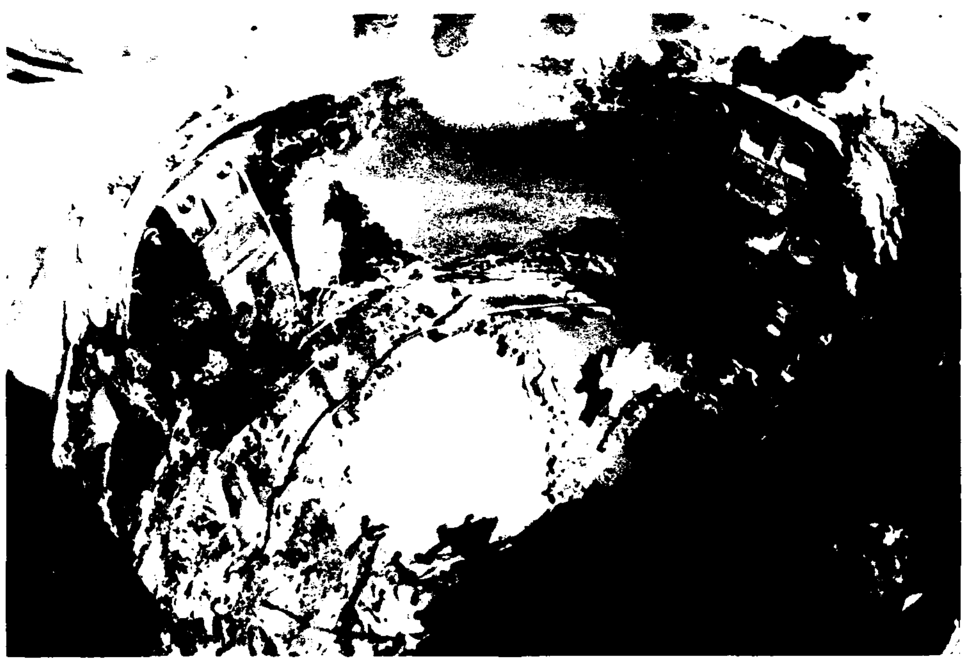


Figure 5.4.13 NAWC radiant heat test: RV aeroshell substrate damage post test

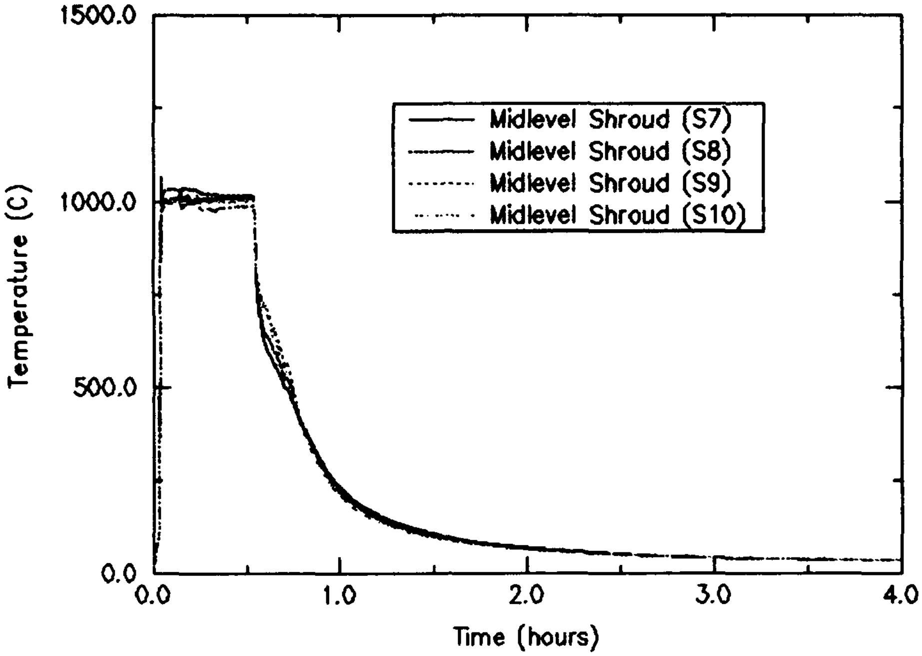


Figure 5.4.14 NAWC 30-minute radiant heat test midplane shroud temperatures (0°-180°)

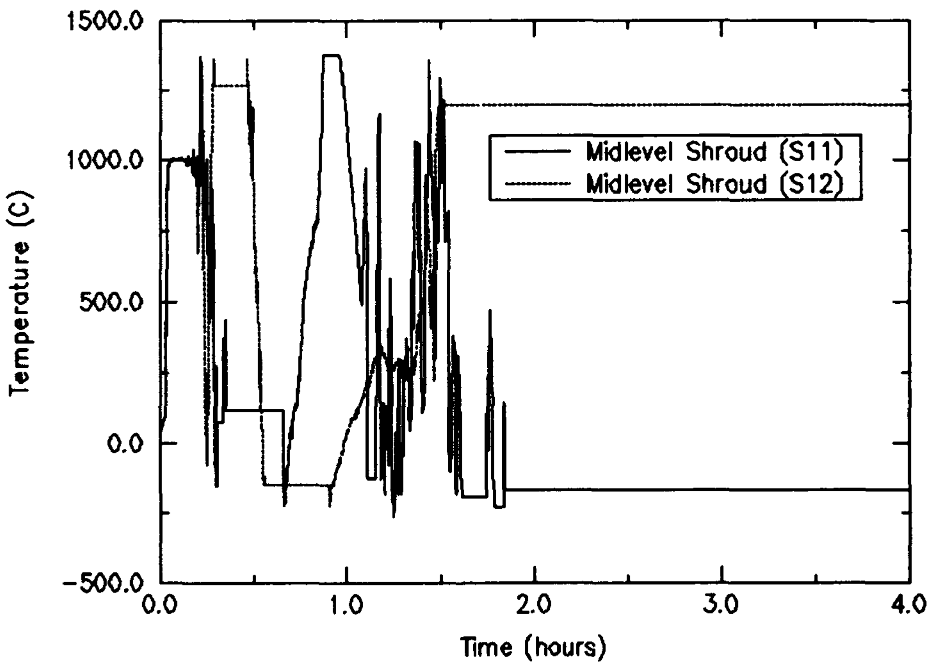


Figure 5.4.15 NAWC 30-minute radiant heat test midplane shroud temperatures (240°,300°)

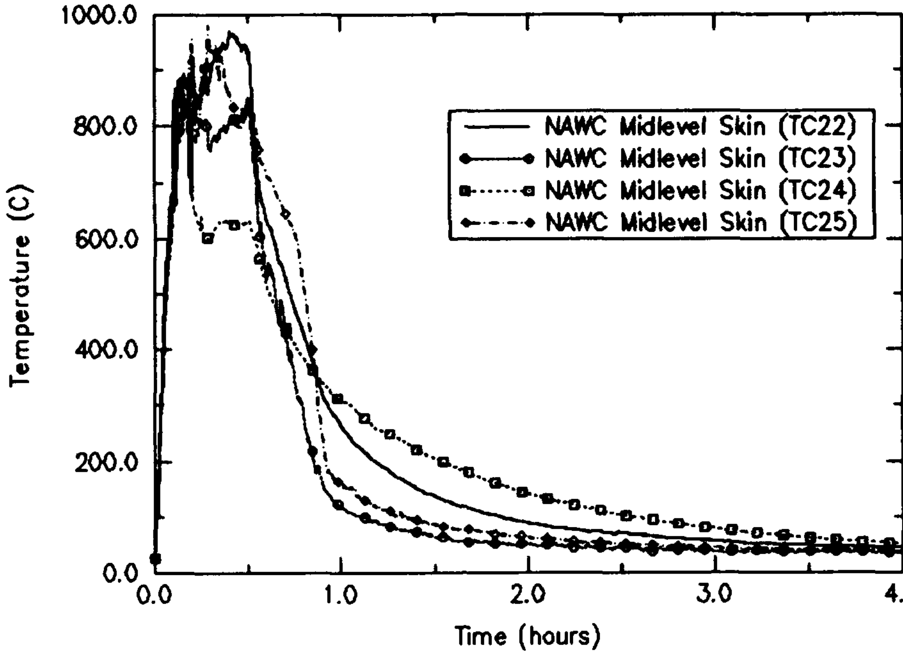


Figure 5.4.16 NAWC 30-minute radiant heat test container skin temperatures (midplane)

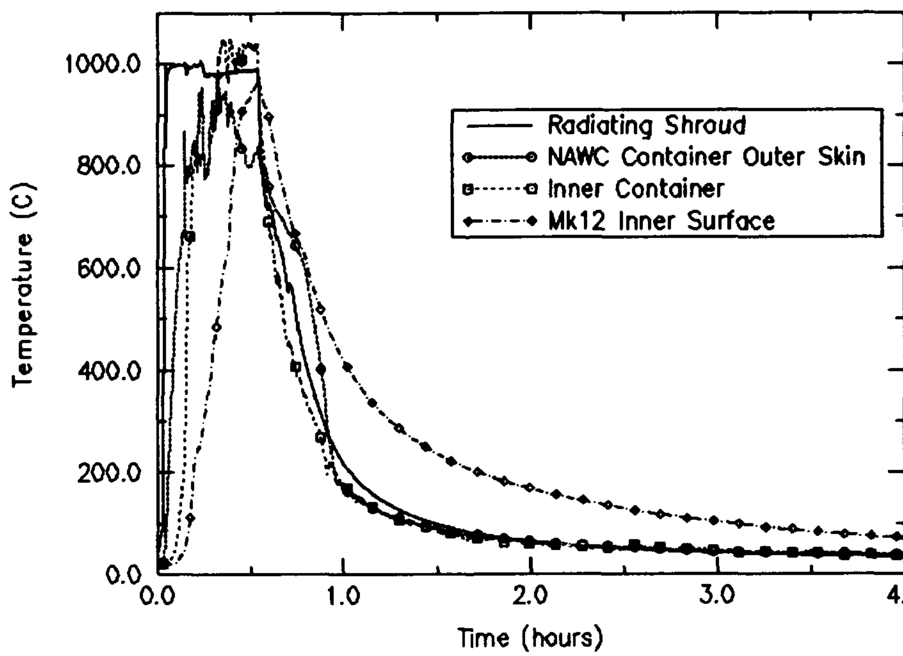


Figure 5.4.17 Summary of 30-minute, 1010° C NAWC radiant heat test temperature results

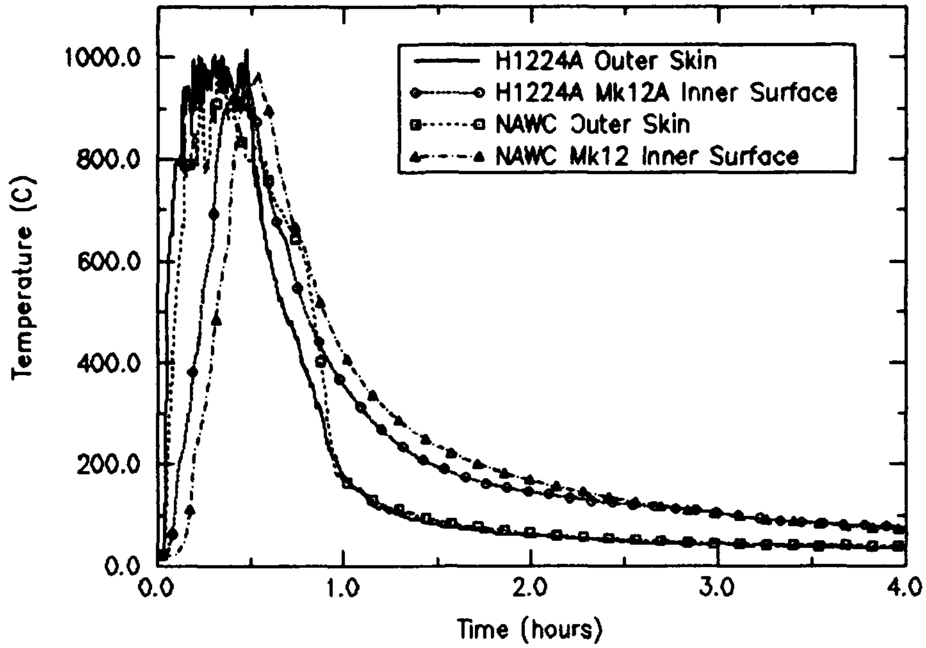


Figure 5.4.18 Comparison of H1224A and NAWC 30-minute radiant heat test results

Table 5.1: Summary of Peak Temperatures During Radiant Heat Testing

	4-Hour, 121°C (250°F)	30-Min., 1010°C (1850°F)
H1224A, Mk12a, Aft Mass	43°C (110°F)	415°C (779°F)
H1224A, Mk12a, Fore Mass	35.5°C (96°F)	395°C (743°F)
H1224A, Mk12a, Aft Aeroshell	48°C (118°F)	650-800°C (1200-1470°F)
H1224A, Mk12a, Fore Aeroshell	45°C (113°F)	900-985°C (1650-1800°F)
NAWC, Mk12, Aft Aeroshell	32.5°C (90.5°F)	750-950°C (1380-1750°F)
NAWC, Mk12, Fore Aeroshell	32°C (90°F)	910-990°C (1670-1810°F)

6. Conclusions

Sandia National Laboratories has performed two radiant heat tests of the H1224A shipping/ storage container (and two on a simulated H1224A container fabricated by NAWC) for the Mk12a/W78 warhead midsection. The 121° C (250° F) 4-hour slow thermal soak test was performed to generate data to develop and validate numerical thermal model predictions of the H1224A container and RV midsection. Dominant heat paths can be identified with slow thermal soak test data. The 1010° C (1850° F) 30-minute simulated fuel fire environment test was conducted to evaluate the container's ability to protect the RV midsection from potential extreme thermal accident conditions associated with the weapon's STS, as well as to validate model predictions. Identical radiant heat tests were performed on the NAWC simulated container, which was fabricated as a mock-up of the H1224A container, to calibrate its performance versus the actual H1224A container in severe thermal environments.

Temperatures measured at points on the container and on the RV midsection during these radiant heat tests are only measurements on a *test* unit, which may differ significantly from those experienced by an actual containerized WR Mk12a midsection in a real thermal accident condition. Real fuel fires rarely produce such symmetrical and constant heat loads as those produced in radiant heat testing. Even in controlled fuel fire tests, heat fluxes within the flames typically vary 30 percent or more, depending upon wind speed, location within the fire, and test unit size and mass. Also, temperature profiles measured at the fore and aft weight plate groups of the Mk12a Mod6c may not be similar to those of an actual WR Mk12a midsection due to differences in heat capacitance, thermal conductivity, air gaps, etc.

Although flames were observed at the upper vent holes of the radiating heat shrouds in the high-temperature tests of both containers, flames may not have been present inside the shroud or either container during testing. A relatively poor supply of oxygen inside the shroud reduces the chance that volatile off-gasses from foam decomposition actually burn inside the shroud. Small gaps around the shroud's upper lid provided visible evidence early in the 1010° C (1850° F) H1224A test that volatiles did not burn inside the upper portion of the shroud until they exited the shroud and reached a good oxygen source, such as the surrounding air. Some burning of volatiles may have occurred inside and near the bottom of the shroud, however, where flames would not have been visible from the outside and a small supply of oxygen may have entered.

Loss of radiating shroud temperature control over almost 60° of circumference during the high-temperature NAWC container test did not seriously effect heating of most interior locations, including the Mk12 midsection aeroshell. Temperature variations in the container's outer skin were no greater than those observed during the high-temperature H1224A test, which had no shroud temperature control problems due to corrosion of thermocouples. Variations in temperatures circumferentially (including those observed in the outer container) could be due to local blockages of radiant heat by darker volatiles, such as oxidizing paint or foam. A dark smoke was visible, before flames at the top of the shroud, early in the 1010° C (1850° F) H1224A test. Since radiation is the primary mode of heat transfer, local blockage by smoke could be significant.

During high-temperature testing of the H1224A and NAWC containers, significant differences were noted in both heat transfer through the various layers and in generation of smoke and volatile off-gasses. Test results were very similar except for an apparent time delay, most likely due to a much larger surface reflectivity of the polished aluminum NAWC container than the painted H1224A container. Temperature differences at the RV level could also be due to the difference in mass between the weighted Mk12a Mod6c midsection and the hollow Mk12 midsection aeroshells. Almost immediately after application of radiant heat, paint from the H1224A container began burning off. The rougher and even less reflective primer beneath that allowed more heat to be absorbed by the aluminum surface, beginning degeneration of the foam inserts and even melting the outer shell quickly (within about a minute). Conversely, flames were not generated from the NAWC high-temperature test until about six minutes into the test, indicating that heat from the 1010°C radiating shroud was reflected (and not absorbed) from the NAWC container outer surface much more strongly. It is recommended that future NAWC containers be primed and painted in a similar manner to the H1224A container to provide similar performance characteristics in severe thermal accident environments.

References

[1] Report on the Panel on Nuclear Weapon Safety on the Committee on Armed Forces, House of Representatives, One Hundred First Congress, Second Congressional Session: December 1990. (also known as "Drell Report" of "Report of Drell panel")

[2] Review of Drell panel Recommendations for ICBM Systems, TRW Ogden Engineering Operations for the Department of the Air Force, Aug. 9, 1991.

[3] Department of Defense and Department of Energy Study on the Logistic Transportation of Nuclear Weapons, Sept. 1991.

[4] Stockpile to Target Sequence for the Mk12a (W78), Air Force Weapon Laboratory, Sept.27, 1976.

[5] Scheiber, C. A., "Final Test Report Mk 12A/JMTP-4B, Temperature Measurement Test (U), R705145, R705146, Sandia Labs, May 1, 1978.

[6] Scheiber, C. A., "Final Test Report Mk 12A/JMTP-4, Thermal Test (U), R705142, Sandia Labs, July 8, 1978.

[7] Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory Commission, "Qualification Criteria to Certify a Package for Air Transport of Plutonium," NUREG-0360, Washington, DC, January 1978.

[8] Personal communication with J. L. Moya, Department 1513, Sandia National Labs, August 18, 1993.

[9] Sandia National Laboratories H1224A drawing #'s AY316847, AY288436, AY288437, AY327291, AY273717, AY273718, AY273719, 273720, AY316848, AY326801, AY326802, AY326803, AY326805, AY326806.

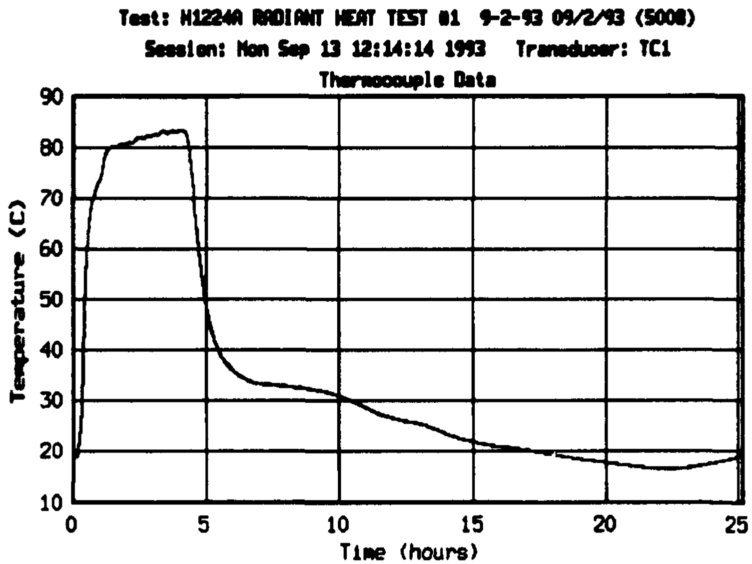
[10] Watlow-Gordon Temperature Measurements Product Catalog, 1991-1992.

[11] "The Mobile Instrumentation Data Acquisition System (MIDAS)," SAND90-2916

[12] Uncapher, W. L., Dickinson, J. R., Althaus, B. L., and Holten, J. R., "The Development of a Mobile Instrumentation Data Acquisition System for Use in Cask Testing," Presented at PATRAM '89, September 1989.

Appendix A

The following pages show temperature data for the 4-hour, 121° C (250° F) radiant heat test of the H1224A shipping/storage container with Mk12a Mod6c midsection inside. Two time windows are provided: 25 hours and a narrow window of approximately 5 hours. The longer duration data plots include each entire test, including the cool-down period to steady state. The shorter duration data plots provide more detail throughout the 4 hour application of radiant heat.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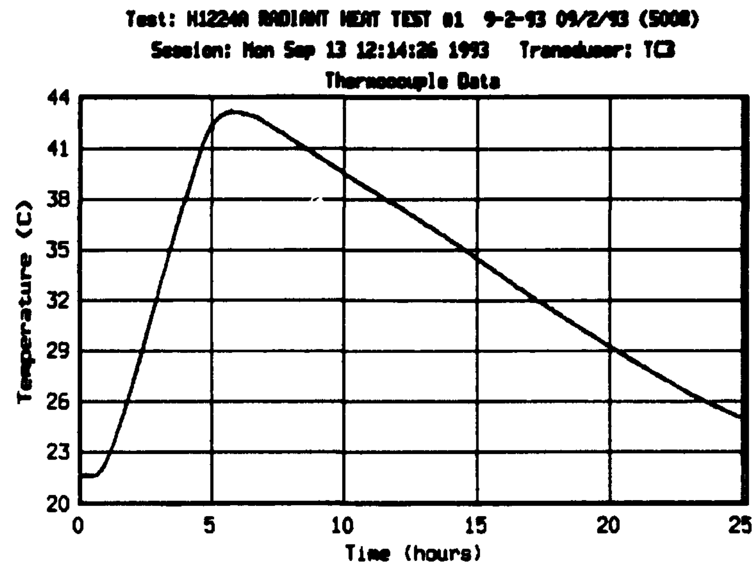
Temperature (C)
Time (hours)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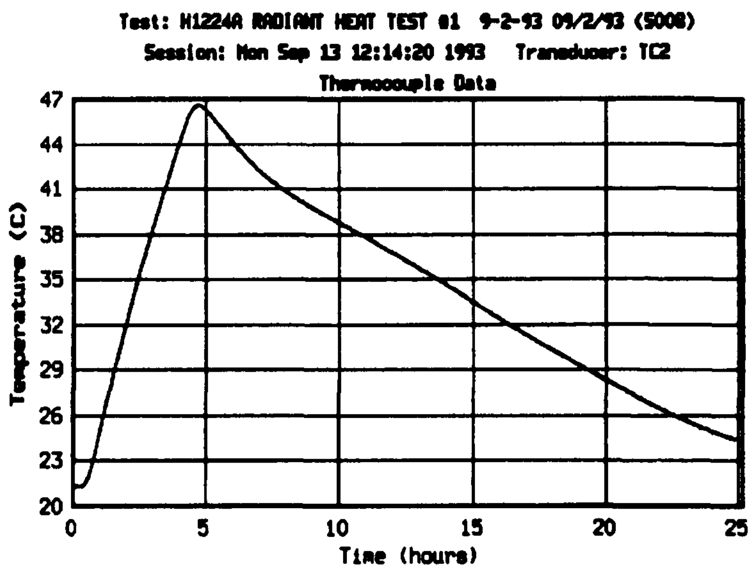
Thermocouple Data
Temperature (C)
Time (hours)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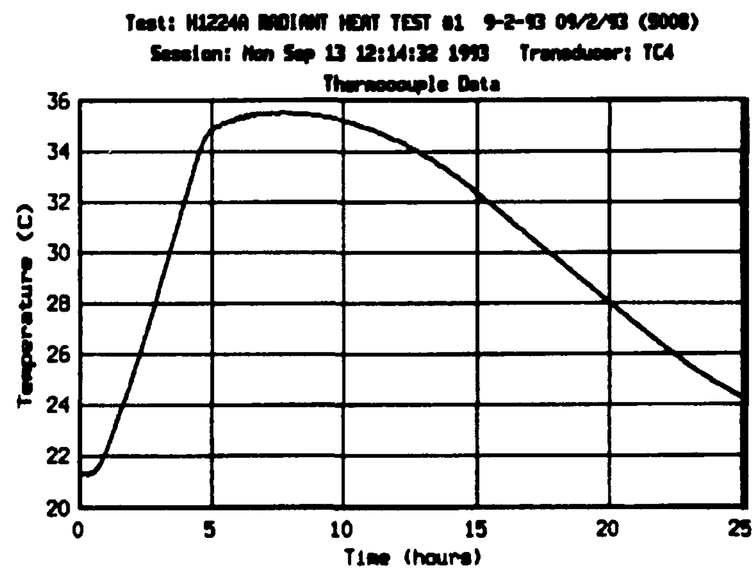
Thermocouple Data
Temperature (C)
Time (hours)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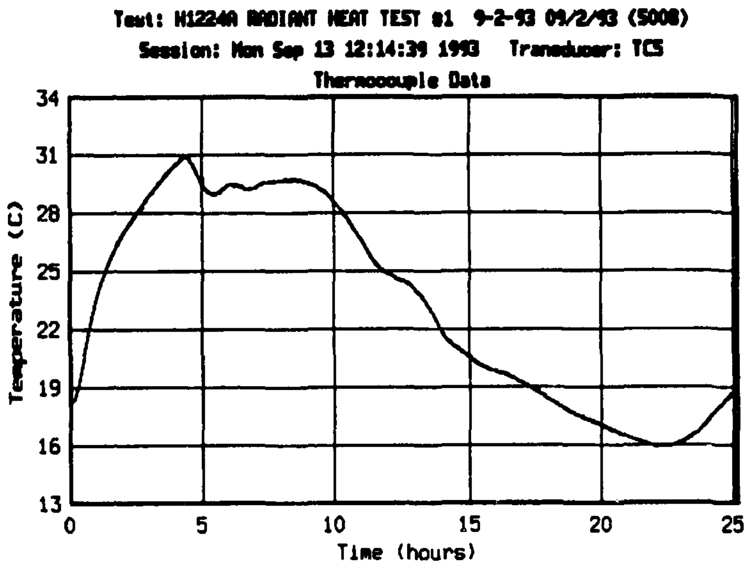
Temperature (C)
Time (hours)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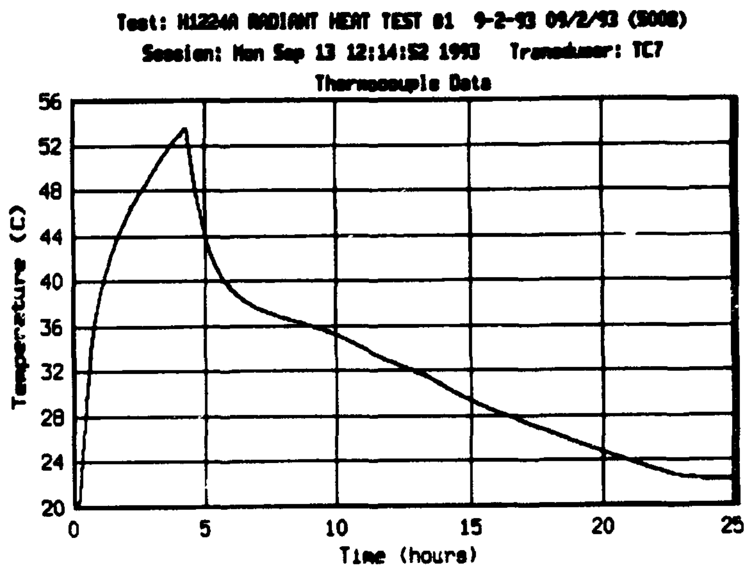
Temperature (C)
Time (hours)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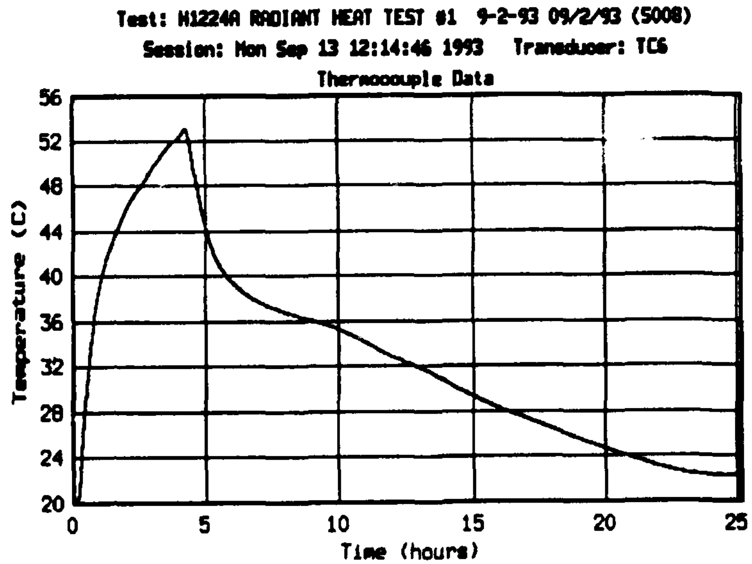
Temperature (C)
Time (hours)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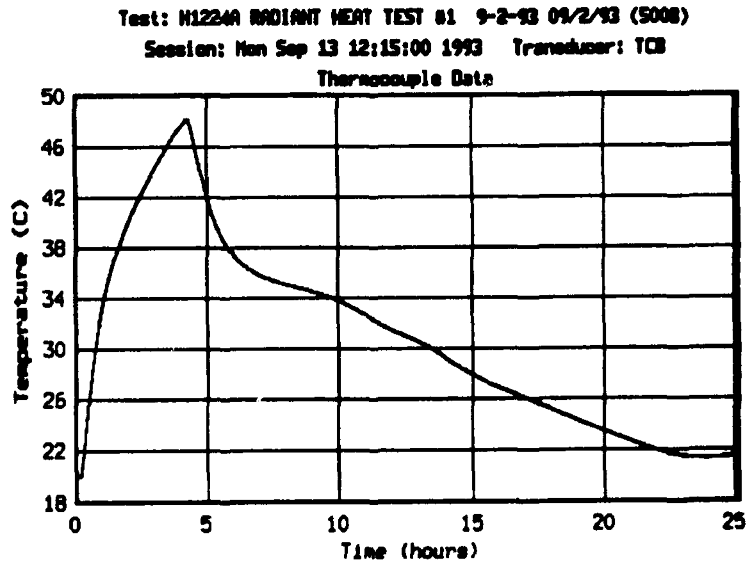
Temperature (C)
Time (hours)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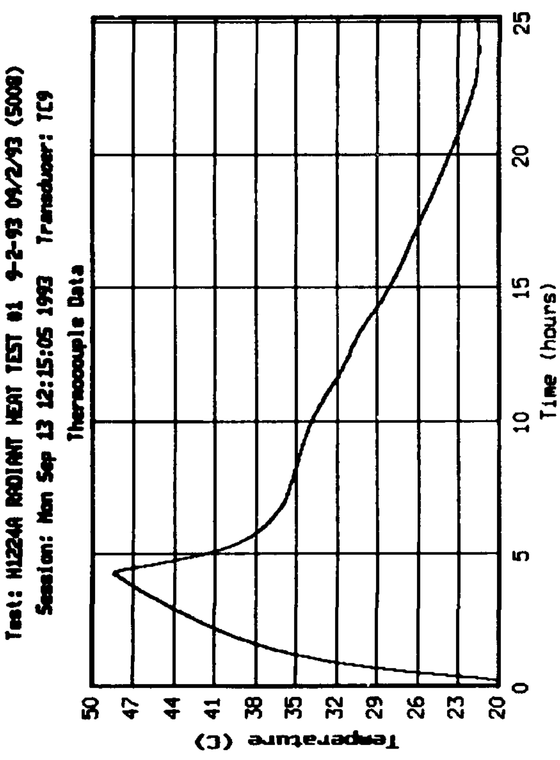
Temperature (C)
Time (hours)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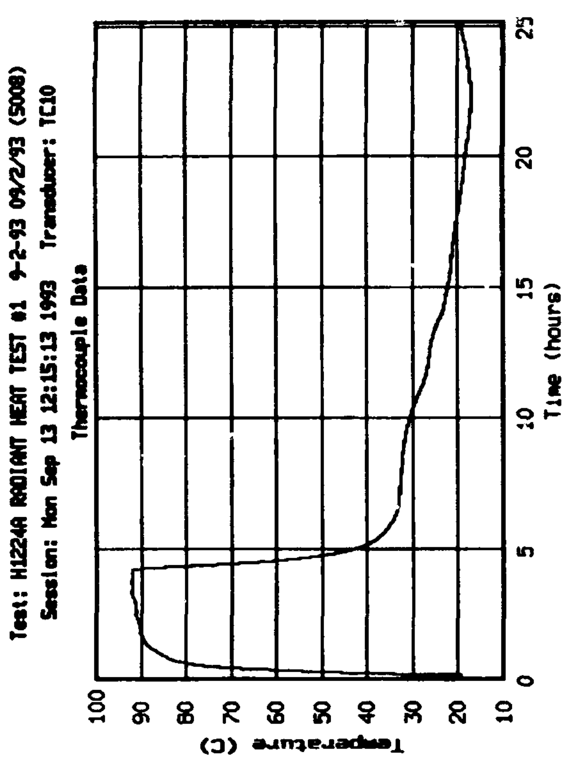
Temperature (C)
Time (hours)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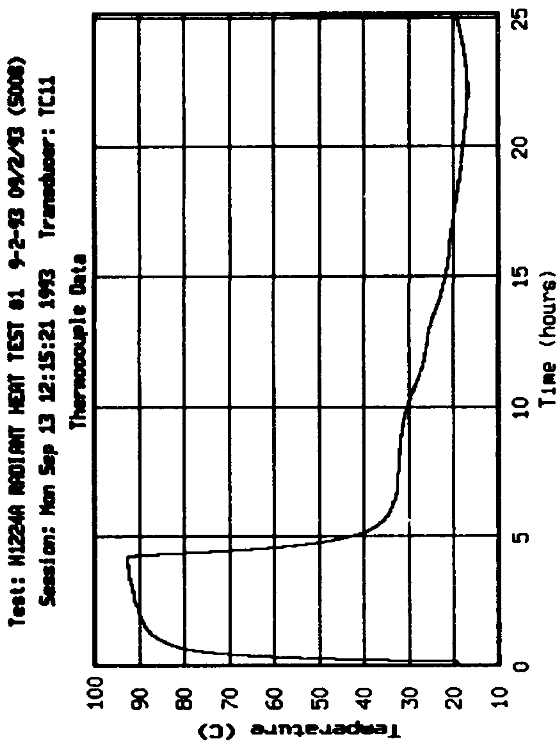
Temperature (C)
Time (hours)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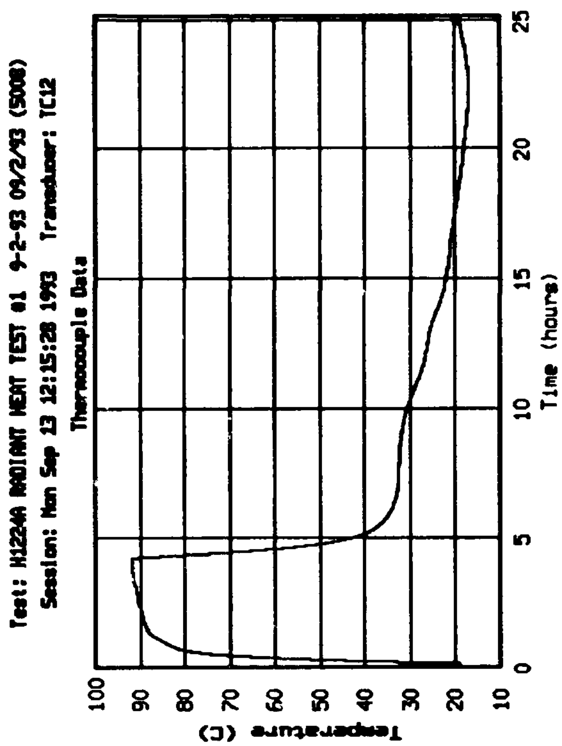
Thermocouple Data
Temperature (C)
Time (hours)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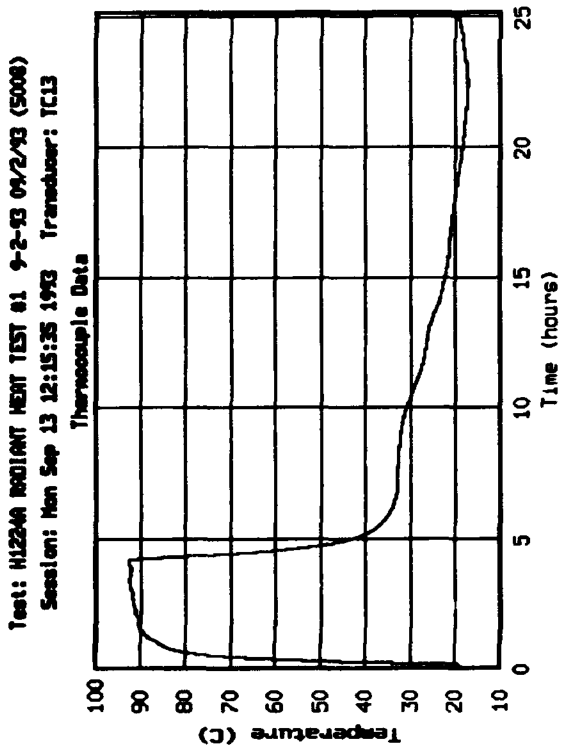
Temperature (C)
Time (hours)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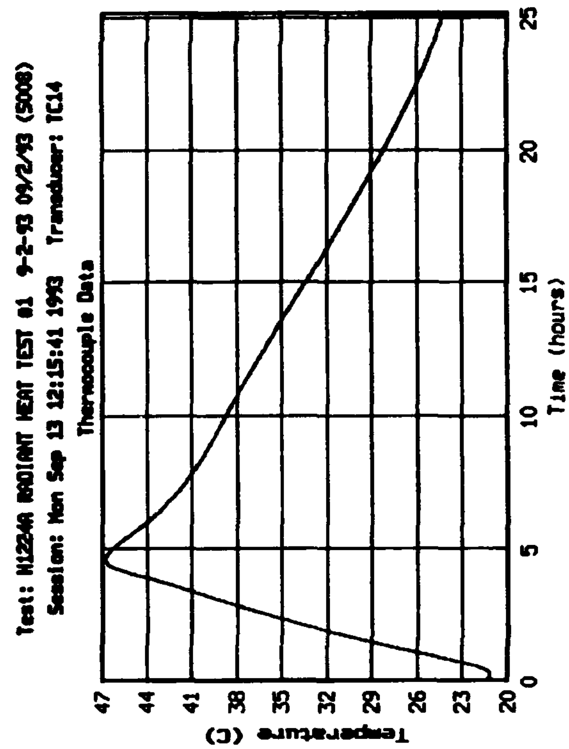
Temperature (C)
Time (hours)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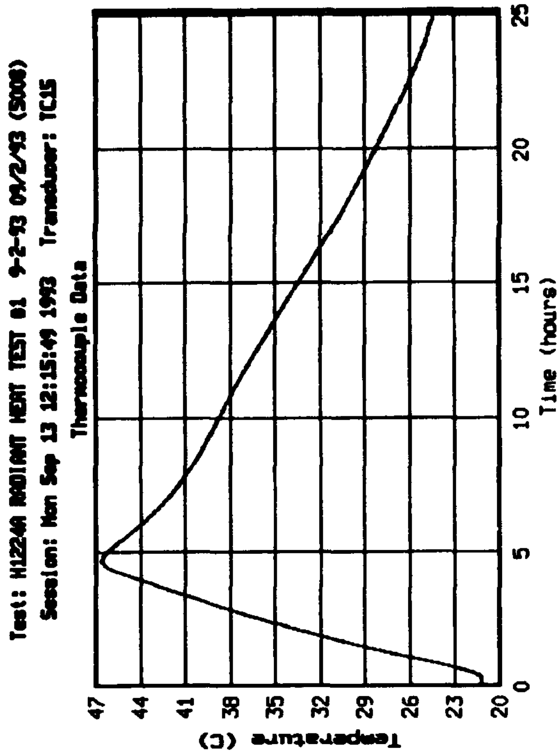
Temperature (C)
Time (hours)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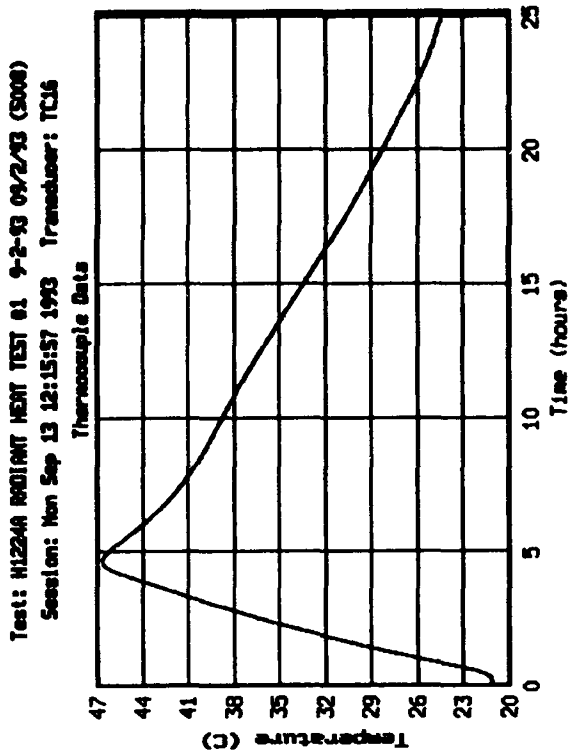
Temperature (C)
Time (hours)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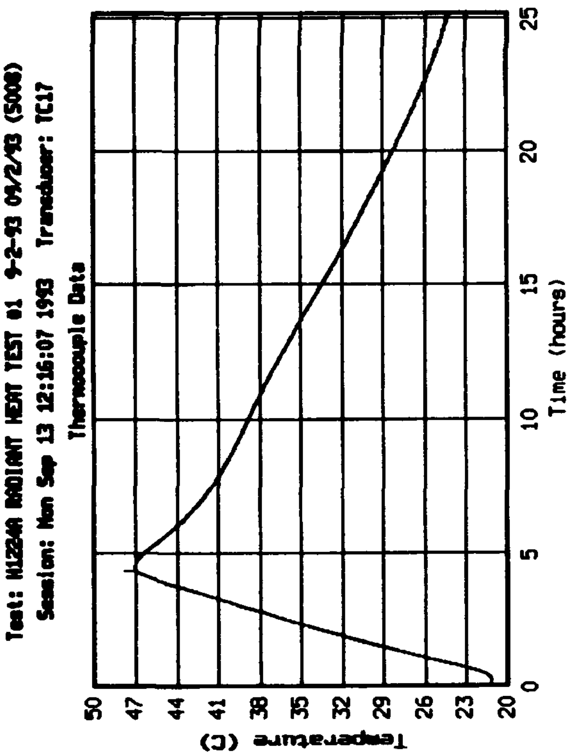
Temperature (C)
Time (hours)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Thermocouple Data
Temperature (C)
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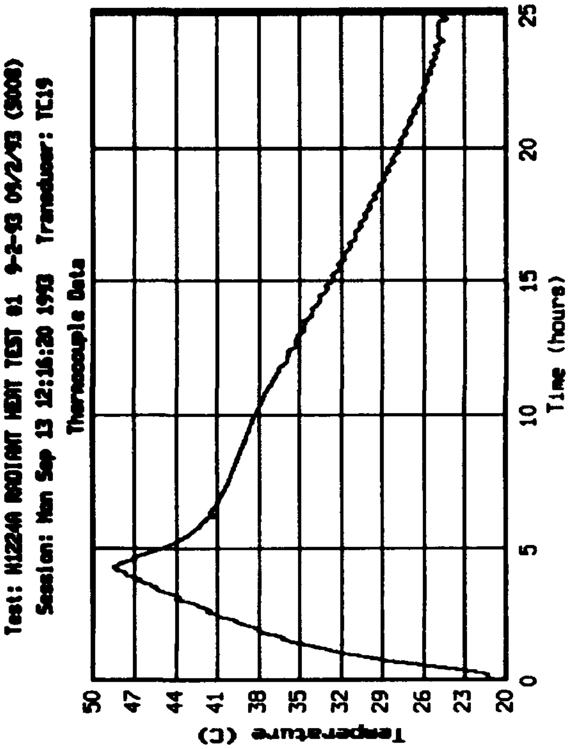
Time (hours)
0 5 10 15 20 25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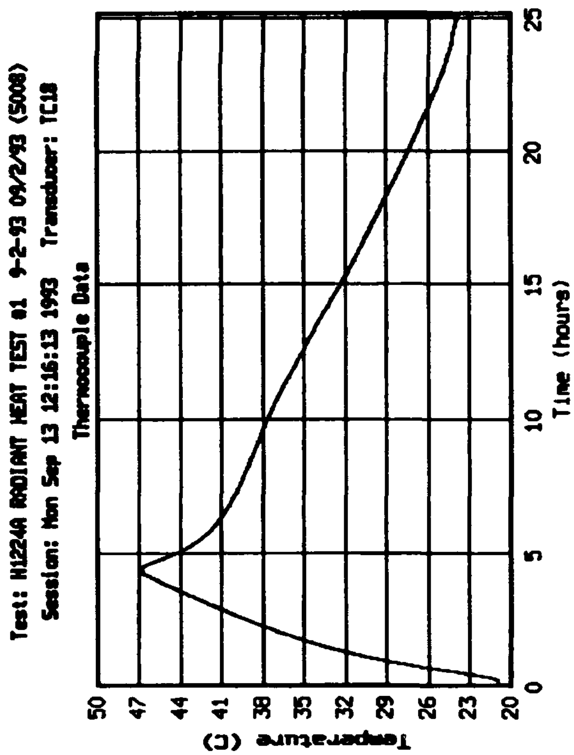
Time (hours)
0 5 10 15 20 25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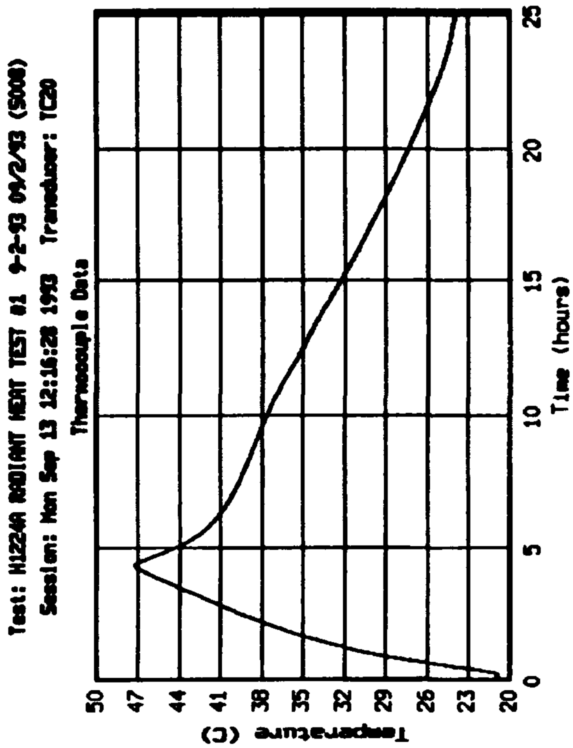
Time (hours)
0 5 10 15 20 25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Thermocouple Data
Temperature (C)
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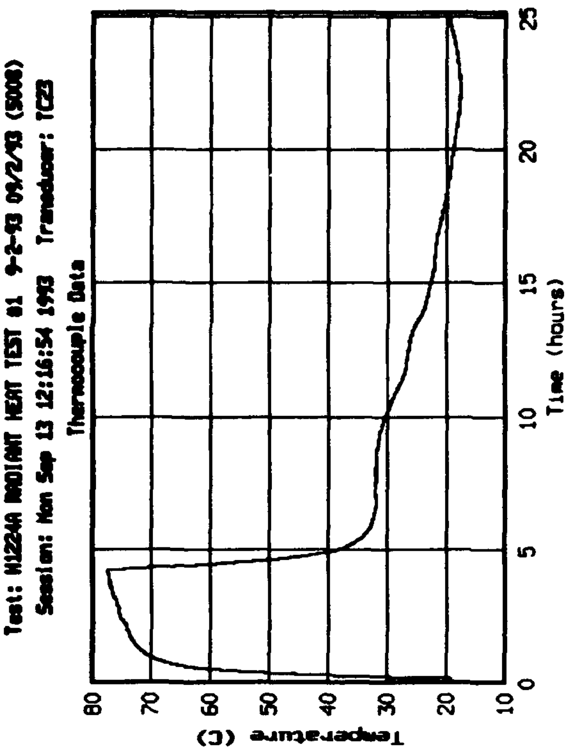
Time (hours)
0 5 10 15 20 25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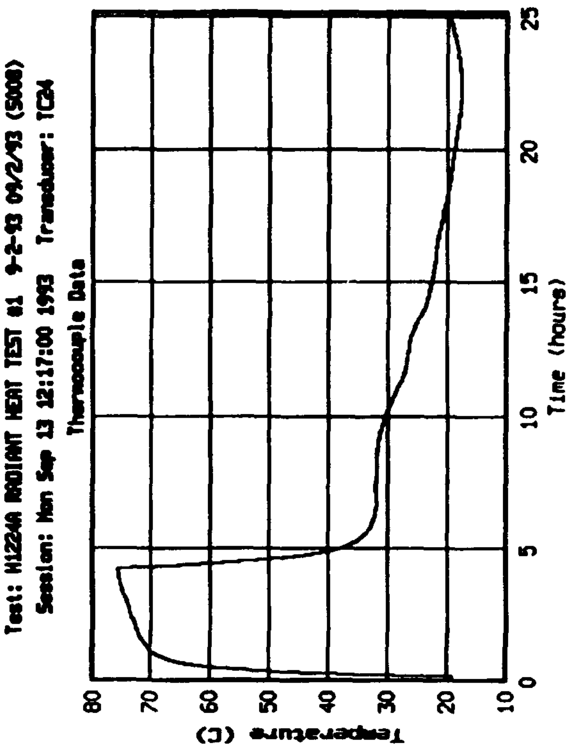
Thermocouple Data
Temperature (C)
Time (hours)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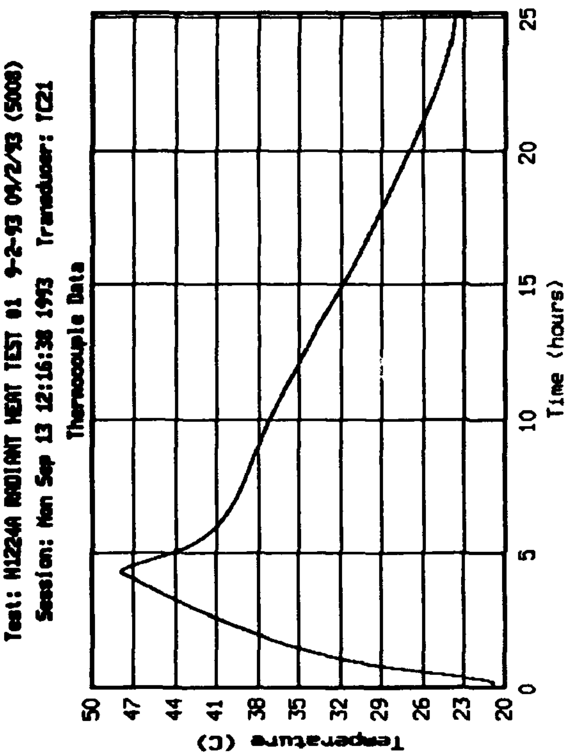
Thermocouple Data
Temperature (C)
Time (hours)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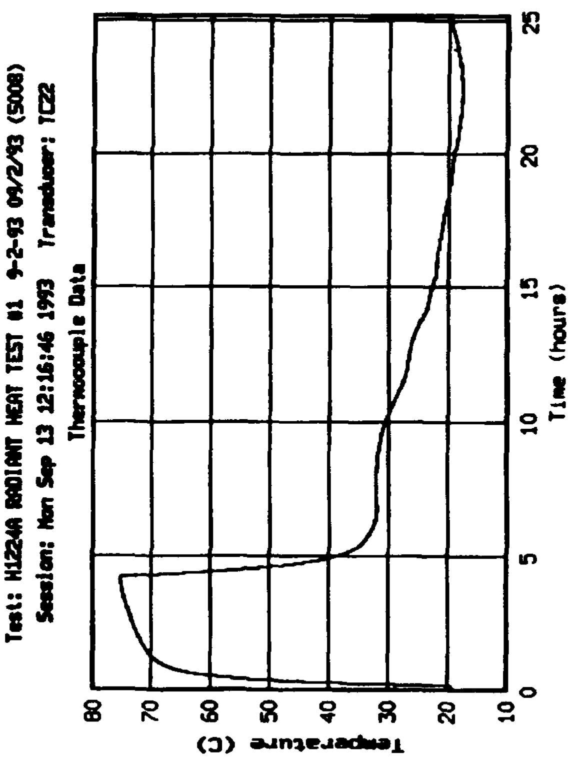
Thermocouple Data
Temperature (C)
Time (hours)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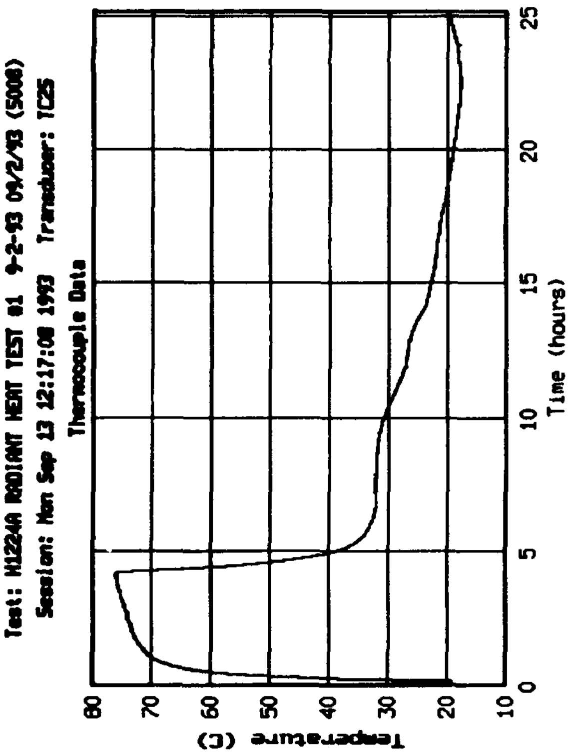
Temperature (C)
Time (hours)



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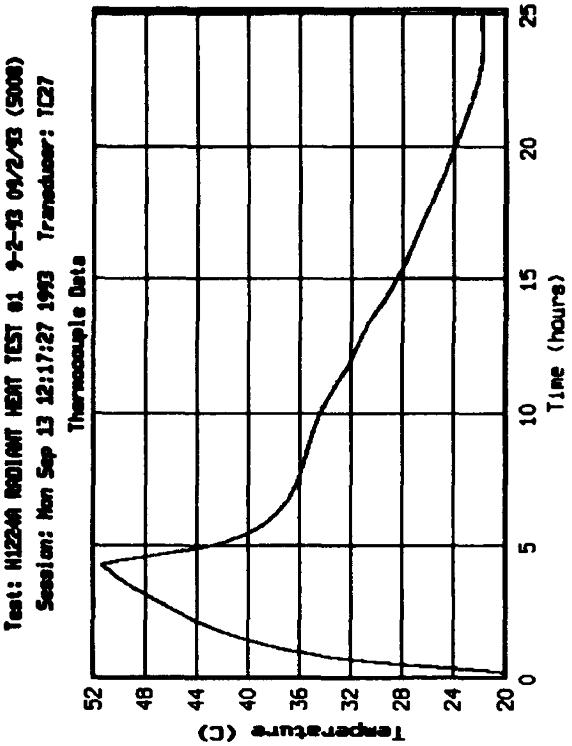
Thermocouple Data
Temperature (C)
80
70
60
50
40
30
20
10
0
5
10
15
20
25
Time (hours)



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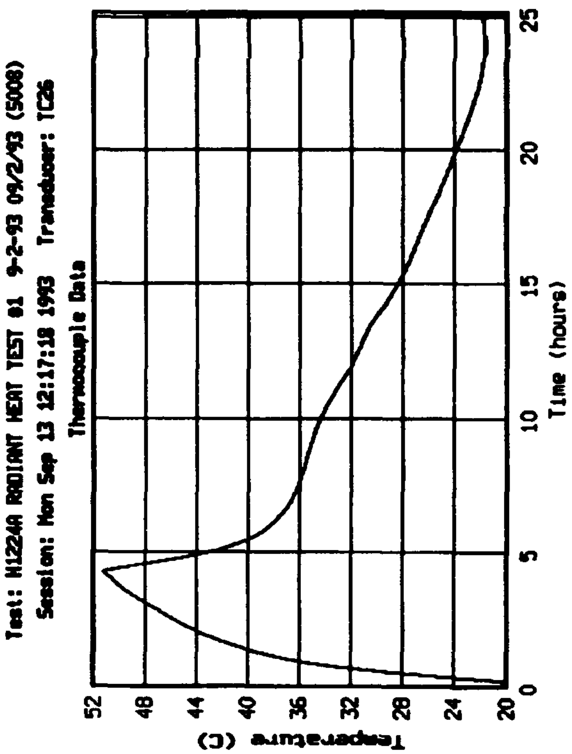
Thermocouple Data
Temperature (C)
52
48
44
40
36
32
28
24
20
0
5
10
15
20
25
Time (hours)



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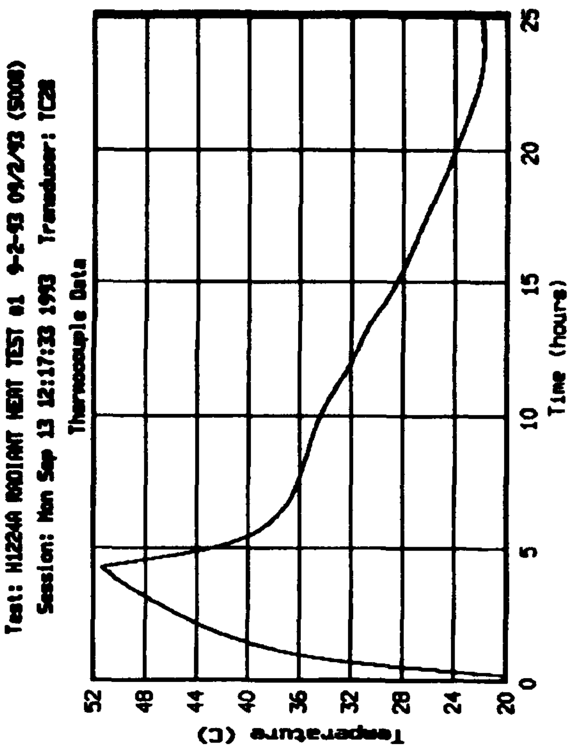
Thermocouple Data
Temperature (C)
52
48
44
40
36
32
28
24
20
0
5
10
15
20
25
Time (hours)



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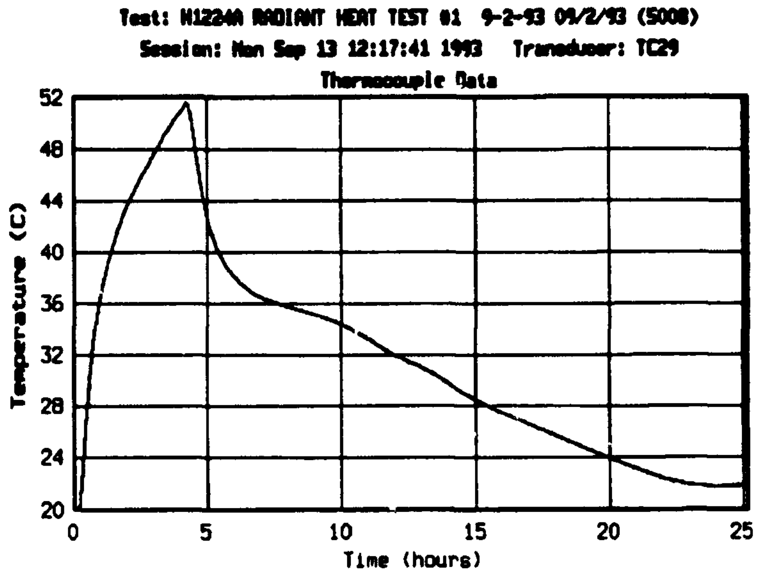
Thermocouple Data
Temperature (C)
52
48
44
40
36
32
28
24
20
0
5
10
15
20
25
Time (hours)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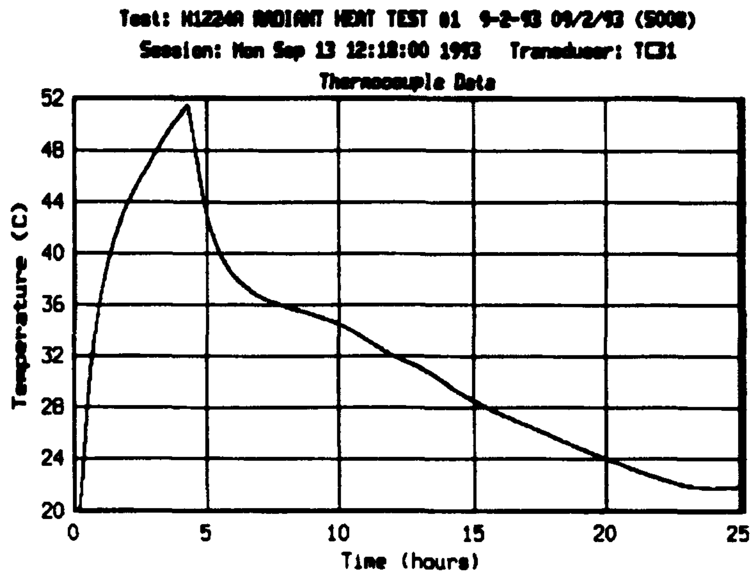
Temperature (C)
Time (hours)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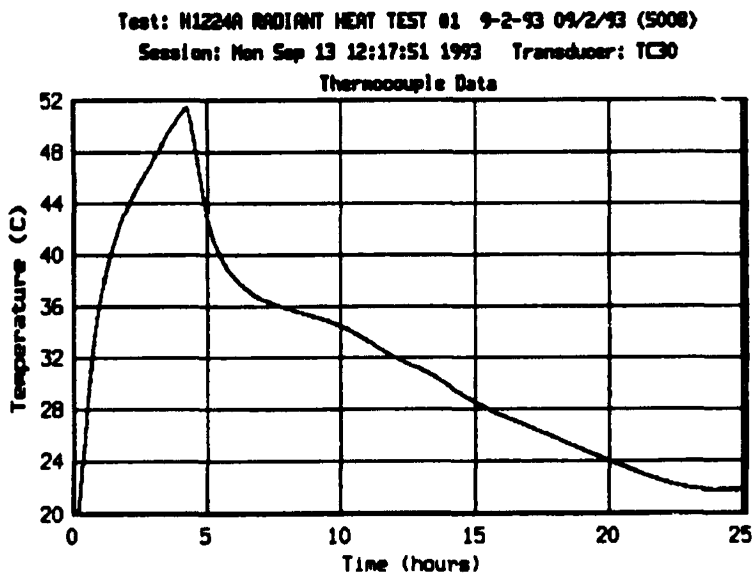
Temperature (C)
Time (hours)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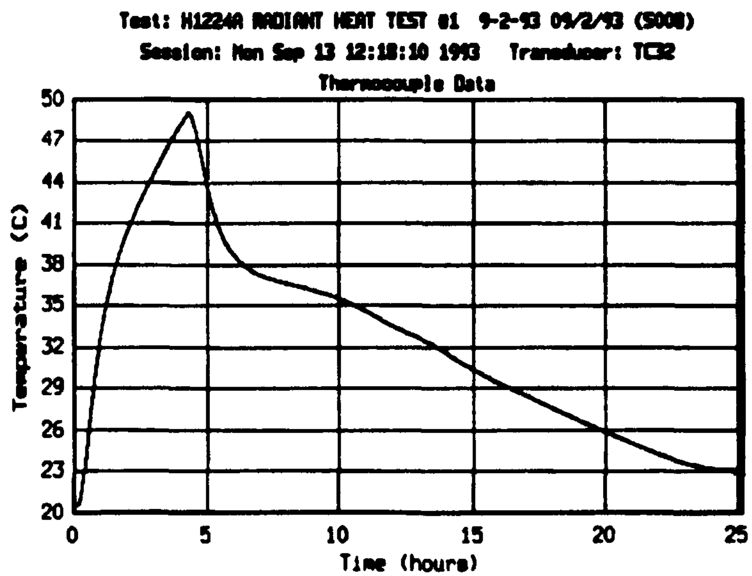
Temperature (C)
Time (hours)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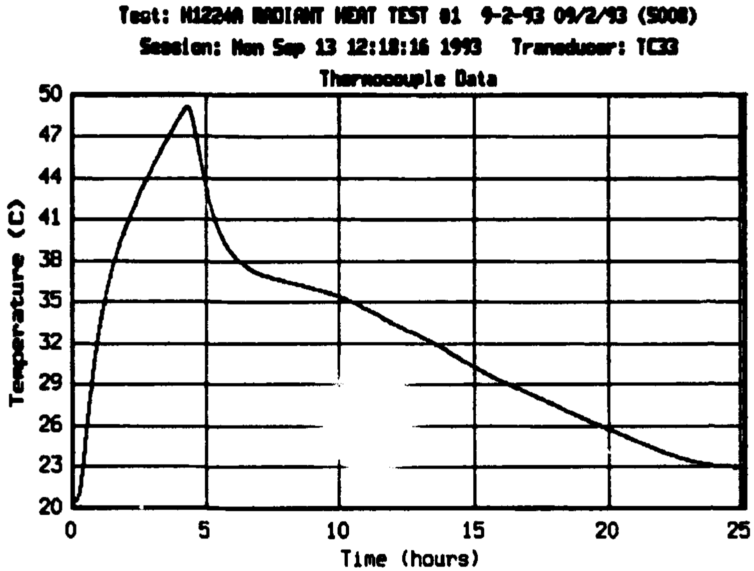
Thermocouple Data
Temperature (C)
Time (hours)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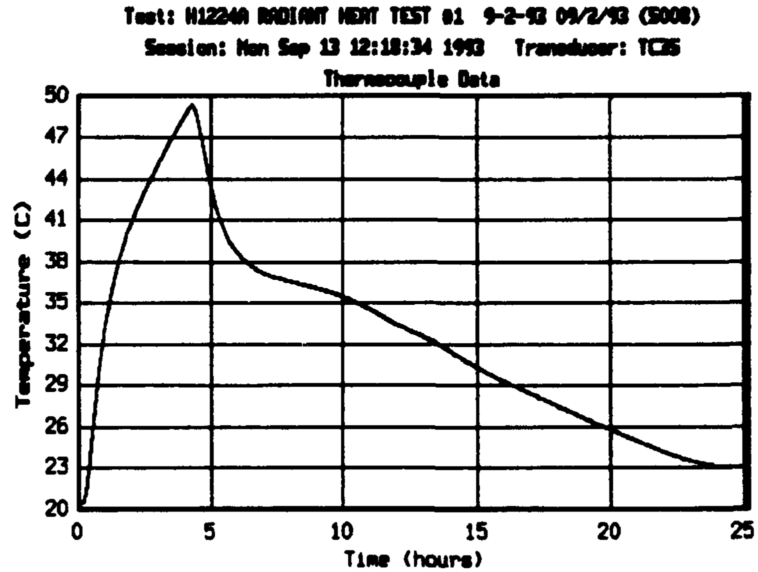
Thermocouple Data
Temperature (C)
50
47
44
41
38
35
32
29
26
23
20
0
5
10
15
20
25
Time (hours)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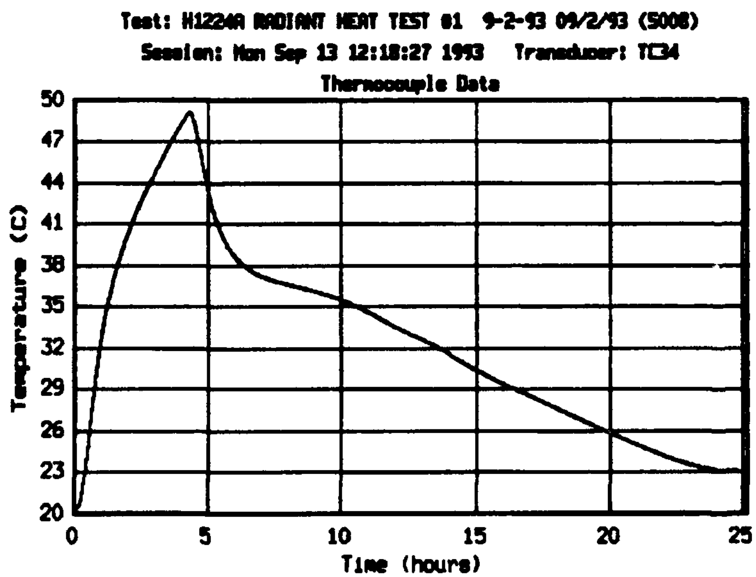
Thermocouple Data
Temperature (C)
50
47
44
41
38
35
32
29
26
23
20
0
5
10
15
20
25
Time (hours)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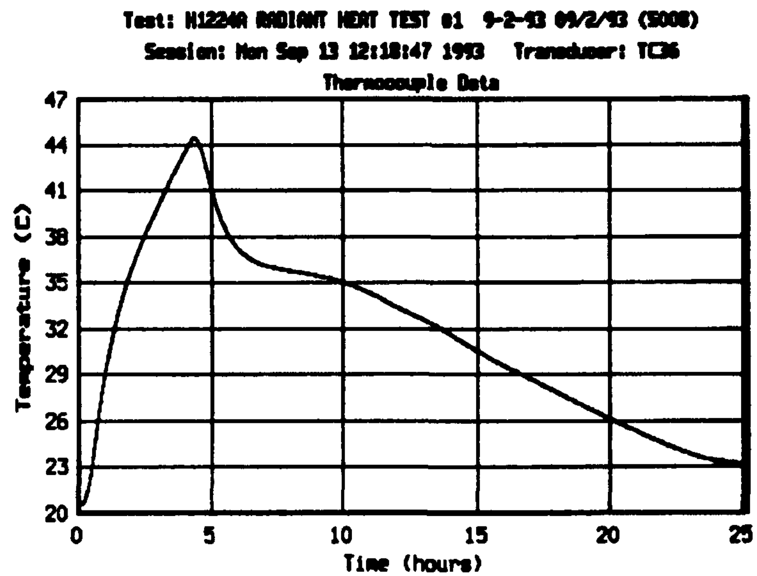
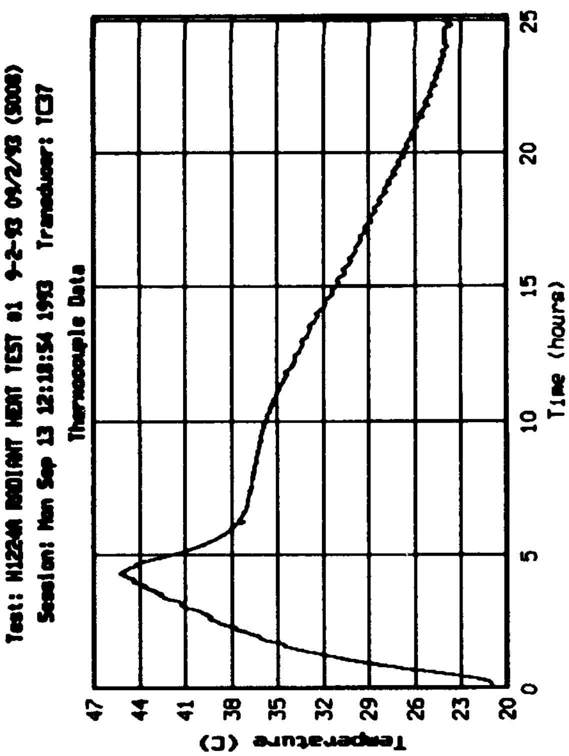
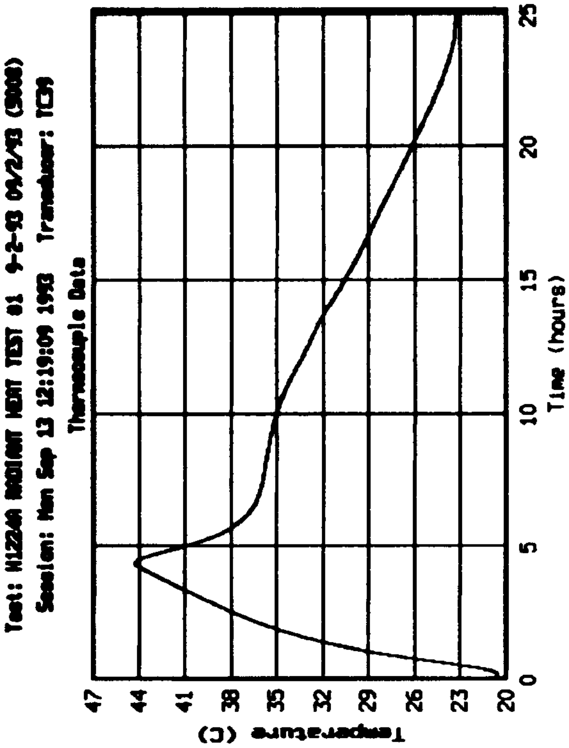
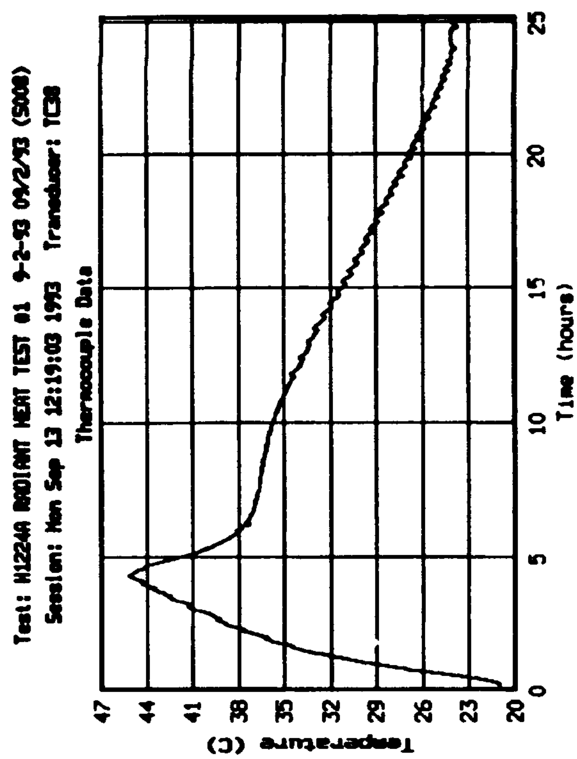
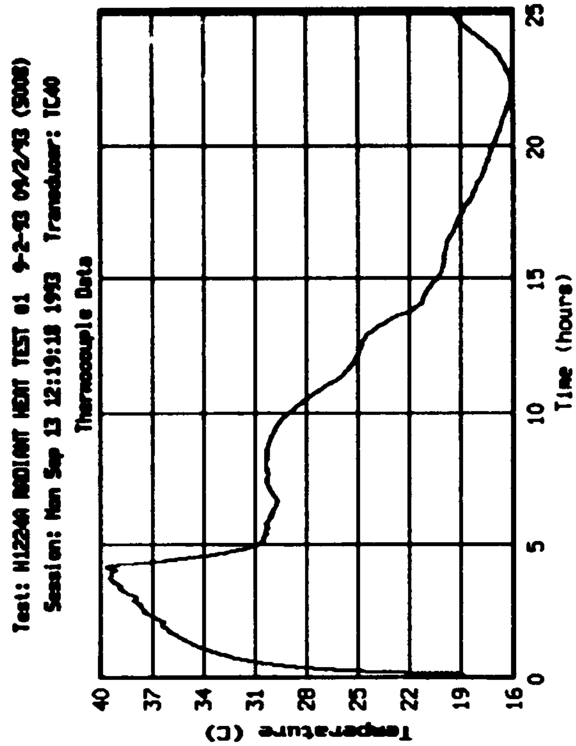
Thermocouple Data
Temperature (C)
50
47
44
41
38
35
32
29
26
23
20
0
5
10
15
20
25
Time (hours)

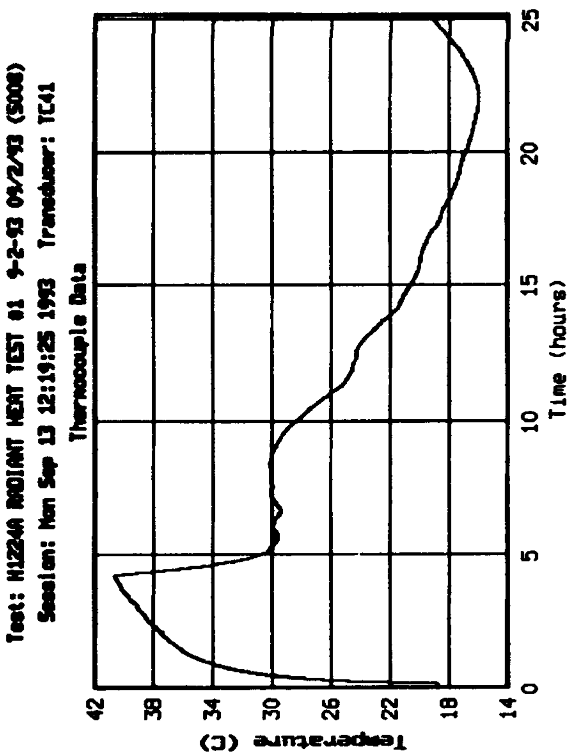

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:18:47 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
5
10
15
20
25
Time (hours)

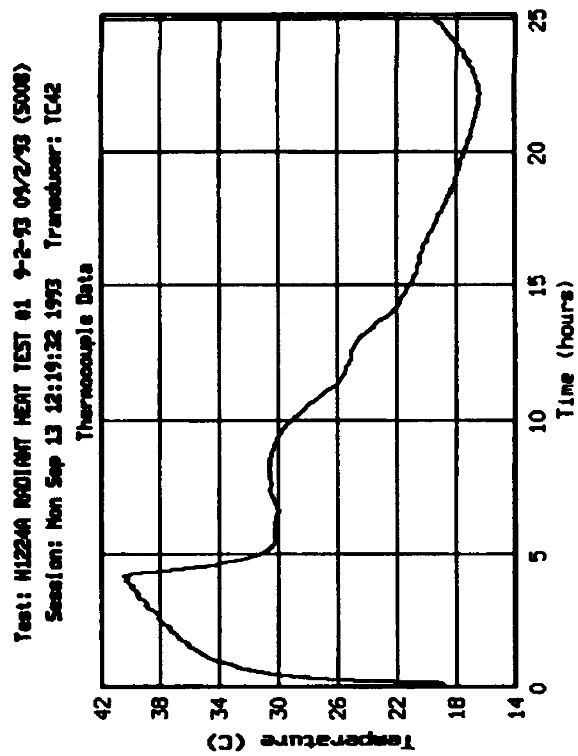

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:18:54 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
Time (hours)

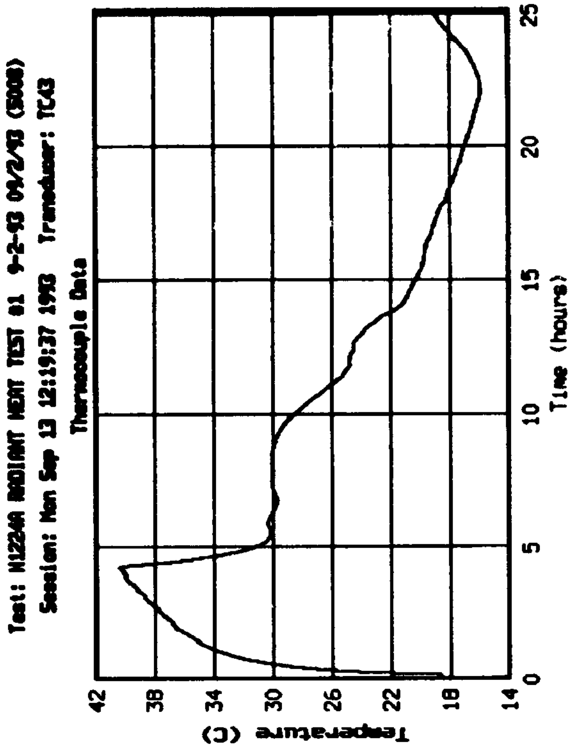

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:09 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
Time (hours)

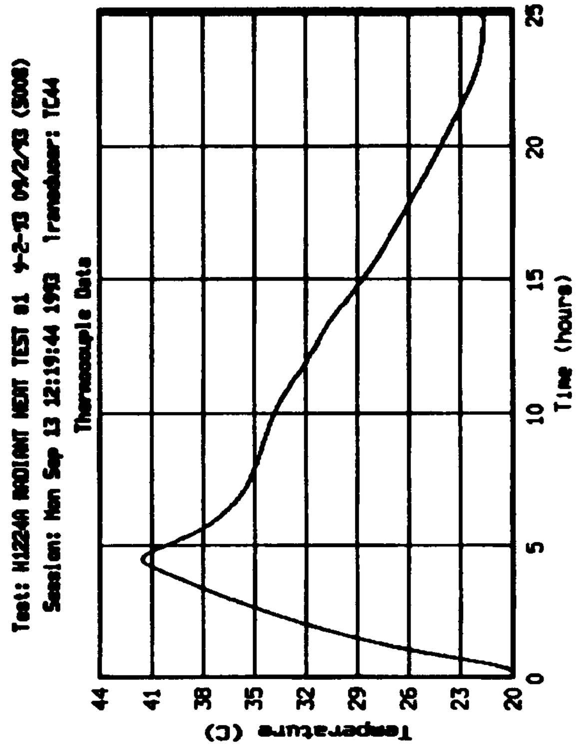

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:03 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
Time (hours)

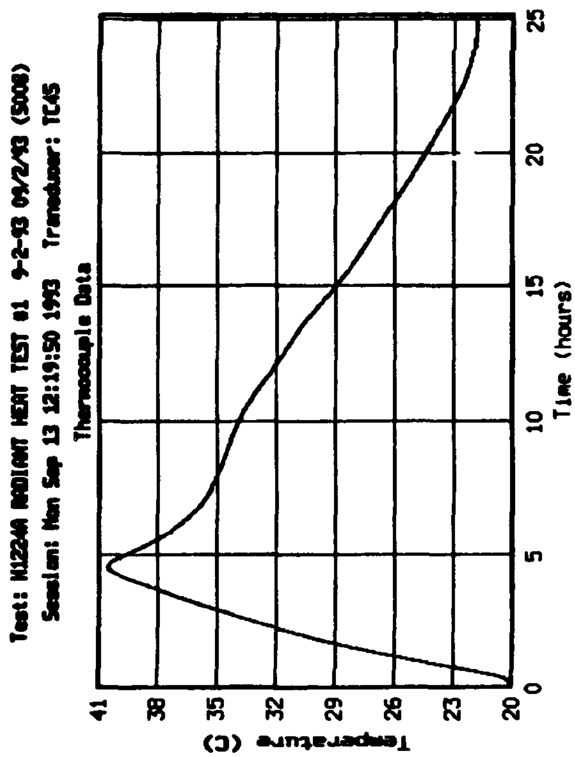

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:18 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
Time (hours)


Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:25 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)

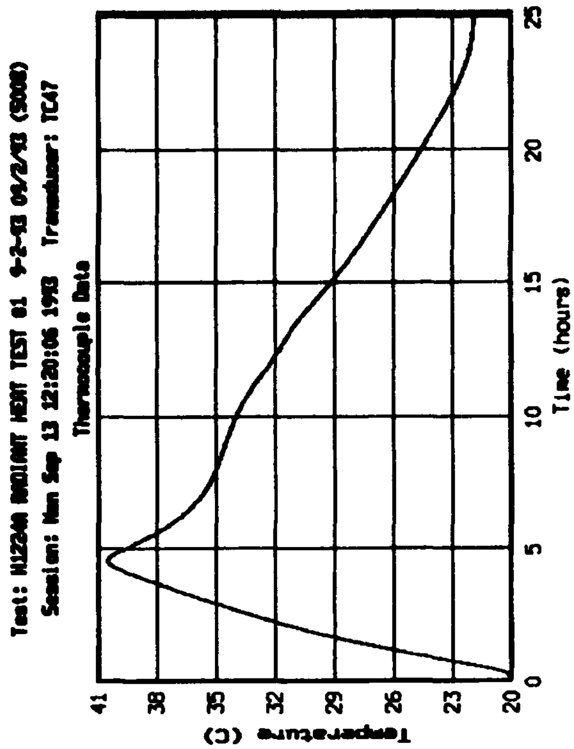

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:32 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)


Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:37 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
Time (hours)

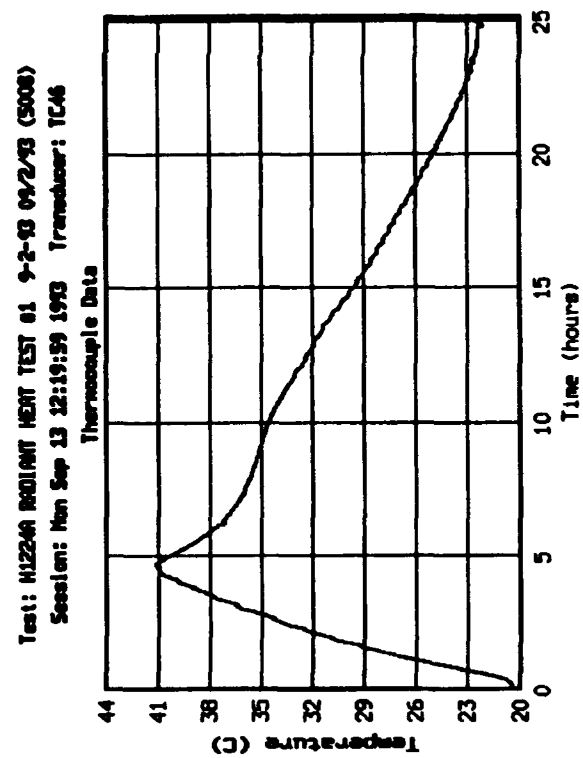

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:44 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
Time (hours)



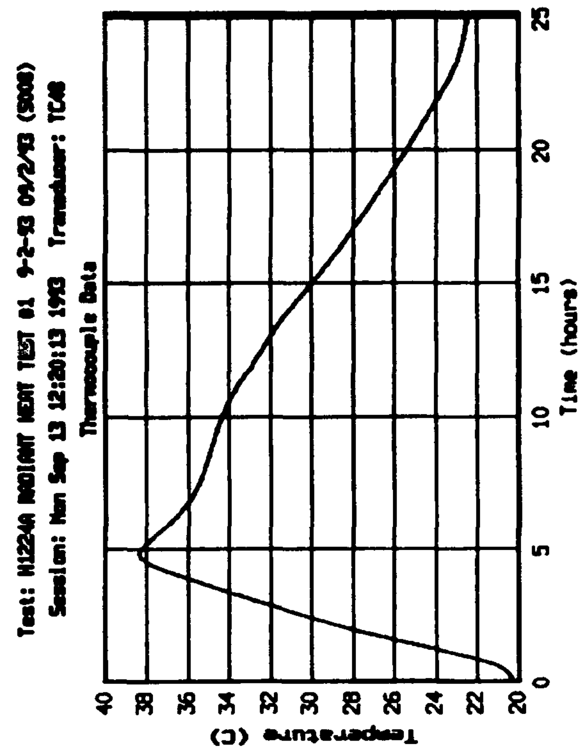
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:50 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
Time (hours)



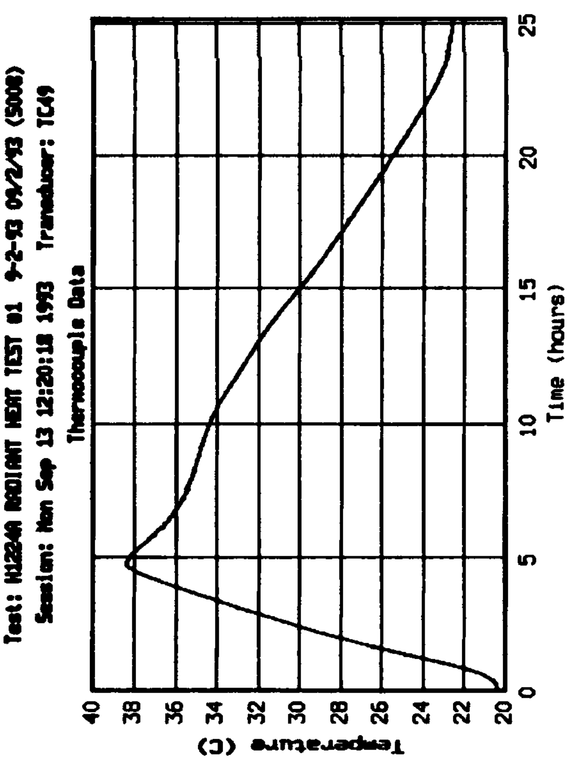
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:06 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
Time (hours)

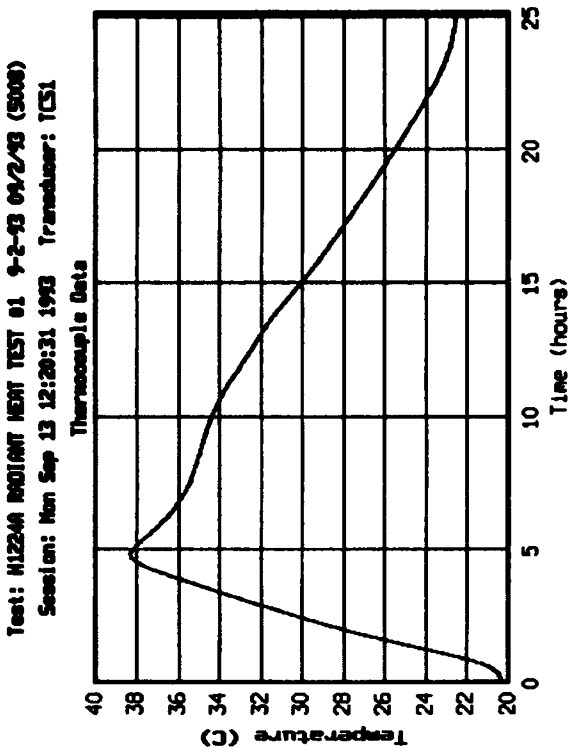


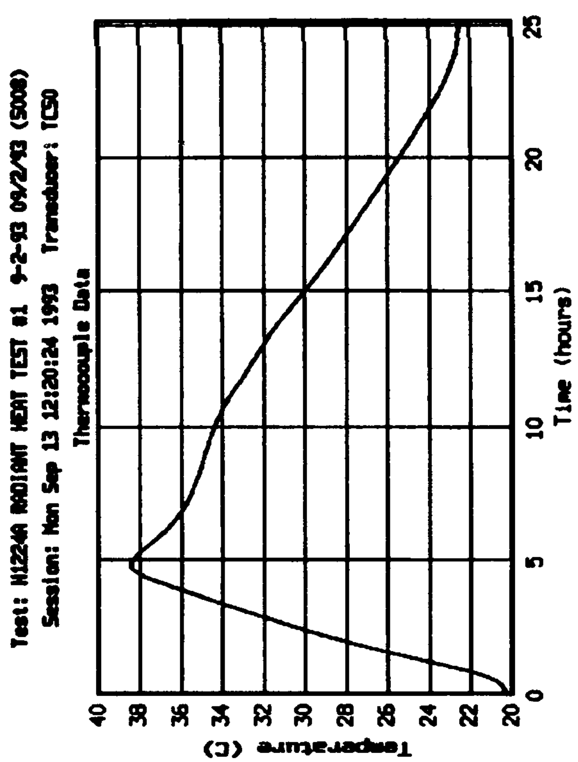
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:19:59 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
Time (hours)

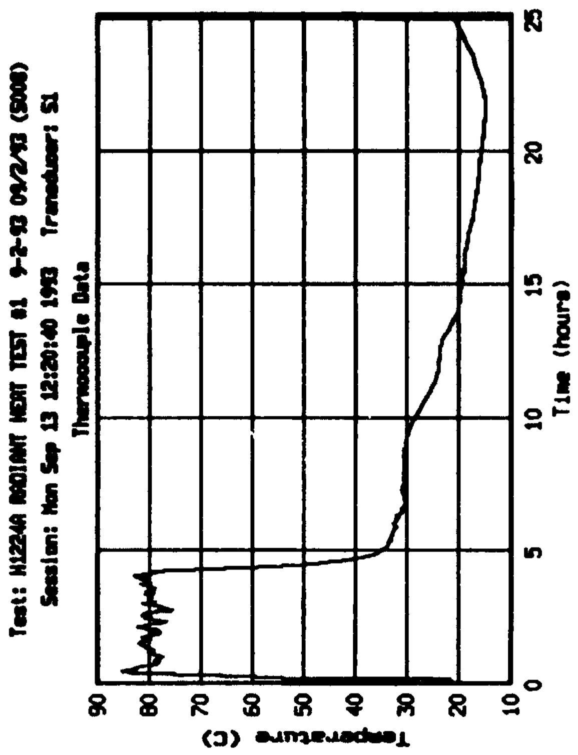


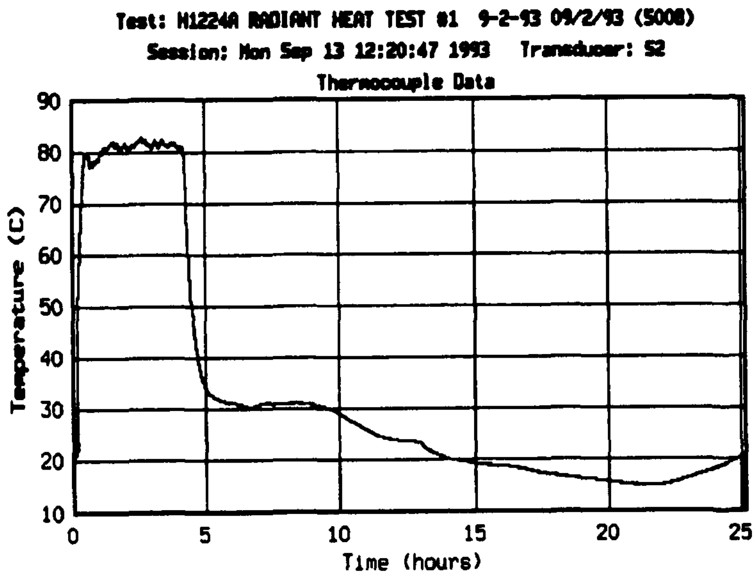
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:13 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
Time (hours)

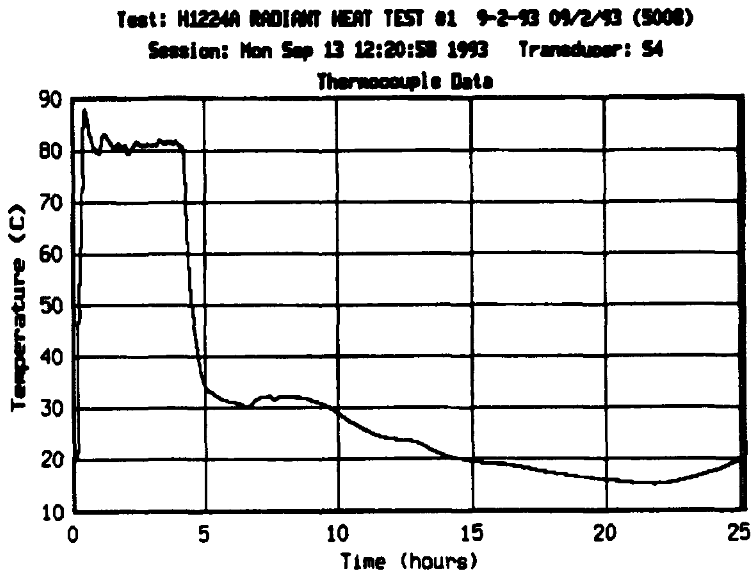

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:18 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
40
38
36
34
32
30
28
26
24
22
20
0
5
10
15
20
25
Time (hours)

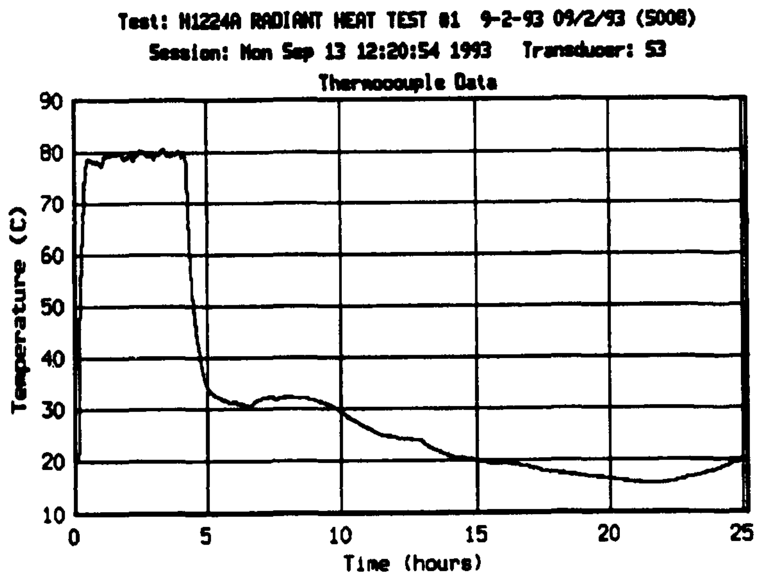

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:31 1993 Transducer: TC51
Thermocouple Data
Temperature (C)
40
38
36
34
32
30
28
26
24
22
20
0
5
10
15
20
25
Time (hours)

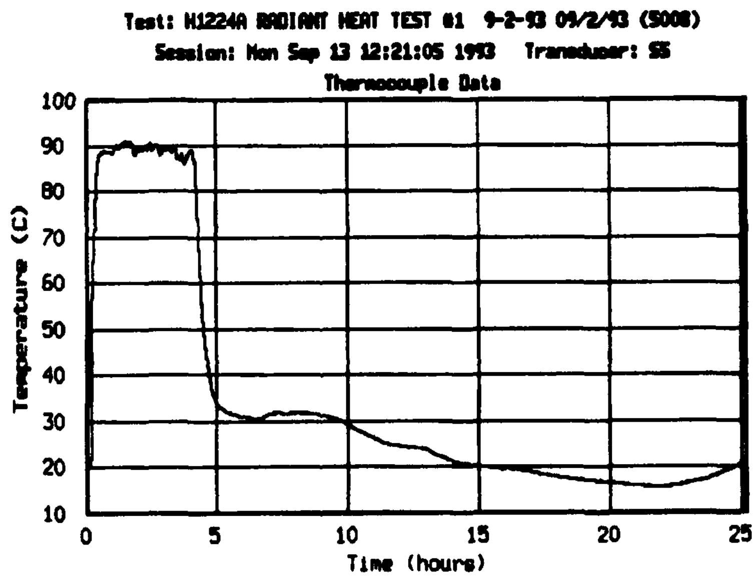

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:24 1993 Transducer: TC50
Thermocouple Data
Temperature (C)
40
38
36
34
32
30
28
26
24
22
20
0
5
10
15
20
25
Time (hours)

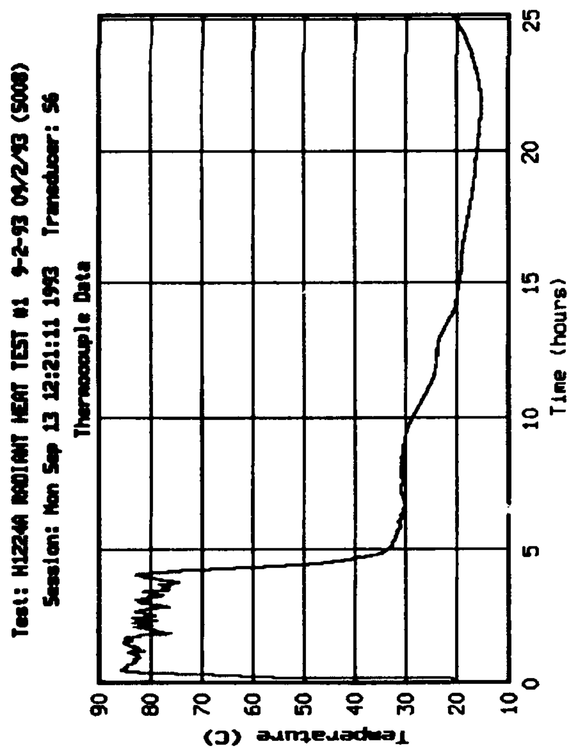

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:40 1993 Transducer: S1
Thermocouple Data
Temperature (C)
90
80
70
60
50
40
30
20
10
0
5
10
15
20
25
Time (hours)

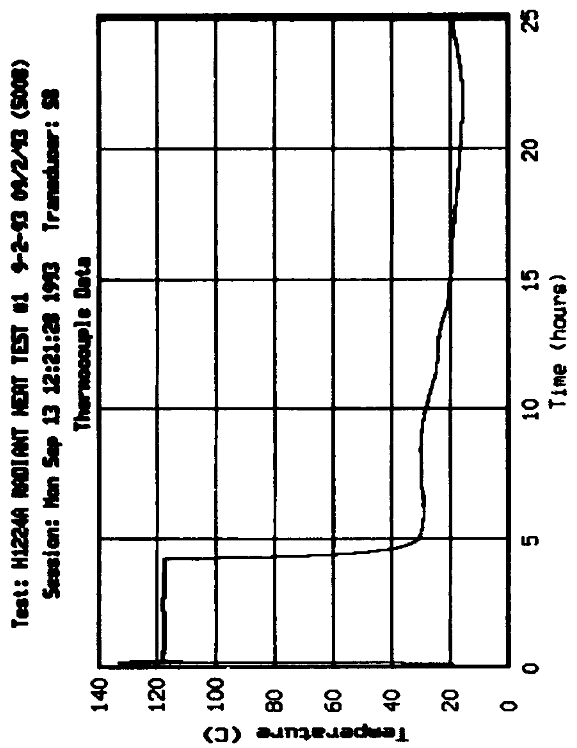

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:47 1993 Transducer: S2
Thermocouple Data
Temperature (C)
Time (hours)

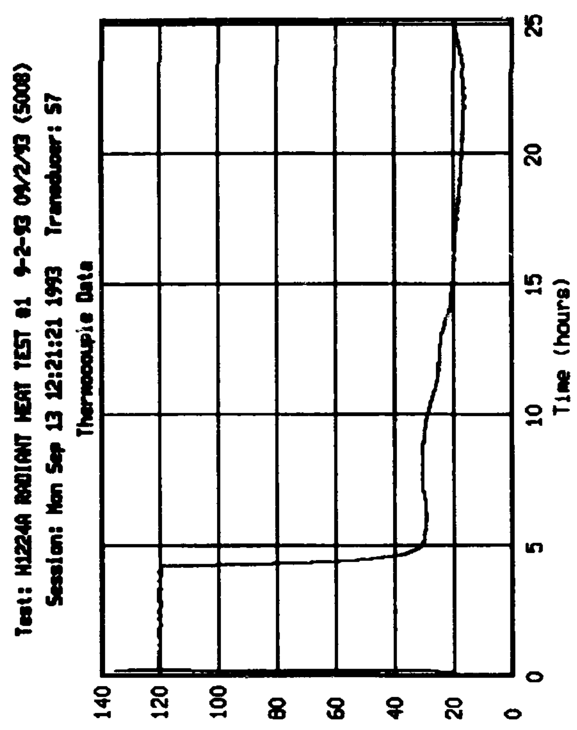

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:58 1993 Transducer: S4
Thermocouple Data
Temperature (C)
Time (hours)

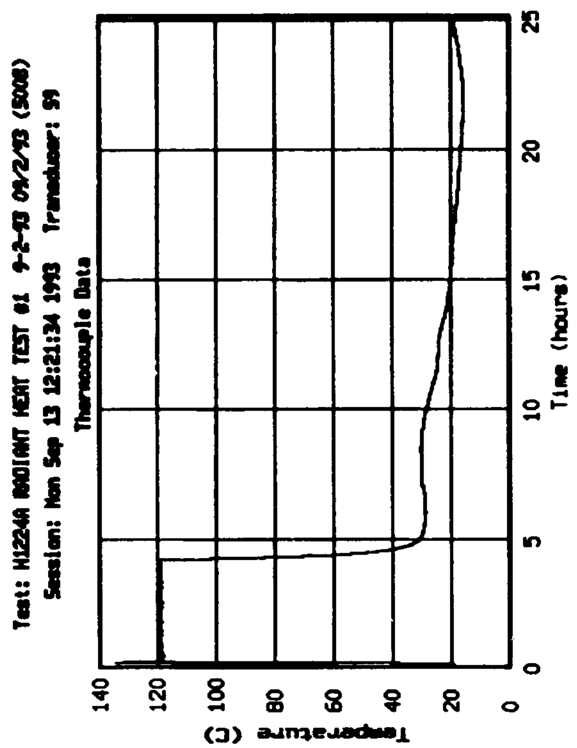

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:20:54 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)

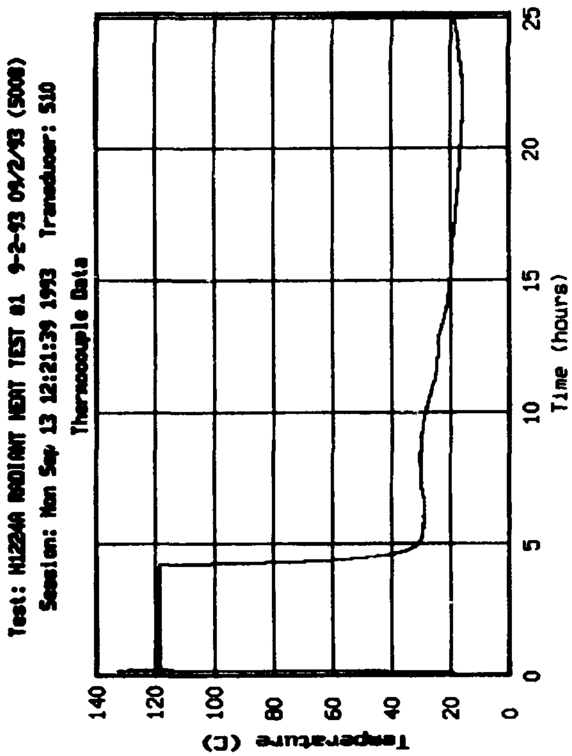

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:05 1993 Transducer: S5
Thermocouple Data
Temperature (C)
Time (hours)

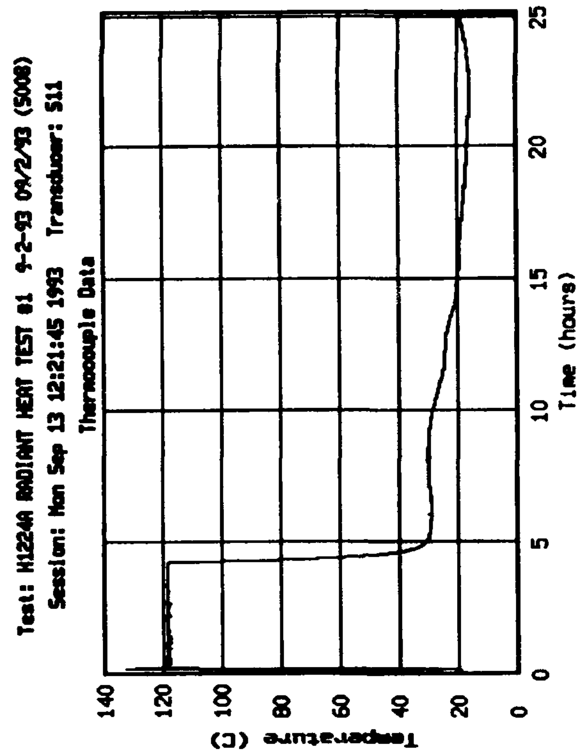

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:11 1993 Transducer: S6
Thermocouple Data
Temperature (C)
Time (hours)

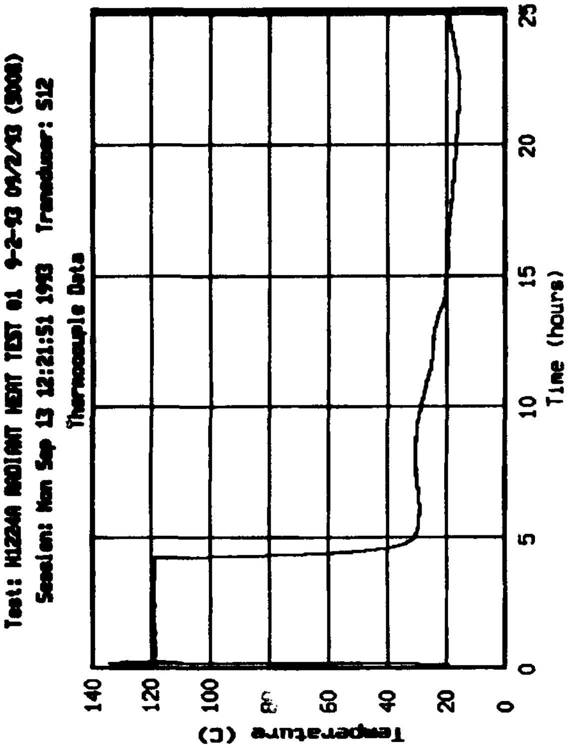

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:28 1993 Transducer: S8
Thermocouple Data
Temperature (C)
Time (hours)

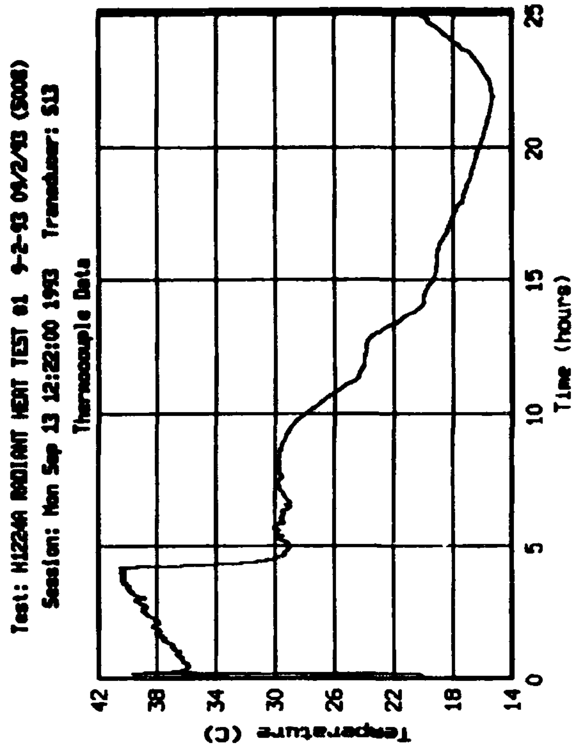

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:21 1993 Transducer: S7
Thermocouple Data
Temperature (C)
Time (hours)

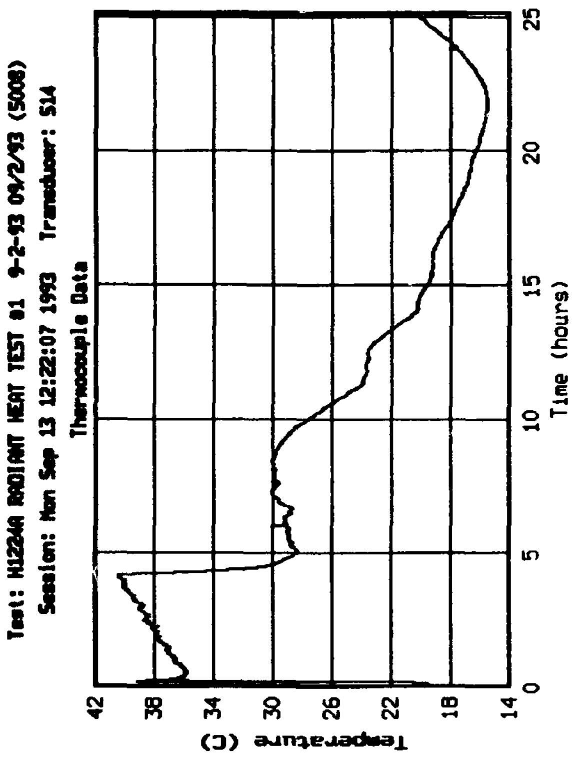

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:34 1993 Transducer: S9
Thermocouple Data
Temperature (C)
Time (hours)

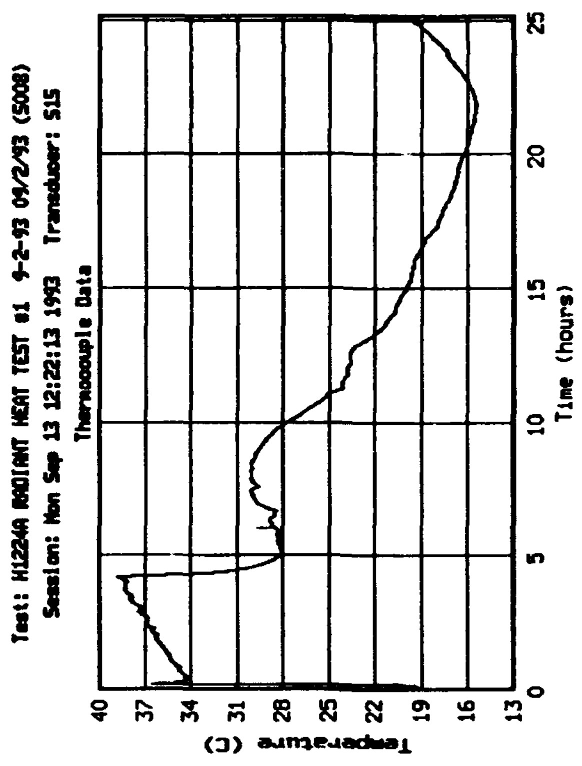

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:39 1993 Transducer: S10
Thermocouple Data
Temperature (C)
Time (hours)

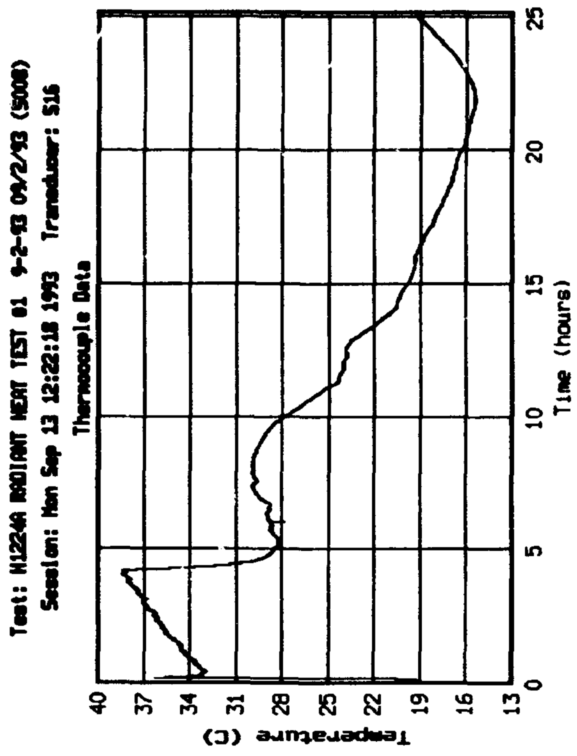

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:45 1993 Transducer: S11
Thermocouple Data
Temperature (C)
Time (hours)

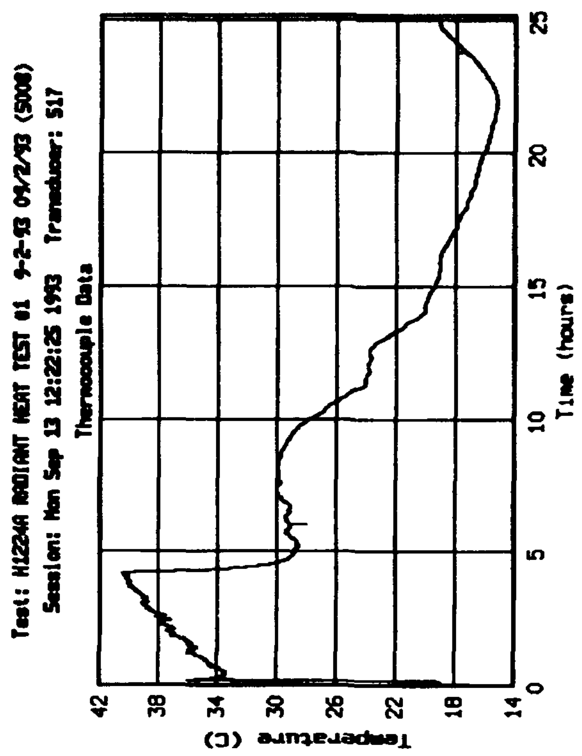

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:21:51 1993 Transducer: S12
Thermocouple Data
Temperature (C)
Time (hours)

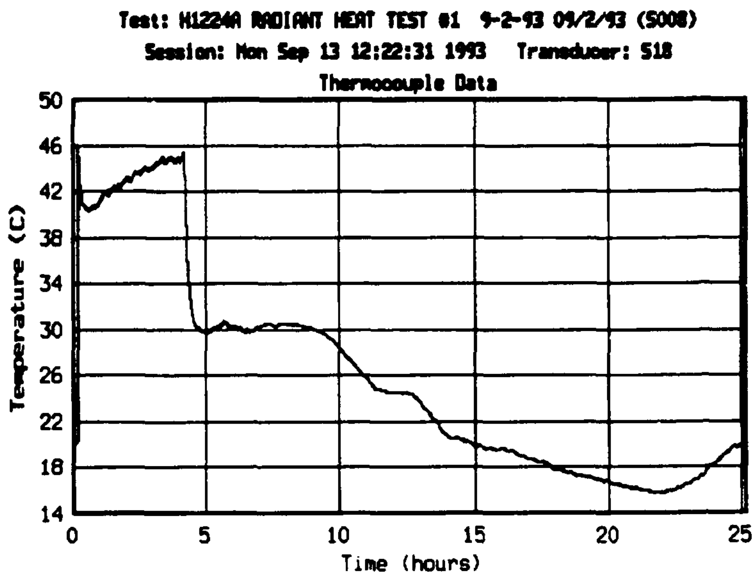

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:22:00 1993 Transducer: S13
Thermocouple Data
Temperature (C)
Time (hours)

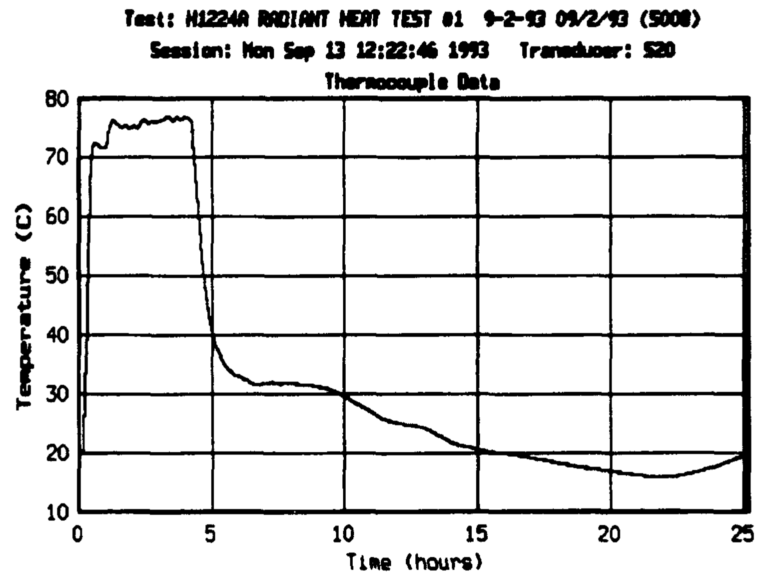

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:22:07 1993 Transducer: S14
Thermocouple Data
Temperature (C)
Time (hours)

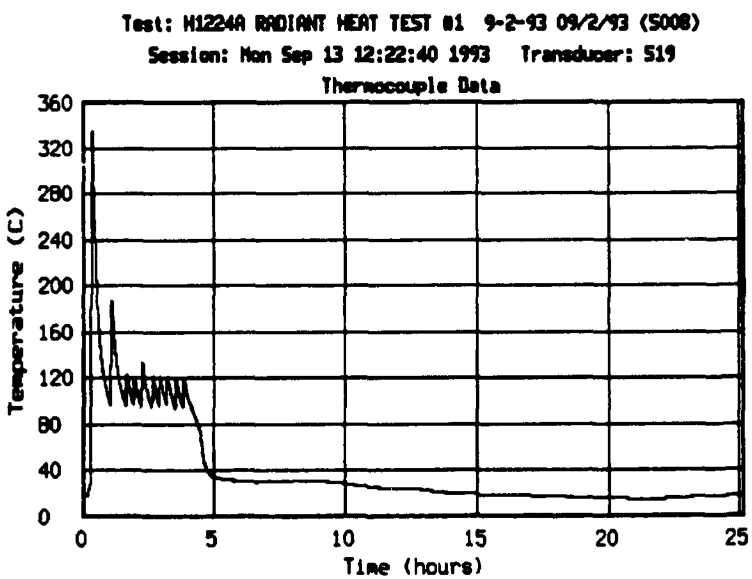

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:22:13 1993 Transducer: S15
Thermocouple Data
Temperature (C)
Time (hours)

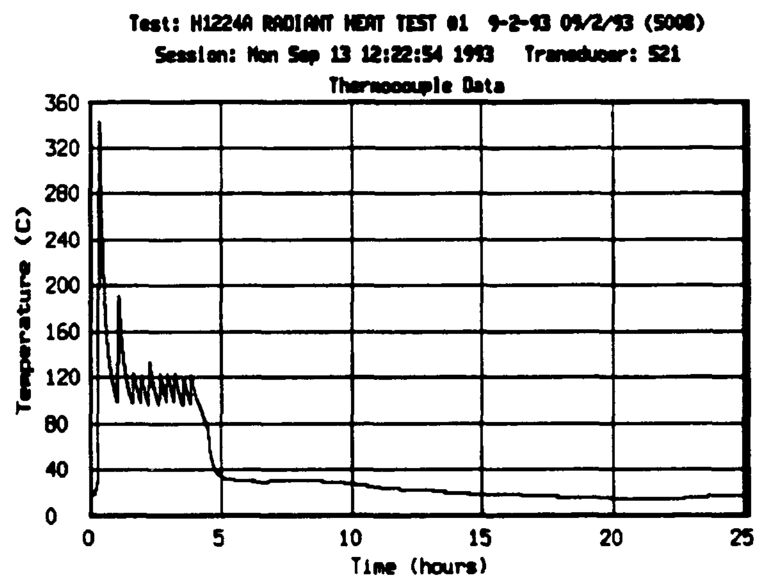

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:22:18 1993 Transducer: S16
Thermocouple Data
Temperature (C)
Time (hours)

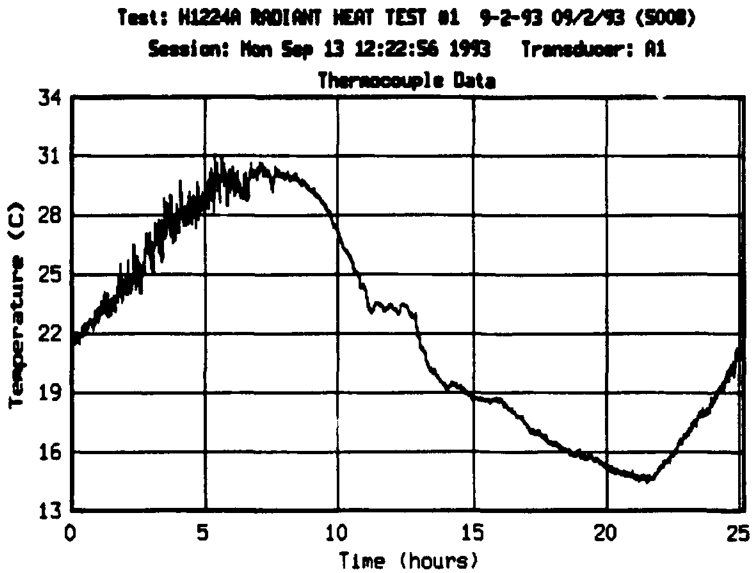

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:22:25 1993 Transducer: S17
Thermocouple Data
Temperature (C)
Time (hours)

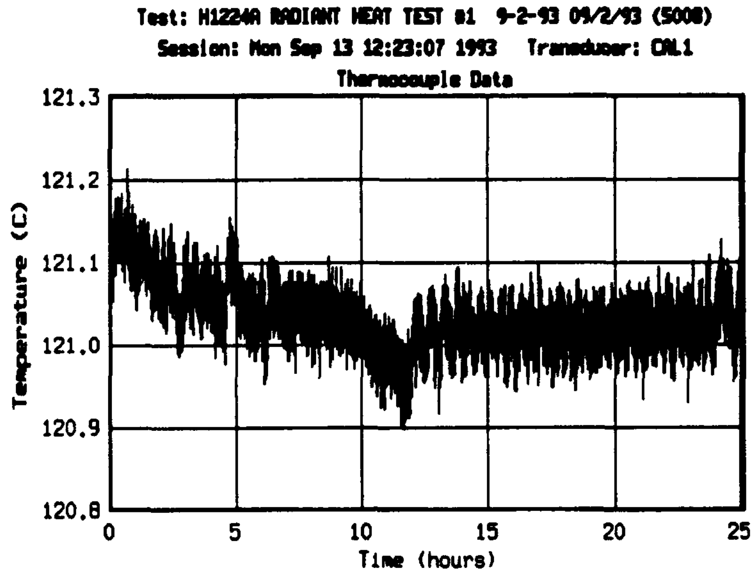

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:22:31 1993 Transducer: 518
Thermocouple Data
Temperature (C)
Time (hours)

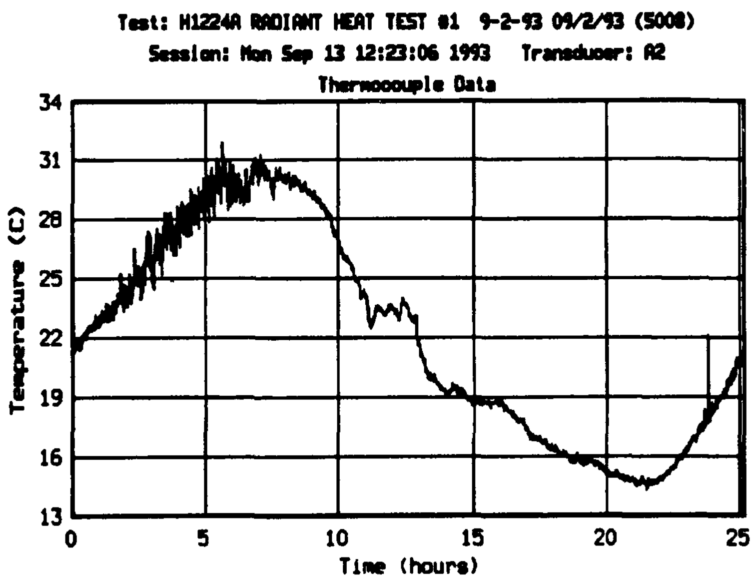

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:22:46 1993 Transducer: 520
Thermocouple Data
Temperature (C)
Time (hours)

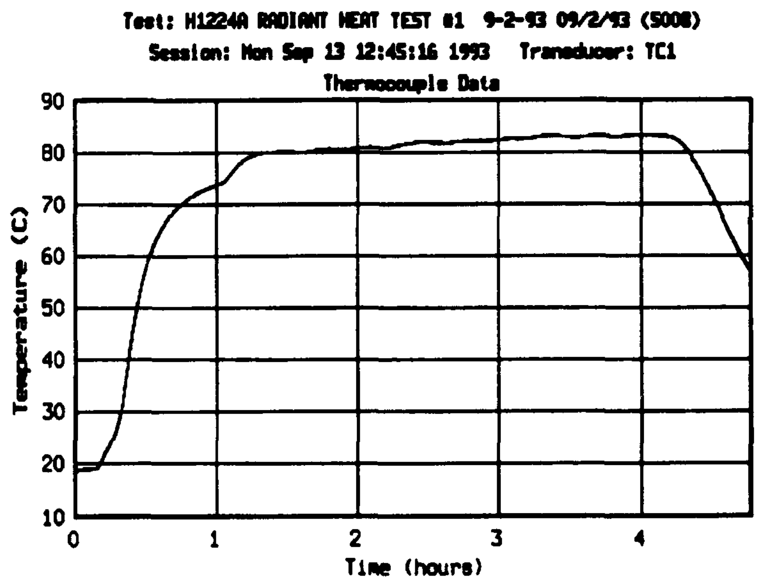

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:22:40 1993 Transducer: 519
Thermocouple Data
Temperature (C)
Time (hours)

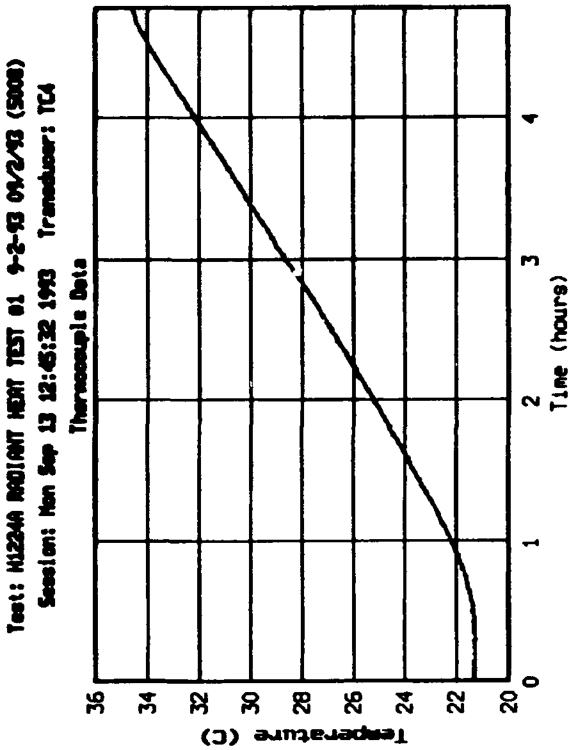

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:22:54 1993 Transducer: 521
Thermocouple Data
Temperature (C)
Time (hours)

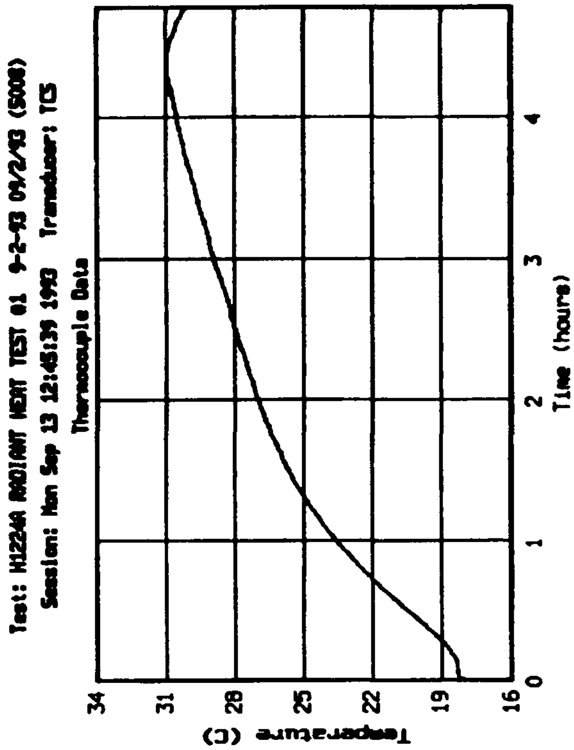

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:22:56 1993 Transducer: A1
Thermocouple Data
Temperature (C)
Time (hours)

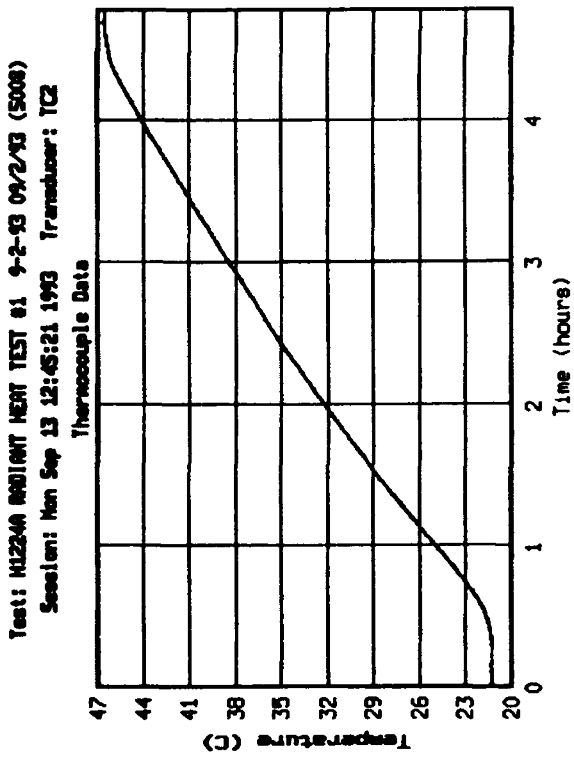

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:23:07 1993 Transducer: CAL1
Thermocouple Data
Temperature (C)
Time (hours)

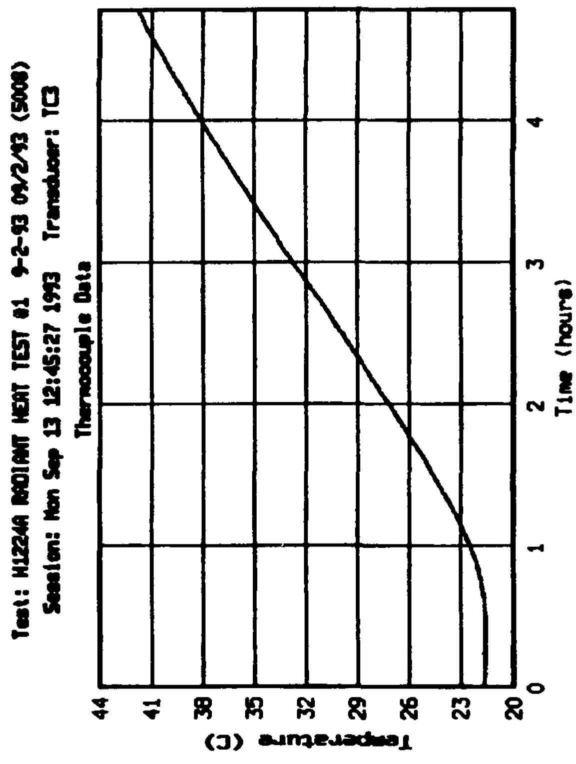

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:23:06 1993 Transducer: A2
Thermocouple Data
Temperature (C)
Time (hours)

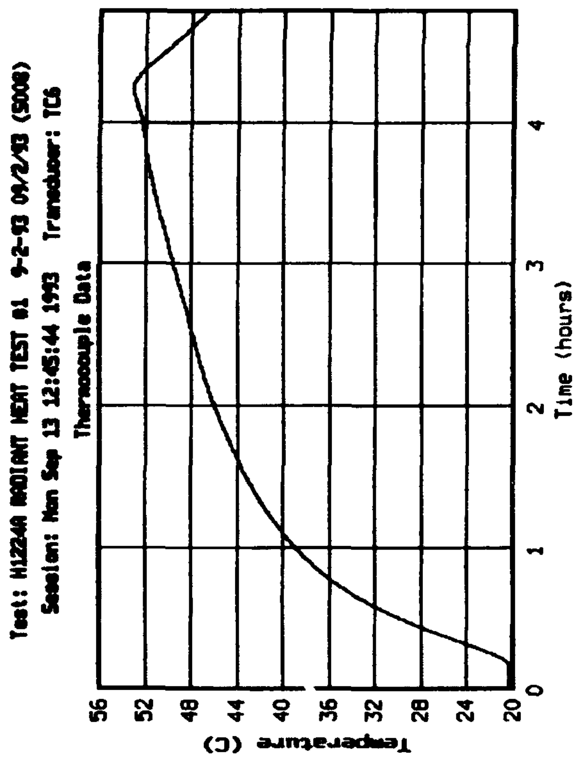

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:16 1993 Transducer: TC1
Thermocouple Data
Temperature (C)
Time (hours)

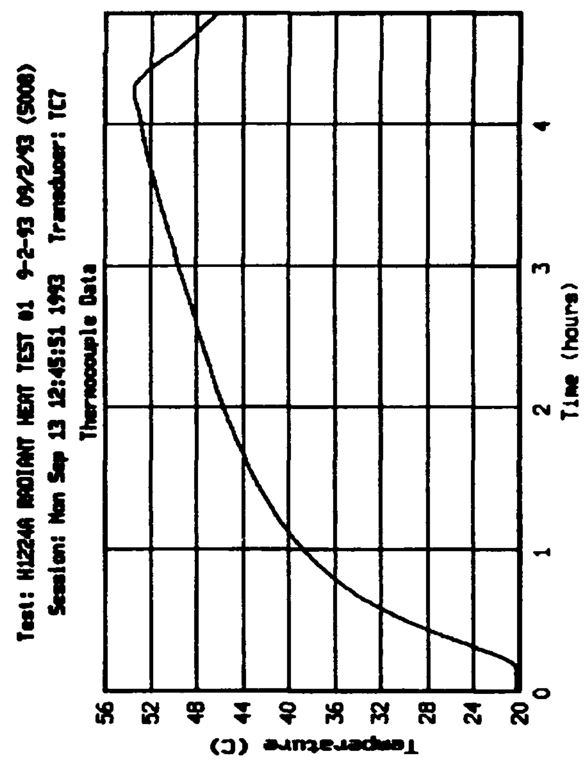

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:32 1993 Transducer: TC4
Thermocouple Data
Temperature (C)
Time (hours)
36 34 32 30 28 26 24 22 20
0 1 2 3 4

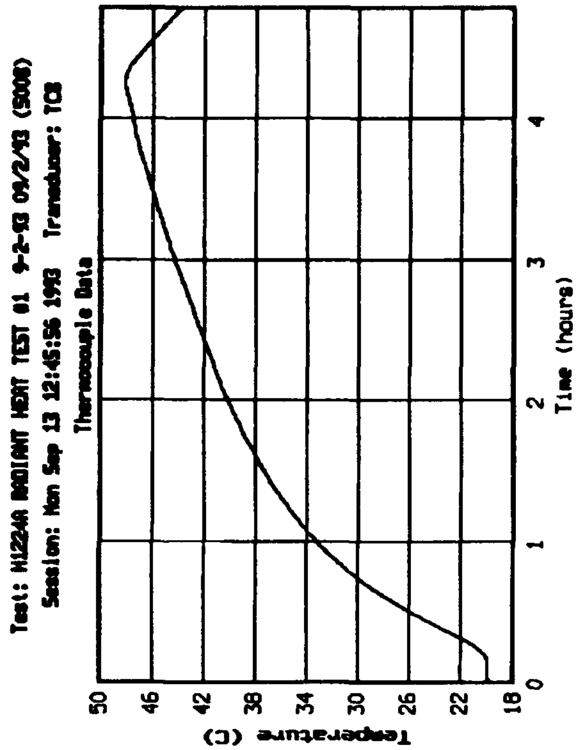

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:39 1993 Transducer: TC5
Thermocouple Data
Temperature (C)
Time (hours)
34 31 28 25 22 19 16
0 1 2 3 4

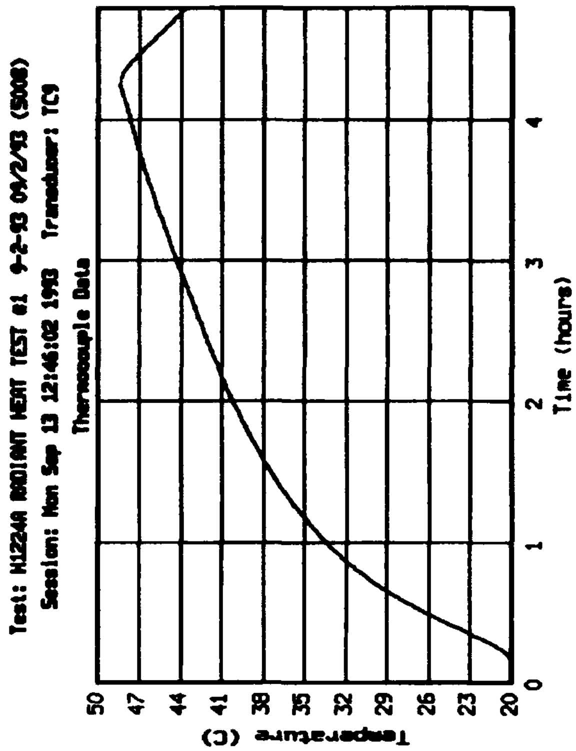

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:21 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
Time (hours)
47 44 41 38 35 32 29 26 23 20
0 1 2 3 4

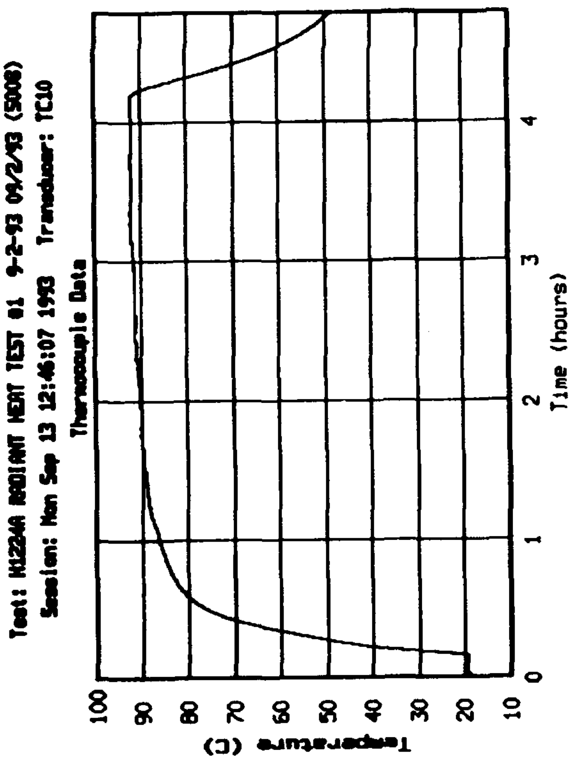

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:27 1993 Transducer: TC3
Thermocouple Data
Temperature (C)
Time (hours)
44 41 38 35 32 29 26 23 20
0 1 2 3 4

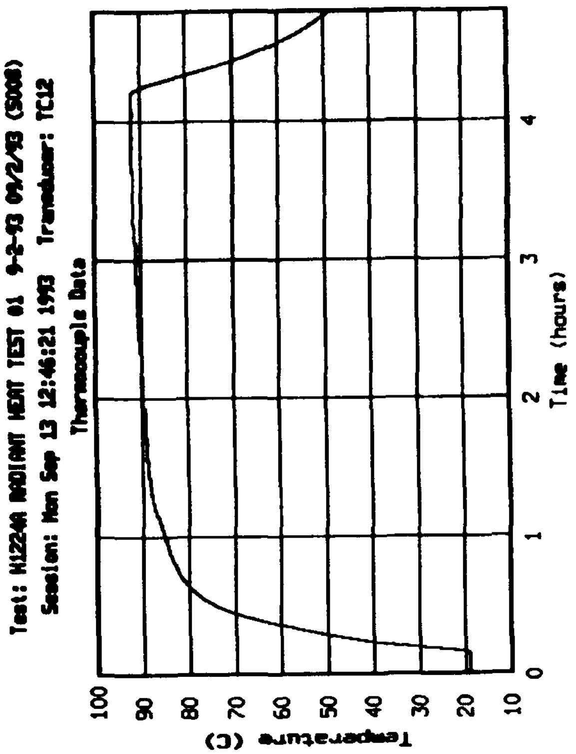

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:44 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
Time (hours)

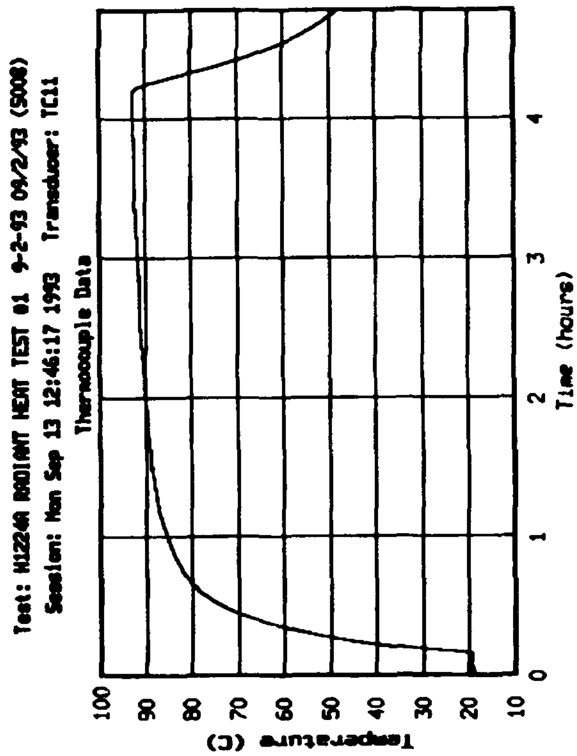

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:51 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
Time (hours)

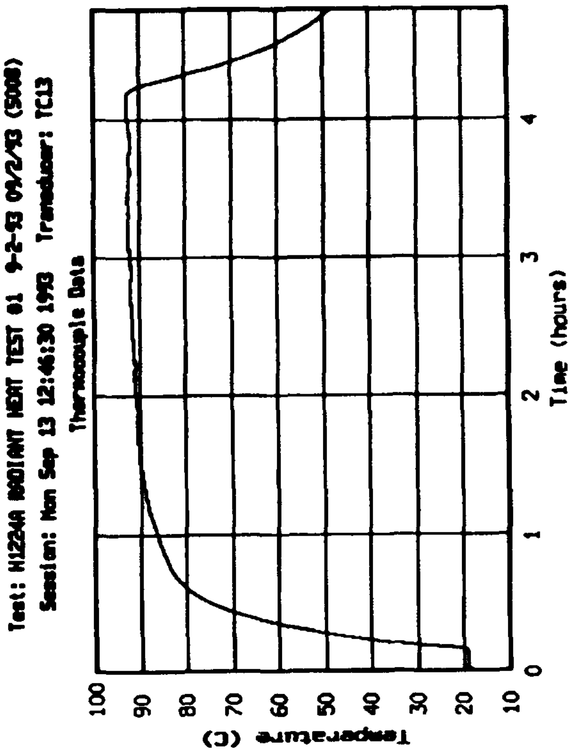

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:45:56 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
Time (hours)

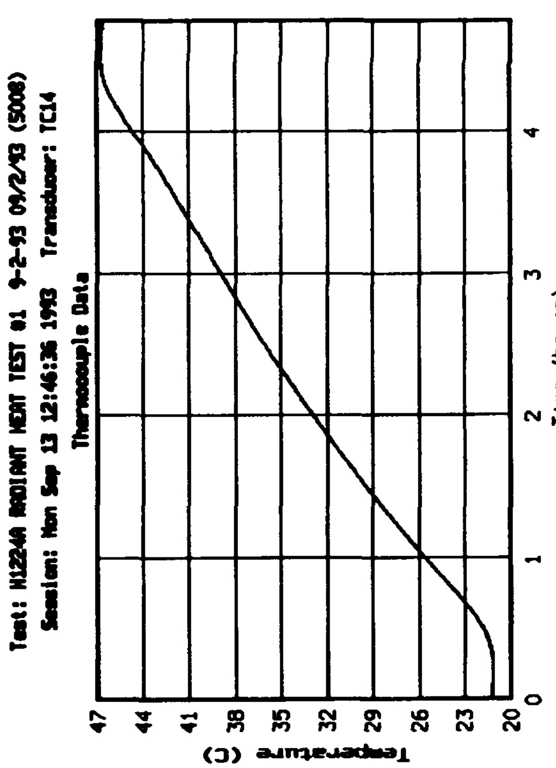

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:02 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
Time (hours)

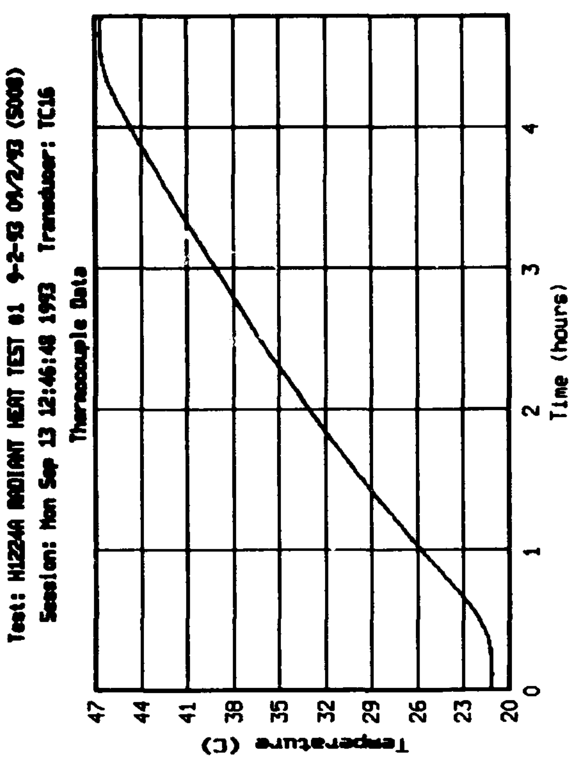

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:07 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
Time (hours)

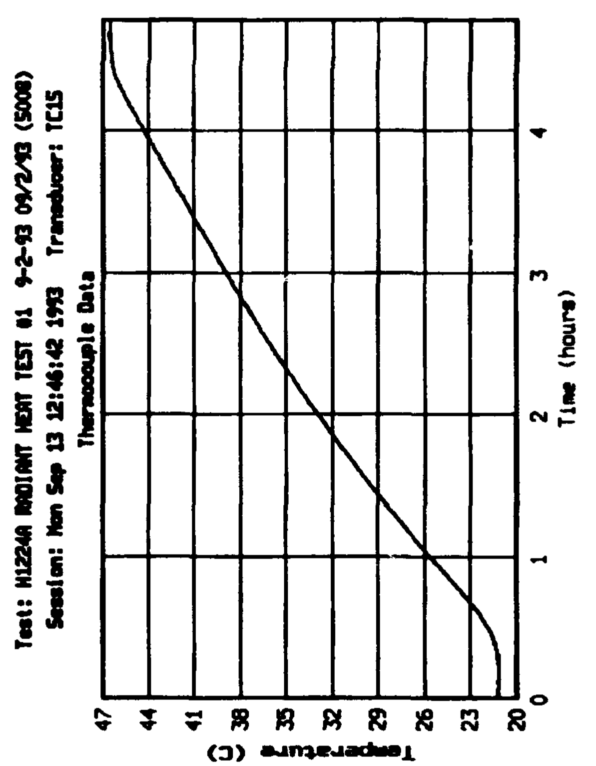

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:21 1993 Transducer: TC12
Thermocouple Data
Temperature (C)
Time (hours)

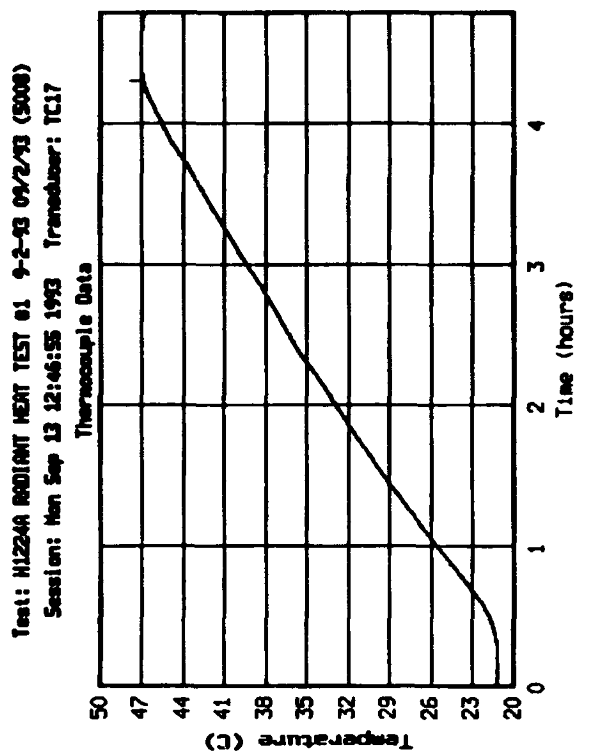

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:17 1993 Transducer: TC11
Thermocouple Data
Temperature (C)
Time (hours)

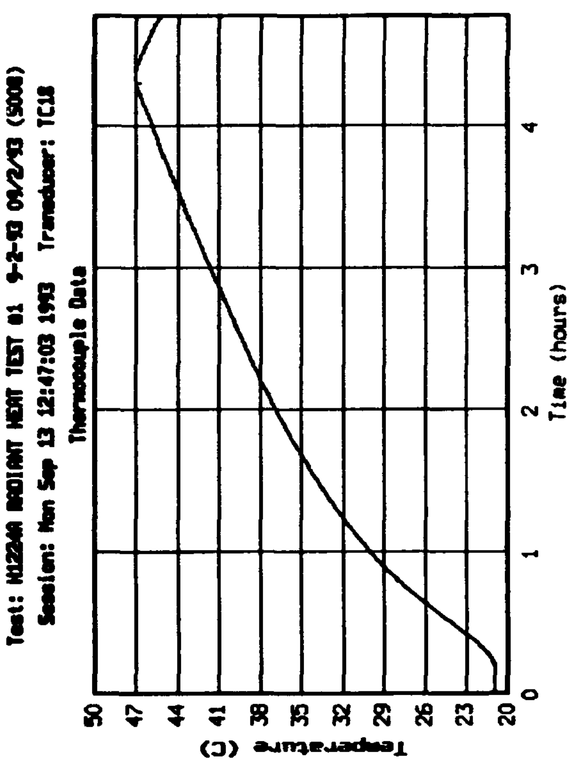

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:30 1993 Transducer: TC13
Thermocouple Data
Temperature (C)
Time (hours)

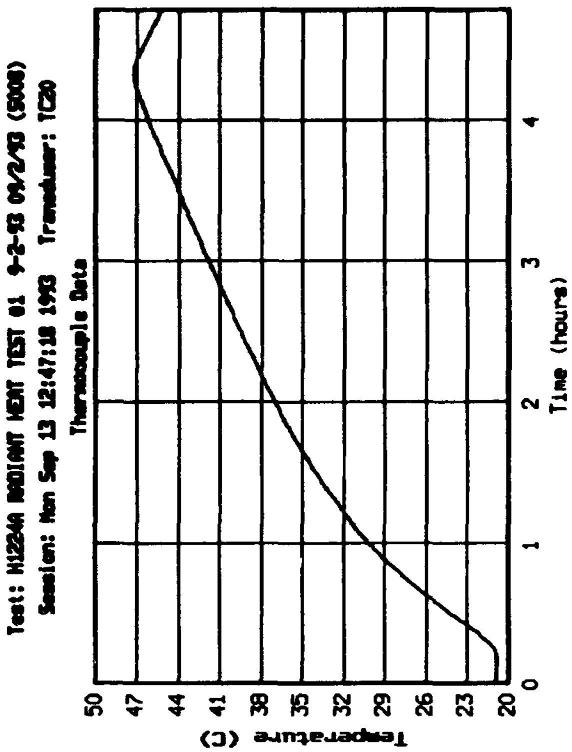

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:36 1993 Transducer: TC14
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
Time (hours)

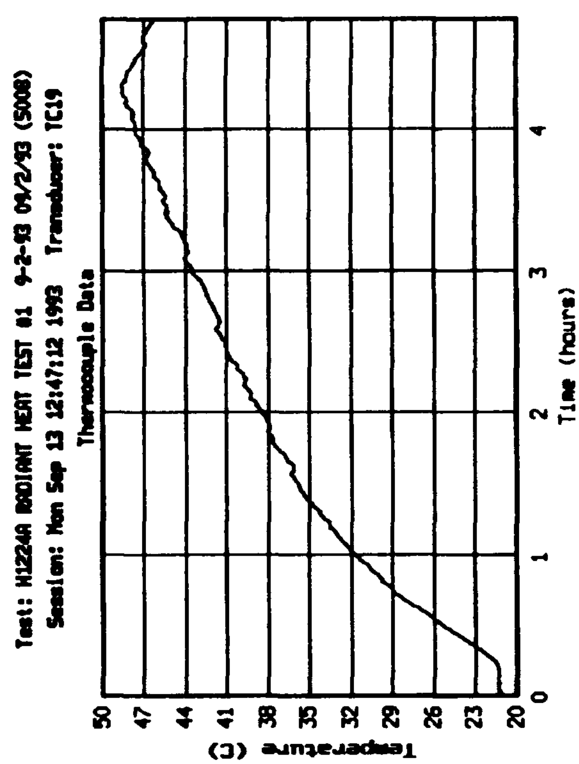

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:48 1993 Transducer: TC16
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
Time (hours)

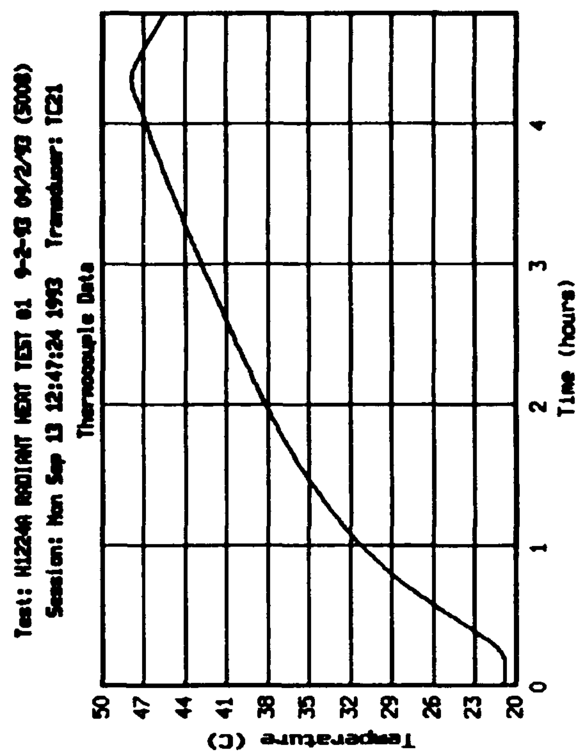

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:42 1993 Transducer: TC15
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
Time (hours)

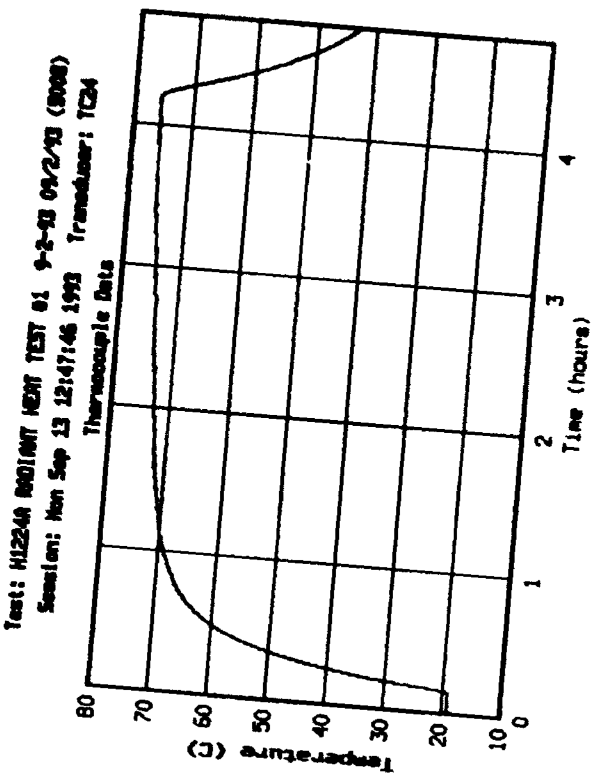

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:46:55 1993 Transducer: TC17
Thermocouple Data
Temperature (C)
50
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
Time (hours)

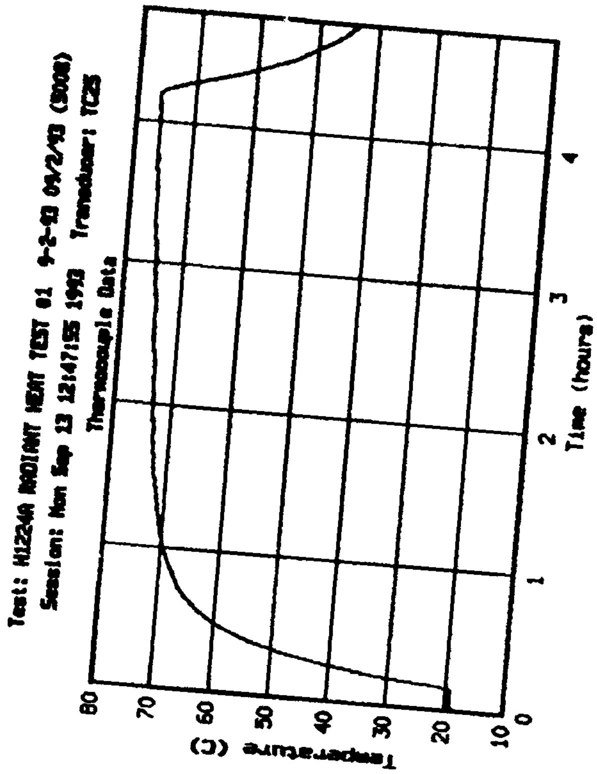

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:03 1993 Transducer: TC18
Thermocouple Data
Temperature (C)
50 47 44 41 38 35 32 29 26 23 20
0 1 2 3 4
Time (hours)

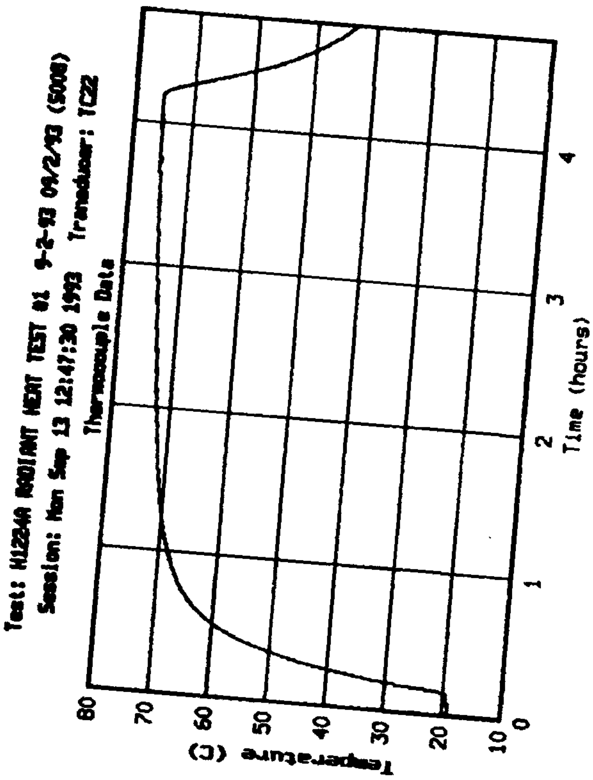

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:18 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
50 47 44 41 38 35 32 29 26 23 20
0 1 2 3 4
Time (hours)

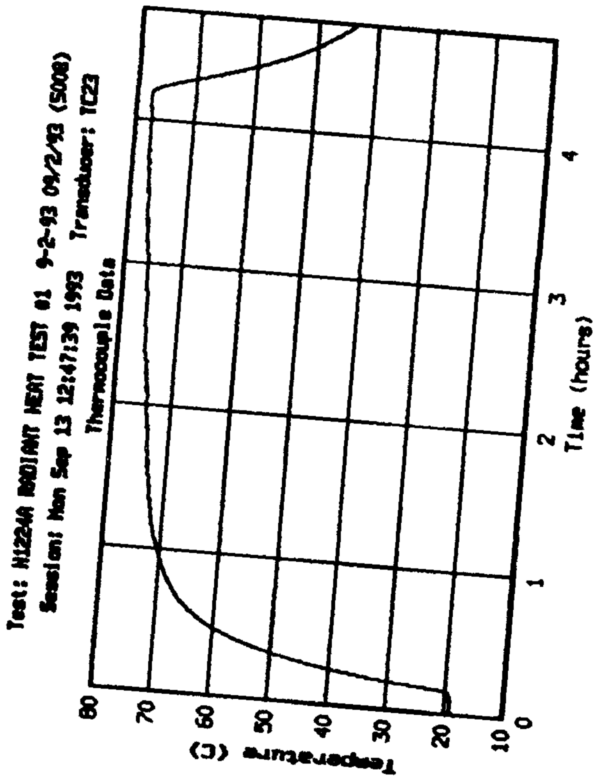

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:12 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
50 47 44 41 38 35 32 29 26 23 20
0 1 2 3 4
Time (hours)

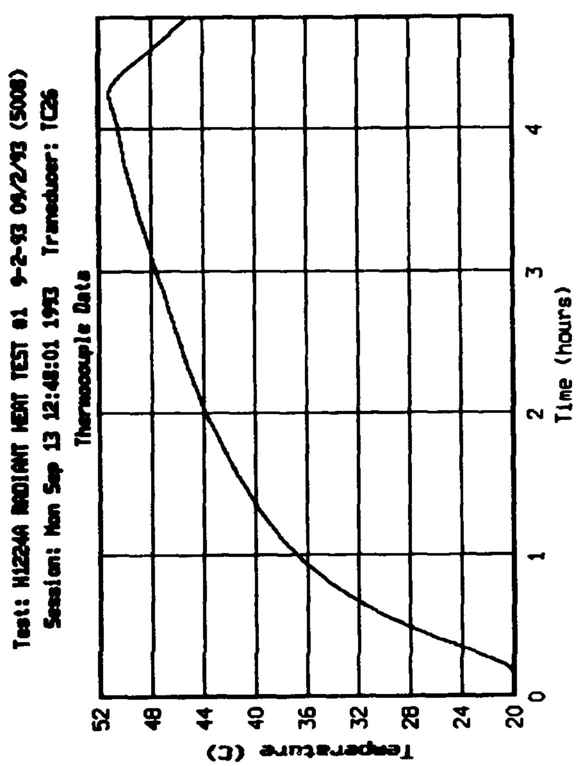

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:24 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
50 47 44 41 38 35 32 29 26 23 20
0 1 2 3 4
Time (hours)

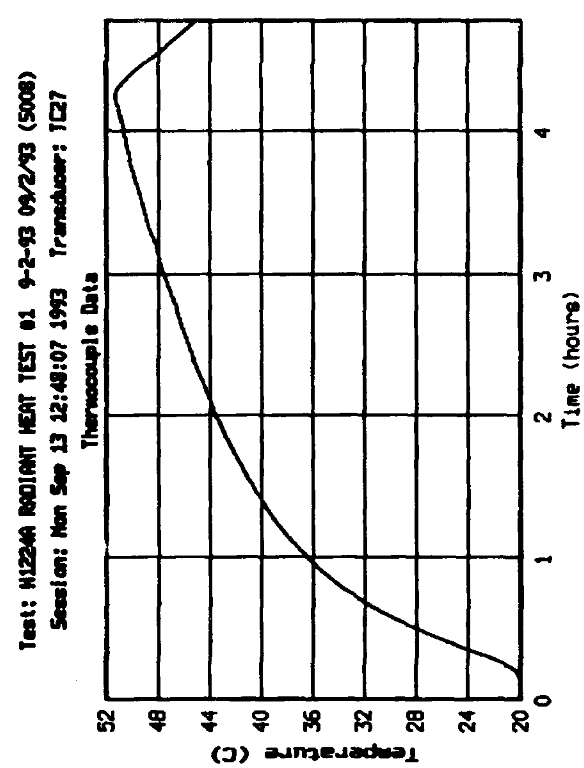

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:46 1993 Transducer: TC24
Thermocouple Data
Temperature (C)
Time (hours)

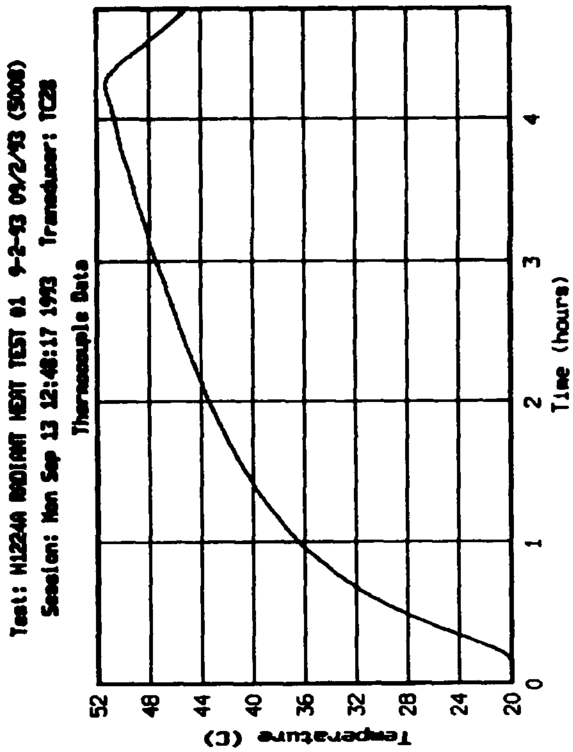

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:55 1993 Transducer: TC25
Thermocouple Data
Temperature (C)
Time (hours)

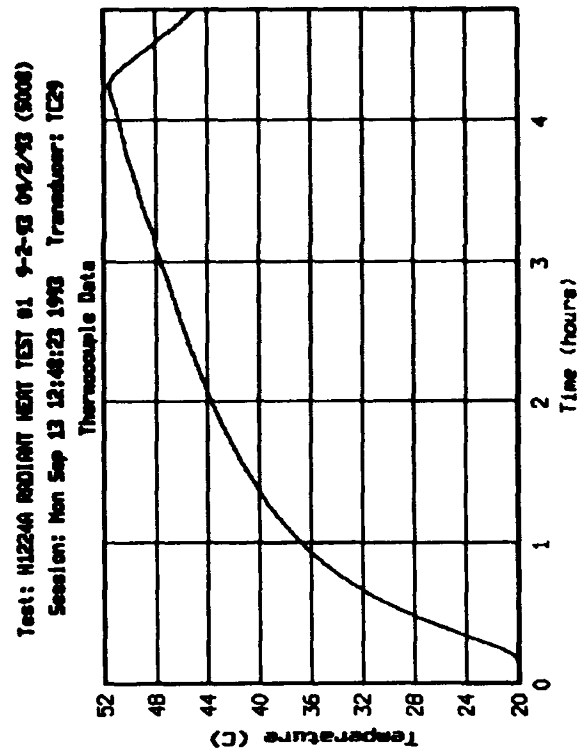

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:30 1993 Transducer: TC22
Thermocouple Data
Temperature (C)
Time (hours)

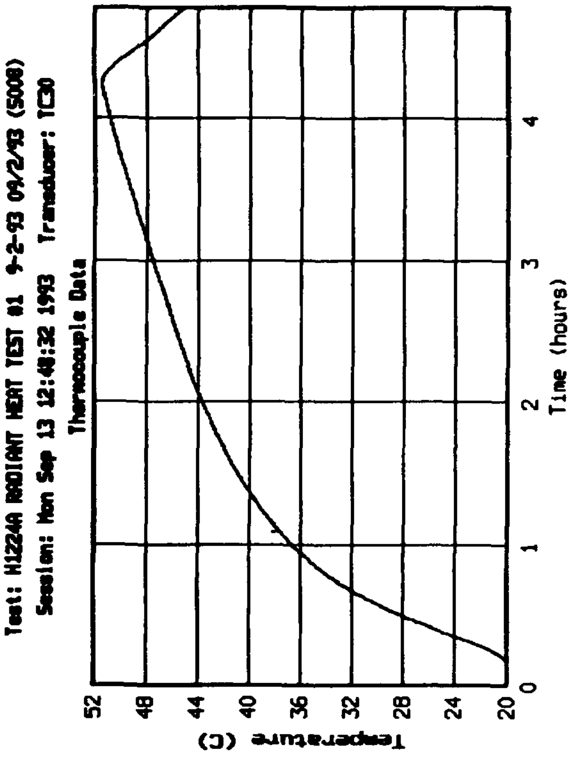

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:47:39 1993 Transducer: TC23
Thermocouple Data
Temperature (C)
Time (hours)

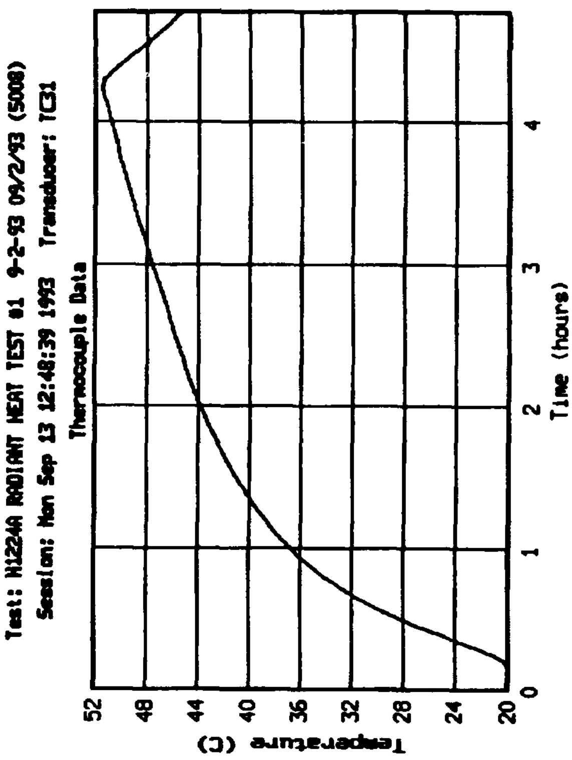

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:01 1993 Transducer: TC26
Thermocouple Data
Temperature (C)
Time (hours)

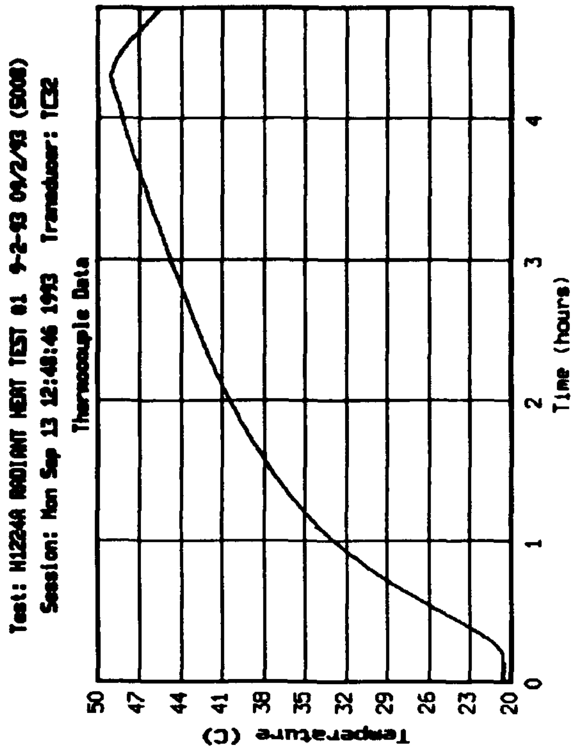

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:07 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
Time (hours)

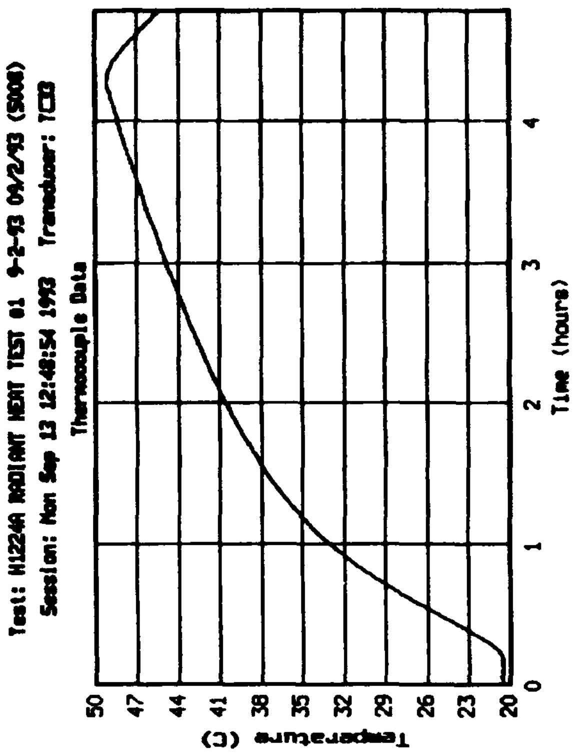

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:17 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
Time (hours)

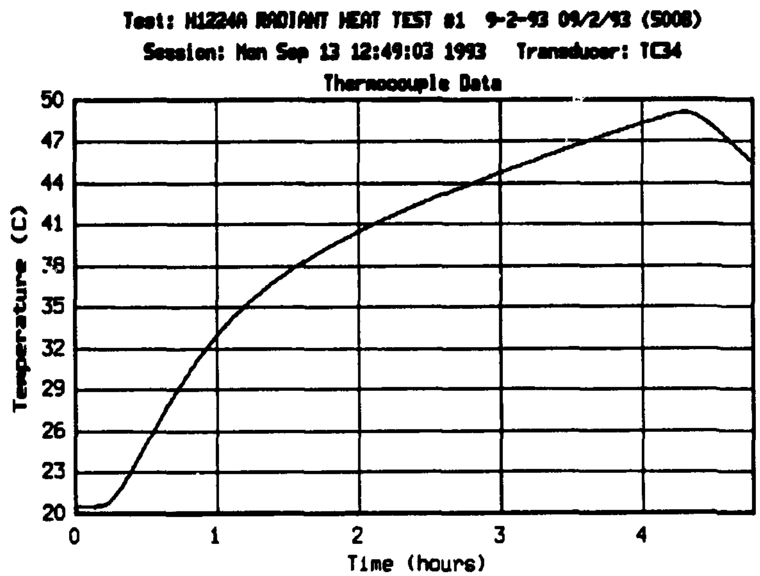

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:23 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
Time (hours)

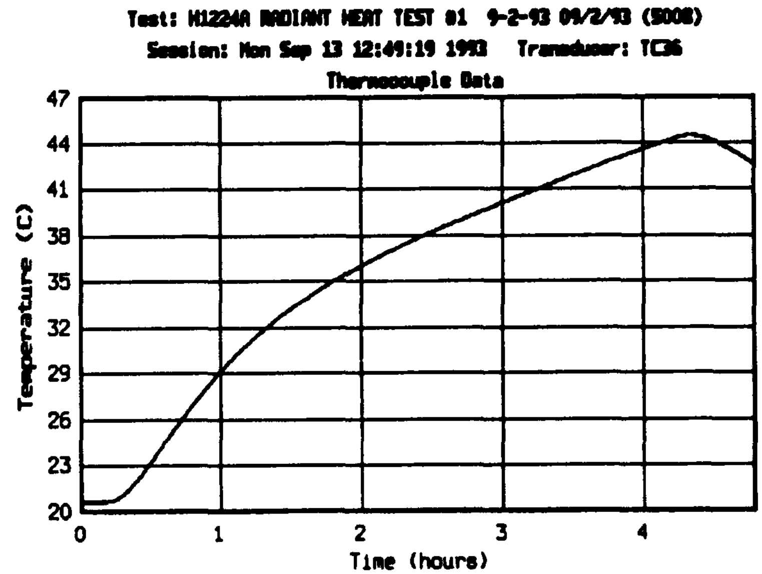

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:32 1993 Transducer: TC30
Thermocouple Data
Temperature (C)
52 48 44 40 36 32 28 24 20
0 1 2 3 4
Time (hours)

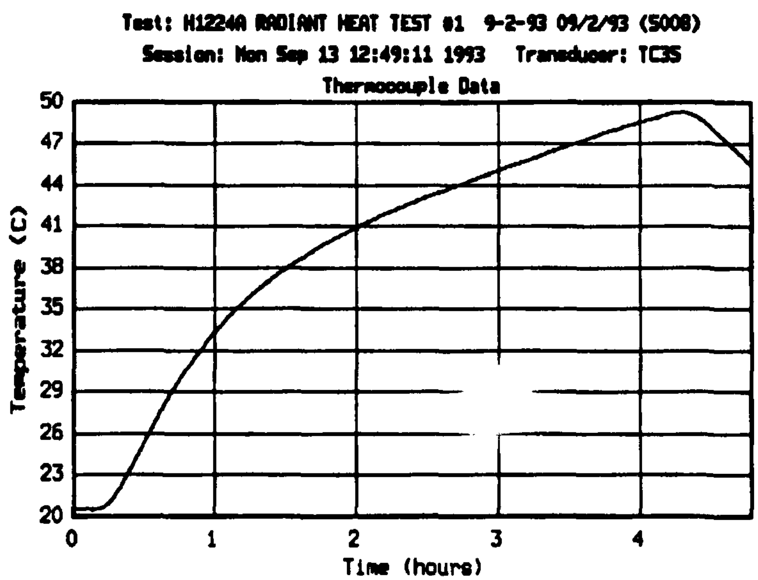

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:39 1993 Transducer: TC31
Thermocouple Data
Temperature (C)
52 48 44 40 36 32 28 24 20
0 1 2 3 4
Time (hours)

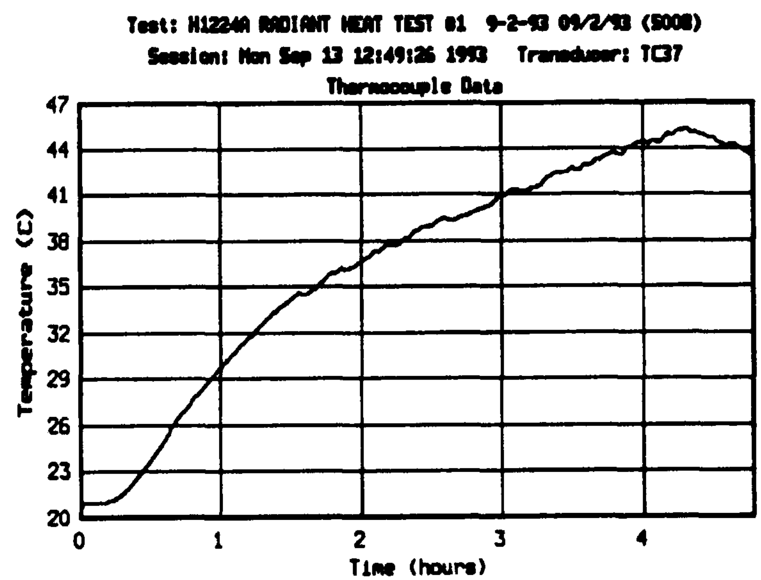

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:46 1993 Transducer: TC32
Thermocouple Data
Temperature (C)
50 47 44 41 38 35 32 29 26 23 20
0 1 2 3 4
Time (hours)


Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:48:54 1993 Transducer: TC33
Thermocouple Data
Temperature (C)
50 47 44 41 38 35 32 29 26 23 20
0 1 2 3 4
Time (hours)

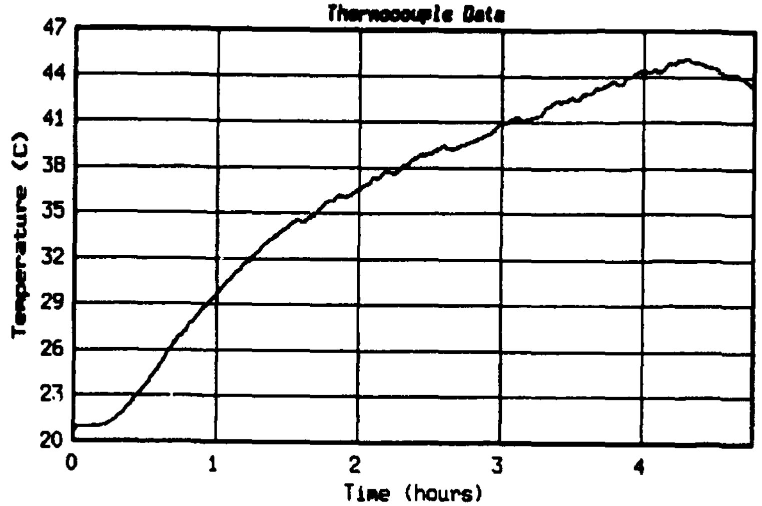

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:03 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
Time (hours)


Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:19 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
Time (hours)

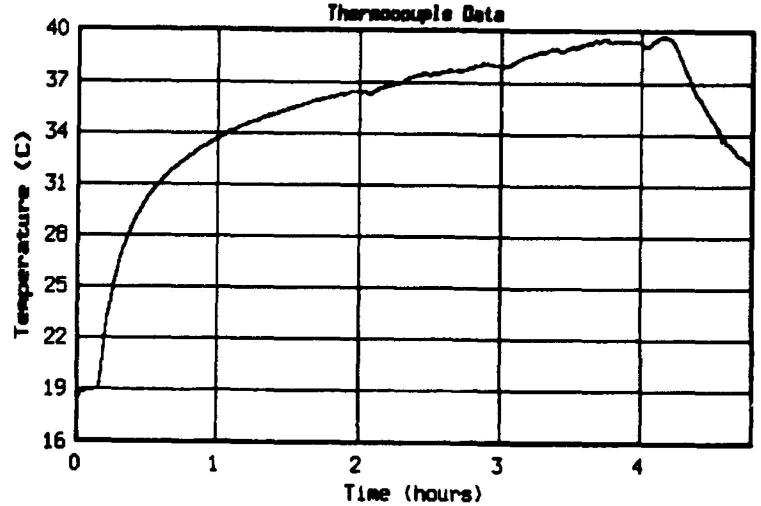

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:11 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
Time (hours)


Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:26 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
Time (hours)

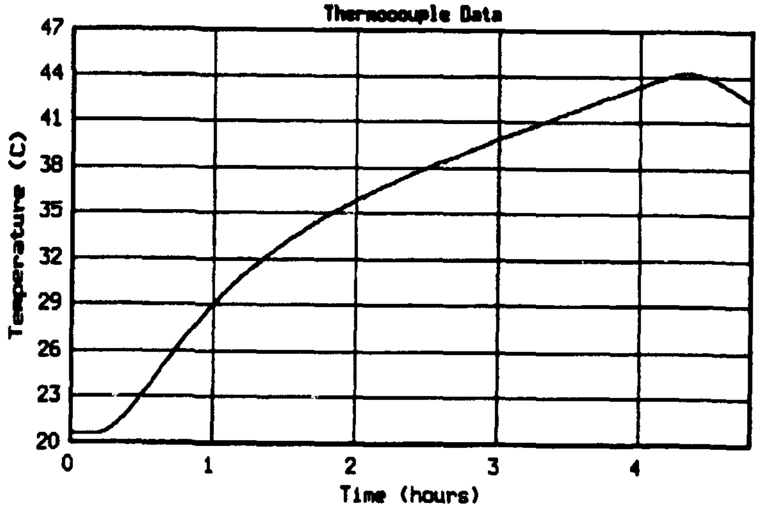
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:34 1993 Transducer: TC38
Thermocouple Data



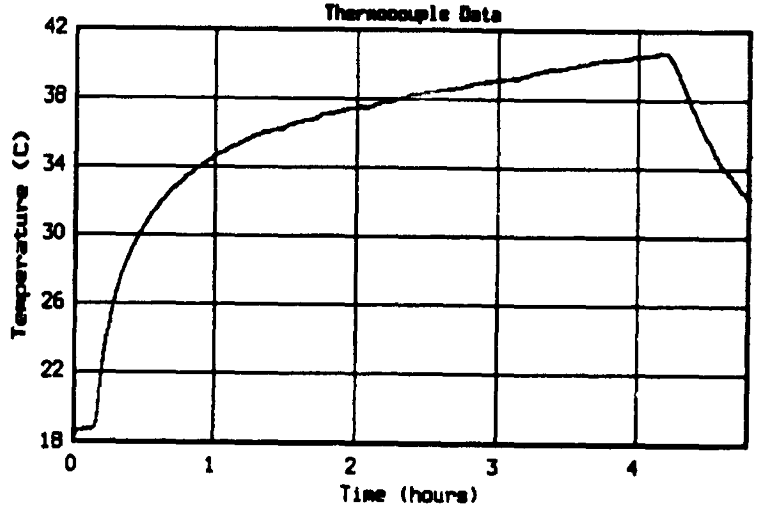
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:52 1993 Transducer: TC40
Thermocouple Data

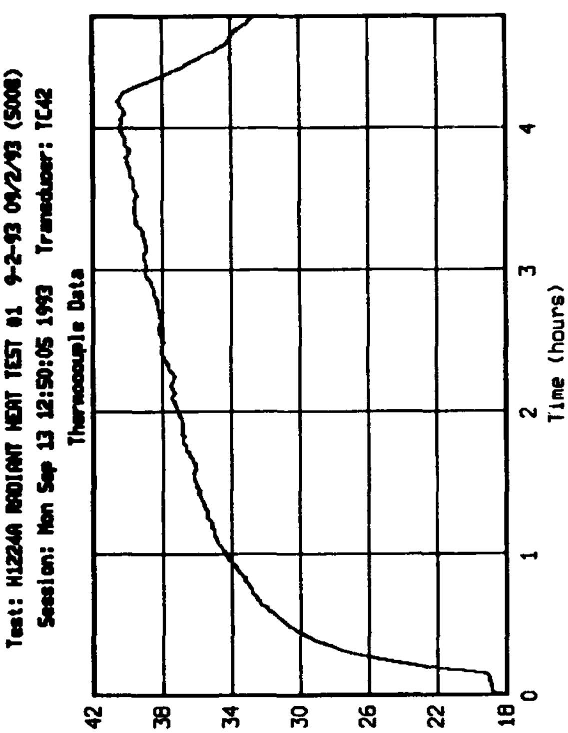


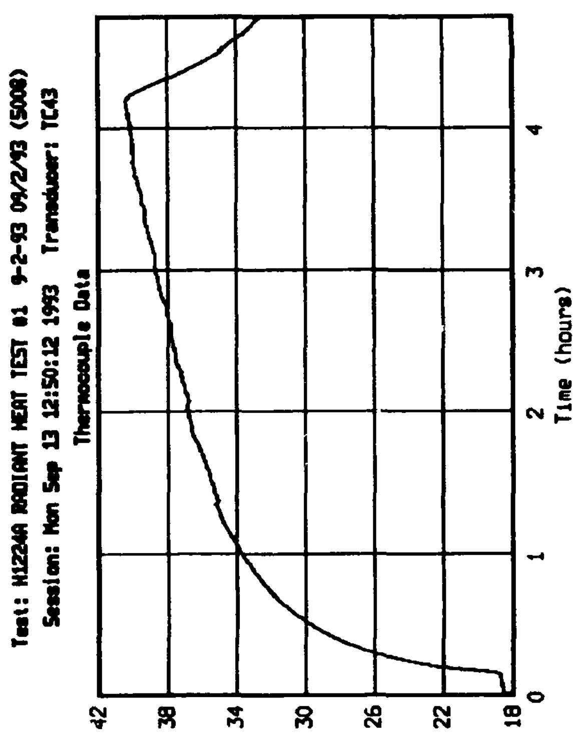
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:44 1993 Transducer: TC39
Thermocouple Data

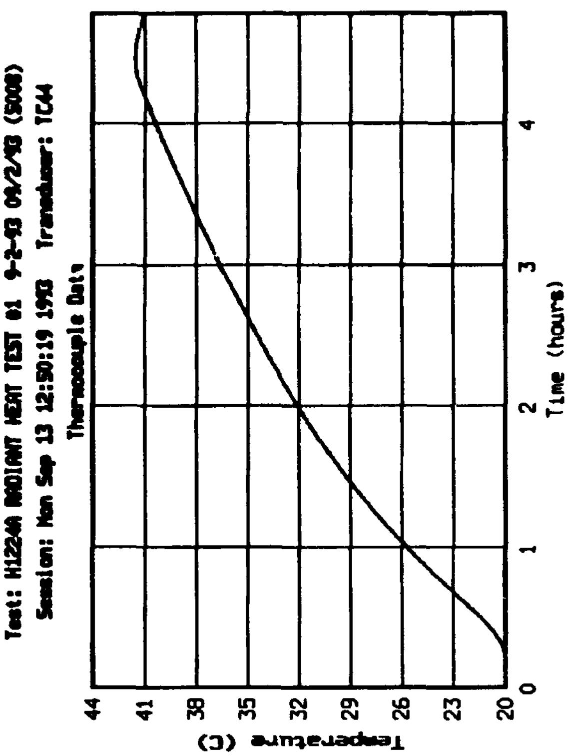


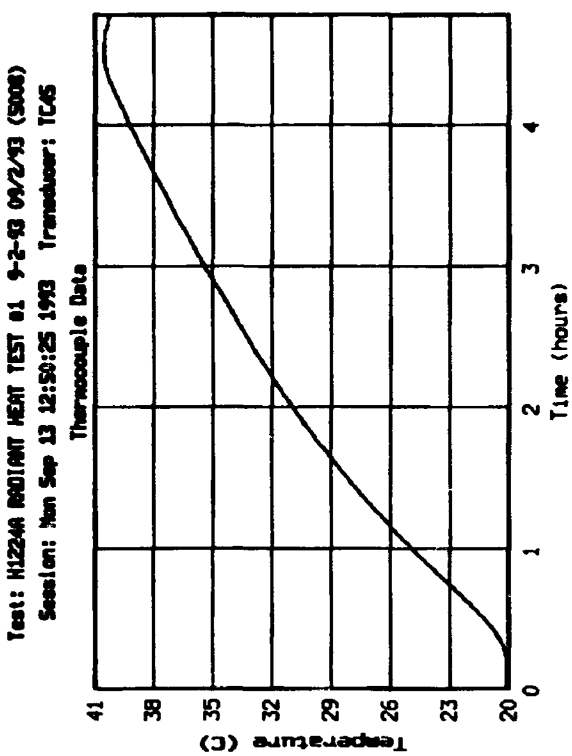
Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:49:59 1993 Transducer: TC41
Thermocouple Data

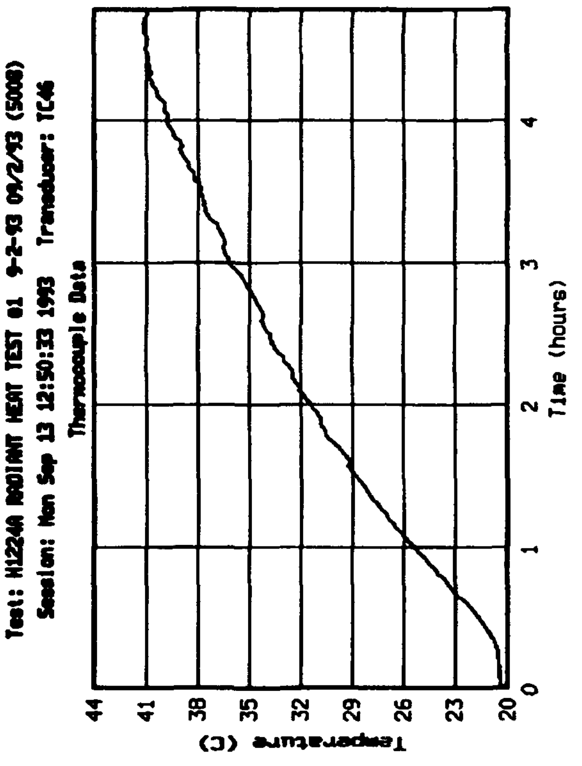


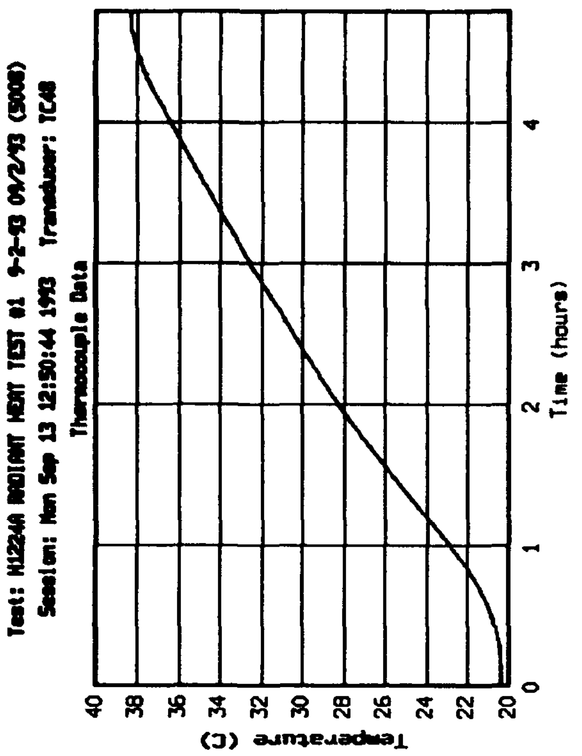

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:05 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)

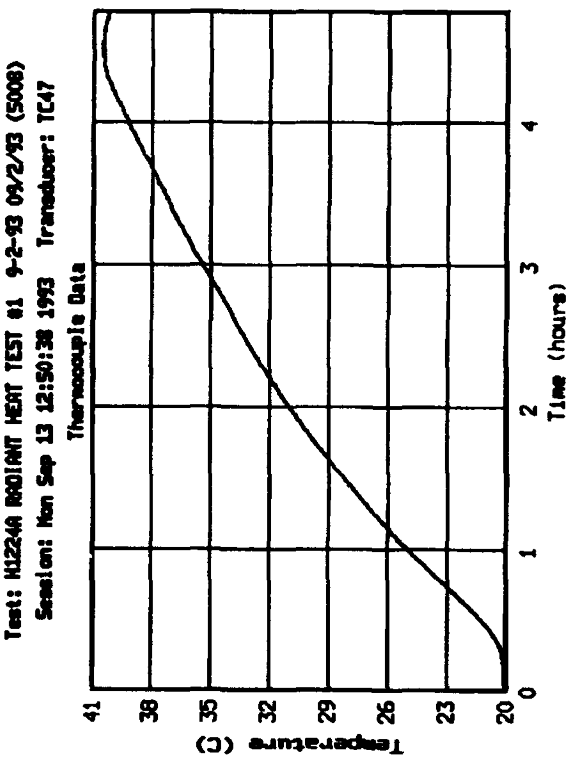

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:12 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
Time (hours)

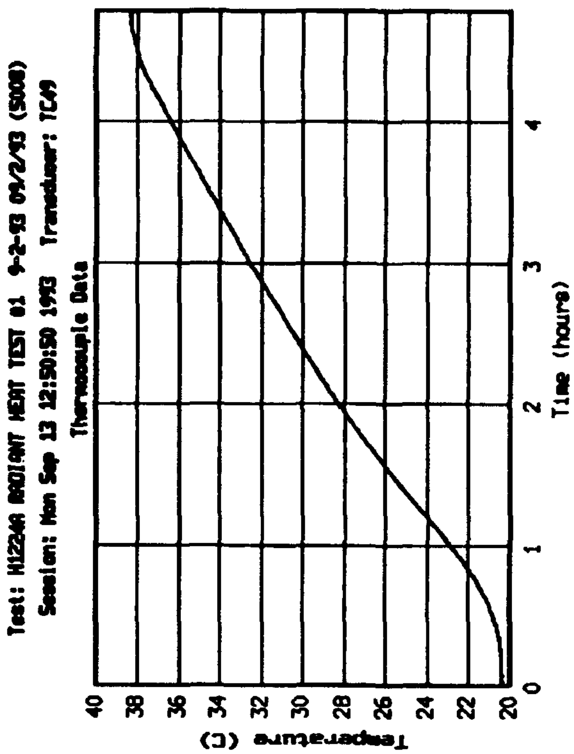

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:19 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
Time (hours)

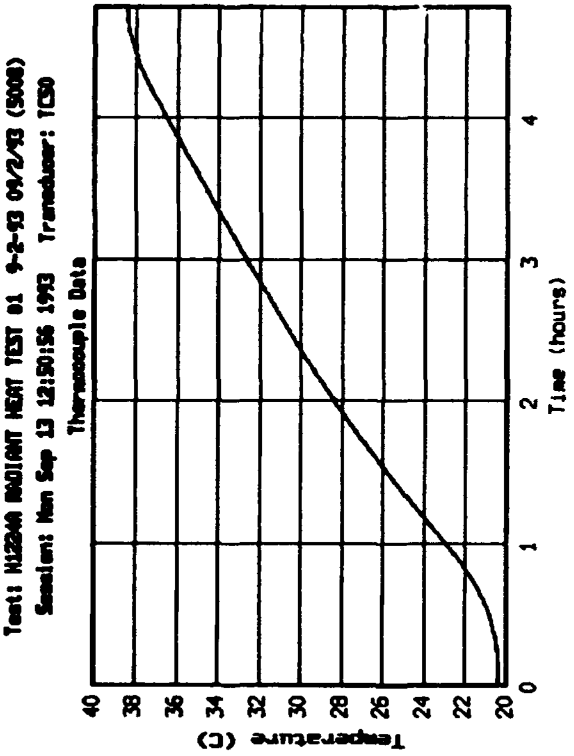

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:25 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
Time (hours)

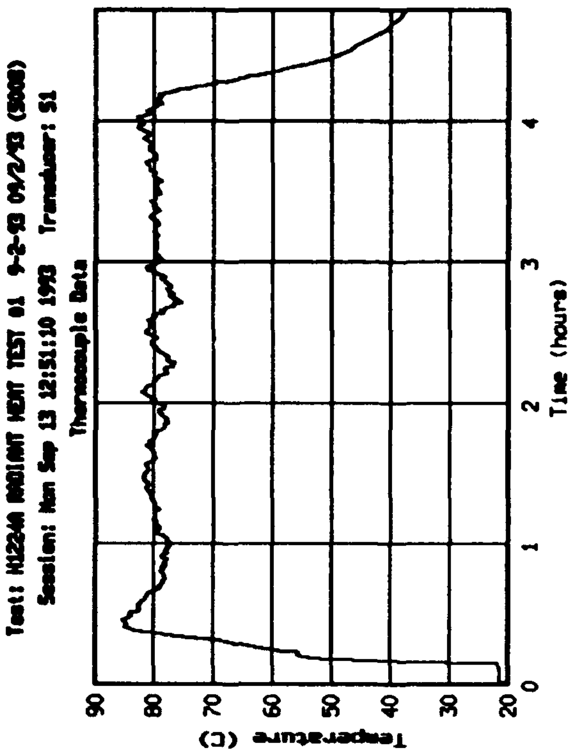

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:33 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
44
41
38
35
32
29
26
23
20
Time (hours)
0
1
2
3
4

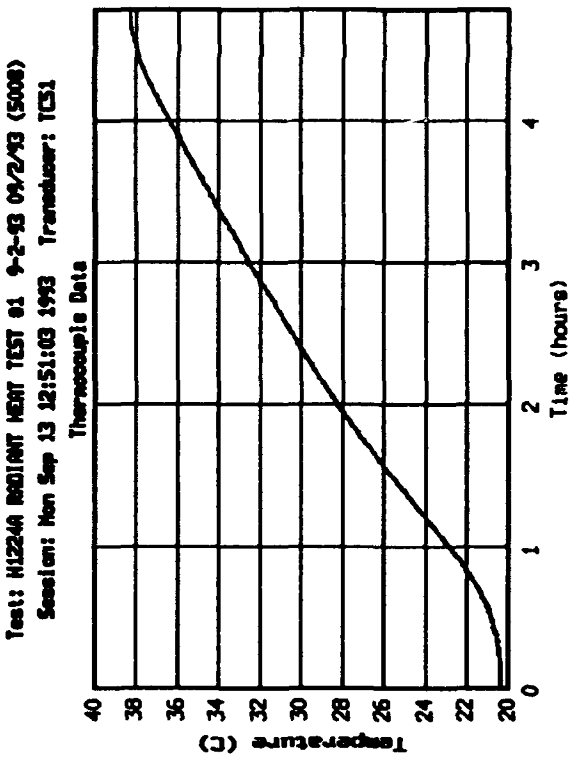

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:44 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
40
38
36
34
32
30
28
26
24
22
20
Time (hours)
0
1
2
3
4

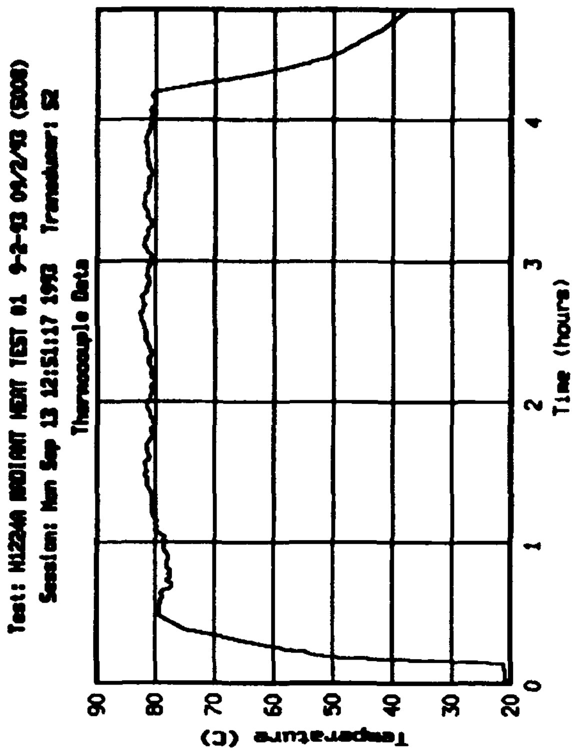

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:38 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
41
38
35
32
29
26
23
20
Time (hours)
0
1
2
3
4

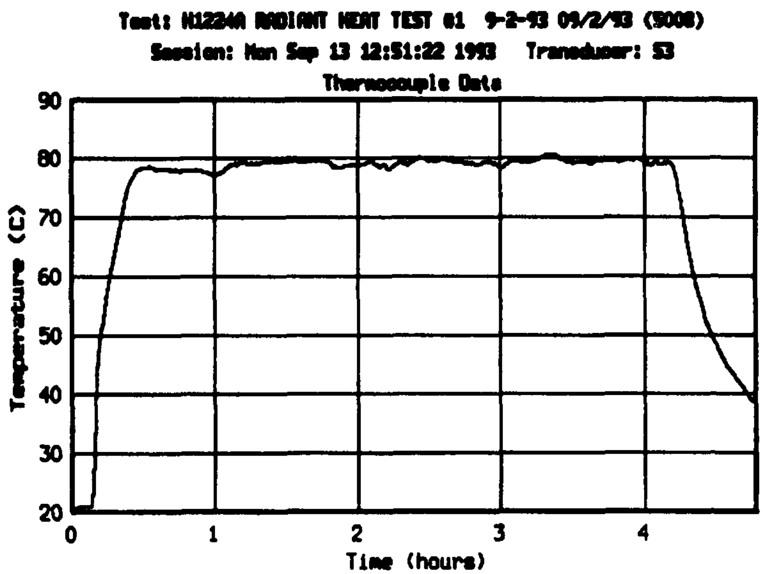

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:50 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
40
38
36
34
32
30
28
26
24
22
20
Time (hours)
0
1
2
3
4

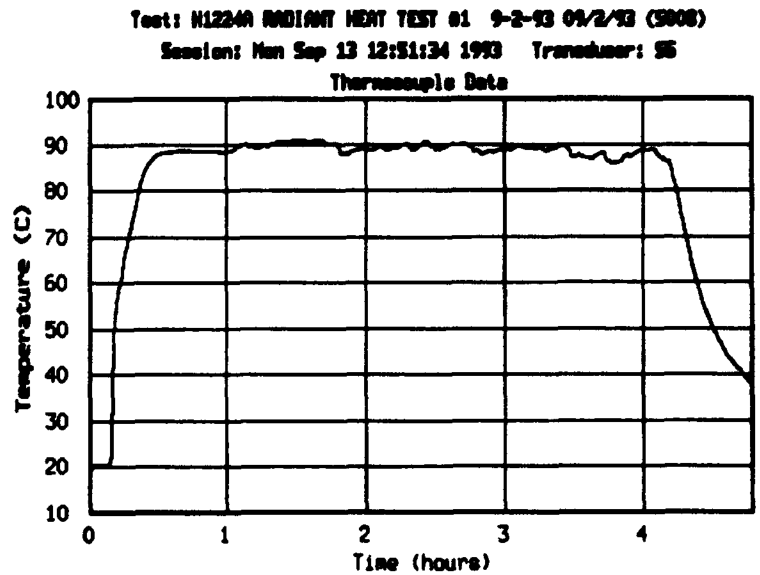

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:50:56 1993 Transducer: TC50
Thermocouple Data
Temperature (C)
Time (hours)

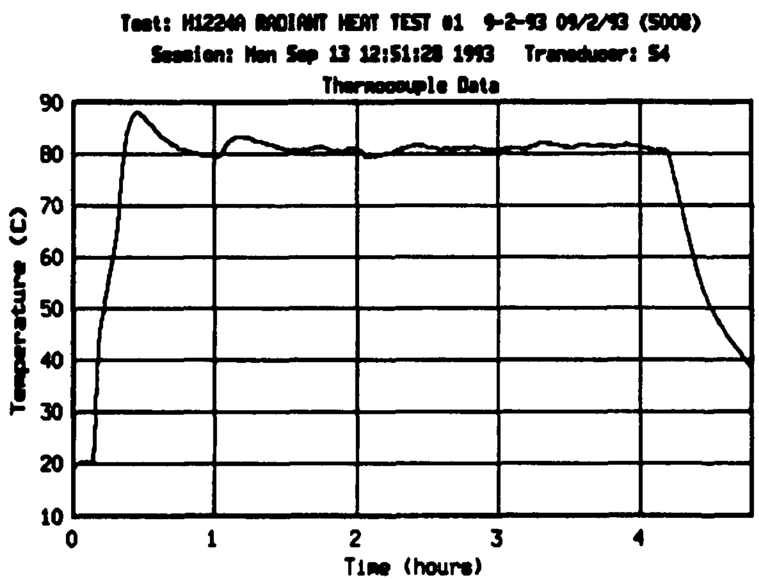

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:51:10 1993 Transducer: S1
Thermocouple Data
Temperature (C)
Time (hours)

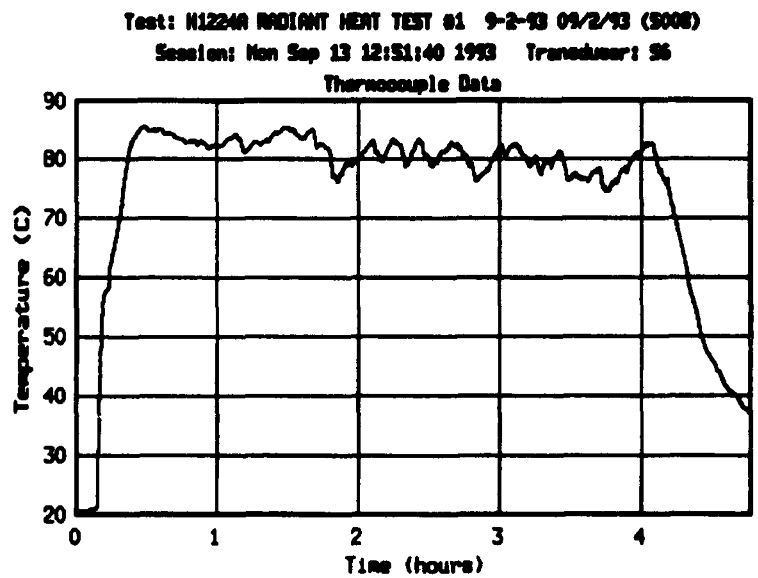

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:51:03 1993 Transducer: TC51
Thermocouple Data
Temperature (C)
Time (hours)

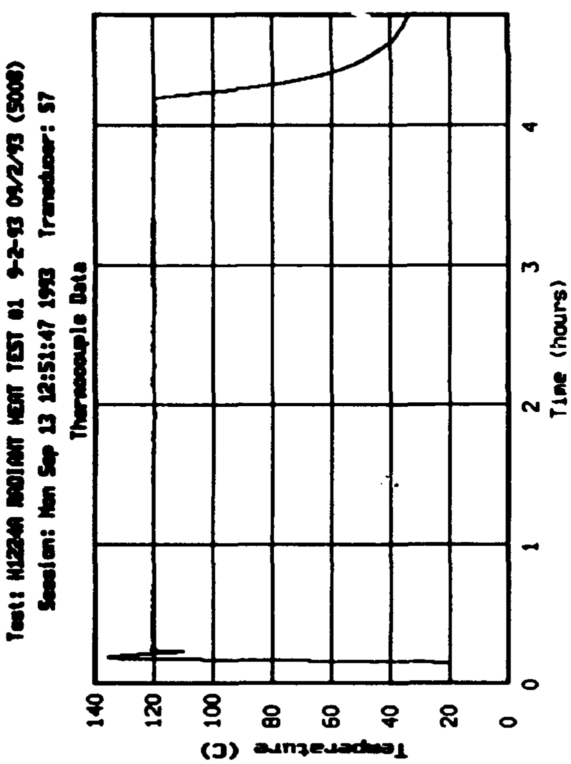

Test: H1224A RADIANT HEAT TEST 01 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:51:17 1993 Transducer: S2
Thermocouple Data
Temperature (C)
Time (hours)

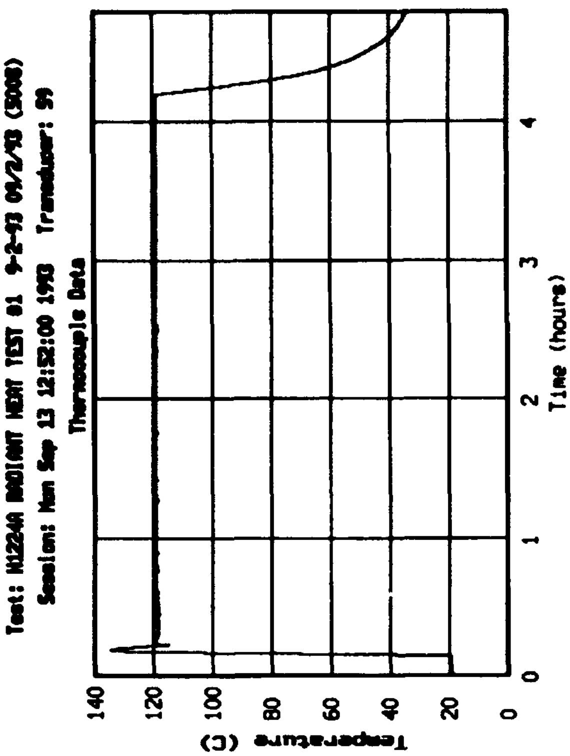

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:51:22 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)

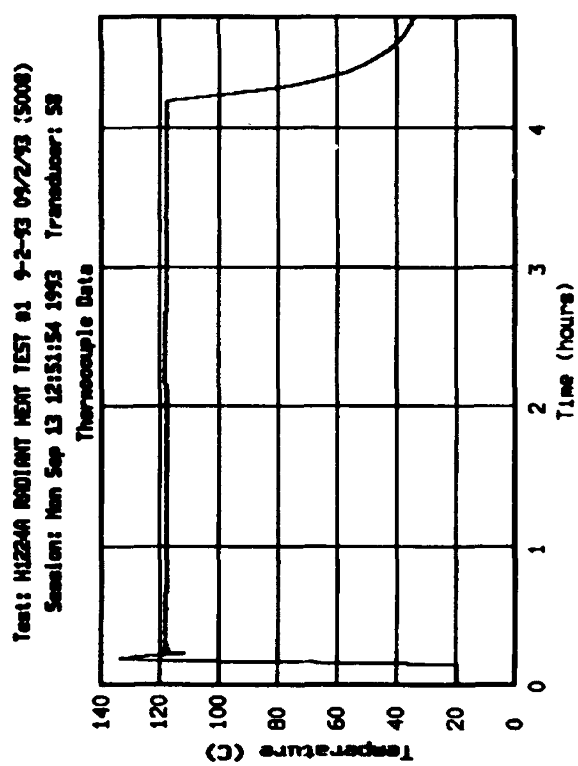

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:51:34 1993 Transducer: S5
Thermocouple Data
Temperature (C)
Time (hours)

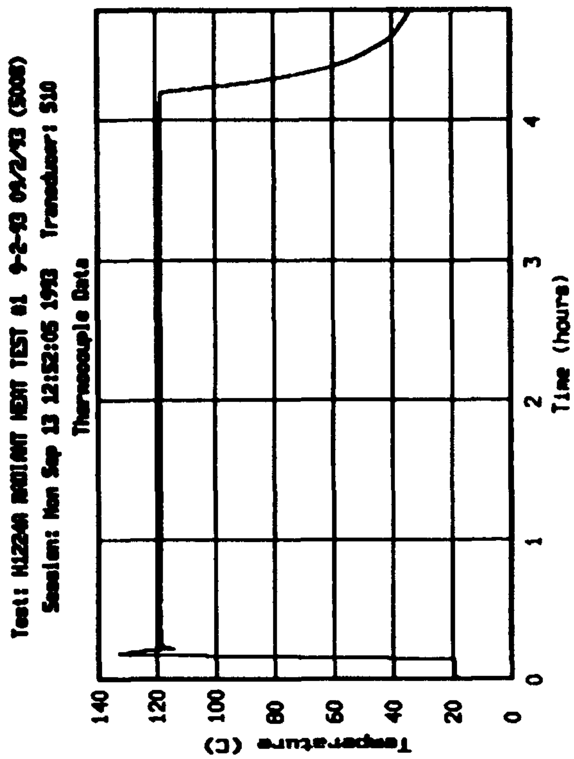

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:51:28 1993 Transducer: S4
Thermocouple Data
Temperature (C)
Time (hours)

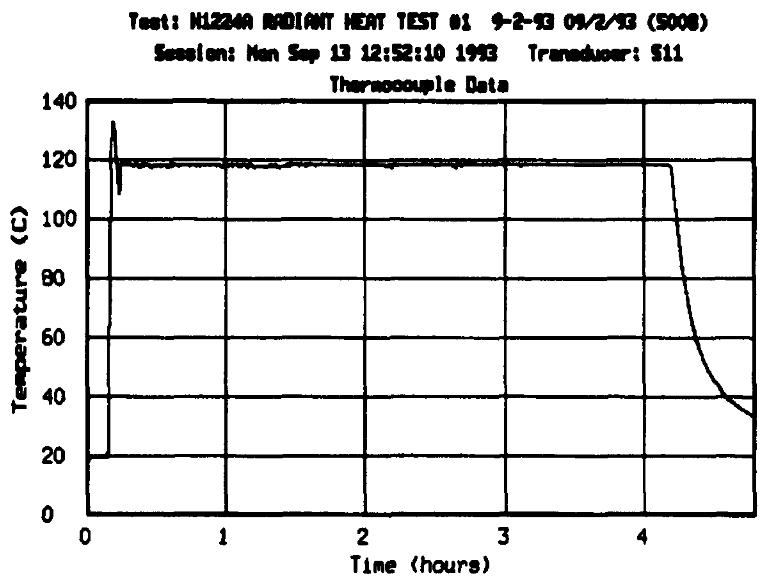

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:51:40 1993 Transducer: S6
Thermocouple Data
Temperature (C)
Time (hours)

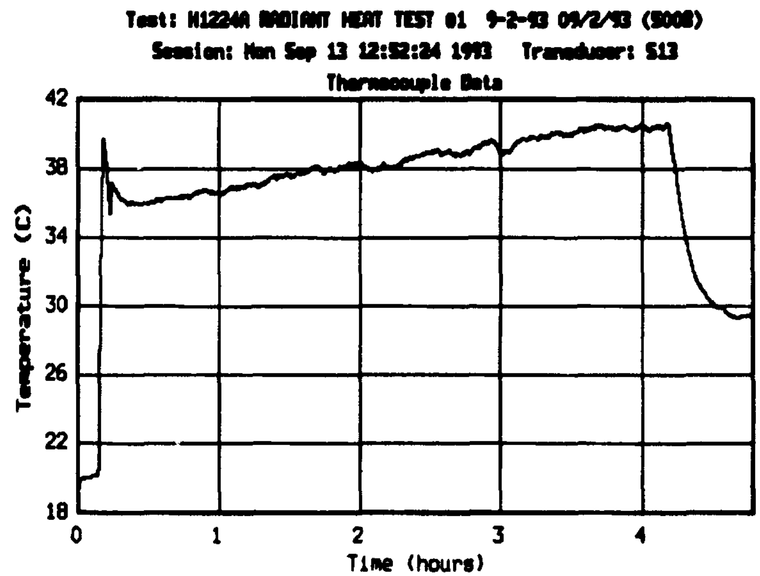

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:51:47 1993 Transducer: S7
Thermocouple Data
Temperature (C)
Time (hours)

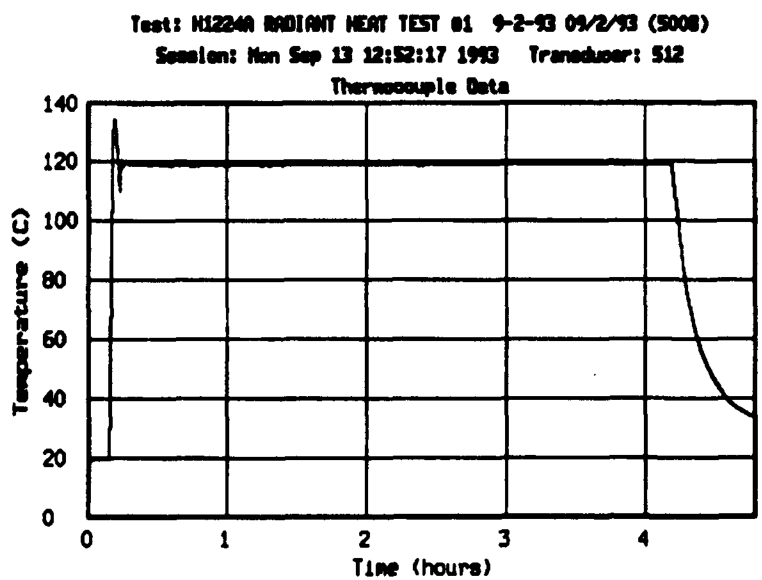

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:52:00 1993 Transducer: S9
Thermocouple Data
Temperature (C)
Time (hours)

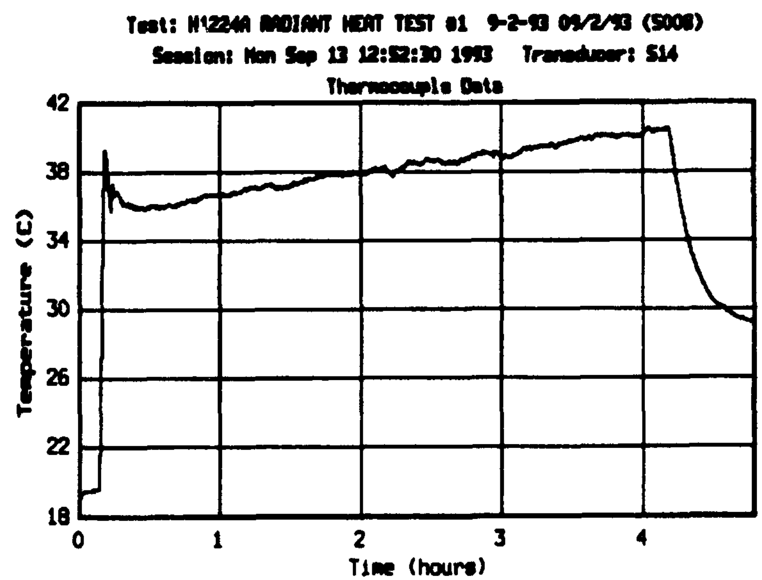

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:51:54 1993 Transducer: S8
Thermocouple Data
Temperature (C)
Time (hours)

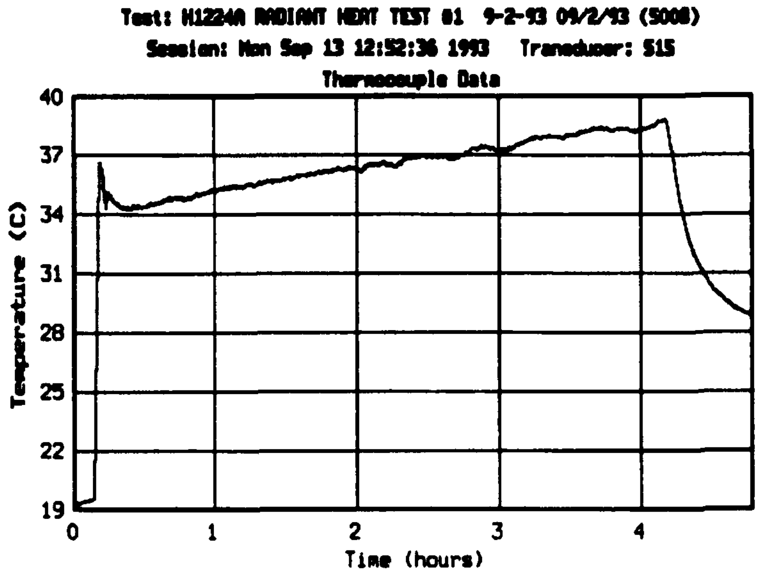

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:52:05 1993 Transducer: S10
Thermocouple Data
Temperature (C)
Time (hours)

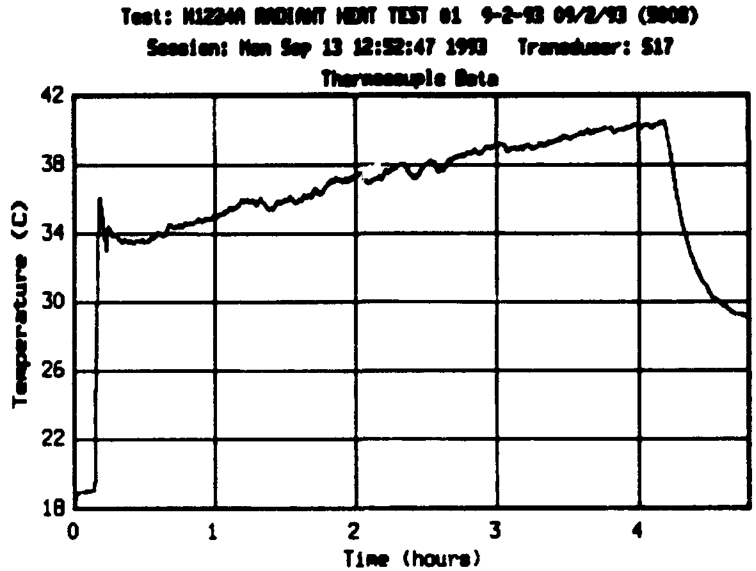

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:52:10 1993 Transducer: S11
Thermocouple Data
Temperature (C)
0
20
40
60
80
100
120
140
Time (hours)
0
1
2
3
4

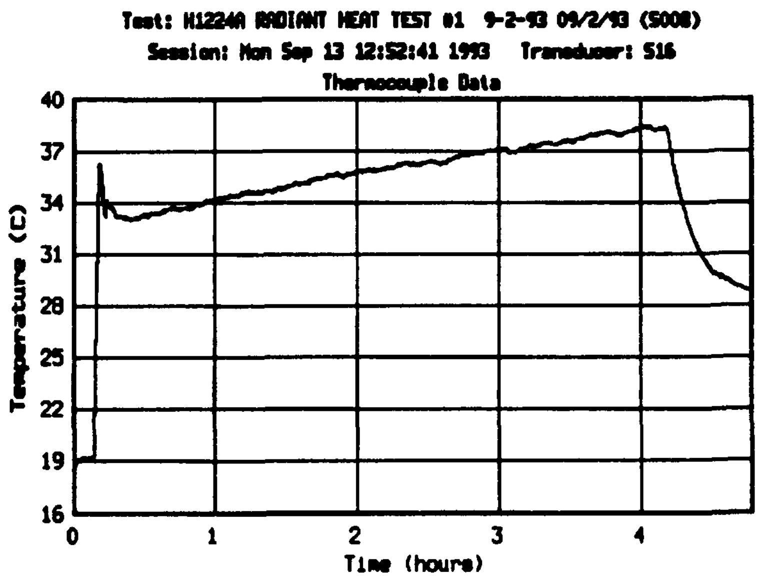

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:52:24 1993 Transducer: S13
Thermocouple Data
Temperature (C)
18
22
26
30
34
38
42
Time (hours)
0
1
2
3
4

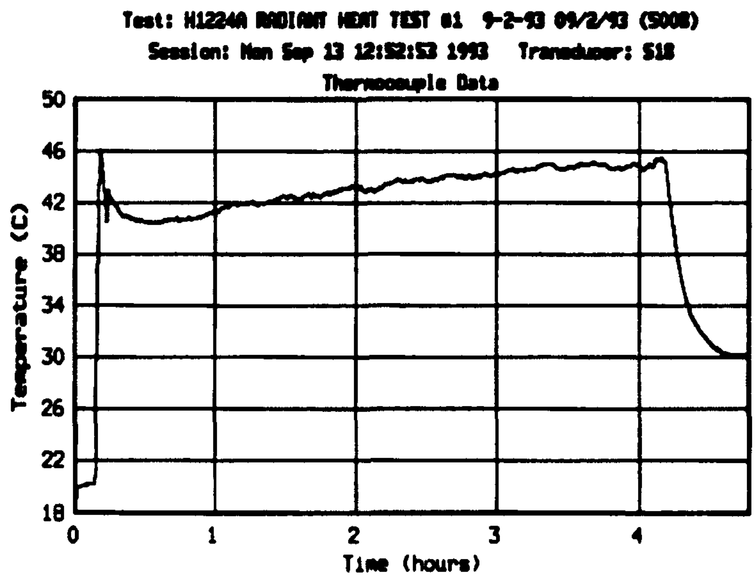

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:52:17 1993 Transducer: S12
Thermocouple Data
Temperature (C)
0
20
40
60
80
100
120
140
Time (hours)
0
1
2
3
4

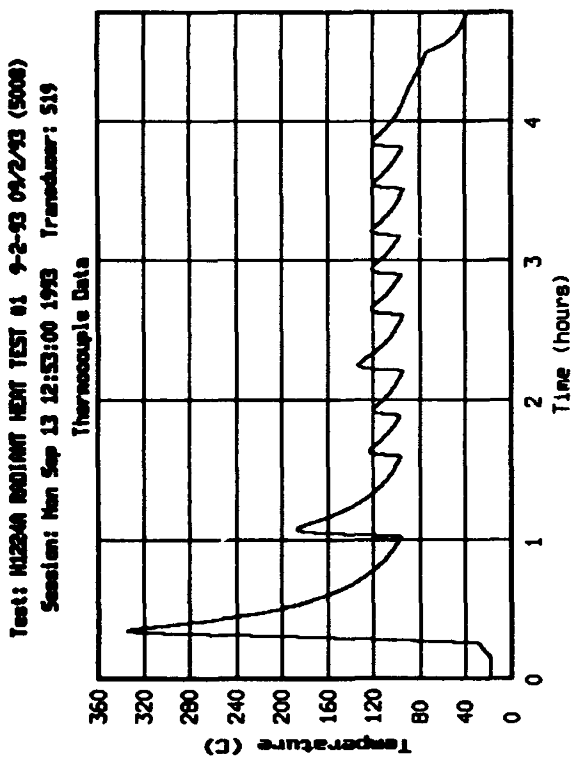

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (S008)
Session: Mon Sep 13 12:52:30 1993 Transducer: S14
Thermocouple Data
Temperature (C)
18
22
26
30
34
38
42
Time (hours)
0
1
2
3
4

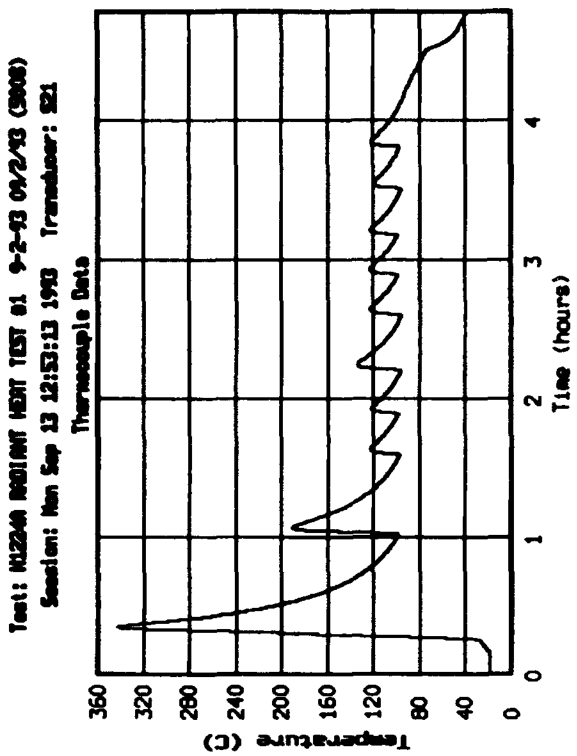

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:52:36 1993 Transducer: S15
Thermocouple Data
Temperature (C)
Time (hours)

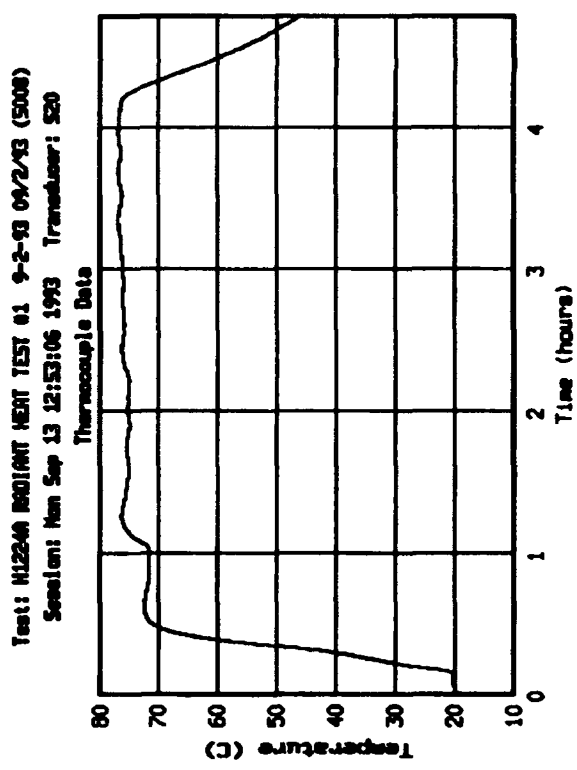

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:52:47 1993 Transducer: S17
Thermocouple Data
Temperature (C)
Time (hours)

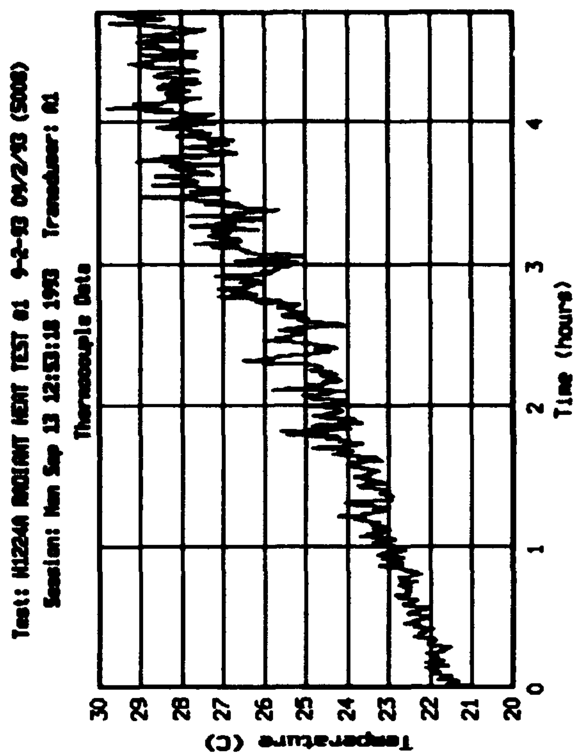

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:52:41 1993 Transducer: S16
Thermocouple Data
Temperature (C)
Time (hours)

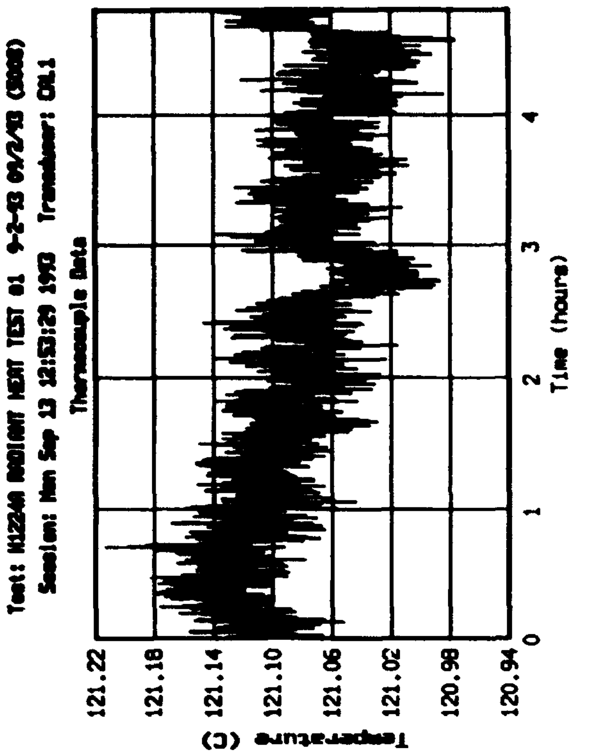

Test: H1224A RADIANT HEAT TEST #1 9-2-93 09/2/93 (5008)
Session: Mon Sep 13 12:52:53 1993 Transducer: S18
Thermocouple Data
Temperature (C)
Time (hours)

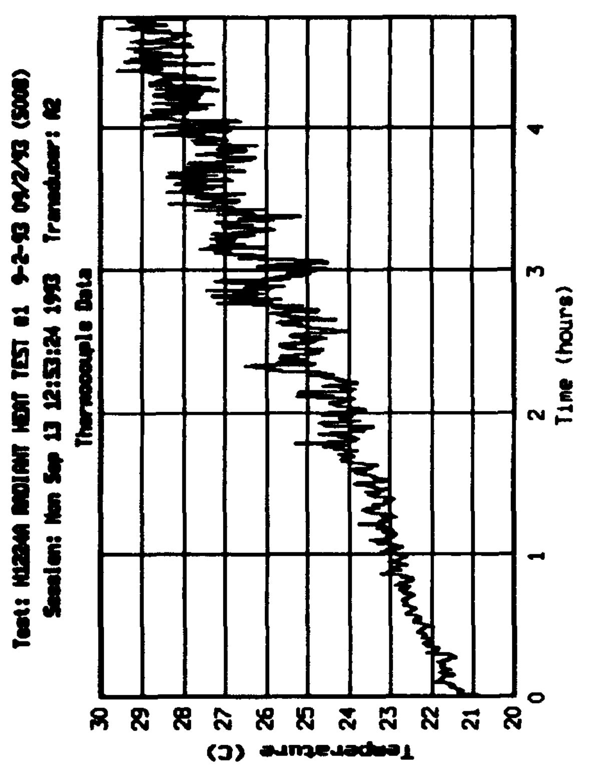

Thermocouple Data
Transducer: S19
Temperature (C)
Time (hours)


Thermocouple Data
Transducer: S21
Temperature (C)
Time (hours)


Thermocouple Data
Transducer: S20
Temperature (C)
Time (hours)

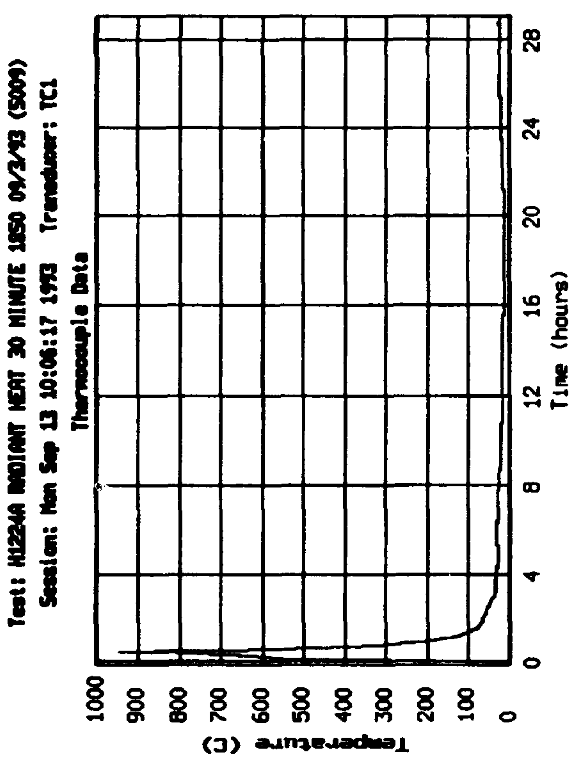

Thermocouple Data
Temperature (C)
Time (hours)

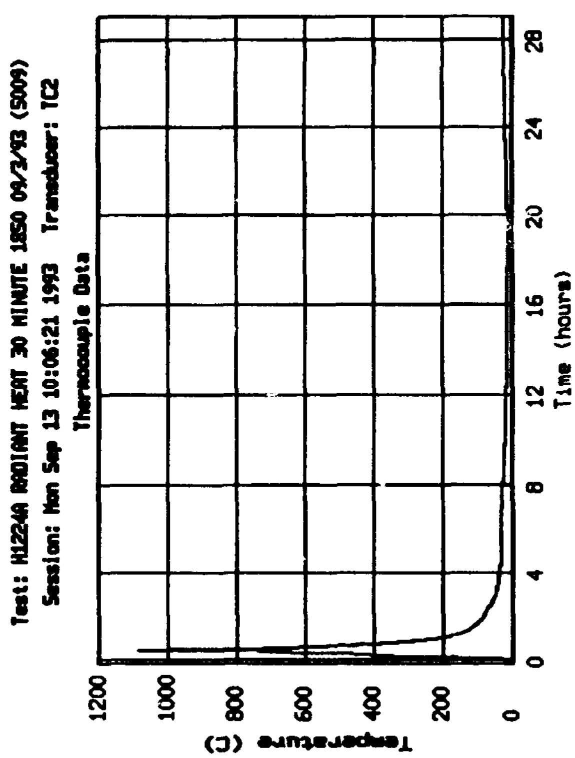

Thermocouple Data
Temperature (C)
Time (hours)
121.22
121.18
121.14
121.10
121.06
121.02
120.98
120.94
0
1
2
3
4

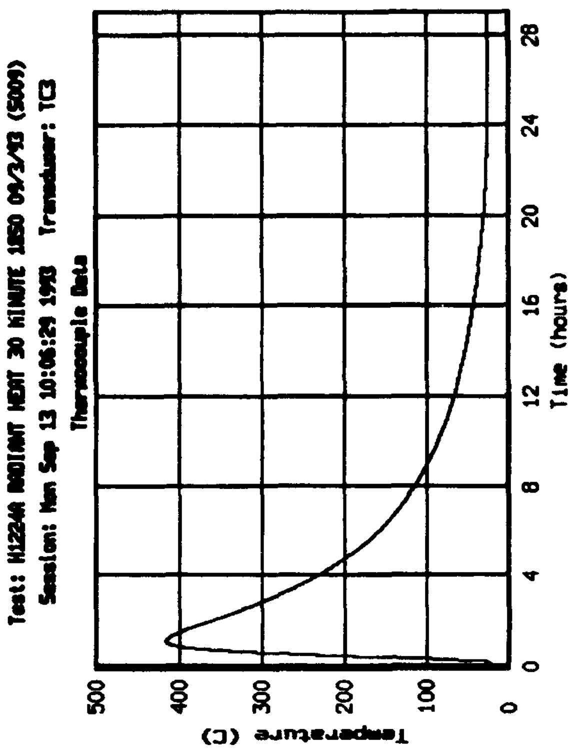

Thermocouple Data
Temperature (C)
Time (hours)
30
29
28
27
26
25
24
23
22
21
20
0
1
2
3
4

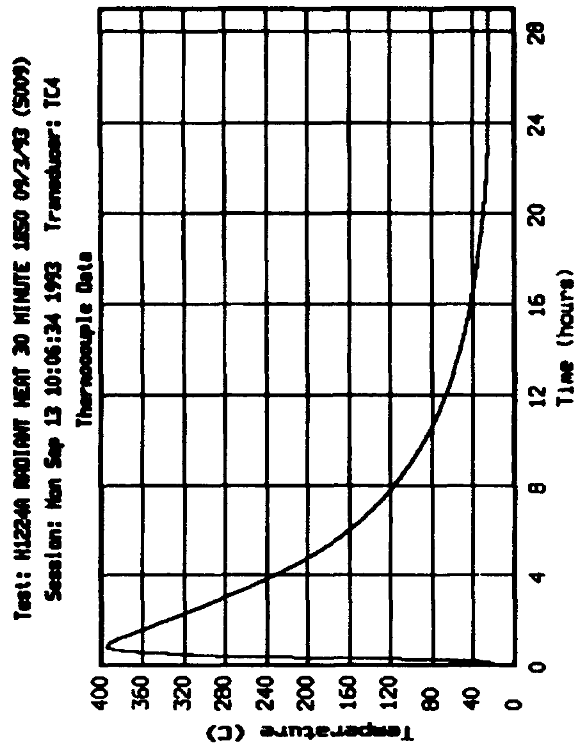
Appendix B

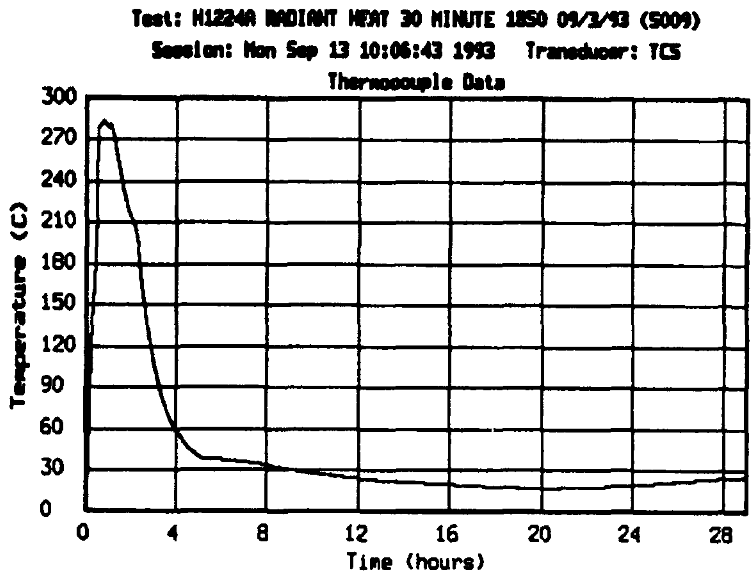
The following pages show temperature data for the 30-minute, 1010° C (1850° F) radiant heat test of the H1224A shipping/storage container with Mk12a Mod6c midsection inside. Two time windows are provided: 28 hours and a narrow window of approximately 2.5 hours. The longer duration data plots include each entire test, including the cool-down period to steady state. The shorter duration data plots provide more detail throughout the 30 minute application of radiant heat.

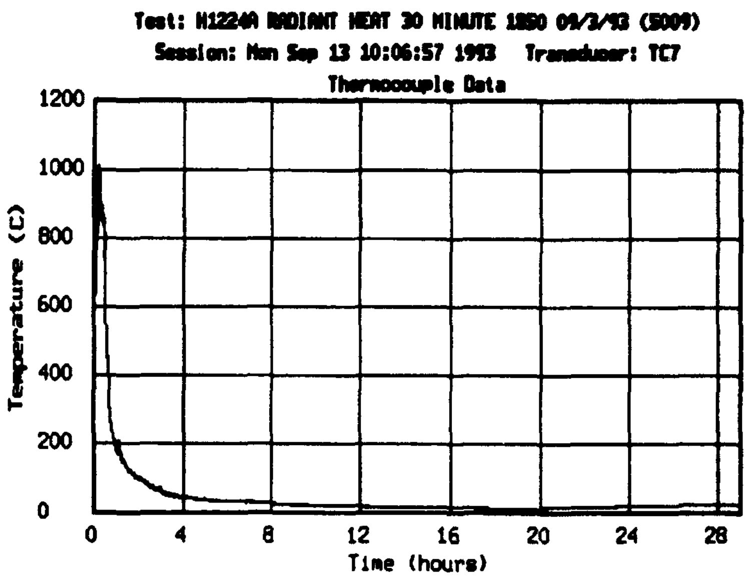

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:06:17 1993 Transducer: TC1
Thermocouple Data
Temperature (C)
Time (hours)

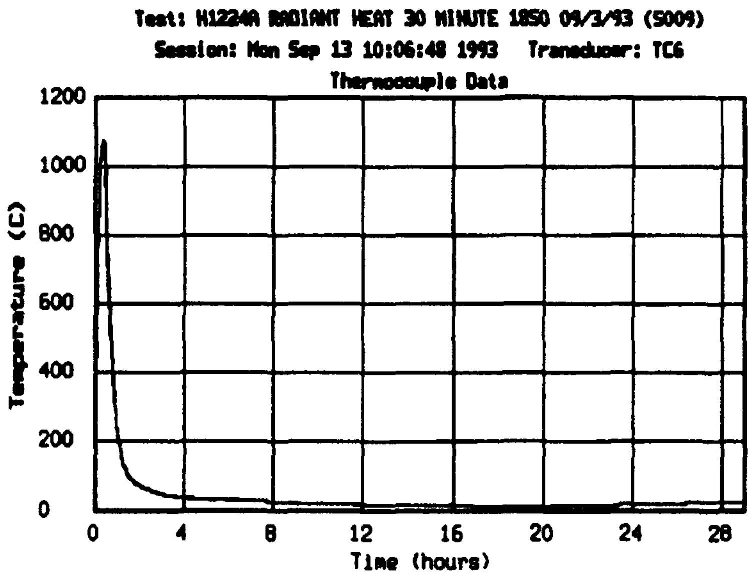

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:06:21 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
Time (hours)

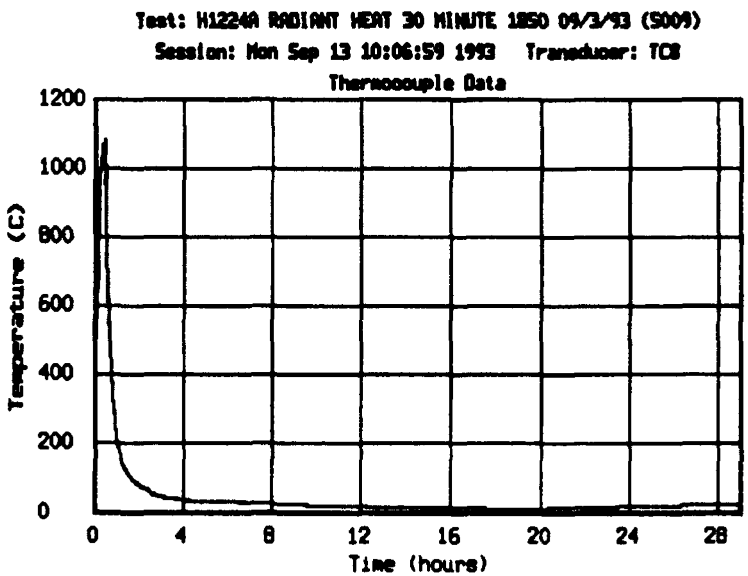

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:06:29 1993 Transducer: TC3
Thermocouple Data
Temperature (C)
Time (hours)

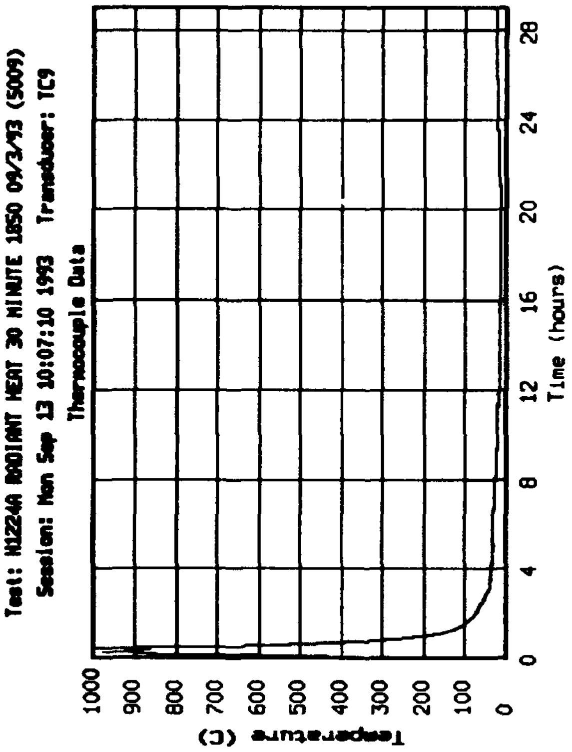

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:06:34 1993 Transducer: TC4
Thermocouple Data
Temperature (C)
Time (hours)

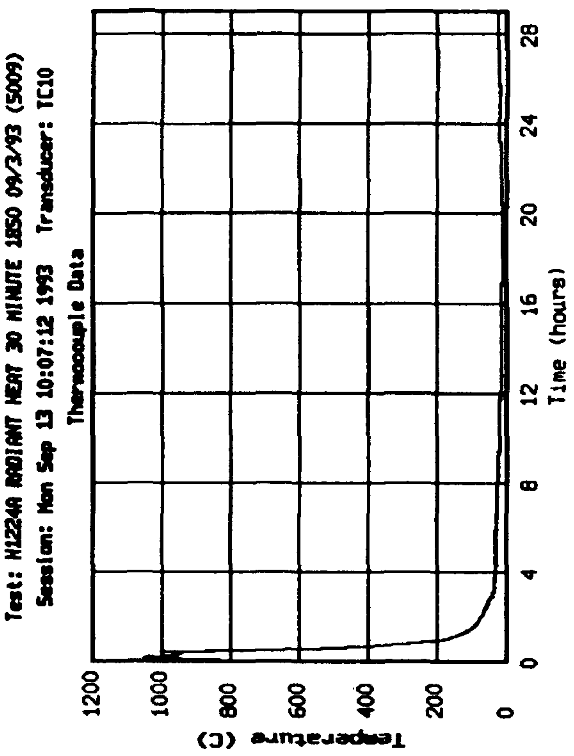

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:06:43 1993 Transducer: TC5
Thermocouple Data
Temperature (C)
Time (hours)

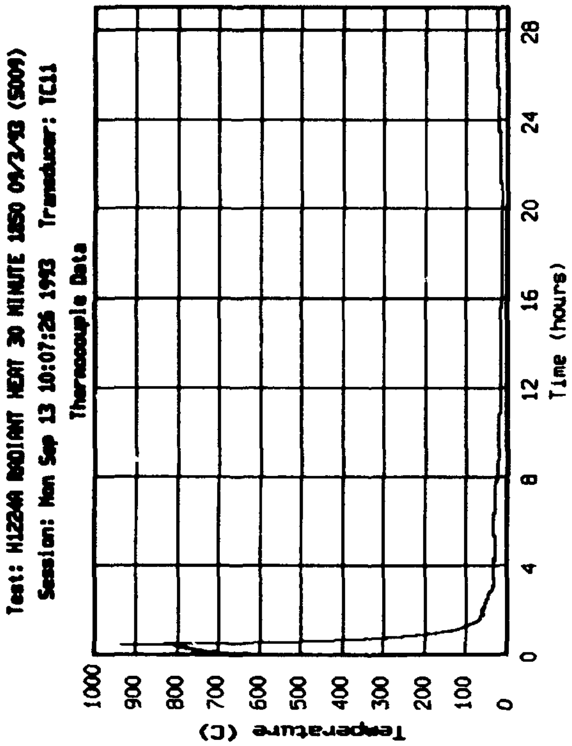

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:06:57 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
Time (hours)

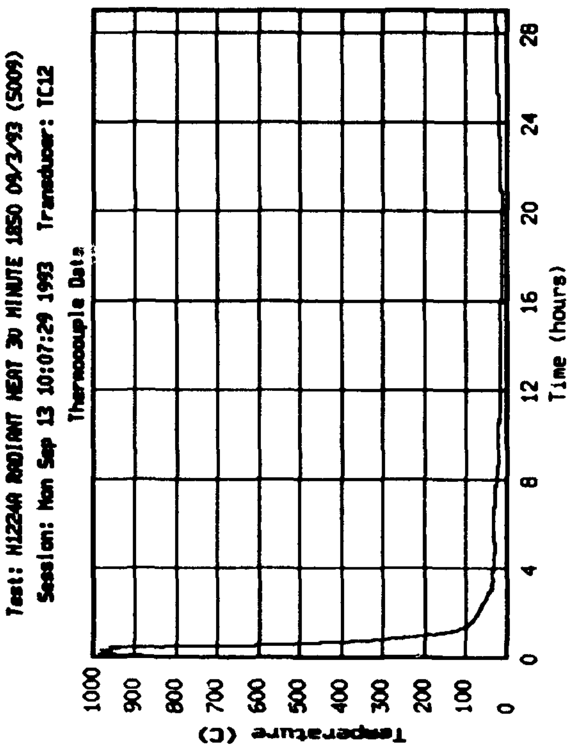

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:06:48 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
Time (hours)

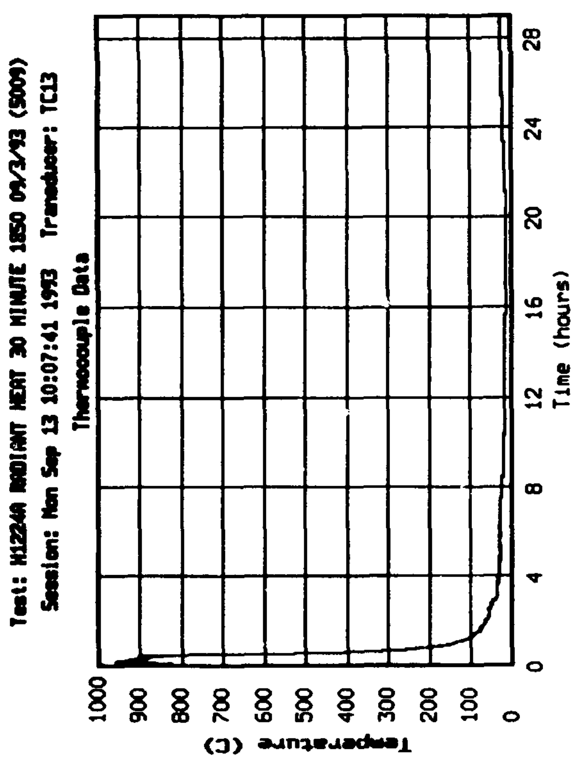

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:06:59 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
Time (hours)

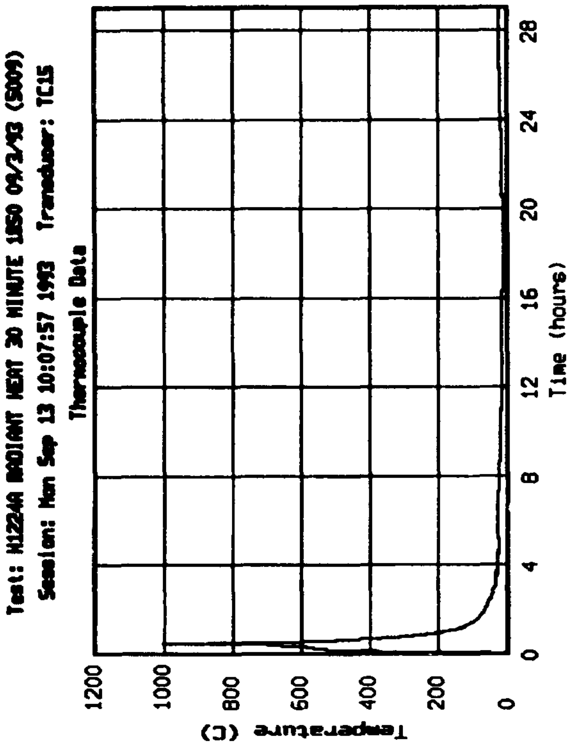

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:07:10 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
Time (hours)

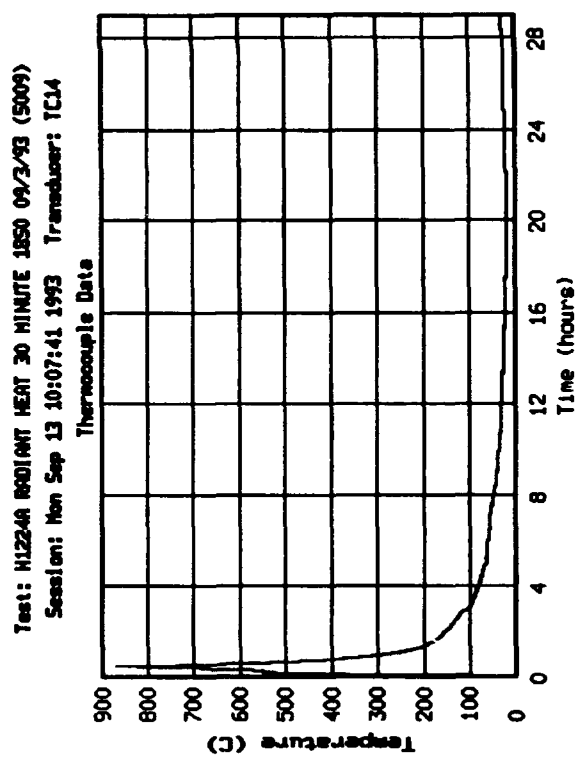

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:07:12 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
Time (hours)

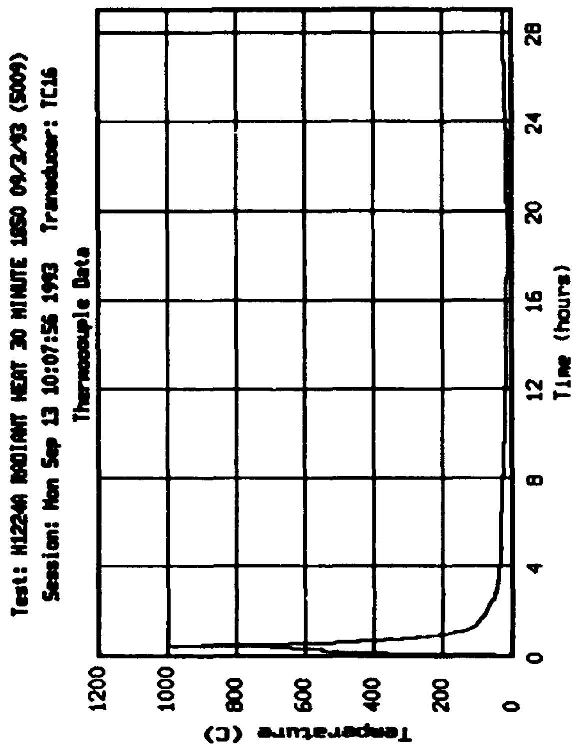

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:07:26 1993 Transducer: TC11
Thermocouple Data
Temperature (C)
Time (hours)

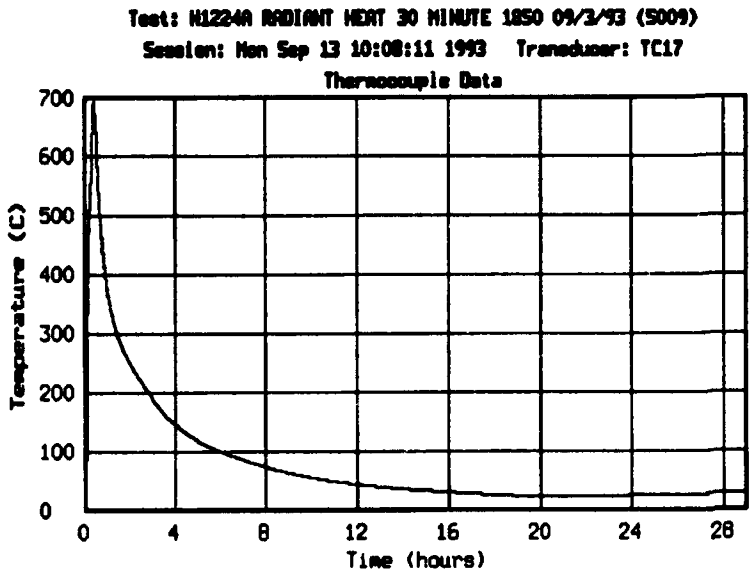

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:07:29 1993 Transducer: TC12
Thermocouple Data
Temperature (C)
Time (hours)


Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:07:41 1993 Transducer: TC13
Thermocouple Data
Temperature (C)
Time (hours)

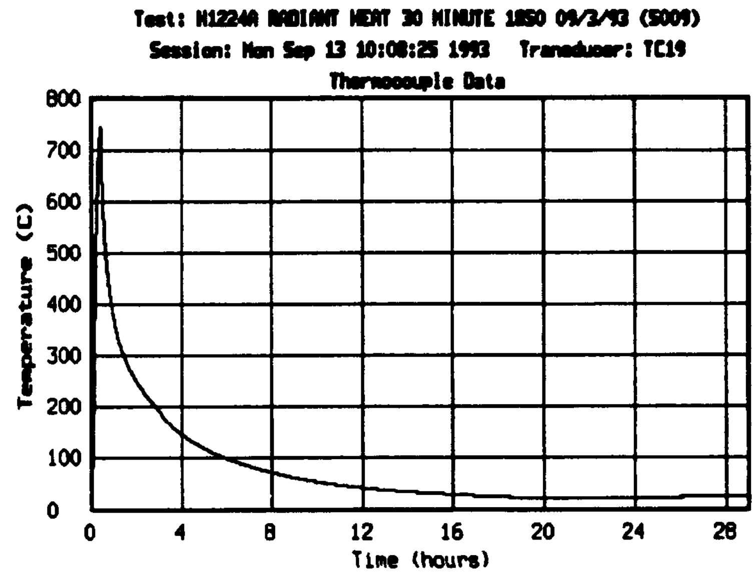

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:07:57 1993 Transducer: TC15
Thermocouple Data
Temperature (C)
Time (hours)


Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:07:41 1993 Transducer: TC14
Thermocouple Data
Temperature (C)
Time (hours)

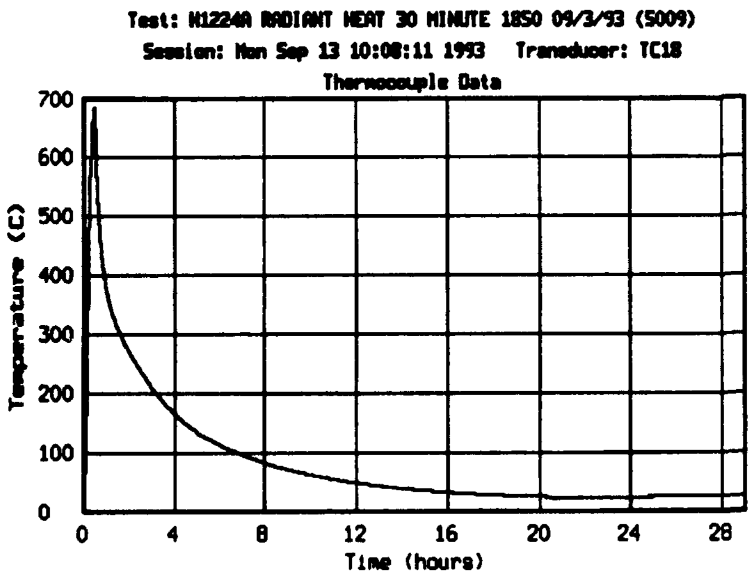

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:07:56 1993 Transducer: TC16
Thermocouple Data
Temperature (C)
Time (hours)



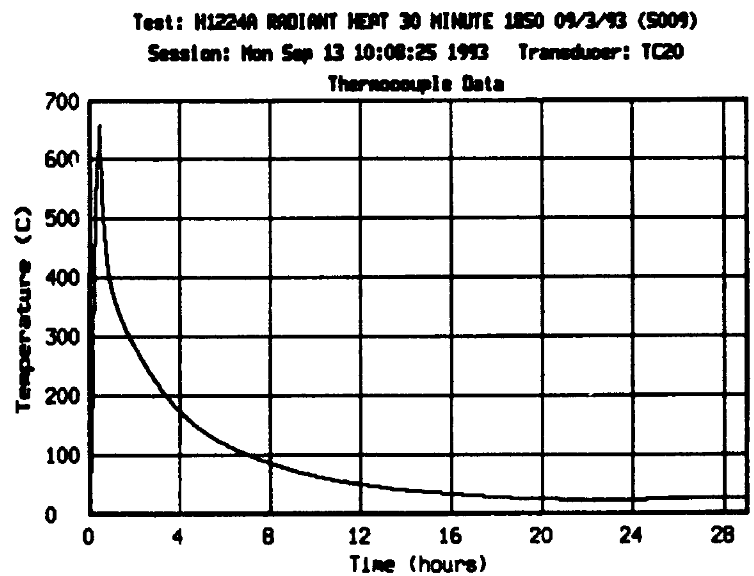
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:11 1993 Transducer: TC17
Thermocouple Data
Temperature (C)
Time (hours)



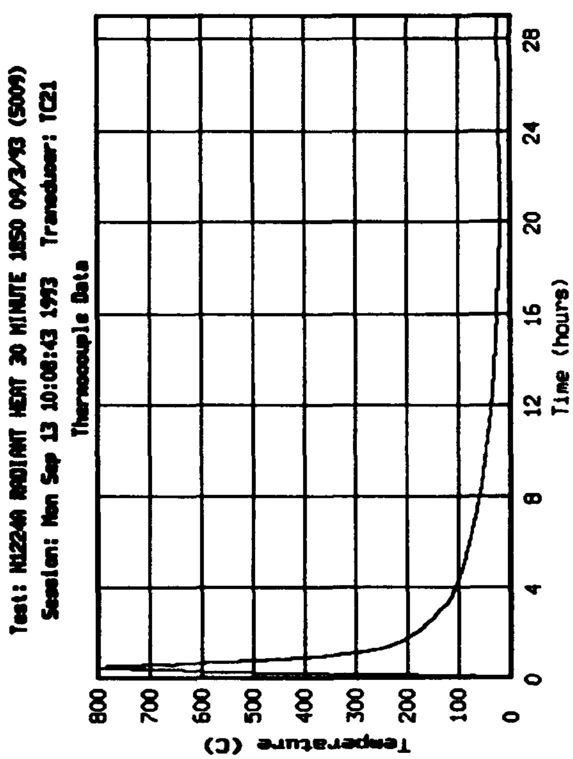
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:25 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
Time (hours)



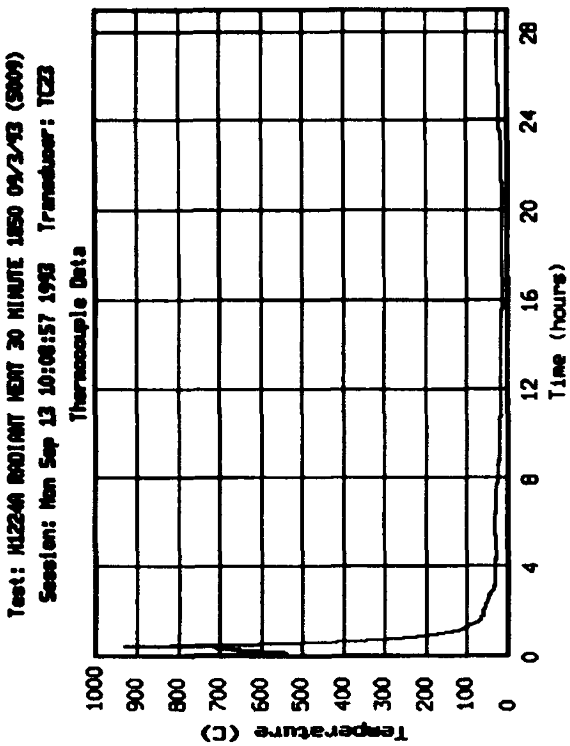
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:11 1993 Transducer: TC18
Thermocouple Data
Temperature (C)
Time (hours)



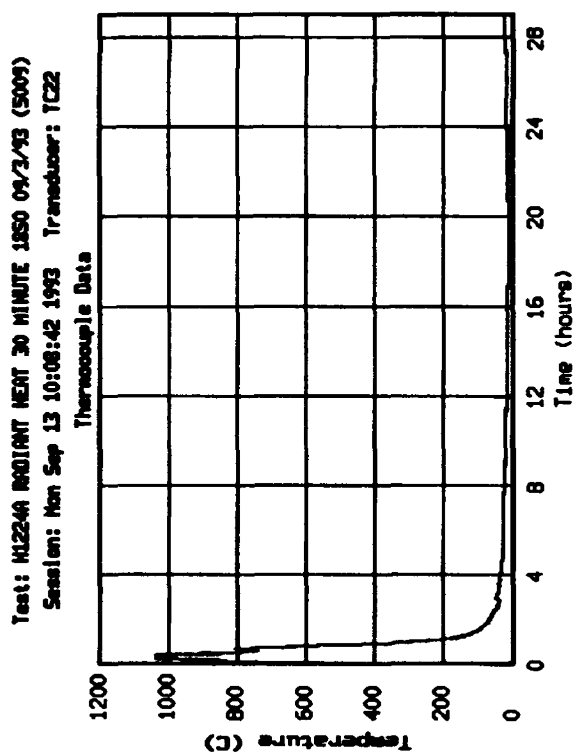
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:25 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
Time (hours)



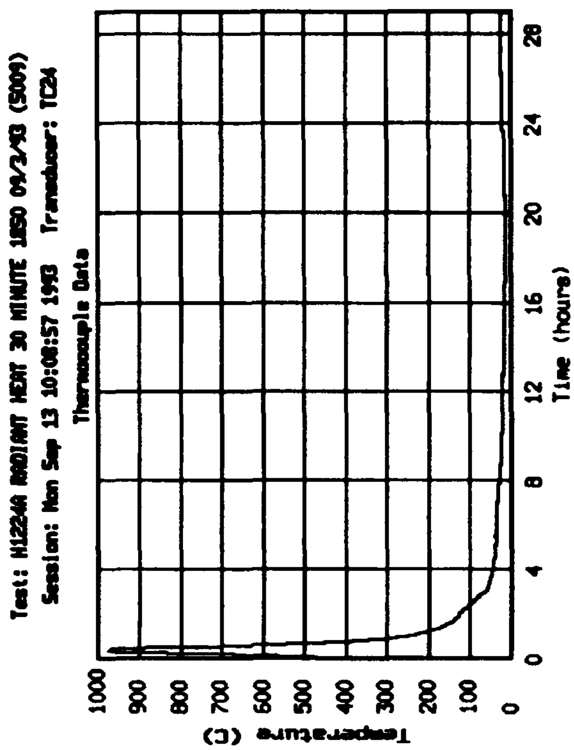
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:43 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)



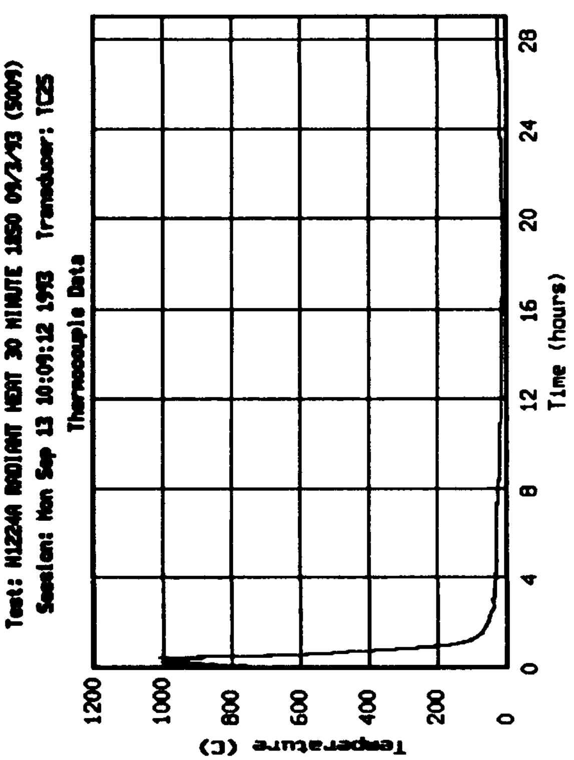
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:57 1993 Transducer: TC23
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

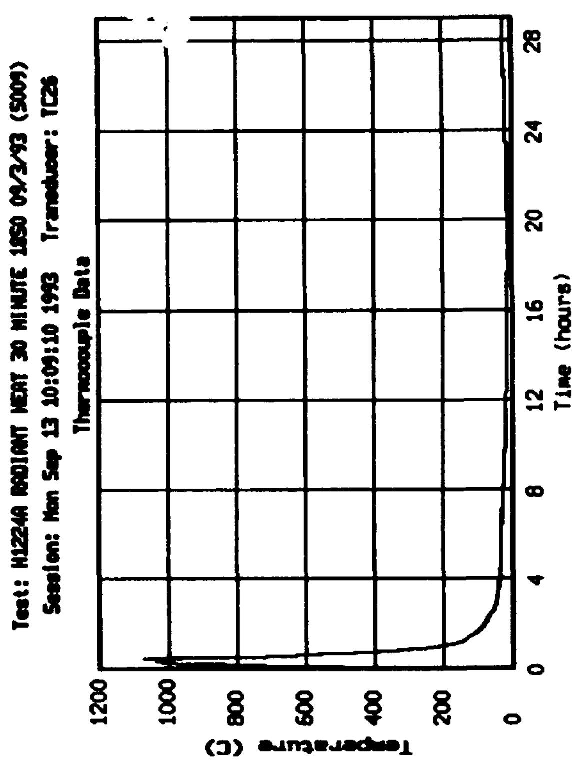


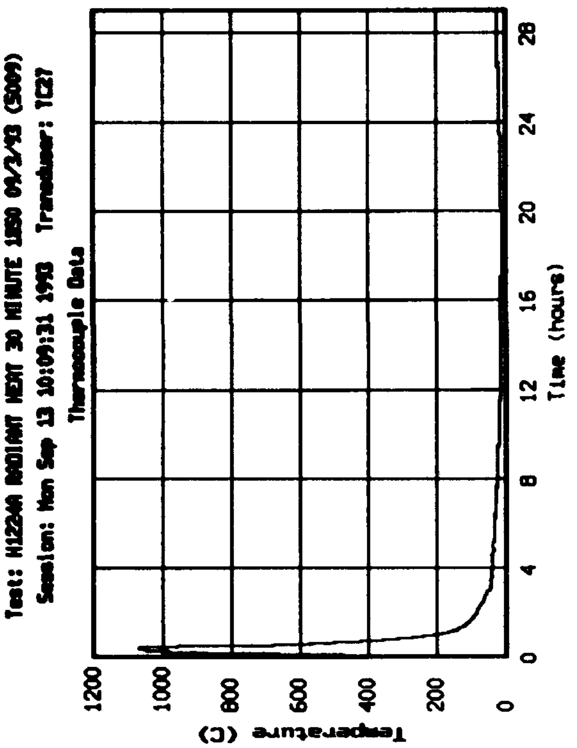
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:42 1993 Transducer: TC22
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

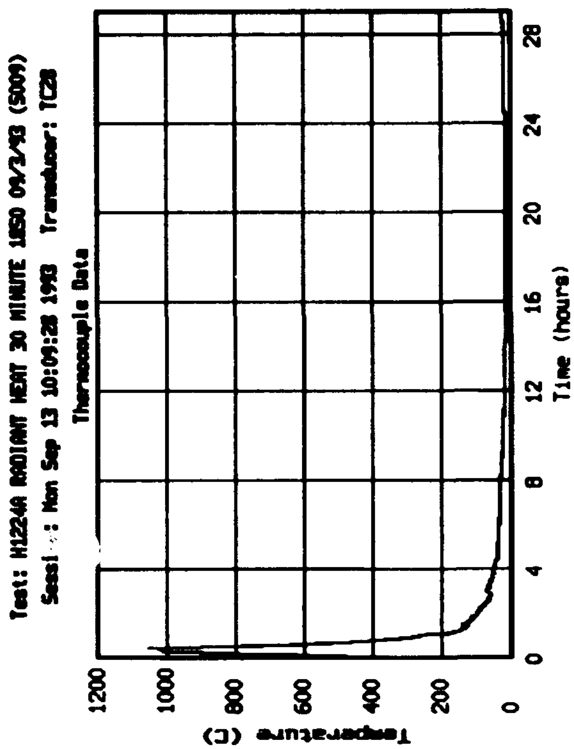


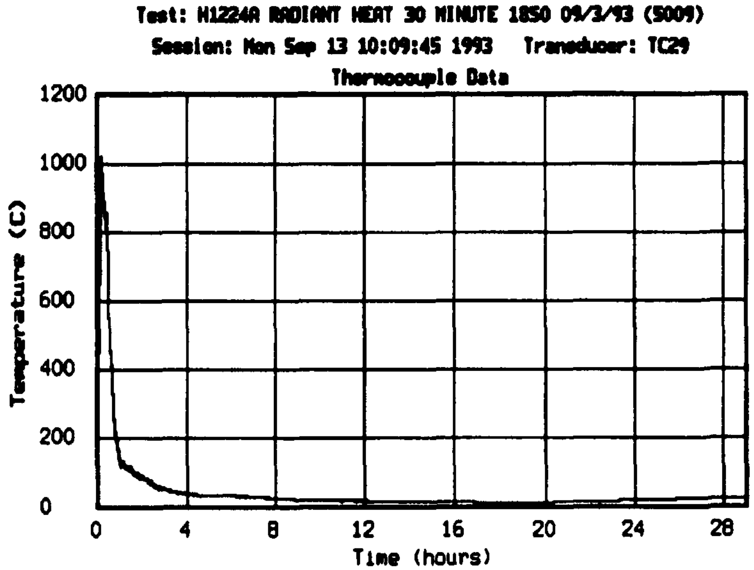
Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:08:57 1993 Transducer: TC24
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

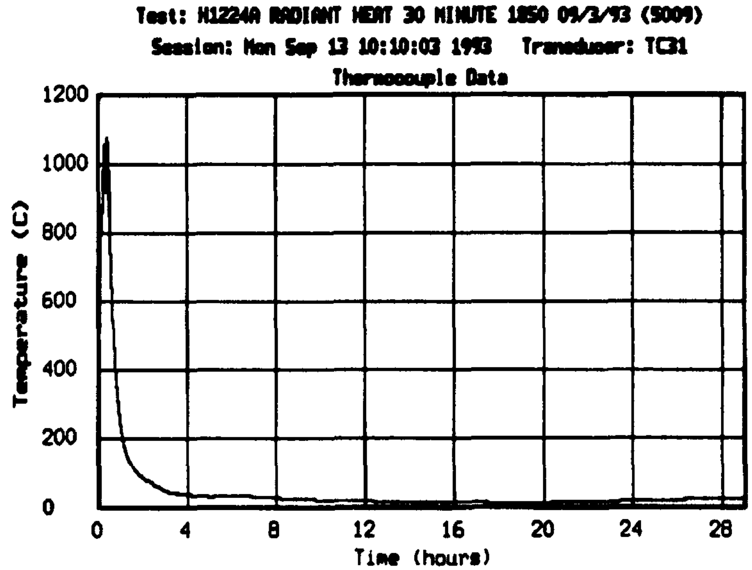

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:09:12 1993 Transducer: TC25
Thermocouple Data
Temperature (C)
Time (hours)
0
200
400
600
800
1000
1200
0
4
8
12
16
20
24
28

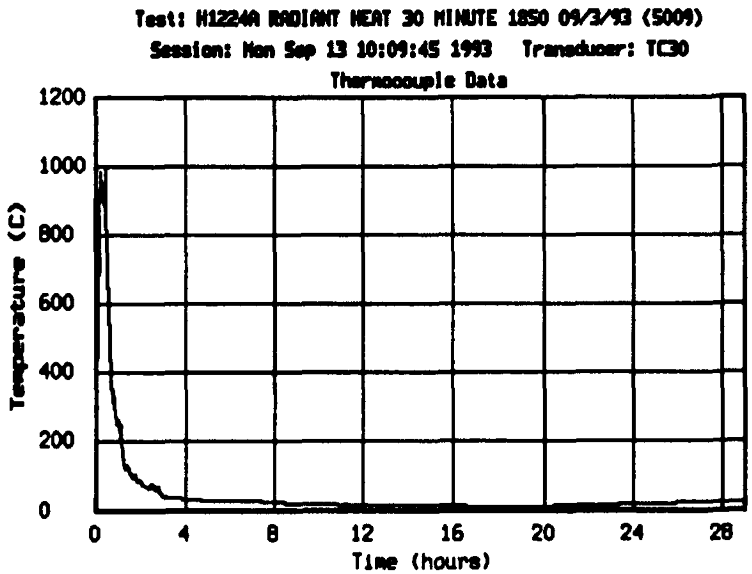

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:09:10 1993 Transducer: TC26
Thermocouple Data
Temperature (C)
Time (hours)
0
200
400
600
800
1000
1200
0
4
8
12
16
20
24
28

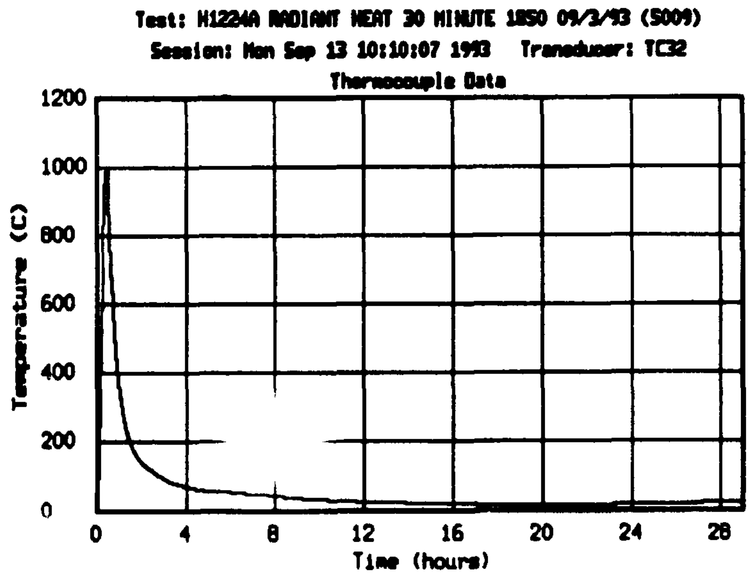

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:09:31 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
Time (hours)
0
200
400
600
800
1000
1200
0
4
8
12
16
20
24
28

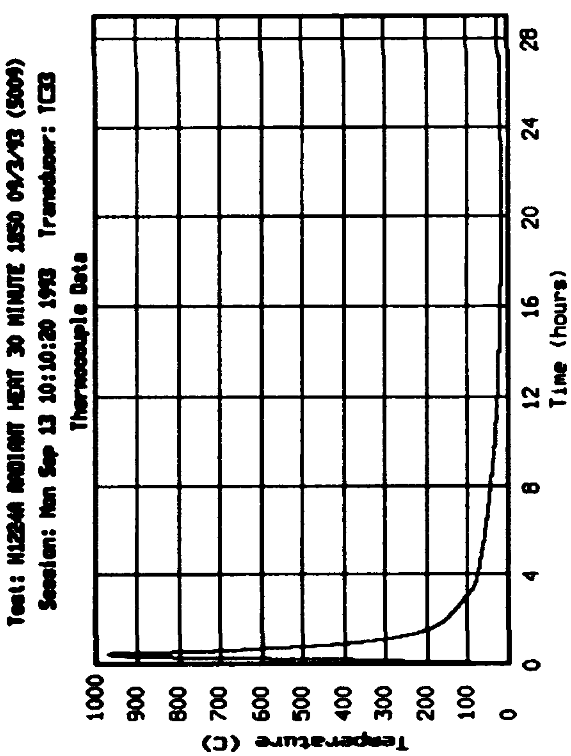

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:09:28 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
Time (hours)
0
200
400
600
800
1000
1200
0
4
8
12
16
20
24
28

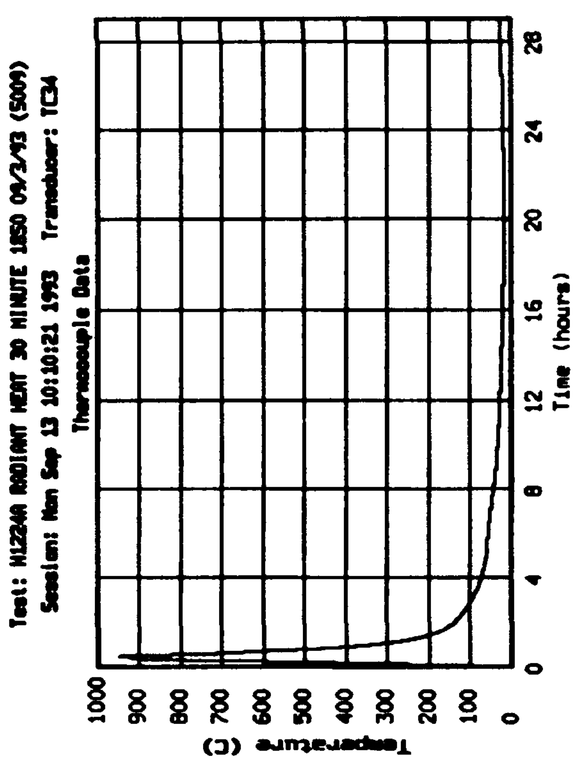

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:09:45 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
Time (hours)

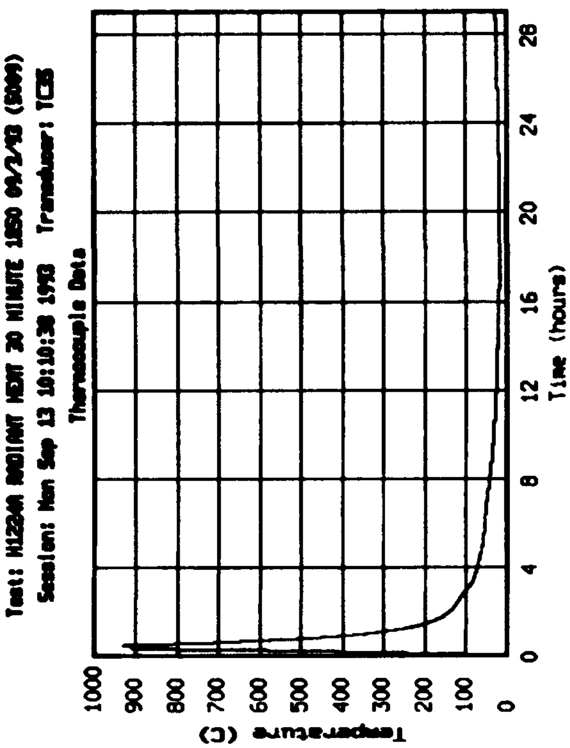

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:10:03 1993 Transducer: TC31
Thermocouple Data
Temperature (C)
Time (hours)

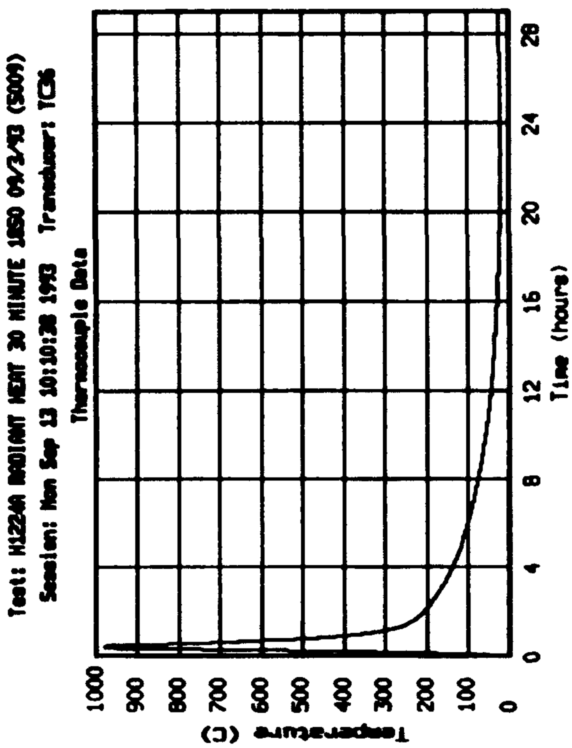

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:09:45 1993 Transducer: TC30
Thermocouple Data
Temperature (C)
Time (hours)

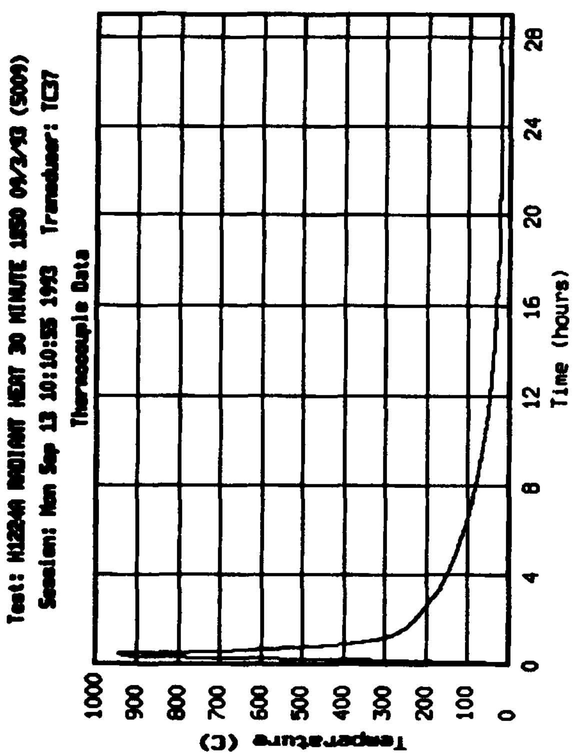

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:10:07 1993 Transducer: TC32
Thermocouple Data
Temperature (C)
Time (hours)

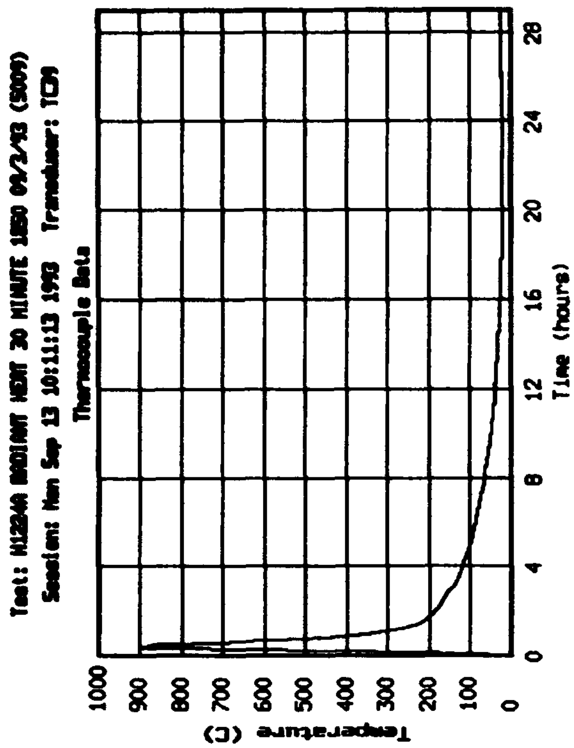

Test: M1224A RADIANT HEAT 30 MINUTE 1050 09/2/93 (5009)
Session: Mon Sep 13 10:10:20 1993 Transducer: TC33
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

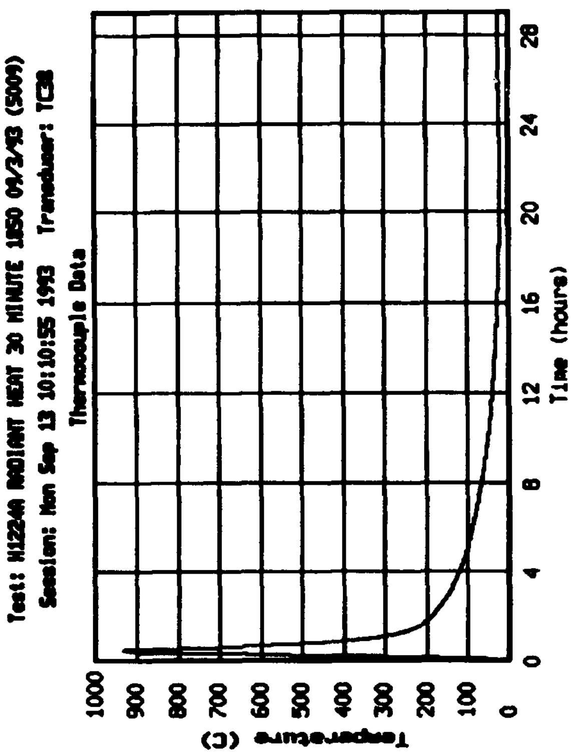

Test: M1224A RADIANT HEAT 30 MINUTE 1050 09/2/93 (5009)
Session: Mon Sep 13 10:10:21 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

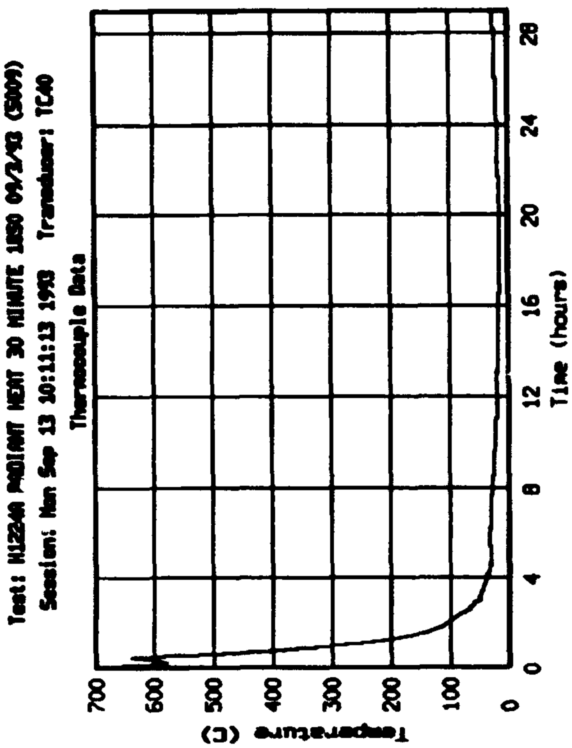

Test: M1224A RADIANT HEAT 30 MINUTE 1050 09/2/93 (5009)
Session: Mon Sep 13 10:10:38 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

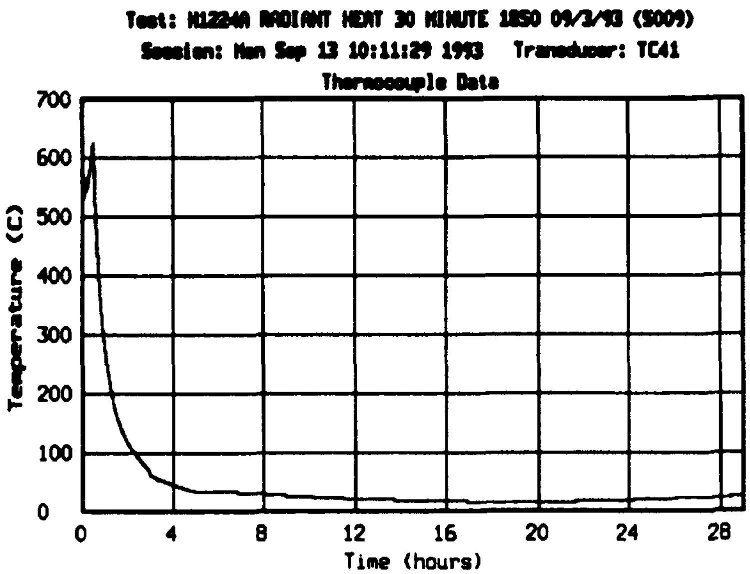

Test: M1224A RADIANT HEAT 30 MINUTE 1050 09/2/93 (5009)
Session: Mon Sep 13 10:10:28 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

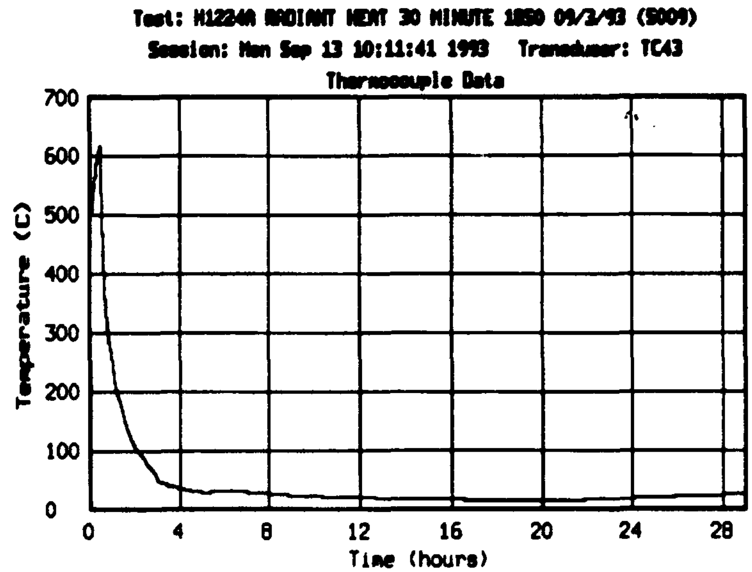

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:10:55 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
Time (hours)
0
4
8
12
16
20
24
28

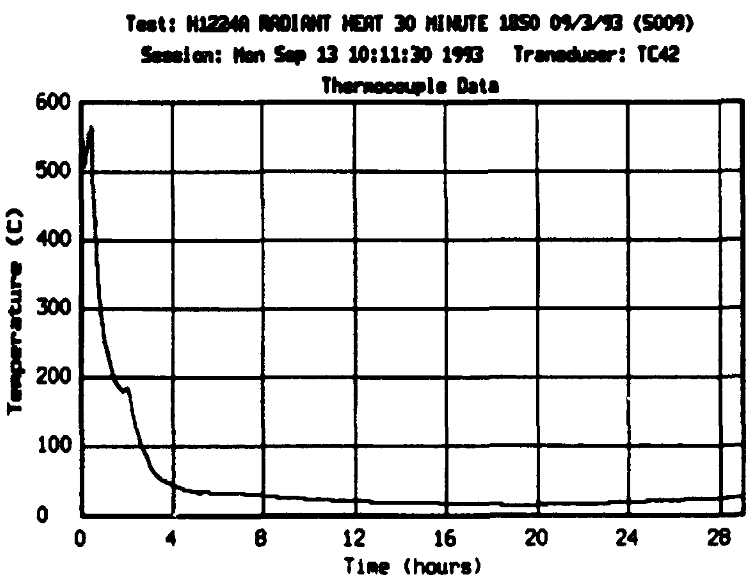

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:13 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
Time (hours)
0
4
8
12
16
20
24
28

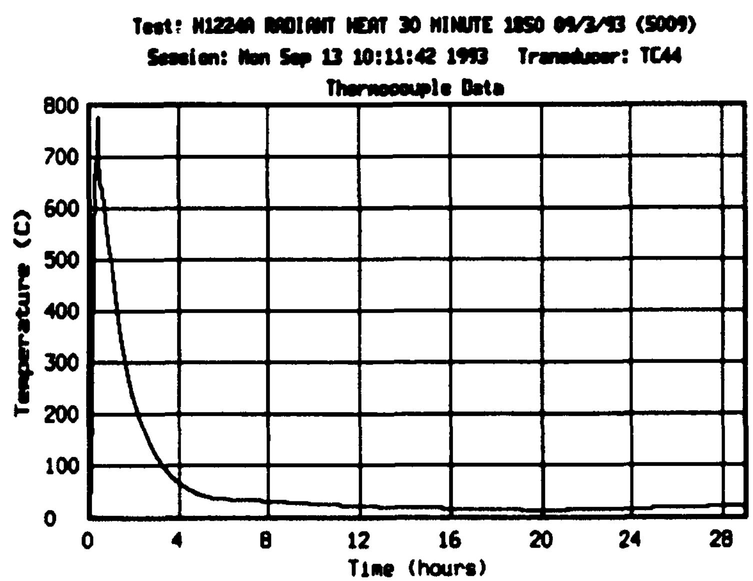

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:10:55 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
Time (hours)
0
4
8
12
16
20
24
28

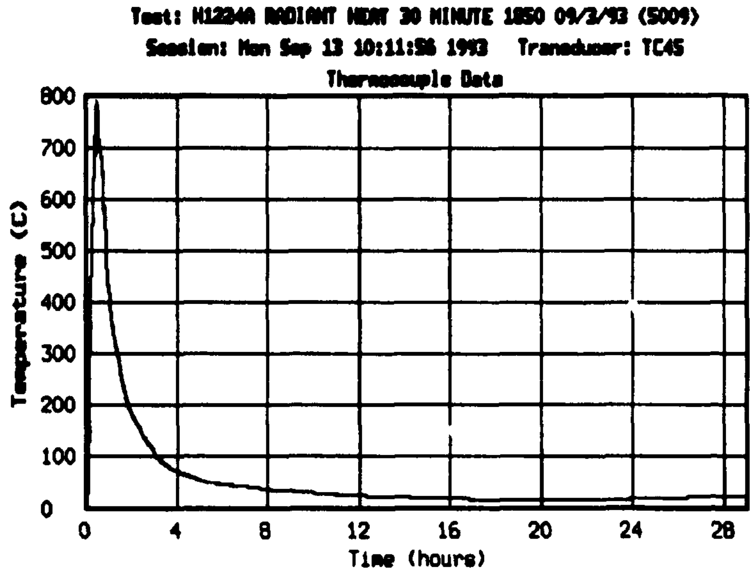

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:13 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
700
600
500
400
300
200
100
0
Time (hours)
0
4
8
12
16
20
24
28

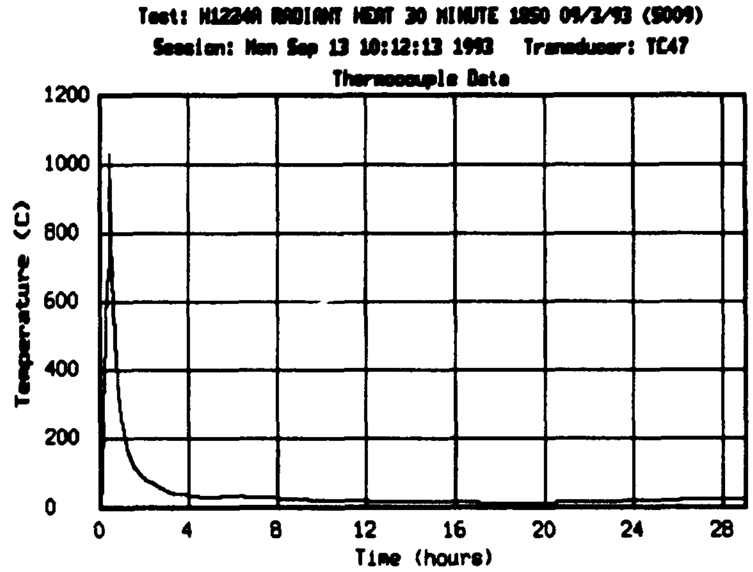

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:29 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)

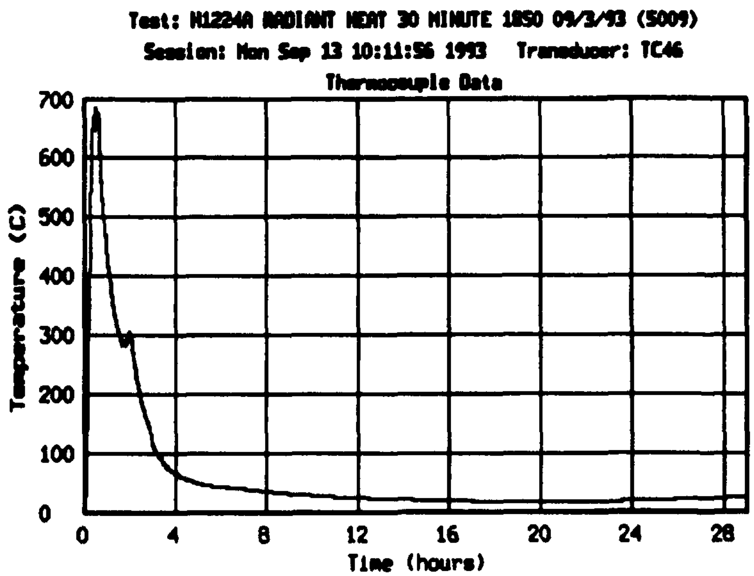

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:41 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
Time (hours)

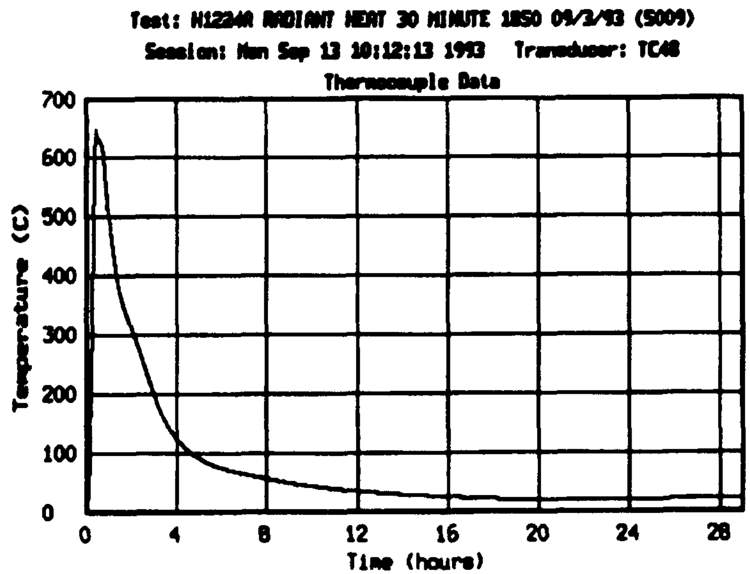

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:30 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)

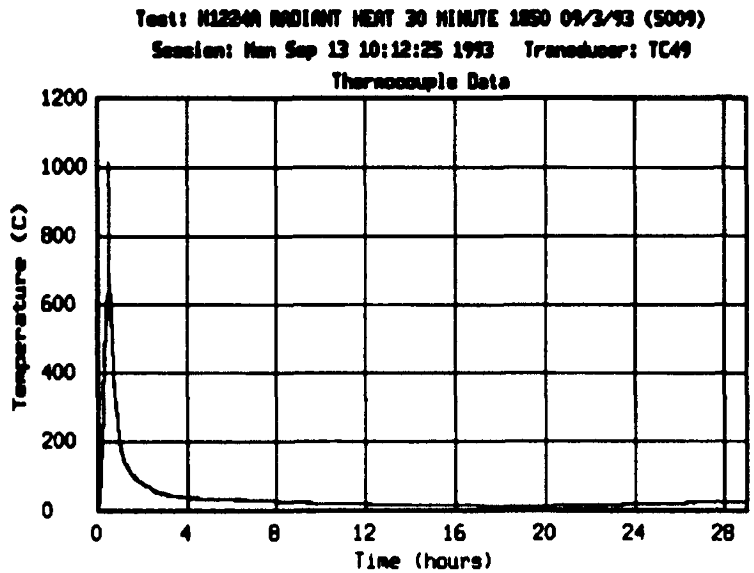

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:42 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
Time (hours)

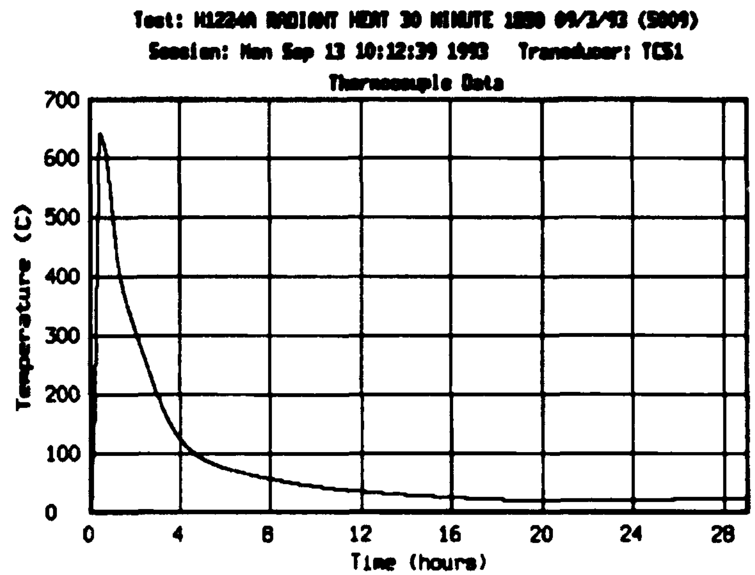

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:56 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
Time (hours)

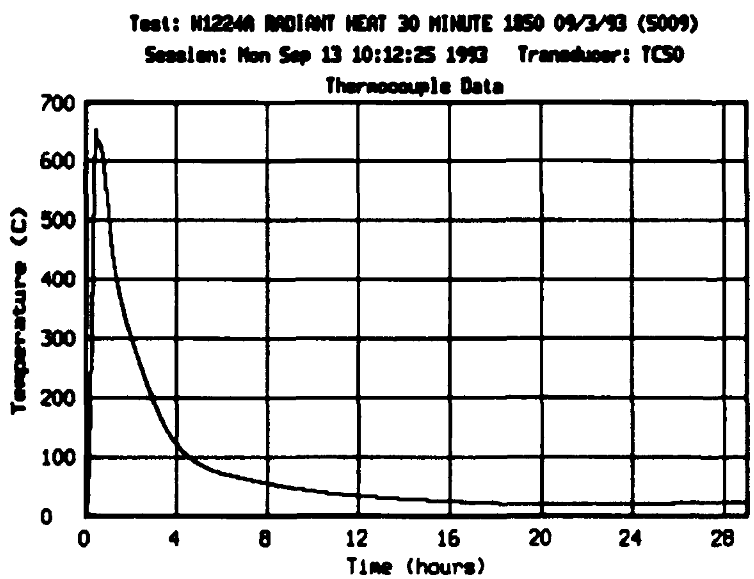

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:13 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
Time (hours)

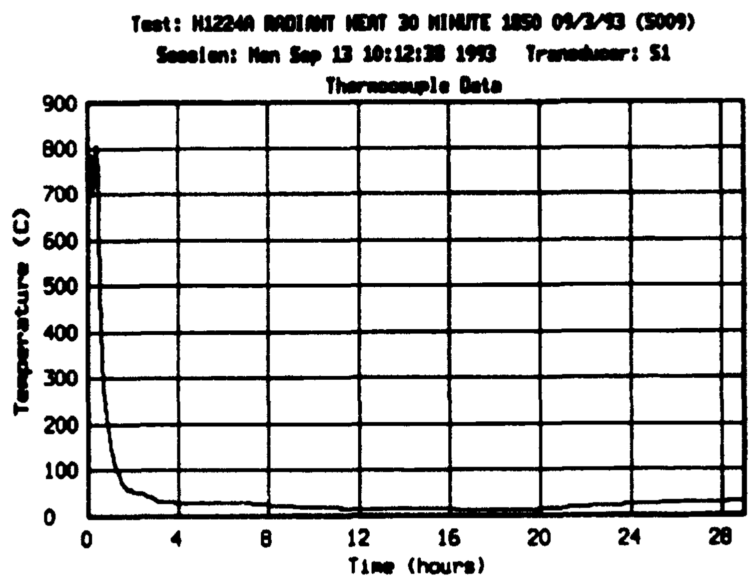

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:11:56 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
Time (hours)

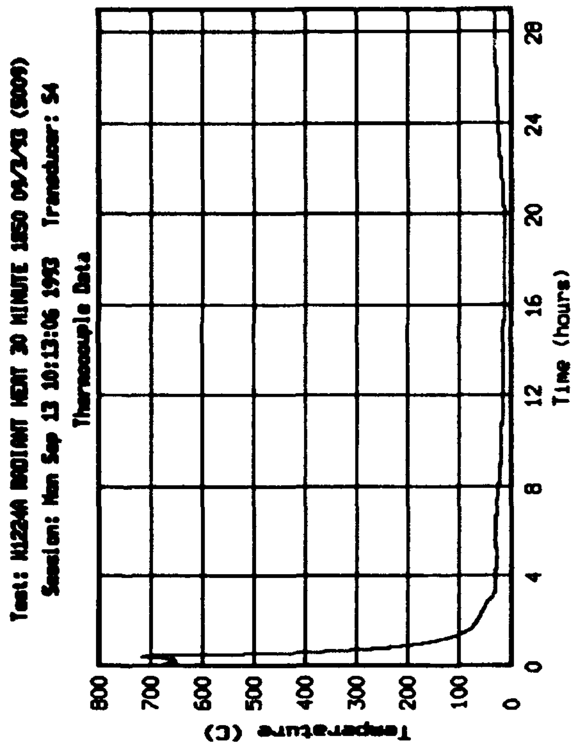

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:13 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
Time (hours)

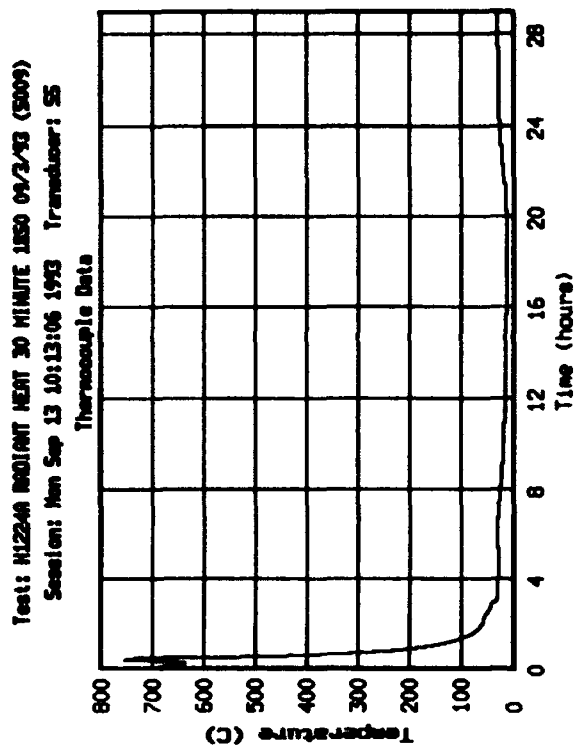

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:25 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
Time (hours)
0
4
8
12
16
20
24
28

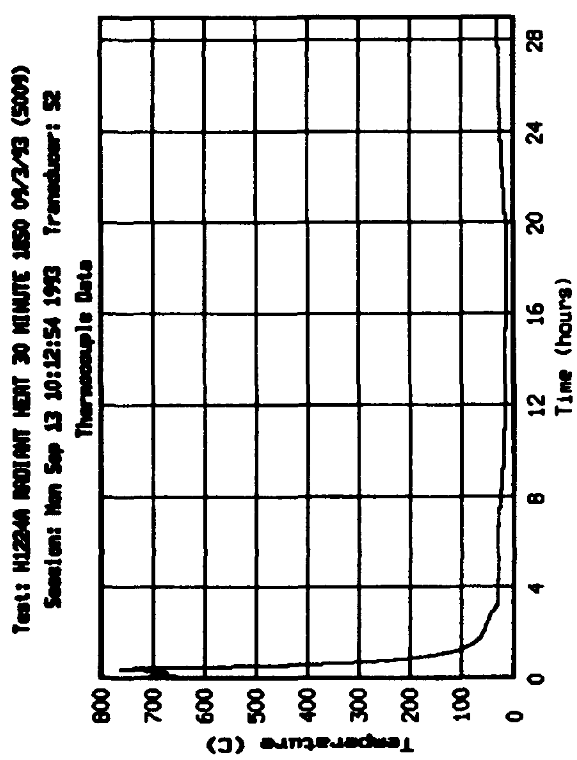

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:39 1993 Transducer: TC51
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0
4
8
12
16
20
24
28

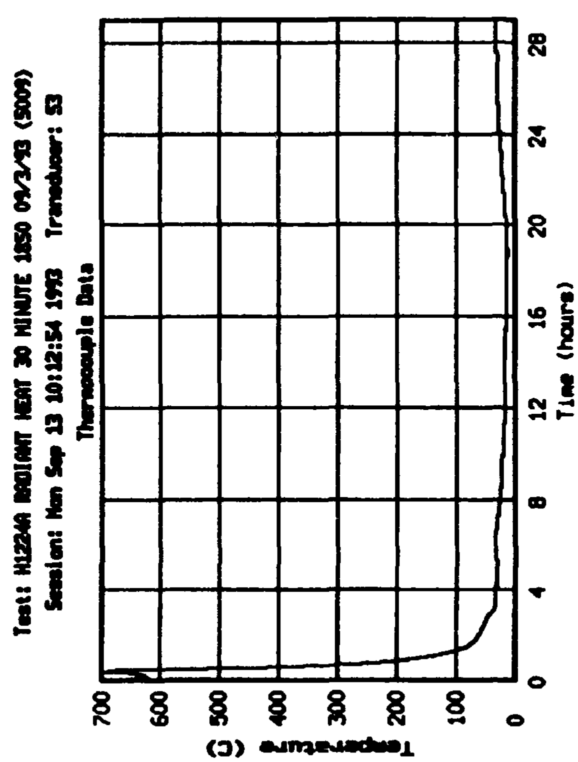

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:25 1993 Transducer: TC50
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0
4
8
12
16
20
24
28

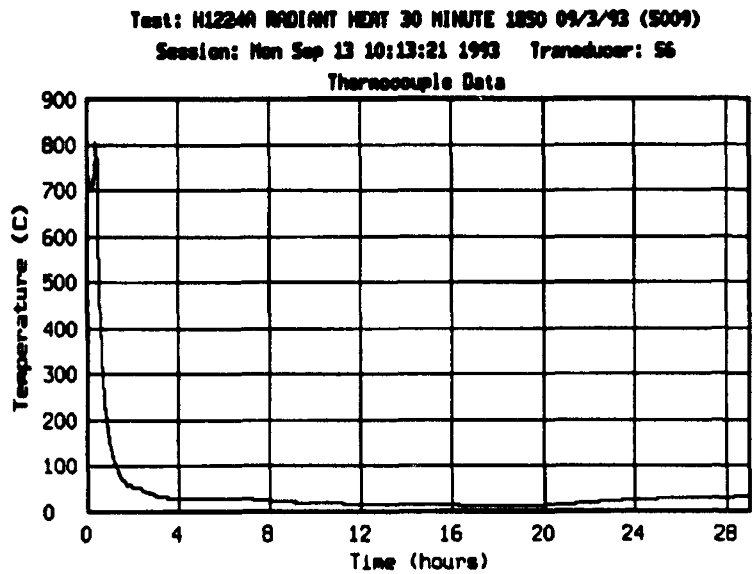

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:38 1993 Transducer: S1
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
Time (hours)
0
4
8
12
16
20
24
28

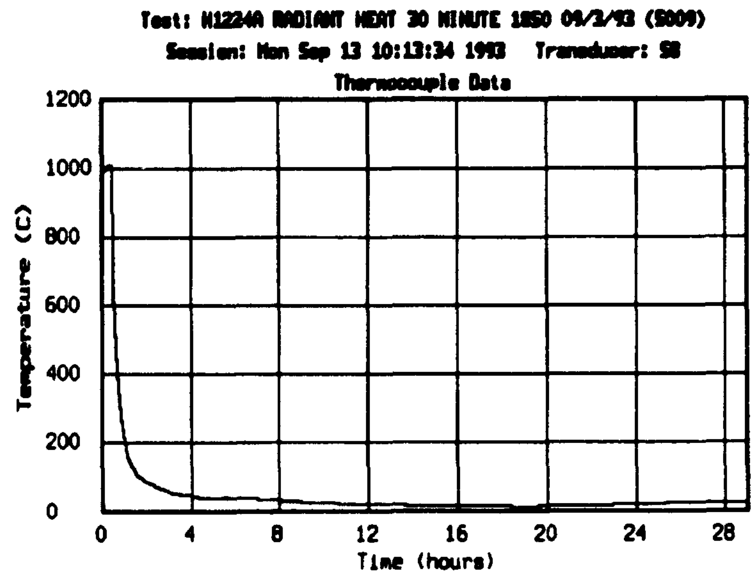

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:13:06 1993 Transducer: S4
Thermocouple Data
Temperature (C)
Time (hours)

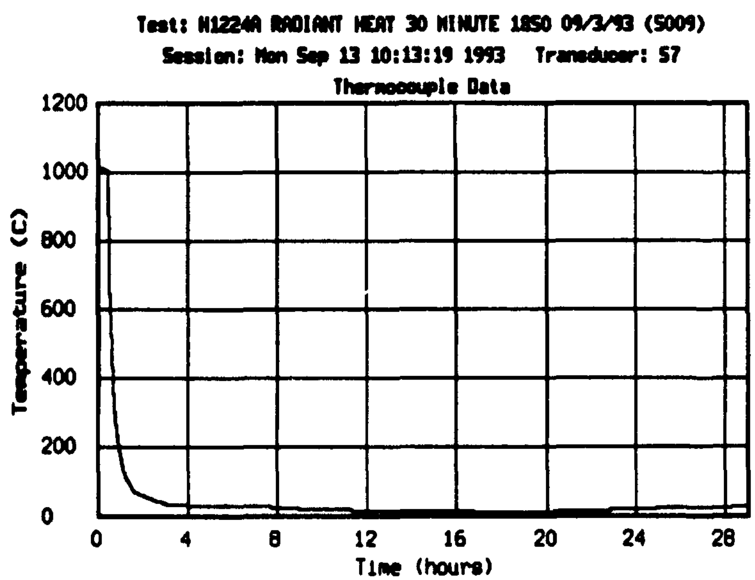

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:13:06 1993 Transducer: S5
Thermocouple Data
Temperature (C)
Time (hours)

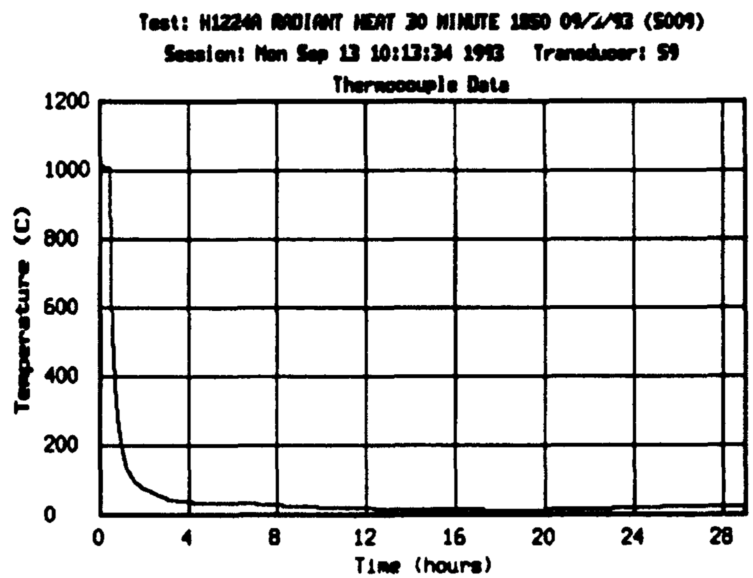

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:54 1993 Transducer: S2
Thermocouple Data
Temperature (C)
Time (hours)

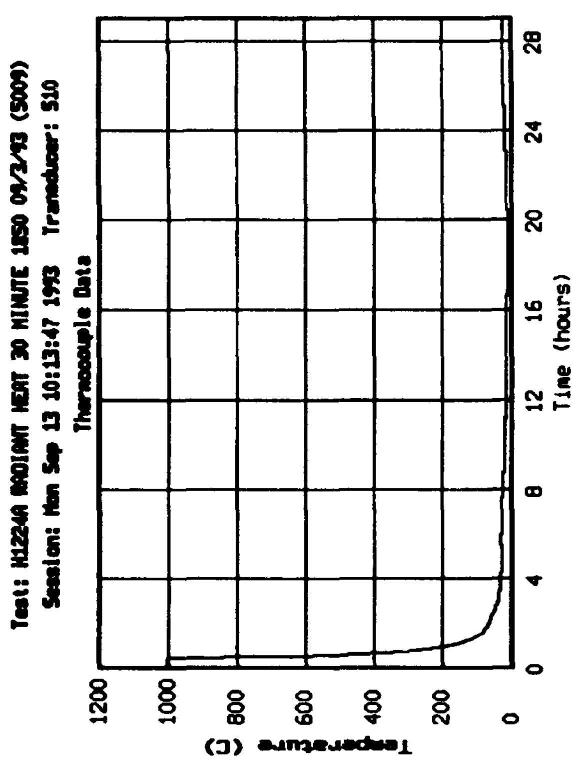

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:12:54 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)

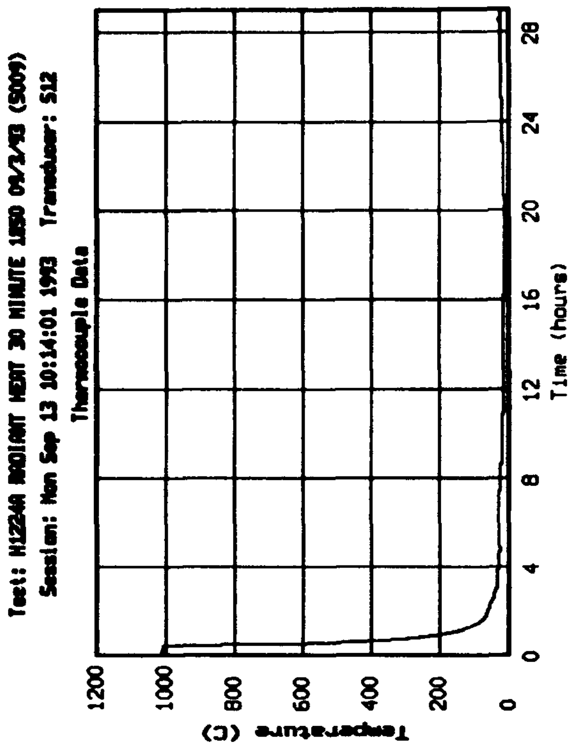

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:13:21 1993 Transducer: S6
Thermocouple Data
Temperature (C)
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

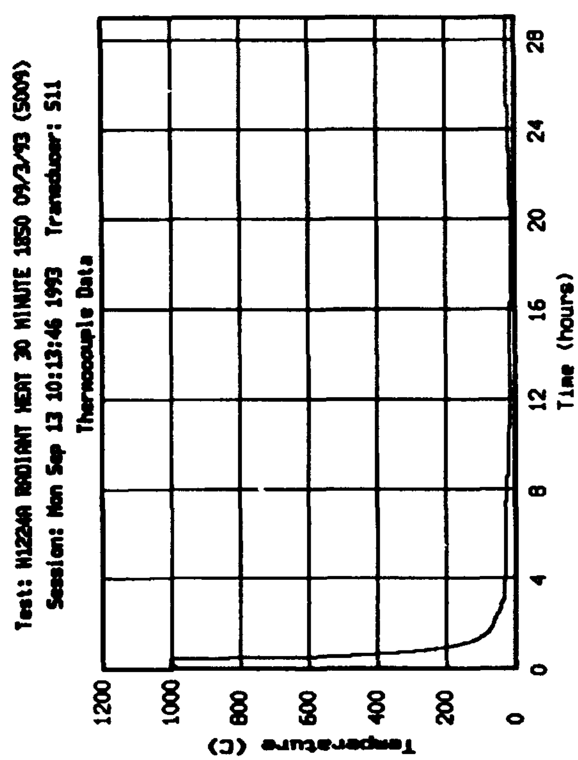

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:13:34 1993 Transducer: S8
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

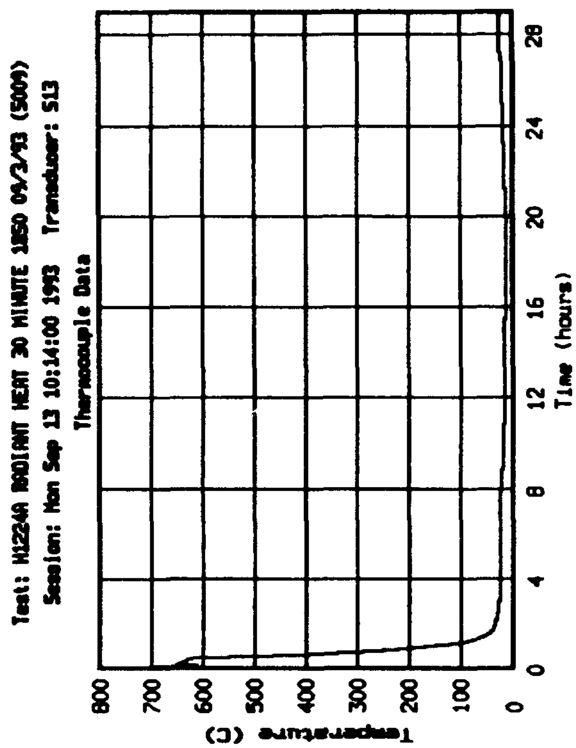

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:13:19 1993 Transducer: S7
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

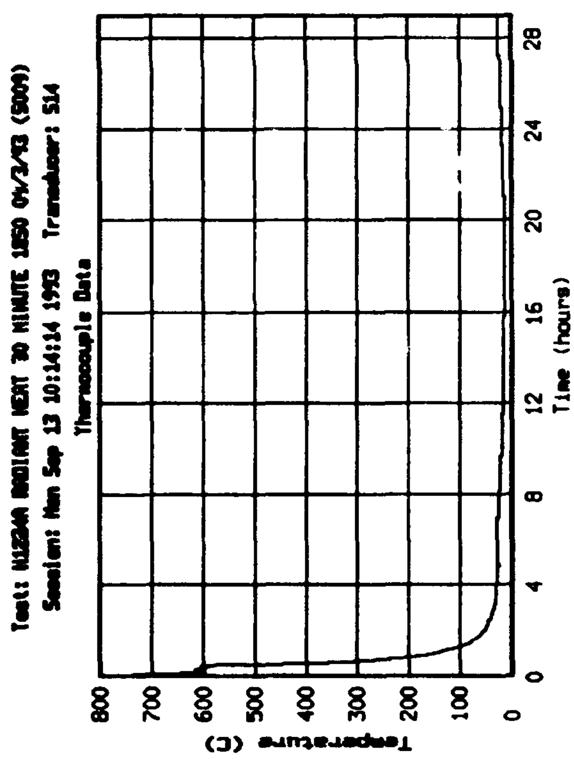

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:13:34 1993 Transducer: S9
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

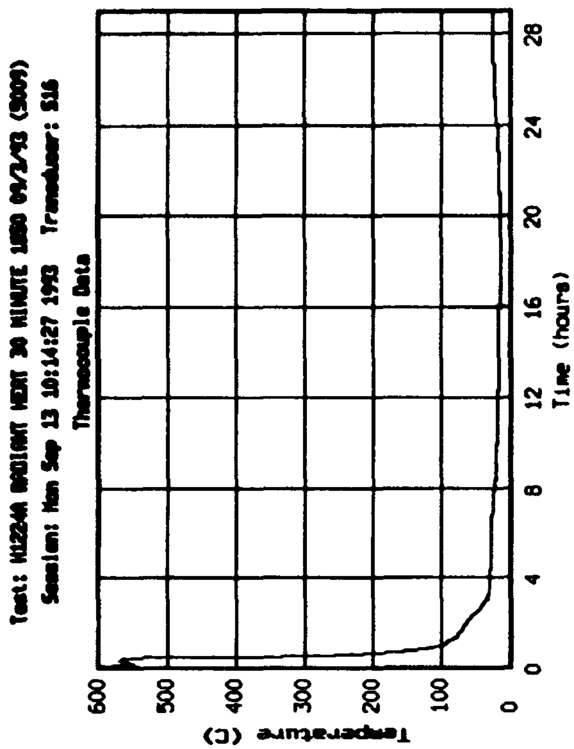

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:13:47 1993 Transducer: S10
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

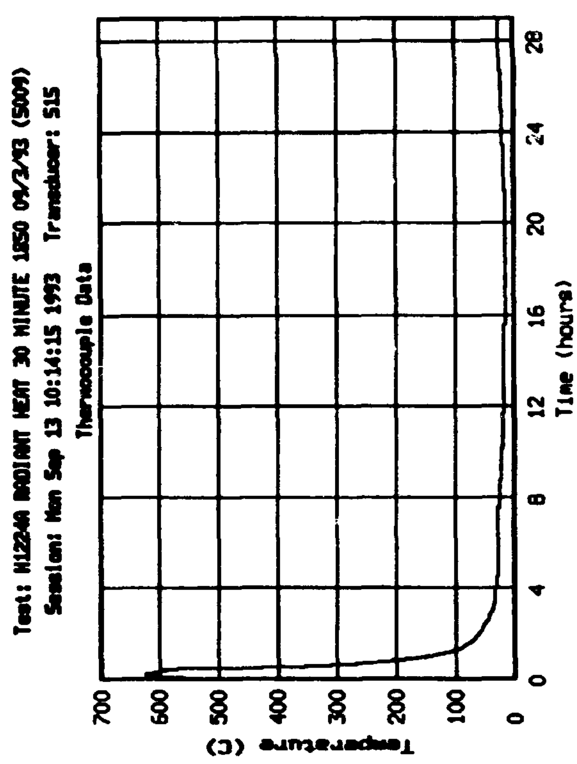

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:14:01 1993 Transducer: S12
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

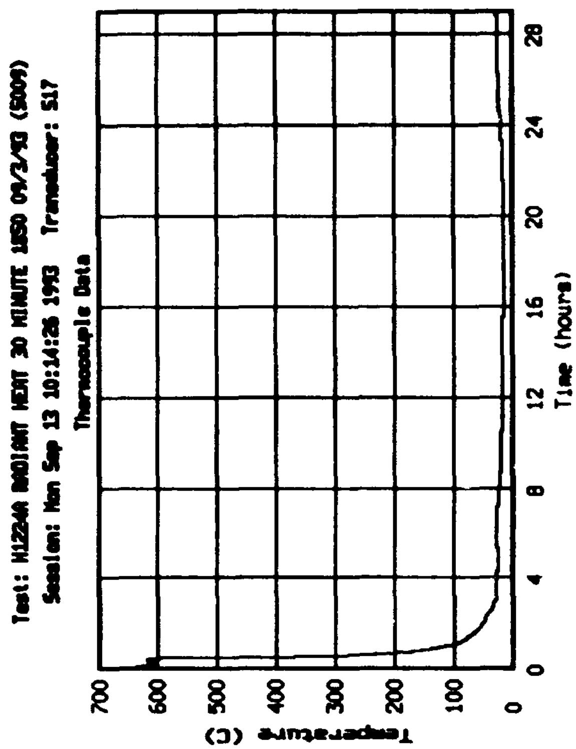

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:13:46 1993 Transducer: S11
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0
4
8
12
16
20
24
28
Time (hours)

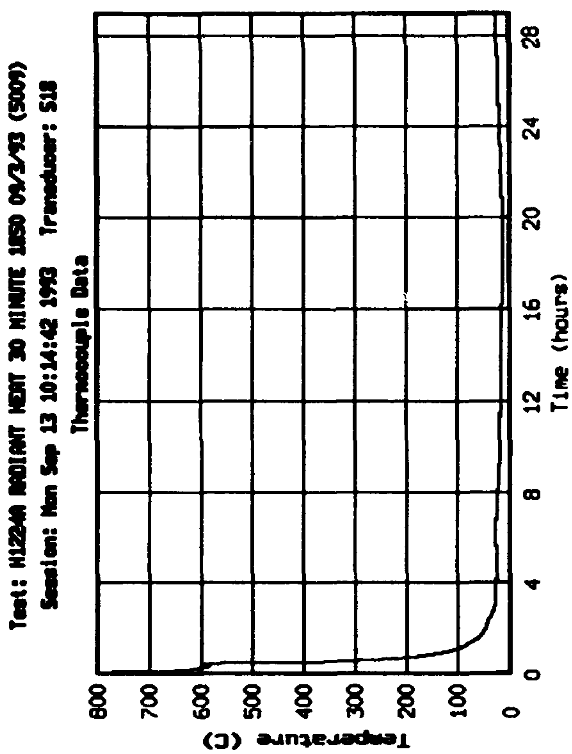

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:14:00 1993 Transducer: S13
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
28
Time (hours)

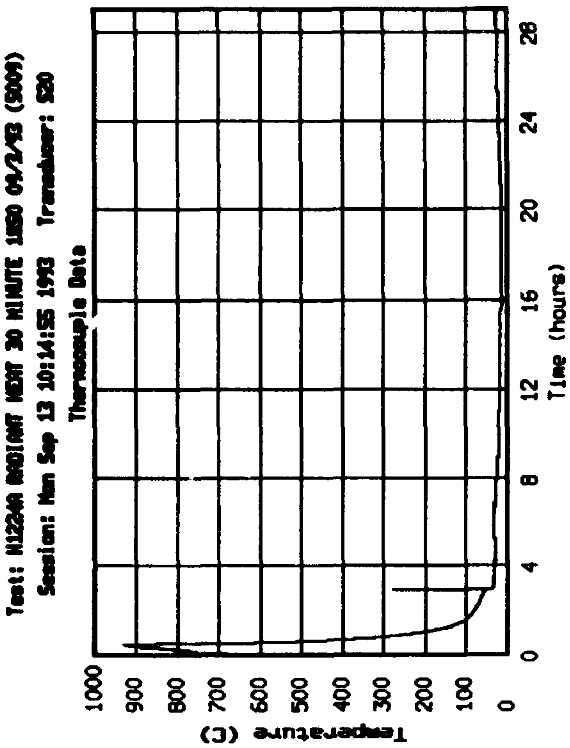

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (500F)
Session: Mon Sep 13 10:14:14 1993 Transducer: S14
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
Time (hours)
0
4
8
12
16
20
24
28

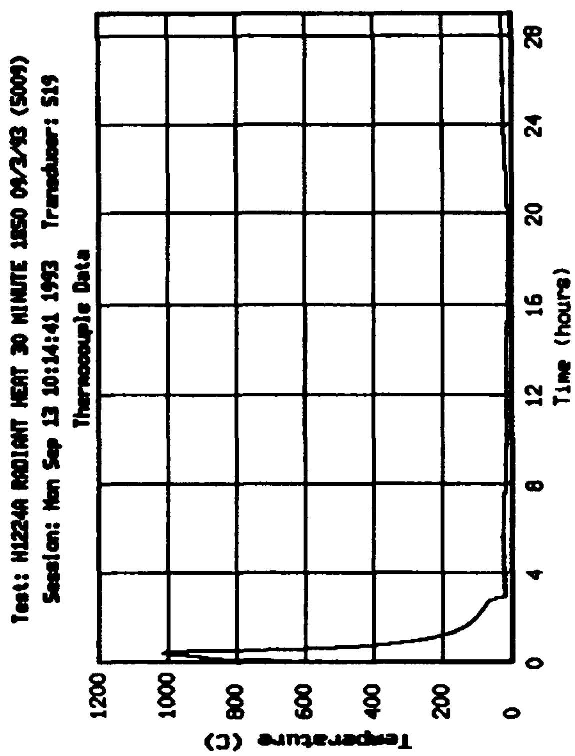

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (500F)
Session: Mon Sep 13 10:14:27 1993 Transducer: S16
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
Time (hours)
0
4
8
12
16
20
24
28

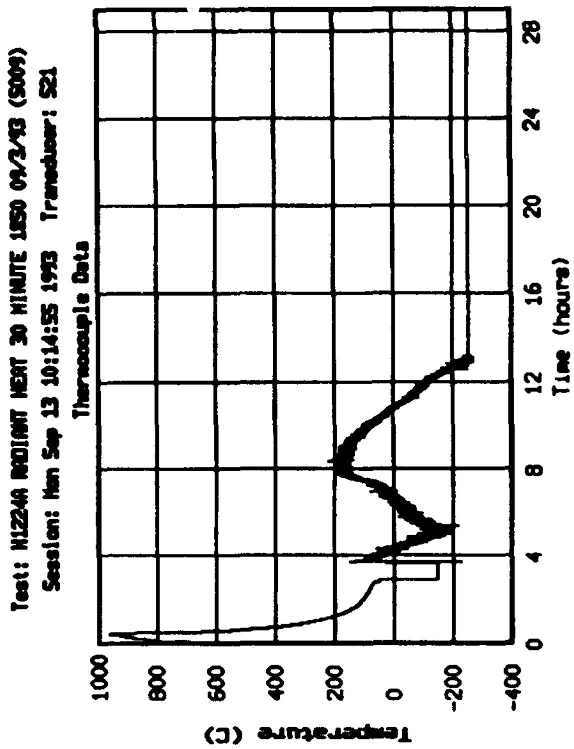

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (500F)
Session: Mon Sep 13 10:14:15 1993 Transducer: S15
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0
4
8
12
16
20
24
28

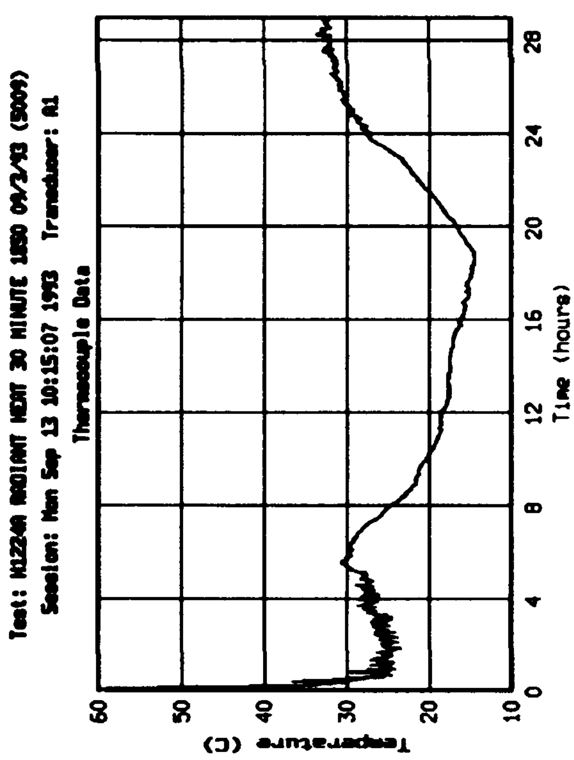

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (500F)
Session: Mon Sep 13 10:14:28 1993 Transducer: S17
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0
4
8
12
16
20
24
28

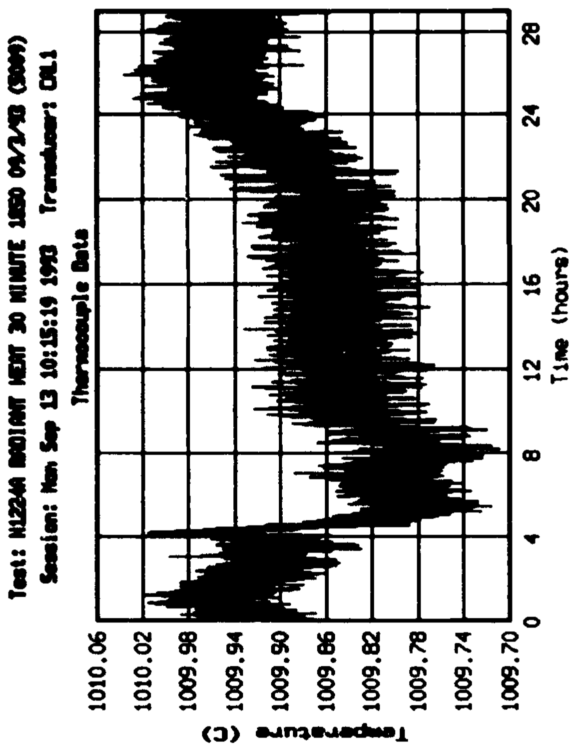

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:14:42 1993 Transducer: S18
Thermocouple Data
Temperature (C)
Time (hours)

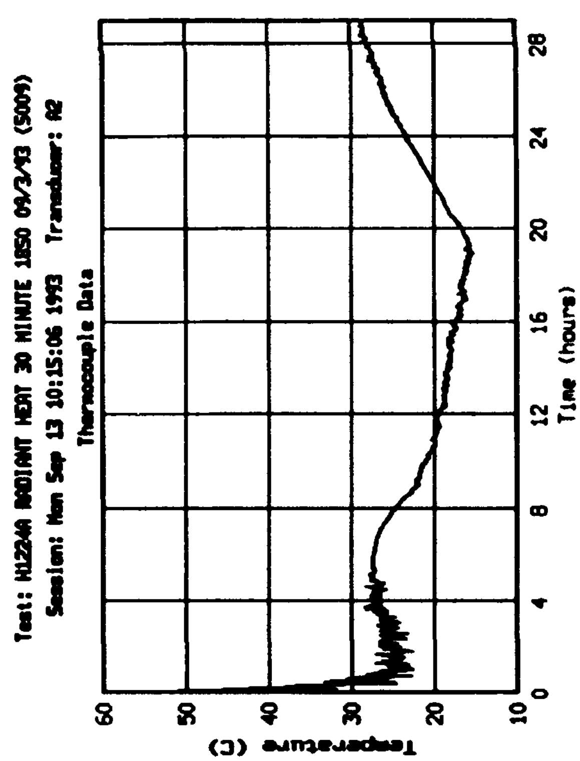

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:14:55 1993 Transducer: S20
Thermocouple Data
Temperature (C)
Time (hours)

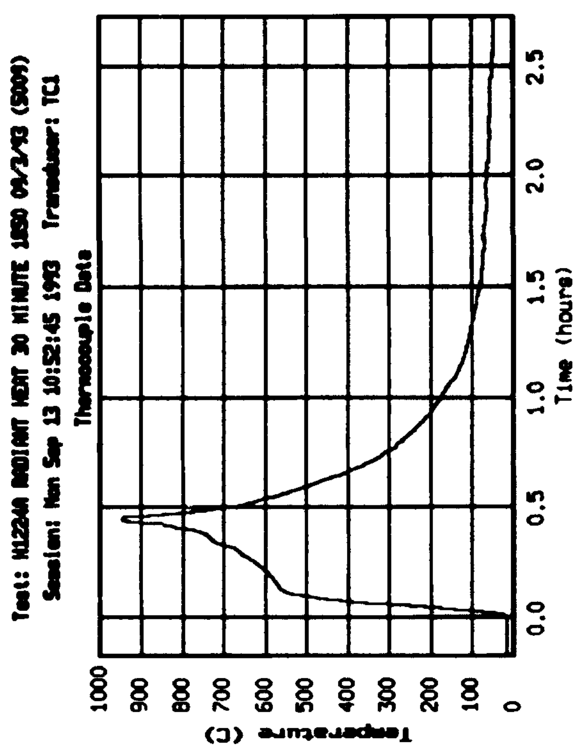

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:14:41 1993 Transducer: S19
Thermocouple Data
Temperature (C)
Time (hours)

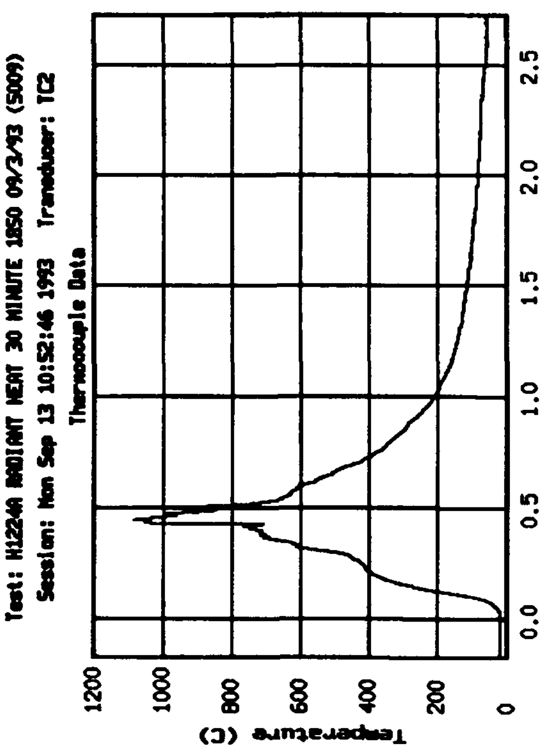

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:14:55 1993 Transducer: S21
Thermocouple Data
Temperature (C)
Time (hours)

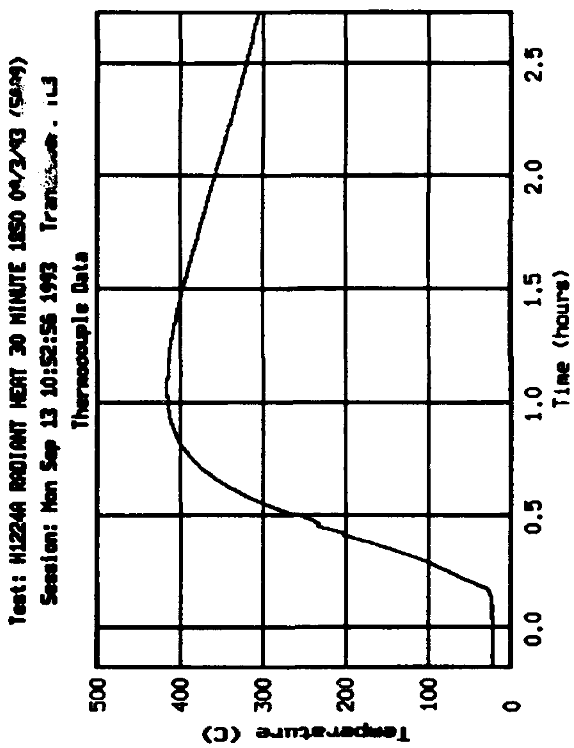

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:15:07 1993   Transducer: A1
Thermocouple Data
Temperature (C)
Time (hours)

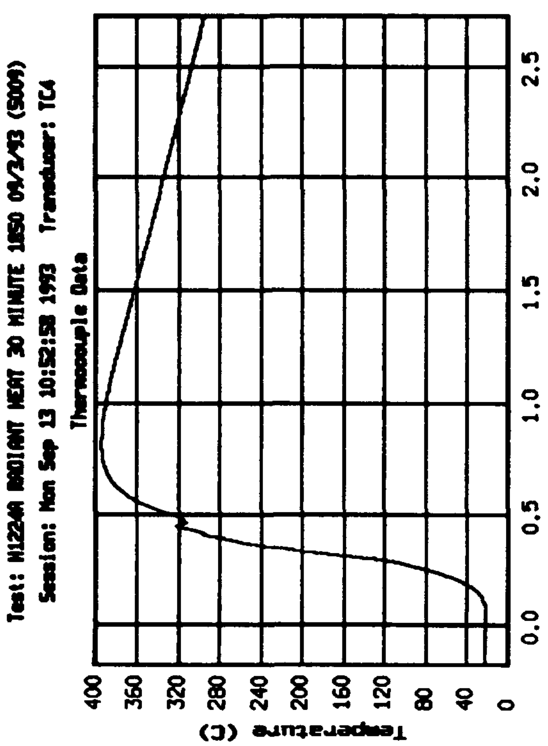

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:15:19 1993   Transducer: CAL1
Thermocouple Data
Temperature (C)
Time (hours)

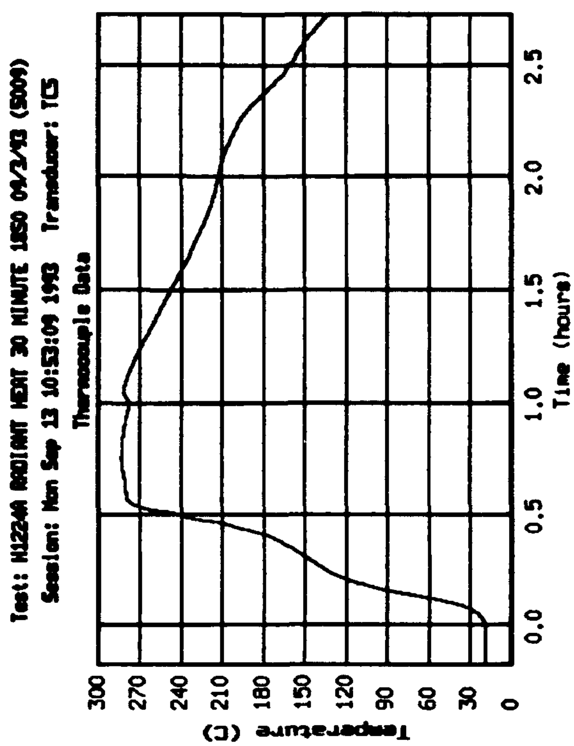

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:15:06 1993   Transducer: A2
Thermocouple Data
Temperature (C)
Time (hours)

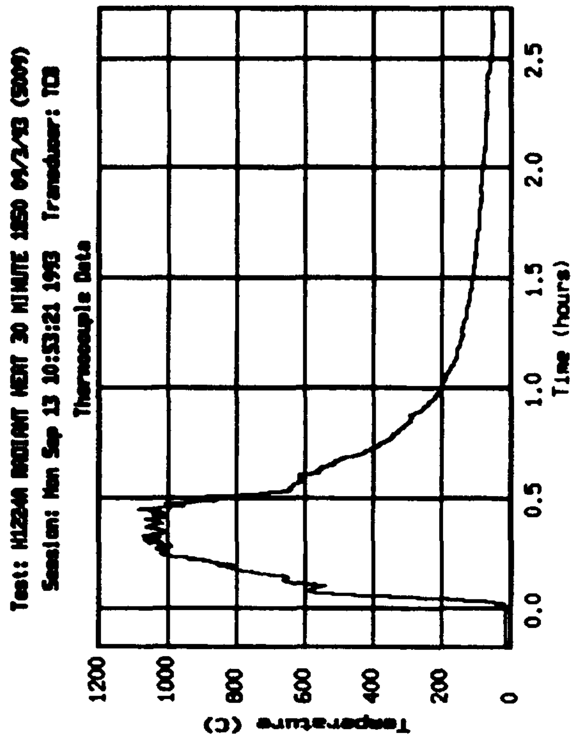

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:52:45 1993   Transducer: TC1
Thermocouple Data
Temperature (C)
Time (hours)

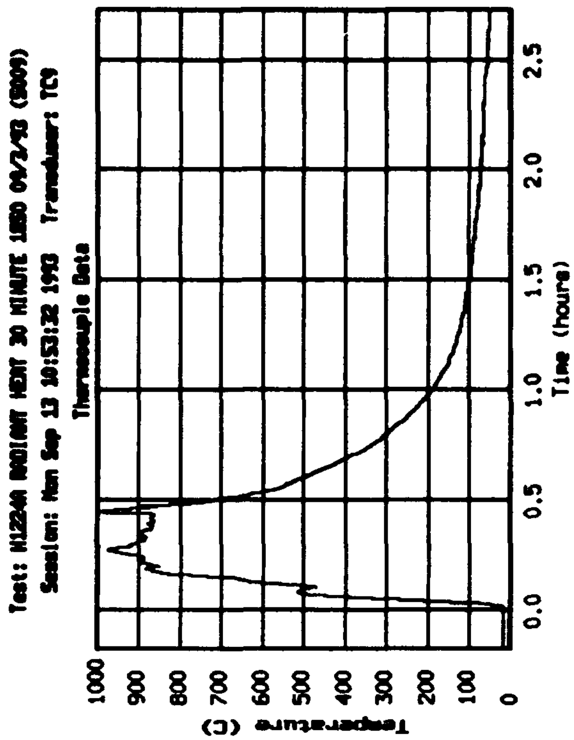

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:52:46 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
Time (hours)

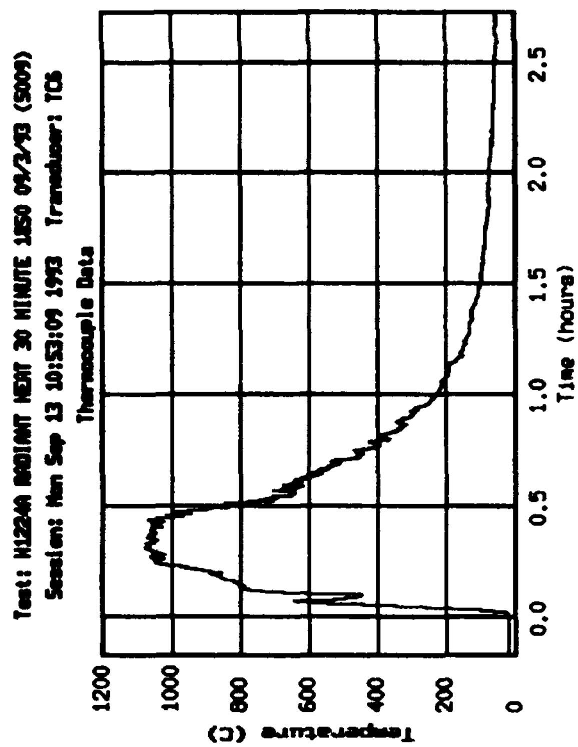

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93
Session: Mon Sep 13 10:52:56 1993
Thermocouple Data
Temperature (C)
Time (hours)

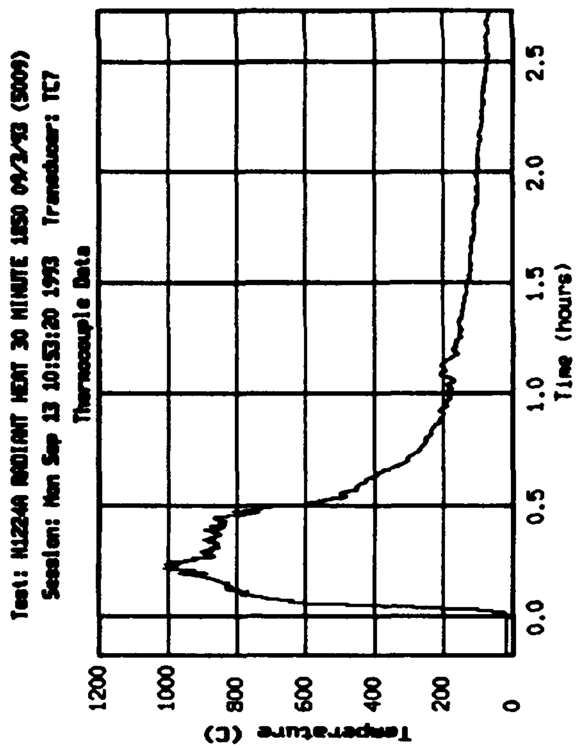

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:52:58 1993 Transducer: TC4
Thermocouple Data
Temperature (C)
Time (hours)

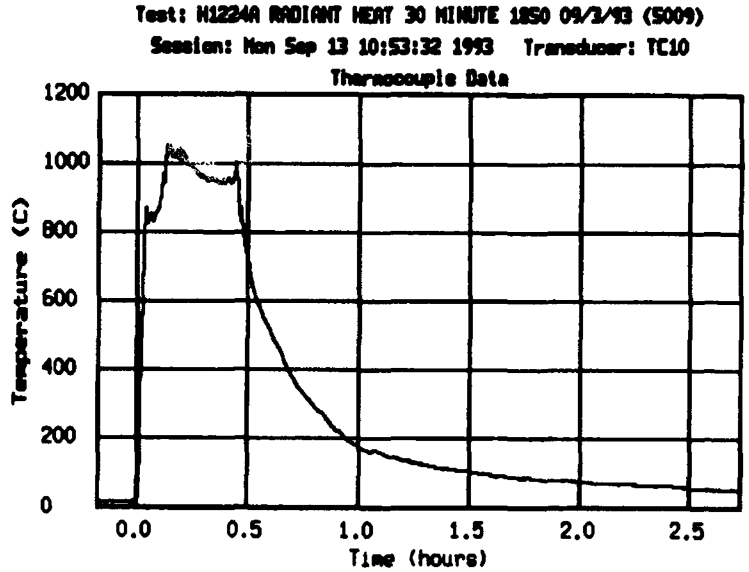

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:53:09 1993 Transducer: TC5
Thermocouple Data
Temperature (C)
Time (hours)

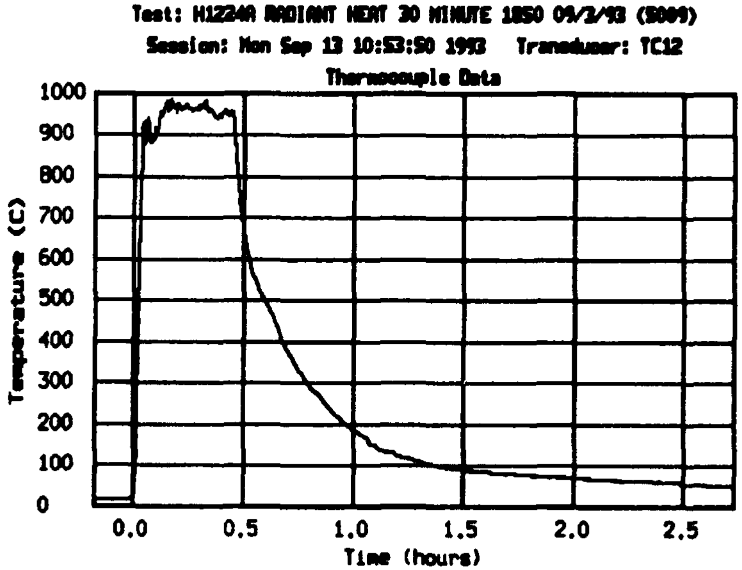

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:53:21 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

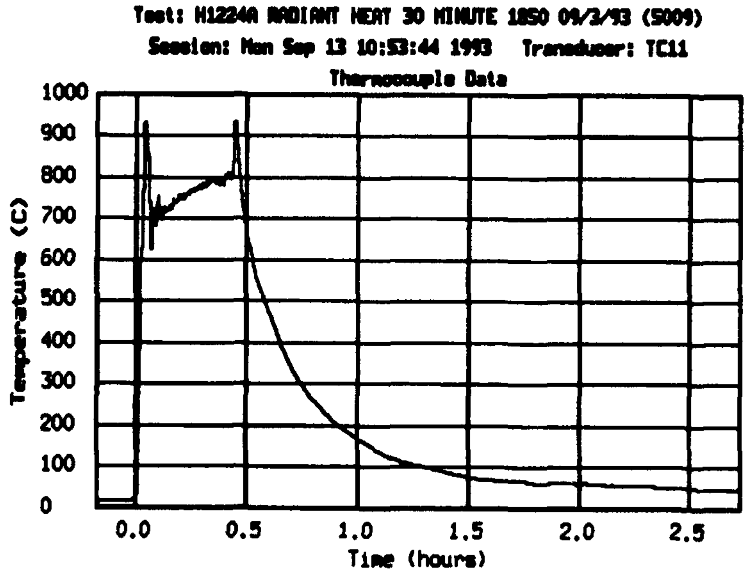

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:53:32 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

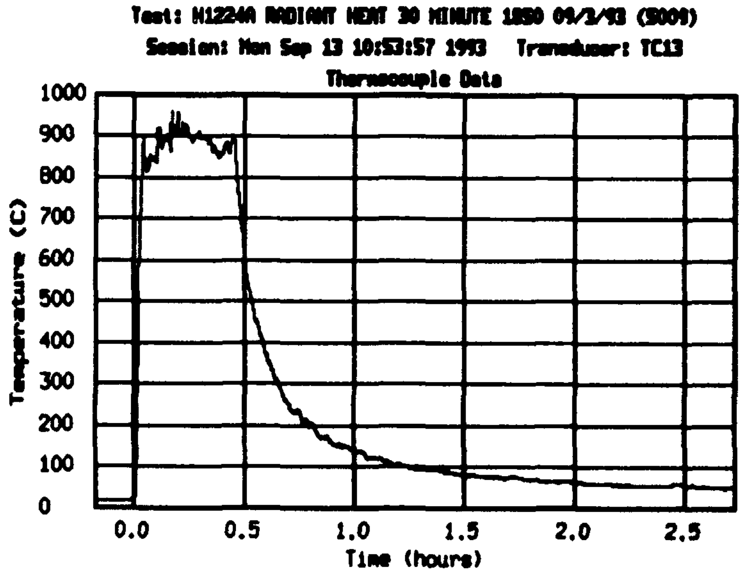

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:53:09 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

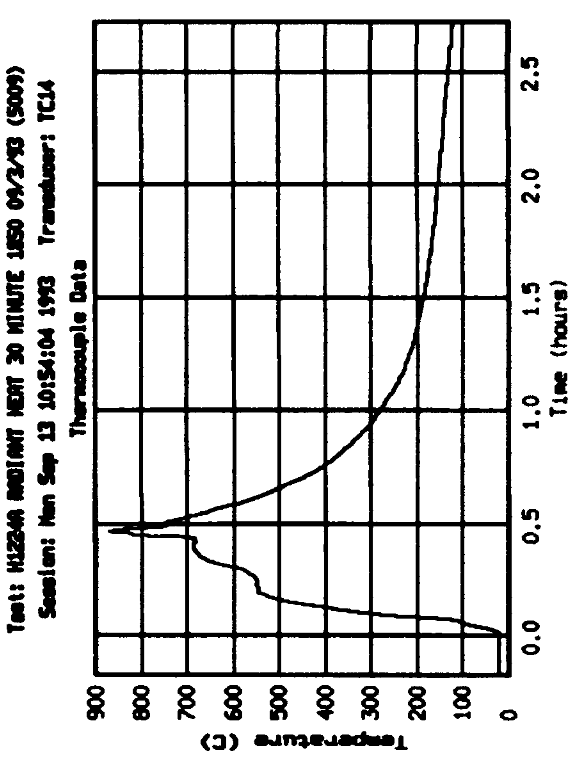

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:53:20 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

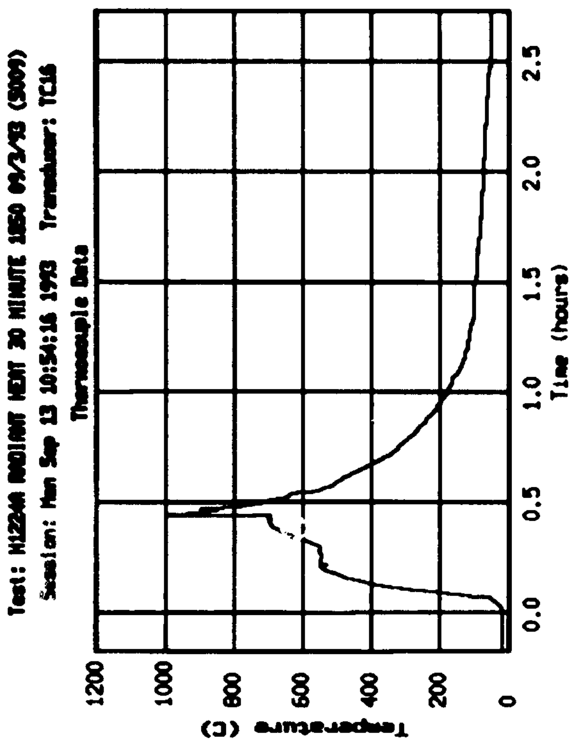

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:53:32 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
Time (hours)

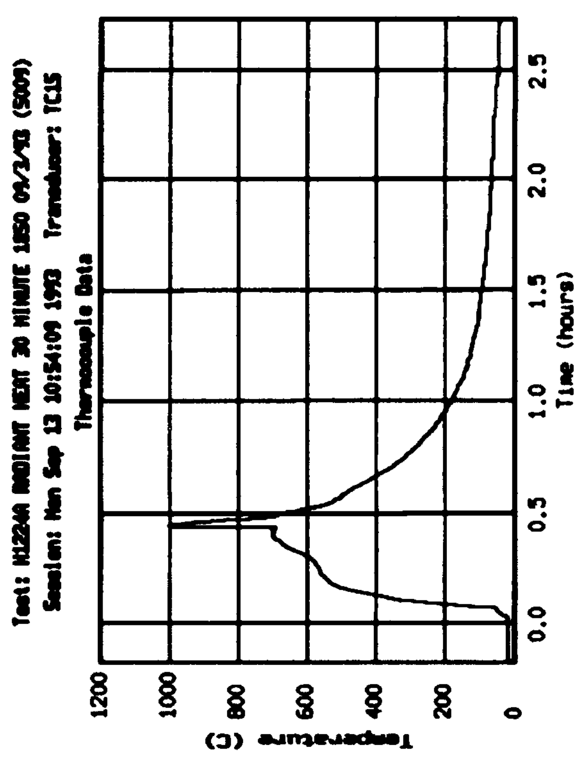

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:53:50 1993 Transducer: TC12
Thermocouple Data
Temperature (C)
Time (hours)

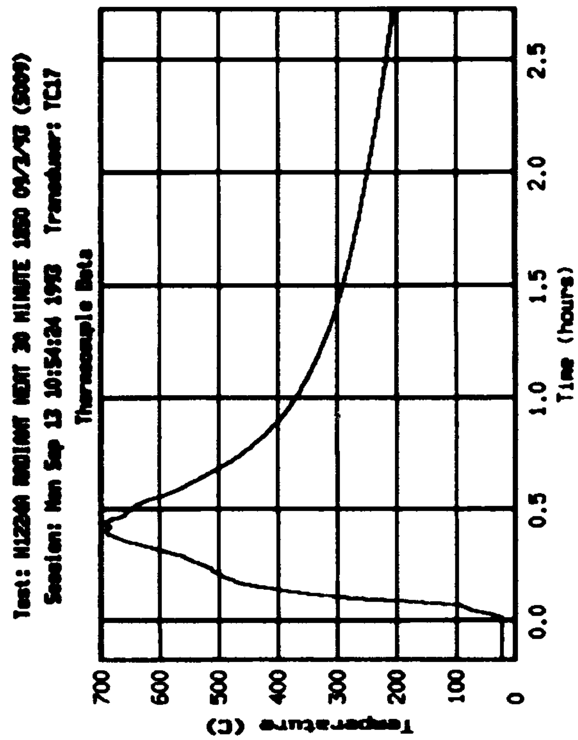

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:53:44 1993 Transducer: TC11
Thermocouple Data
Temperature (C)
Time (hours)

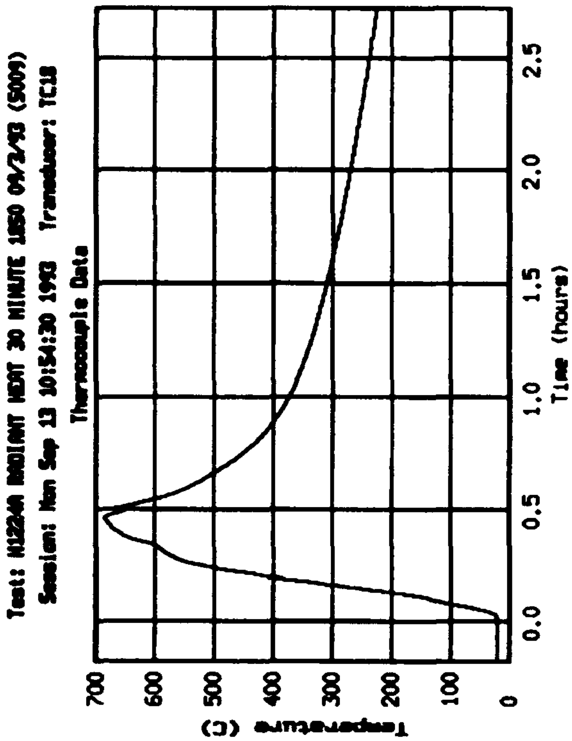

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:53:57 1993 Transducer: TC13
Thermocouple Data
Temperature (C)
Time (hours)

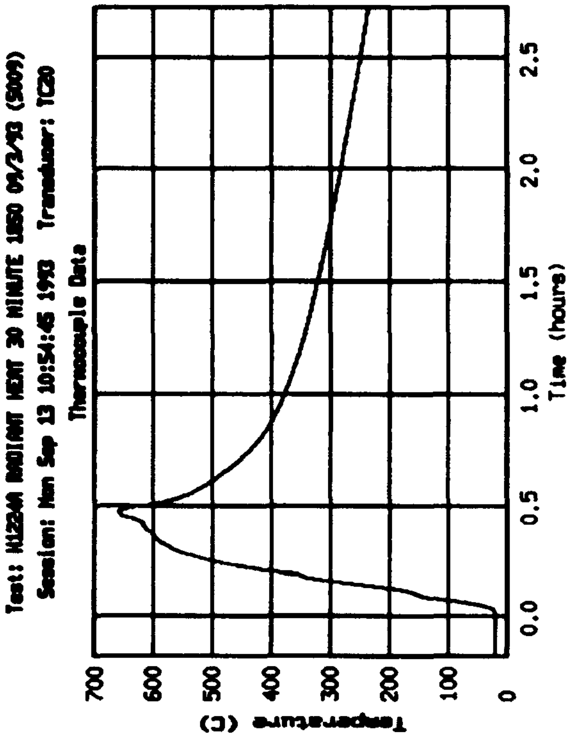

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:54:04 1993 Transducer: TC14
Thermocouple Data
Temperature (C)
Time (hours)

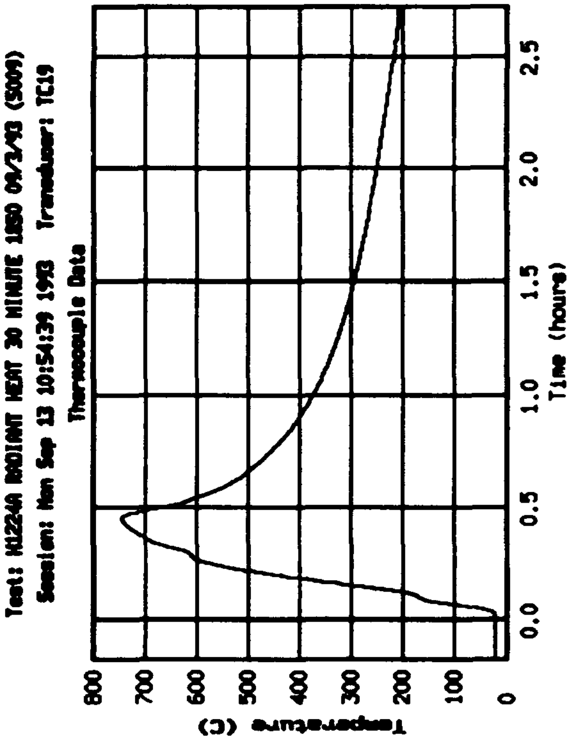

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:54:16 1993 Transducer: TC16
Thermocouple Data
Temperature (C)
Time (hours)

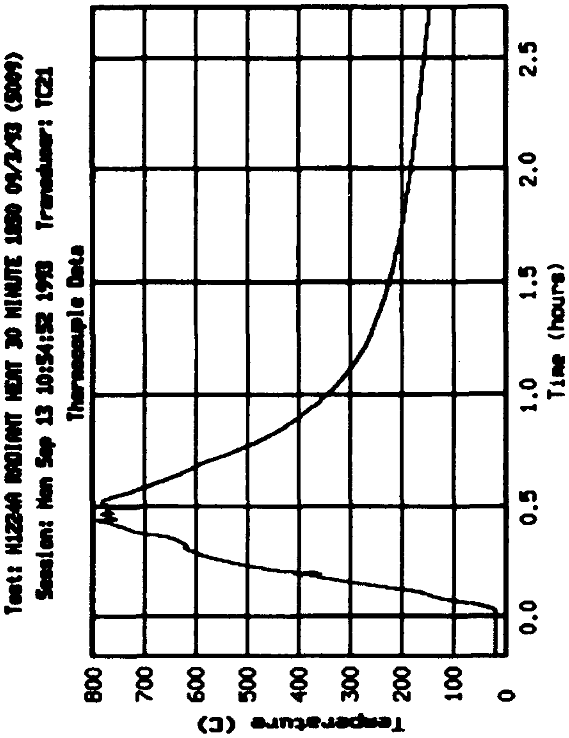

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:54:09 1993 Transducer: TC15
Thermocouple Data
Temperature (C)
Time (hours)

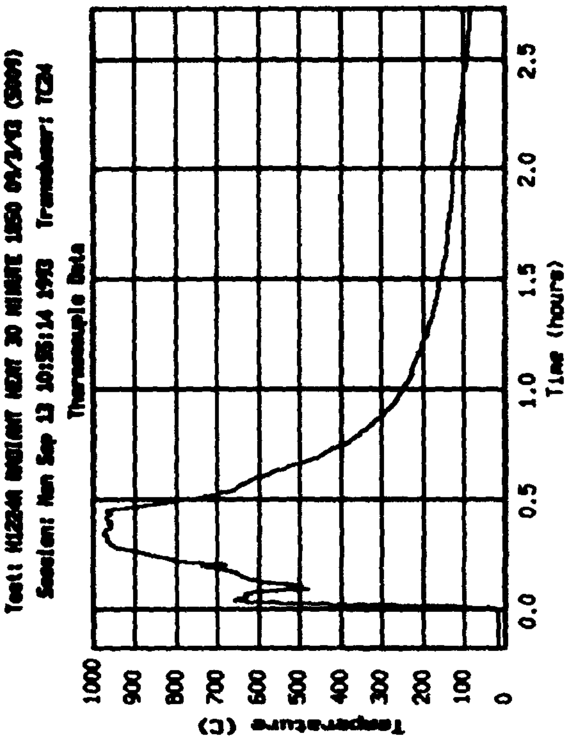

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:54:24 1993 Transducer: TC17
Thermocouple Data
Temperature (C)
Time (hours)

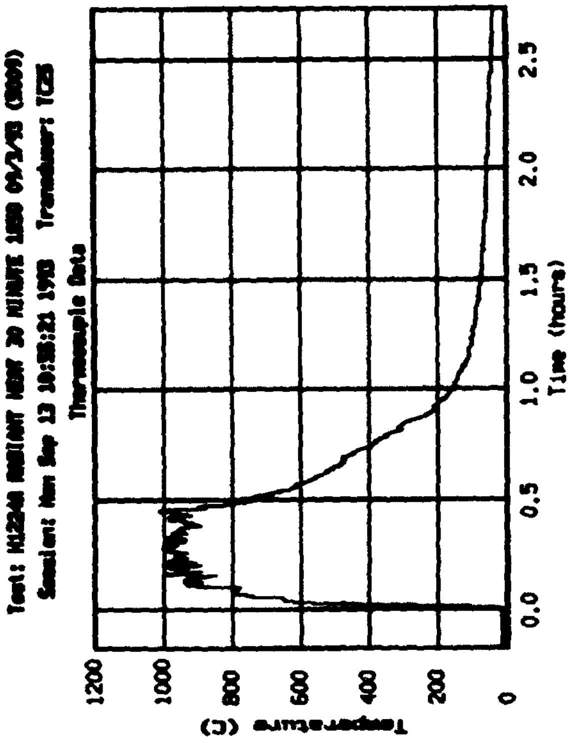

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:54:30 1993 Transducer: TC18
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
0.0
0.5
1.0
1.5
2.0
2.5

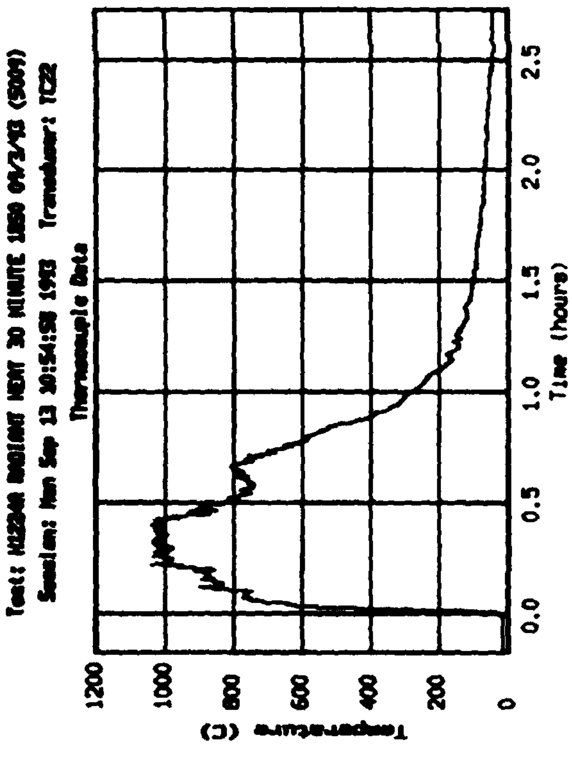

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:54:45 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
0.0
0.5
1.0
1.5
2.0
2.5

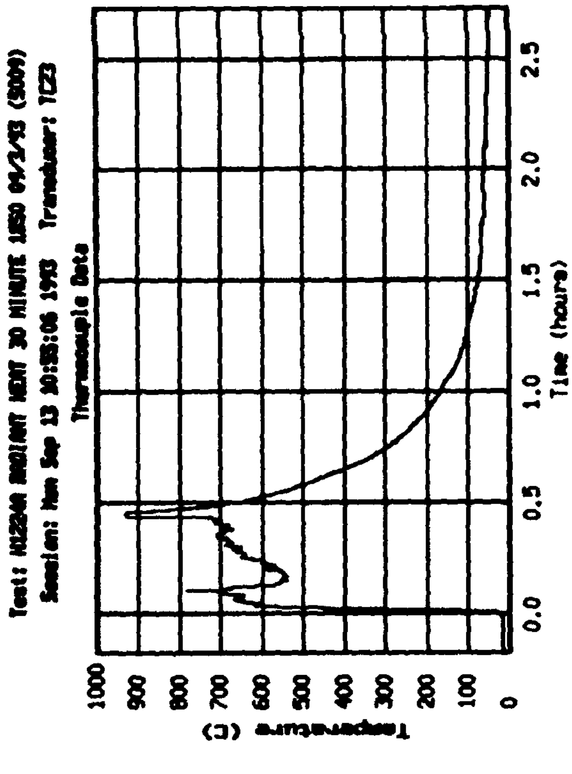

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:54:39 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
0.0
0.5
1.0
1.5
2.0
2.5

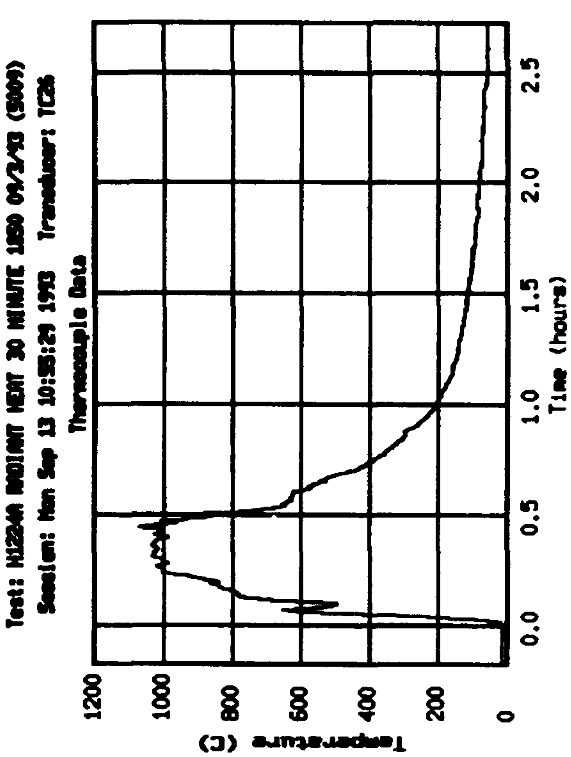

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:54:52 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
0.0
0.5
1.0
1.5
2.0
2.5

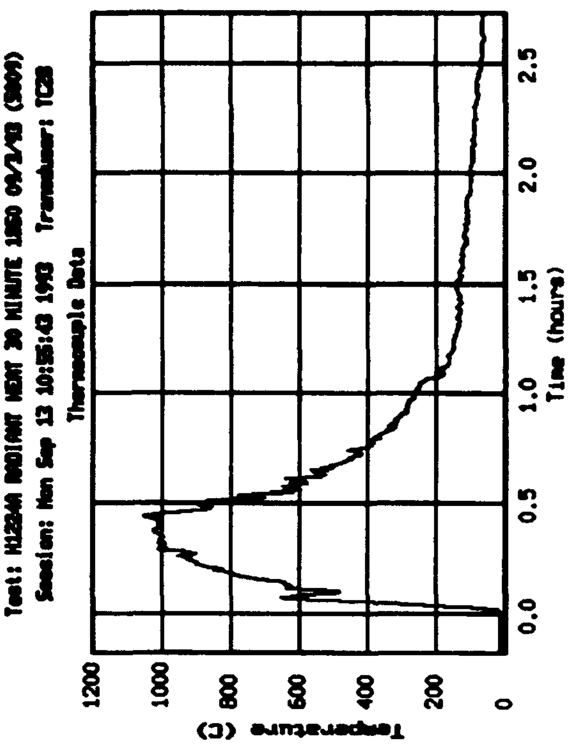

Thermocouple Data
Transducer: TC24
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

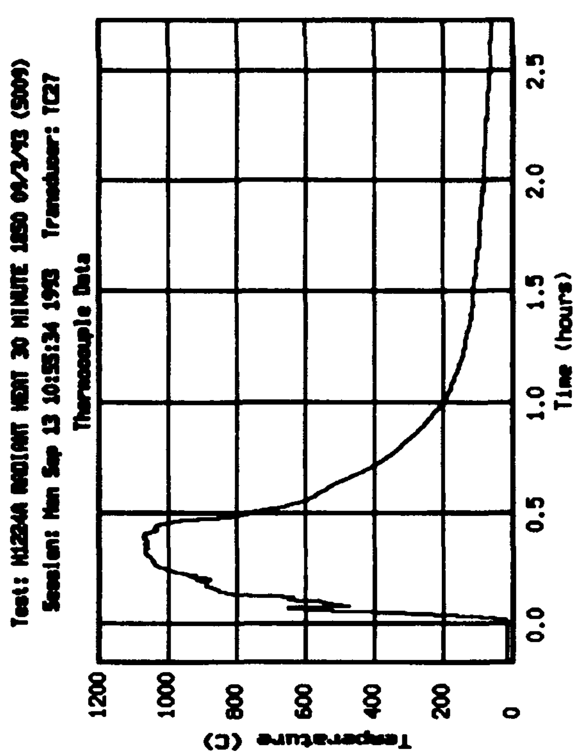

Thermocouple Data
Transducer: TC25
Temperature (C)
1200
1000
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

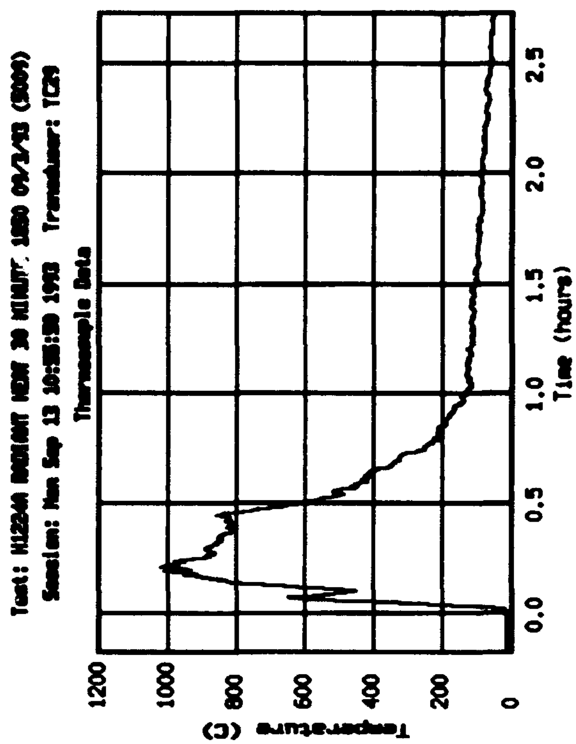

Thermocouple Data
Transducer: TC22
Temperature (C)
1200
1000
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

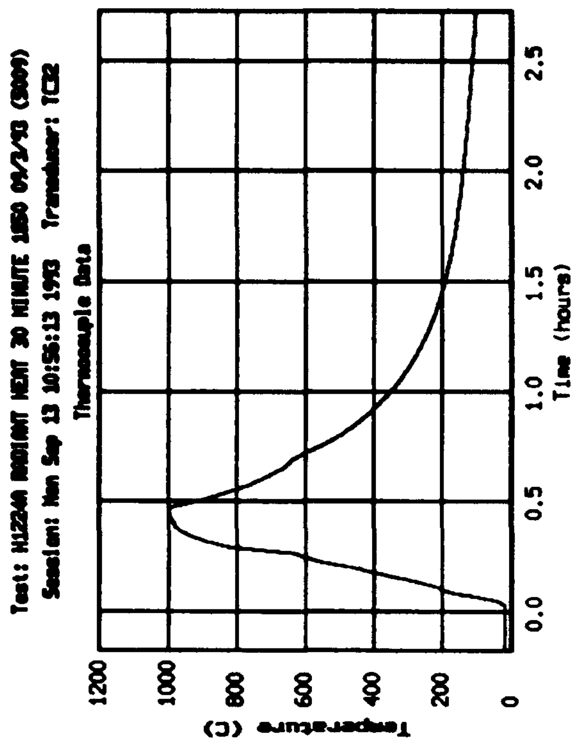

Thermocouple Data
Transducer: TC23
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

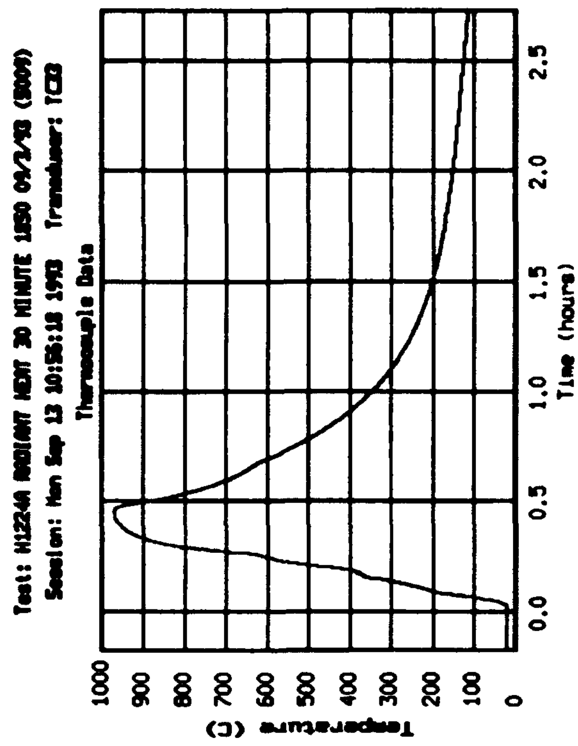

Test: H1234A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:55:29 1993 Transducer: TC26
Thermocouple Data
Temperature (C)
Time (hours)

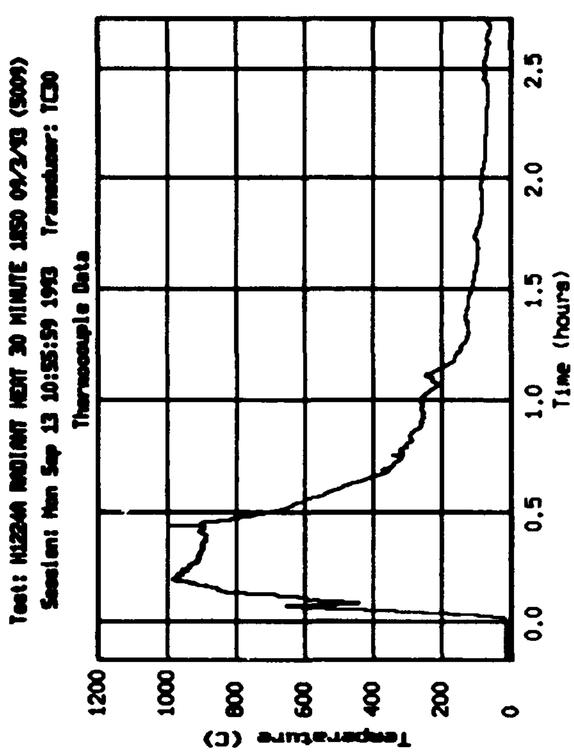

Test: H1234A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:55:43 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
Time (hours)

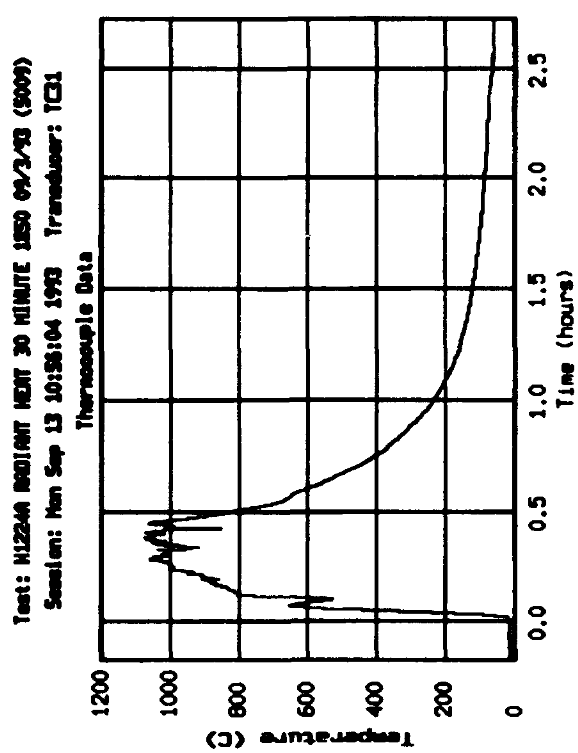

Test: H1234A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:55:34 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
Time (hours)

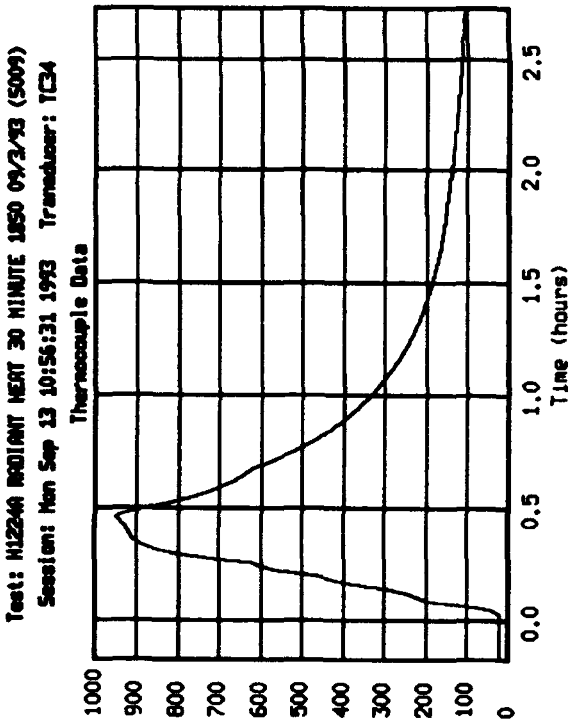

Test: H1234A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:55:50 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
Time (hours)

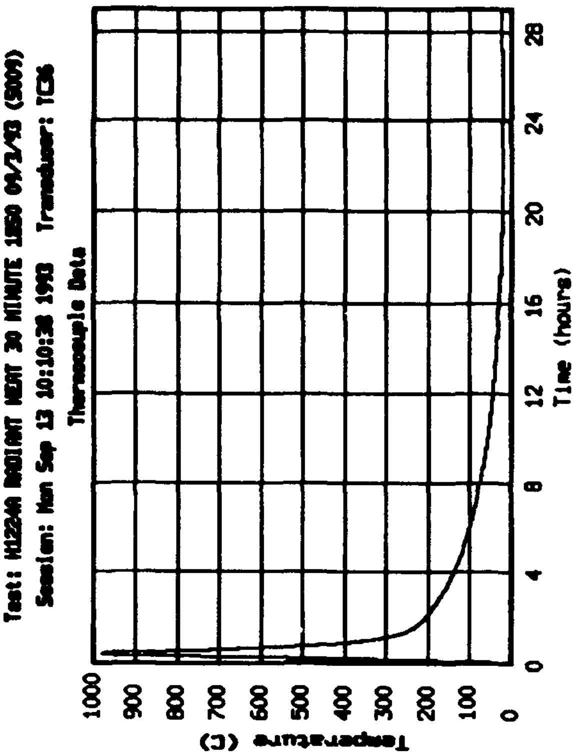


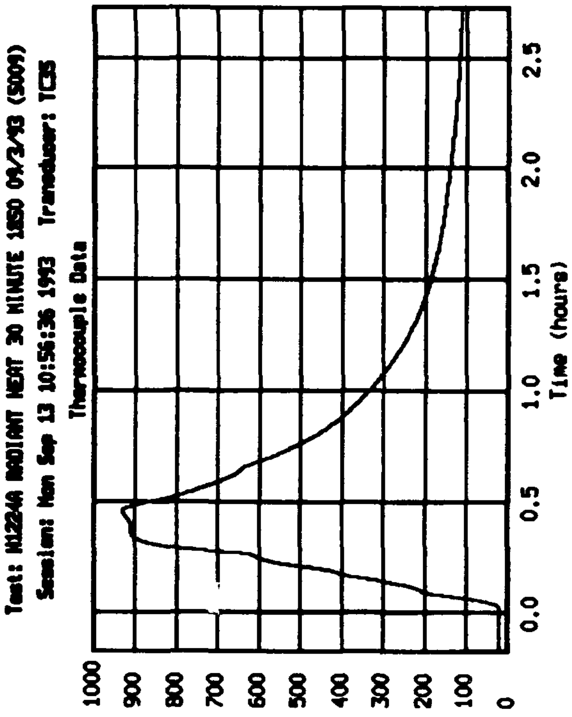


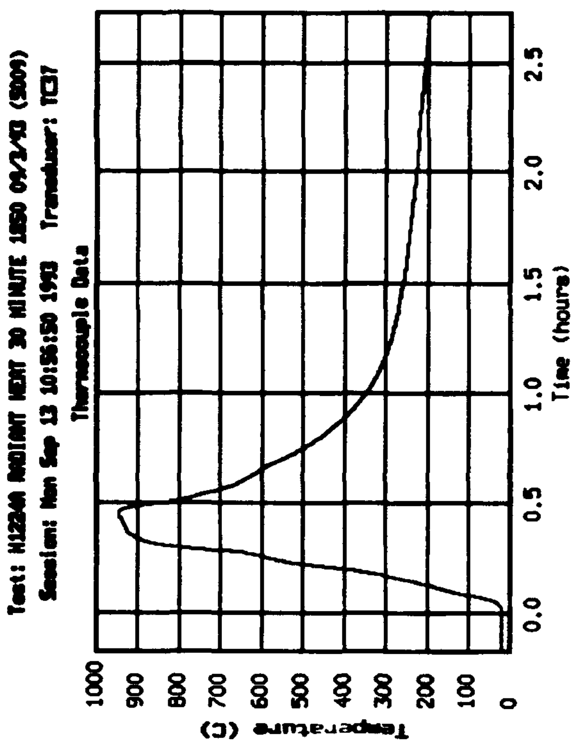


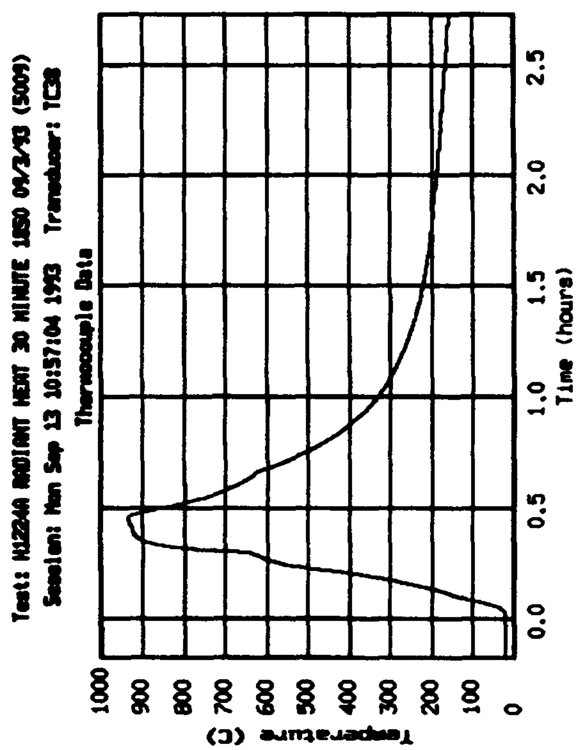


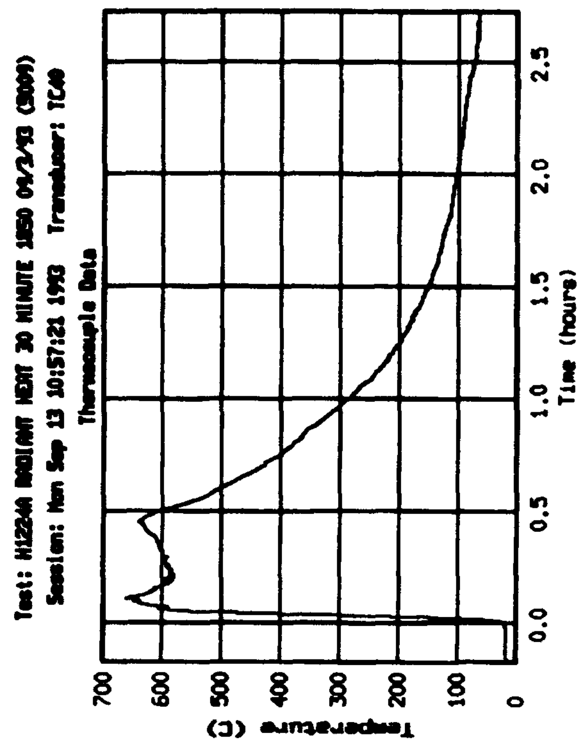

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:56:31 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
Time (hours)

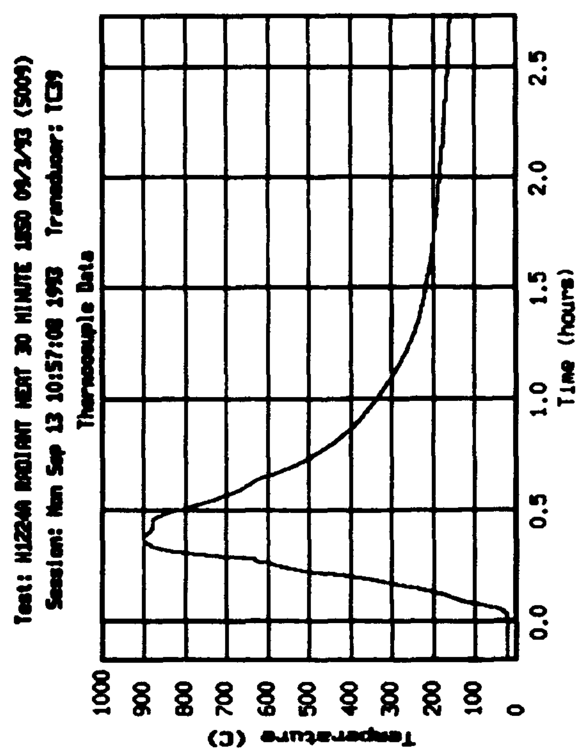

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:10:38 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
Time (hours)

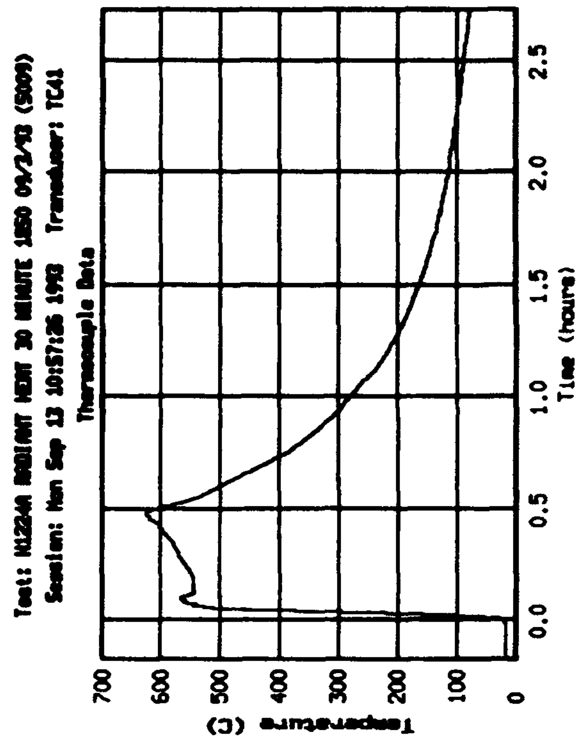

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:56:36 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
Time (hours)

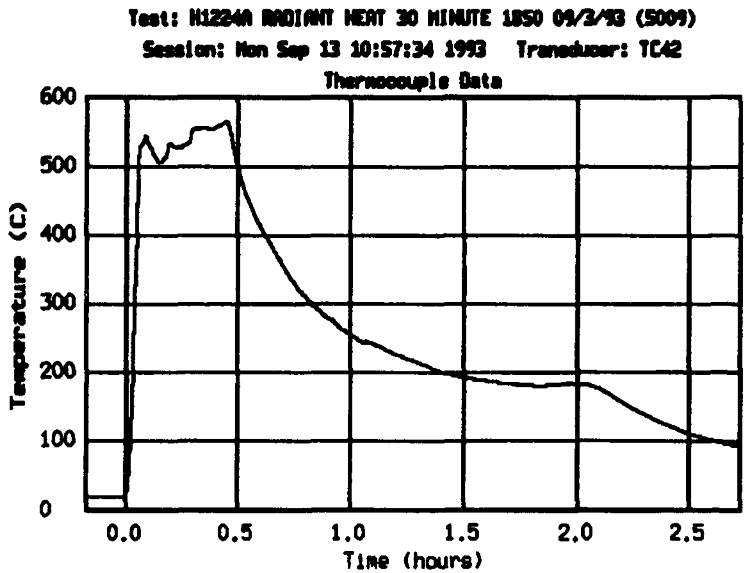

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:56:50 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
Time (hours)

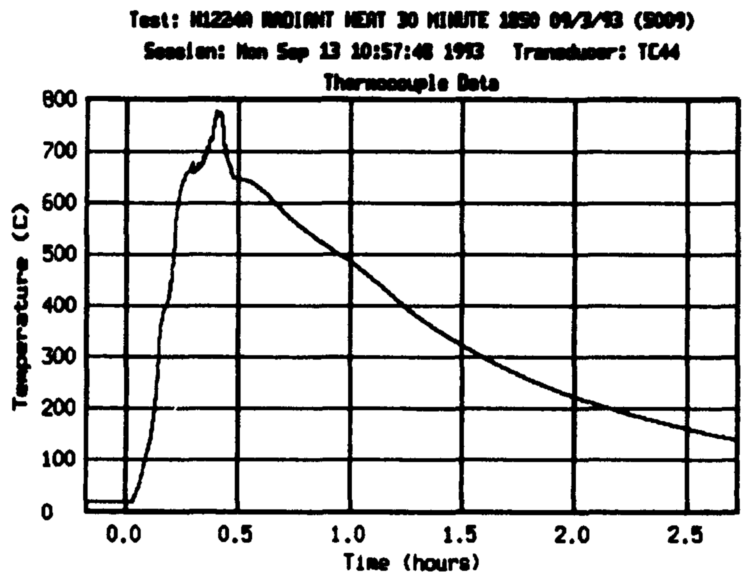

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:57:04 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
Time (hours)

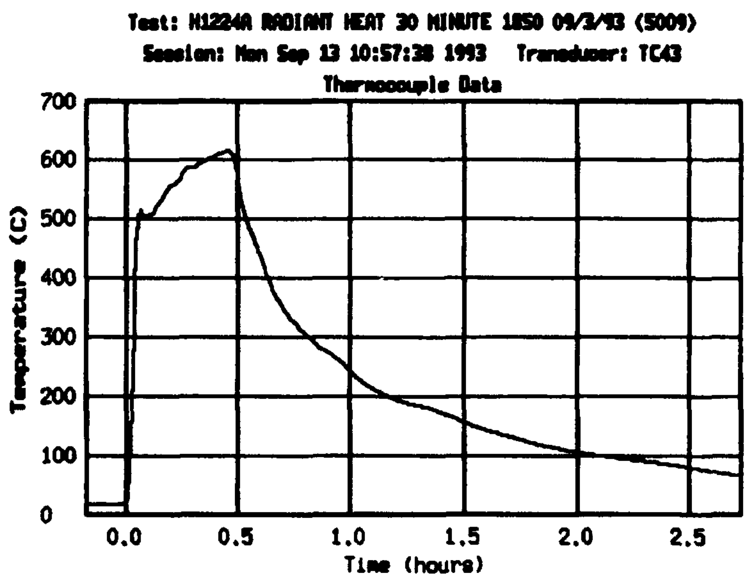

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:57:21 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
Time (hours)

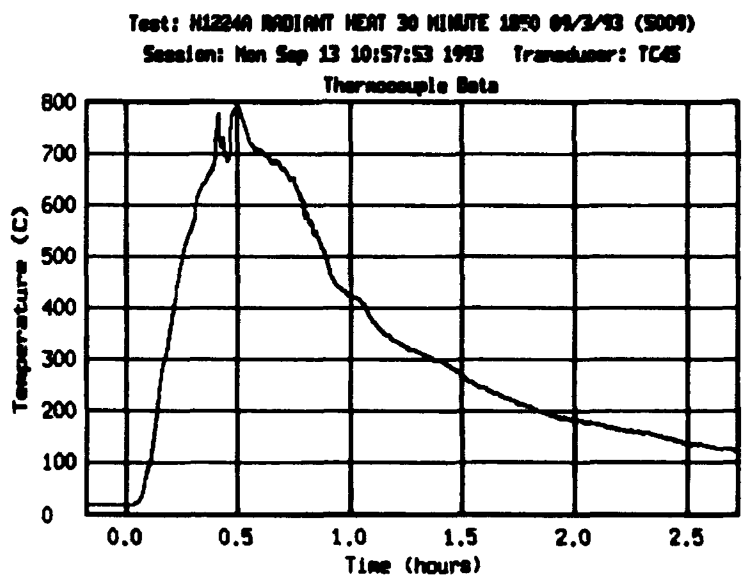

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:57:08 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
Time (hours)

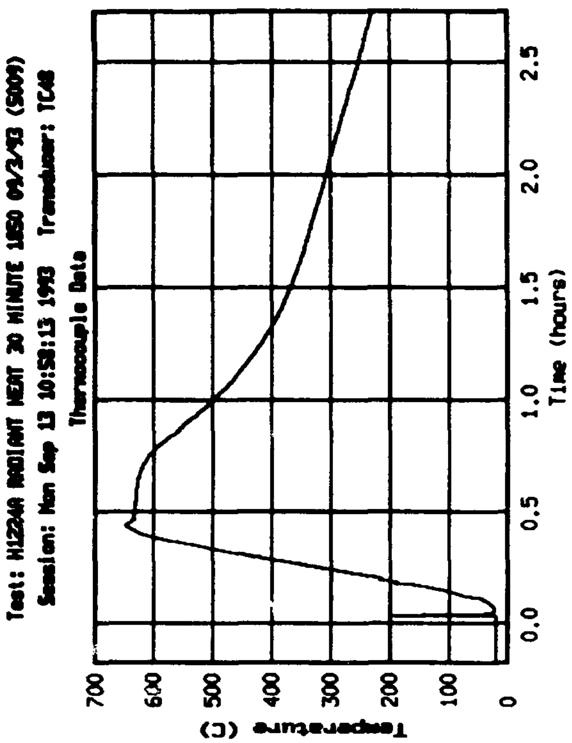

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:57:26 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)

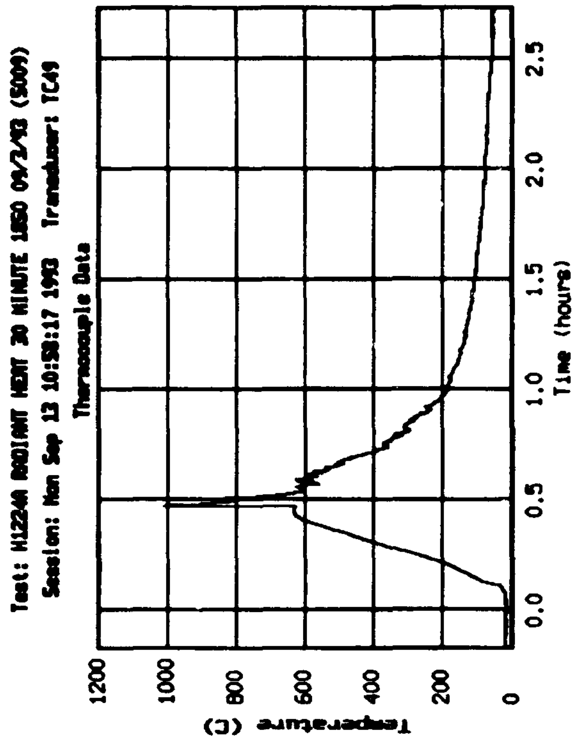

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:57:34 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

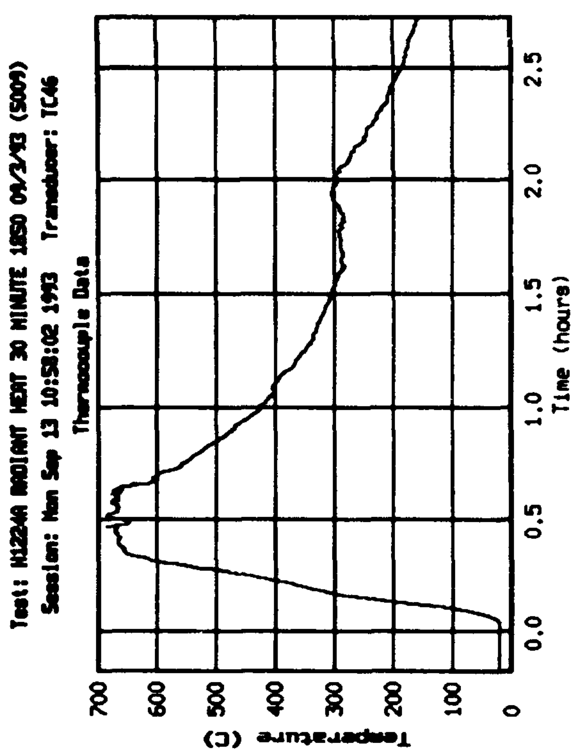

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:57:48 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

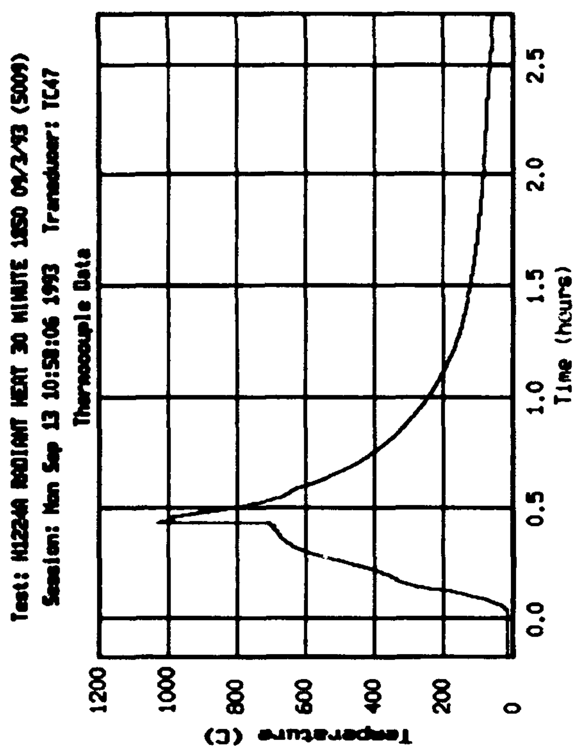

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:57:38 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

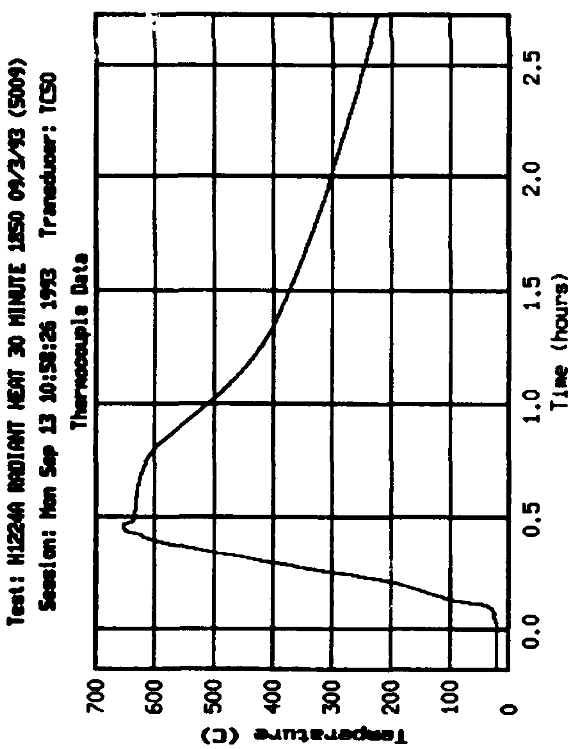

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:57:53 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

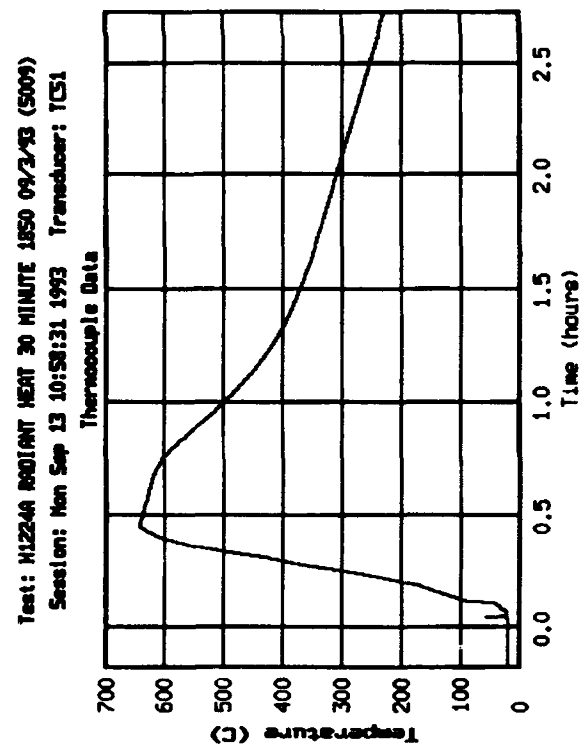

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:58:13 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5

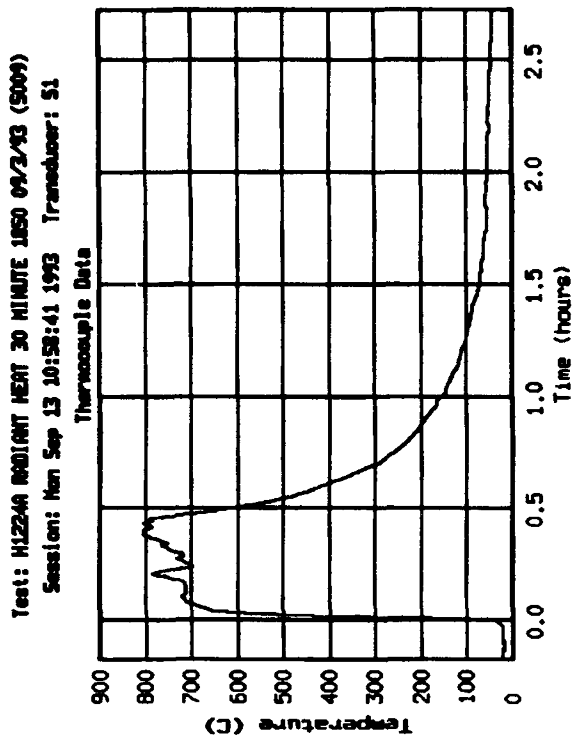

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:58:17 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5

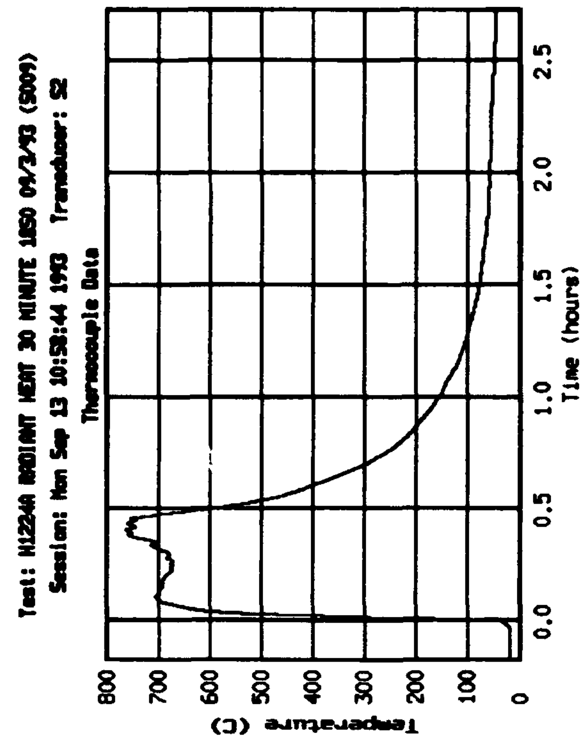

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:58:02 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5

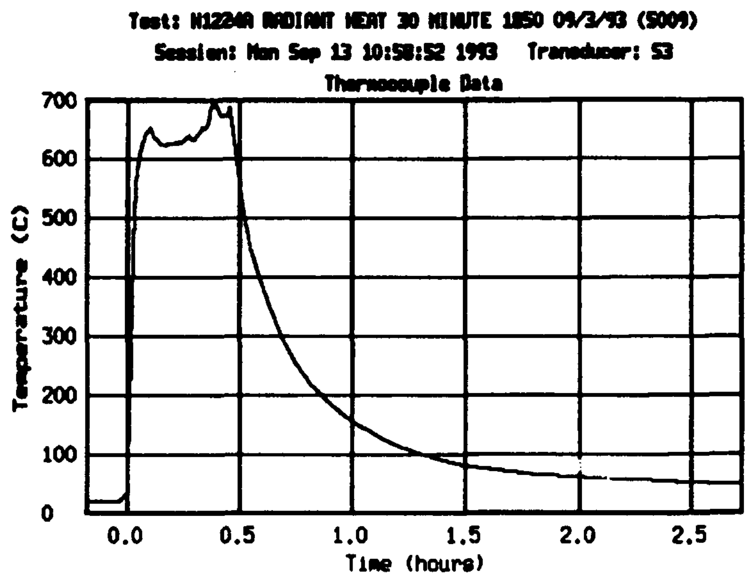

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/2/93 (5009)
Session: Mon Sep 13 10:58:06 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5

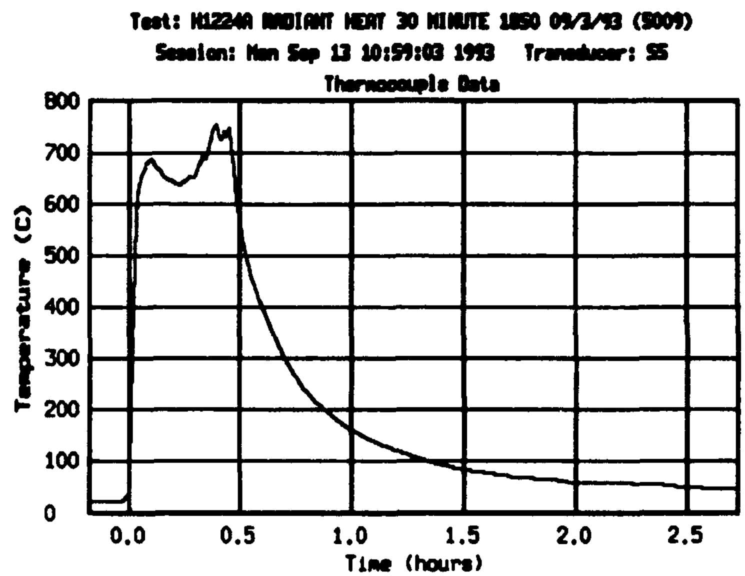

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:58:26 1993 Transducer: TC50
Thermocouple Data
Temperature (C)
Time (hours)

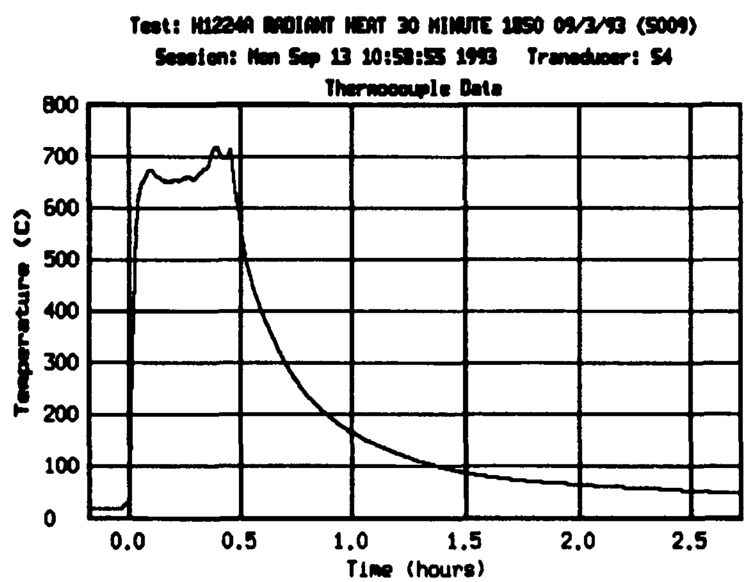

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:58:31 1993 Transducer: TC51
Thermocouple Data
Temperature (C)
Time (hours)

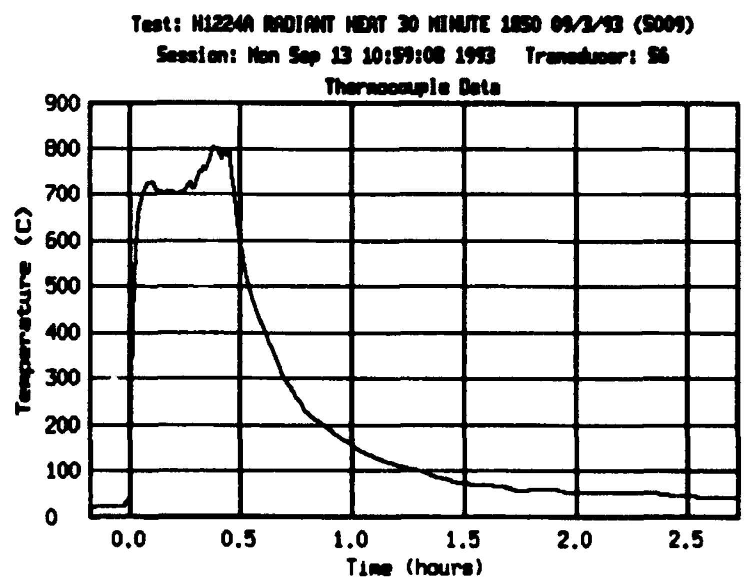

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:58:41 1993 Transducer: S1
Thermocouple Data
Temperature (C)
Time (hours)

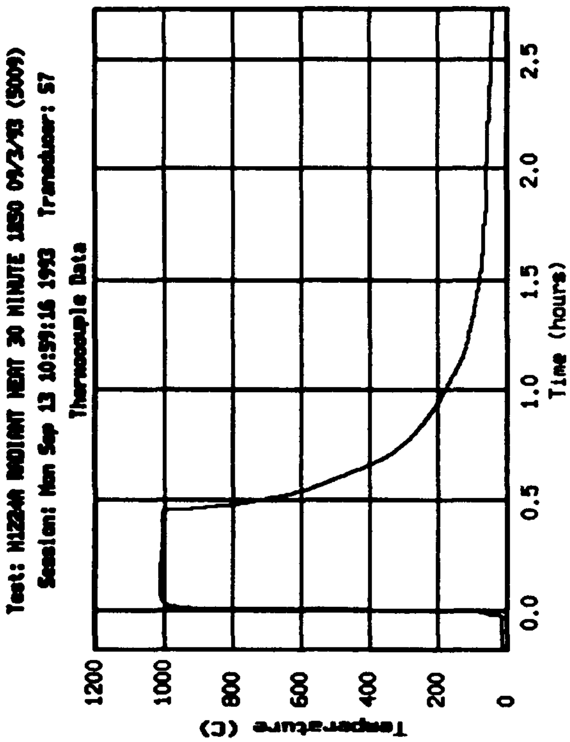

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:58:44 1993 Transducer: S2
Thermocouple Data
Temperature (C)
Time (hours)

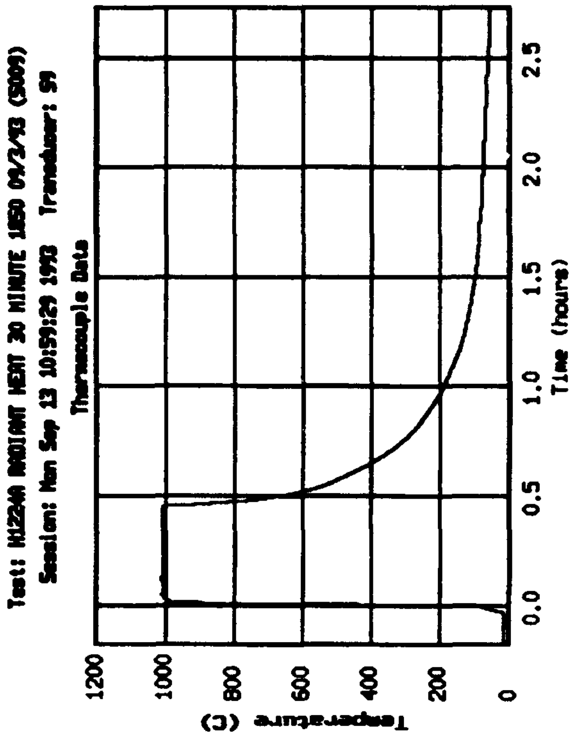

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:58:52 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)

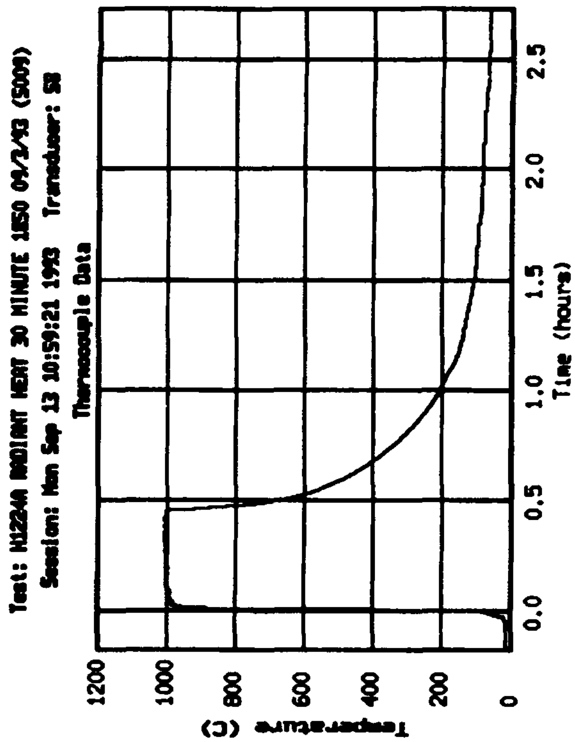

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:59:03 1993 Transducer: S5
Thermocouple Data
Temperature (C)
Time (hours)

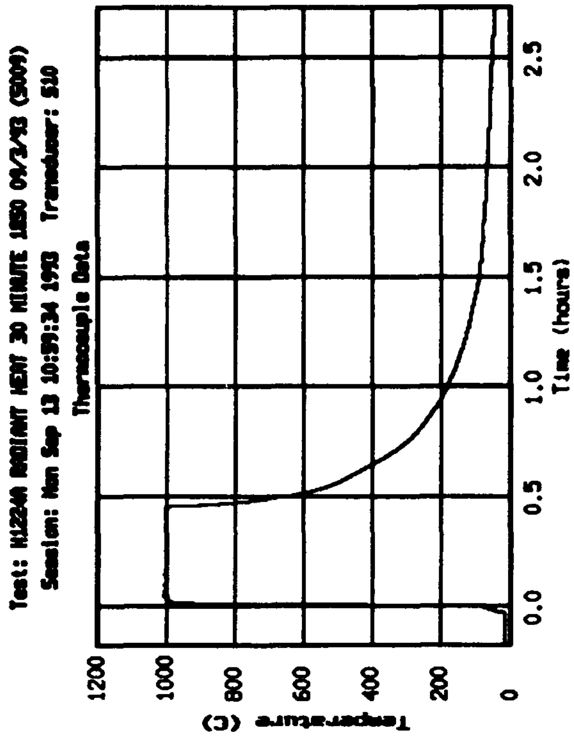

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:58:55 1993 Transducer: S4
Thermocouple Data
Temperature (C)
Time (hours)

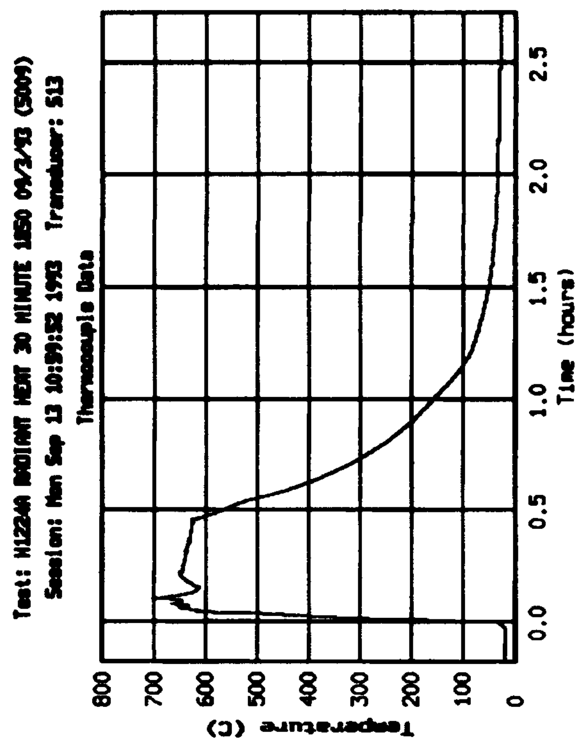

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 10:59:08 1993 Transducer: S6
Thermocouple Data
Temperature (C)
Time (hours)

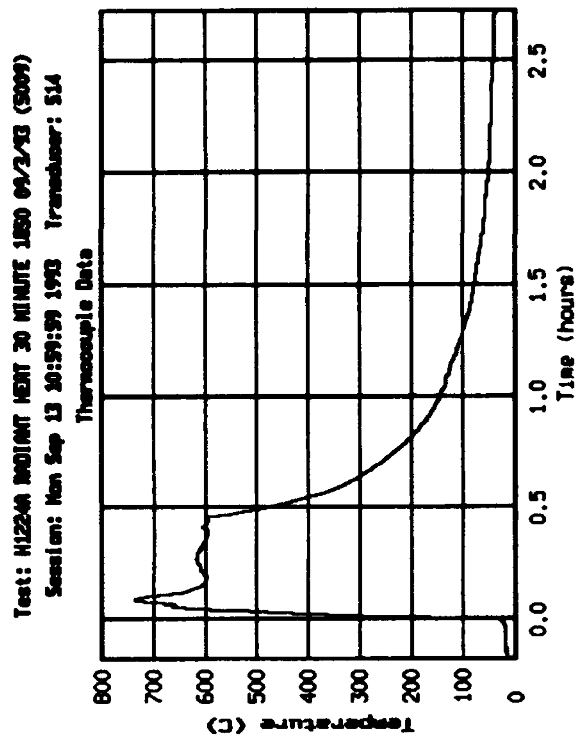

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:16 1993 Transducer: S7
Thermocouple Data
Temperature (C)
Time (hours)

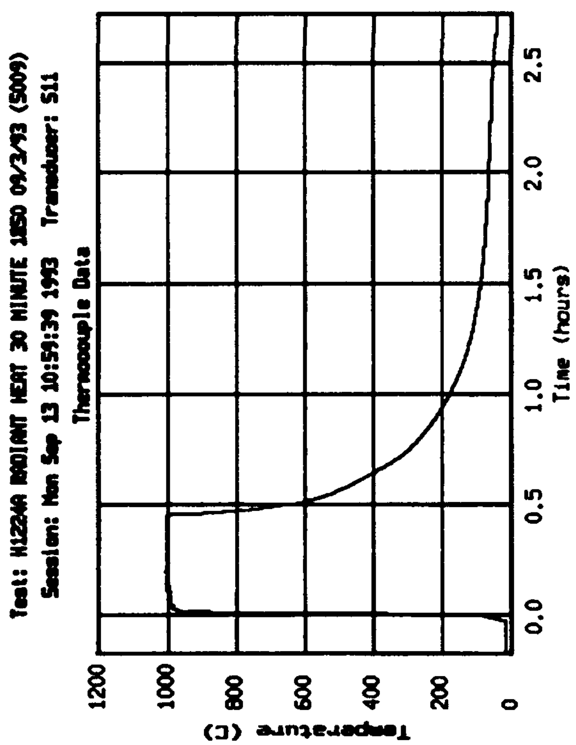

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:29 1993 Transducer: S9
Thermocouple Data
Temperature (C)
Time (hours)

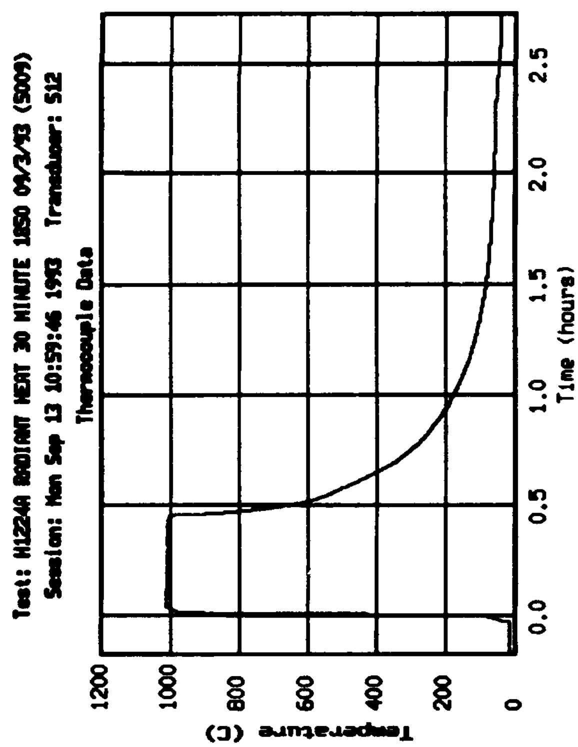

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:21 1993 Transducer: S8
Thermocouple Data
Temperature (C)
Time (hours)

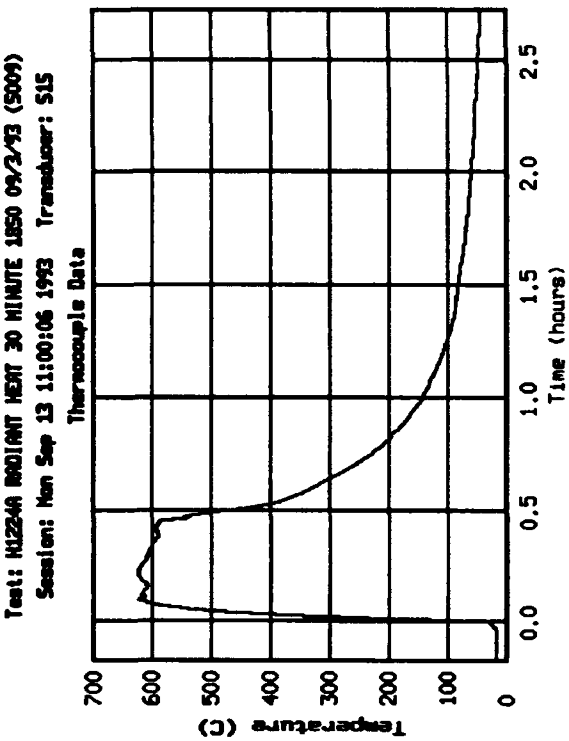

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:34 1993 Transducer: S10
Thermocouple Data
Temperature (C)
Time (hours)

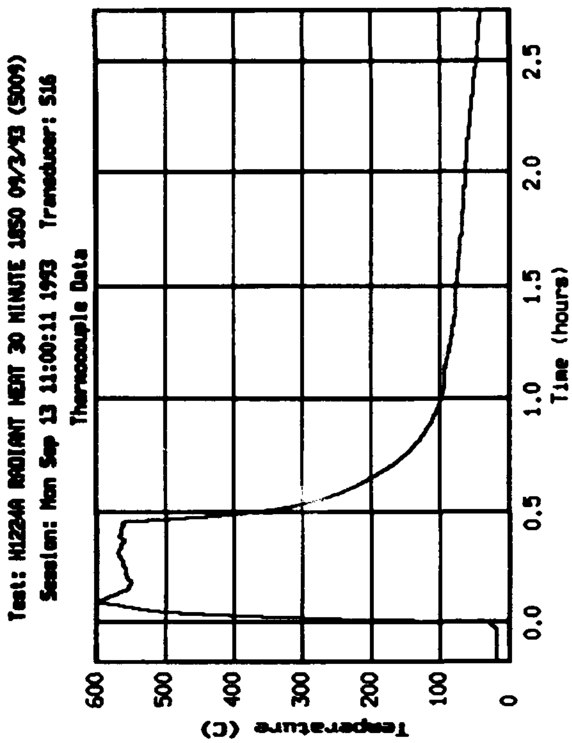

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:52 1993 Transducer: S13
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
0.0
0.5
1.0
1.5
2.0
2.5

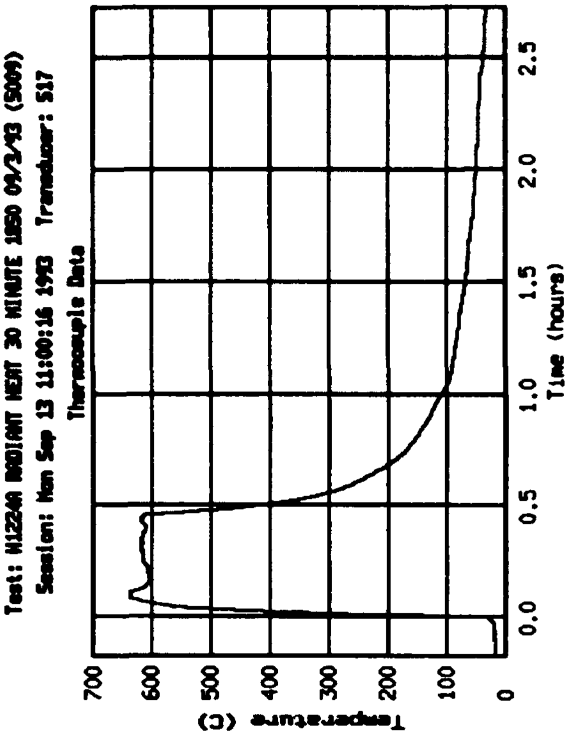

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:59 1993 Transducer: S14
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
0.0
0.5
1.0
1.5
2.0
2.5

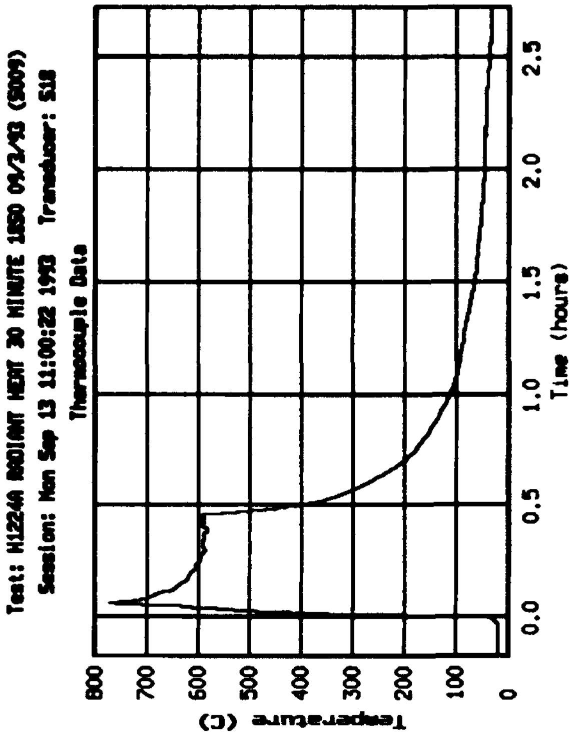

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:39 1993 Transducer: S11
Thermocouple Data
Temperature (C)
Time (hours)
0
200
400
600
800
1000
1200
0.0
0.5
1.0
1.5
2.0
2.5

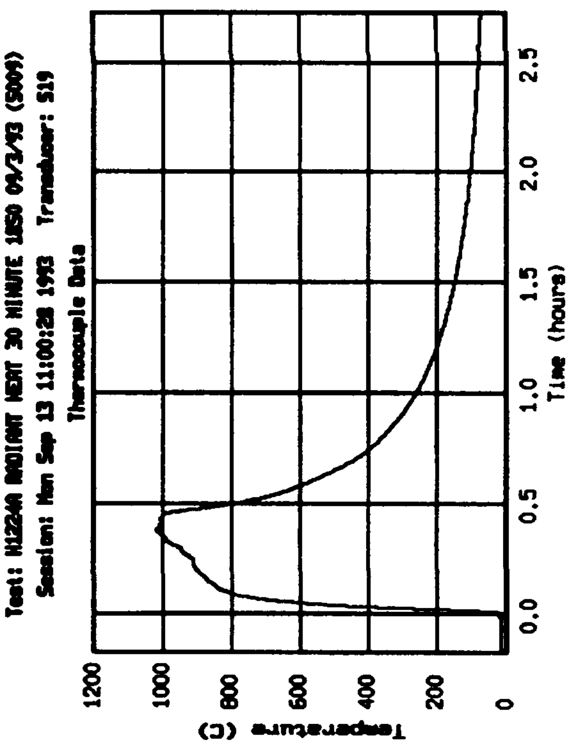

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 10:59:46 1993 Transducer: S12
Thermocouple Data
Temperature (C)
Time (hours)
0
200
400
600
800
1000
1200
0.0
0.5
1.0
1.5
2.0
2.5

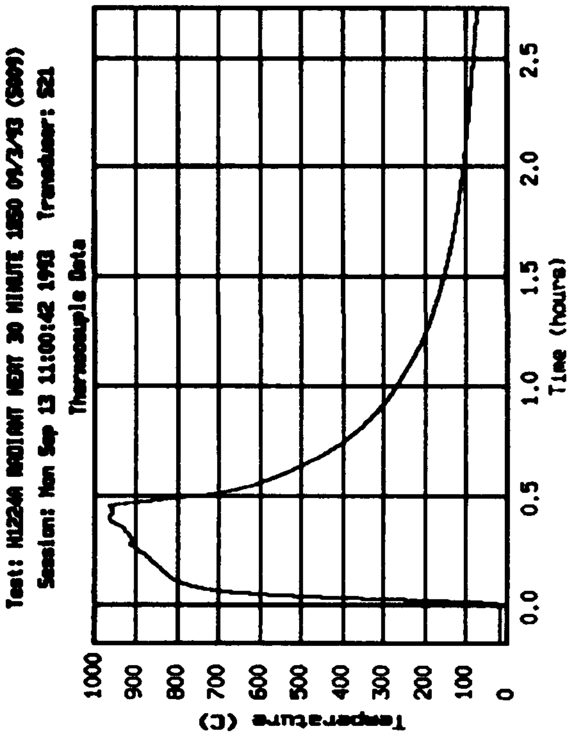

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 11:00:06 1993 Transducer: S15
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
0.0
0.5
1.0
1.5
2.0
2.5

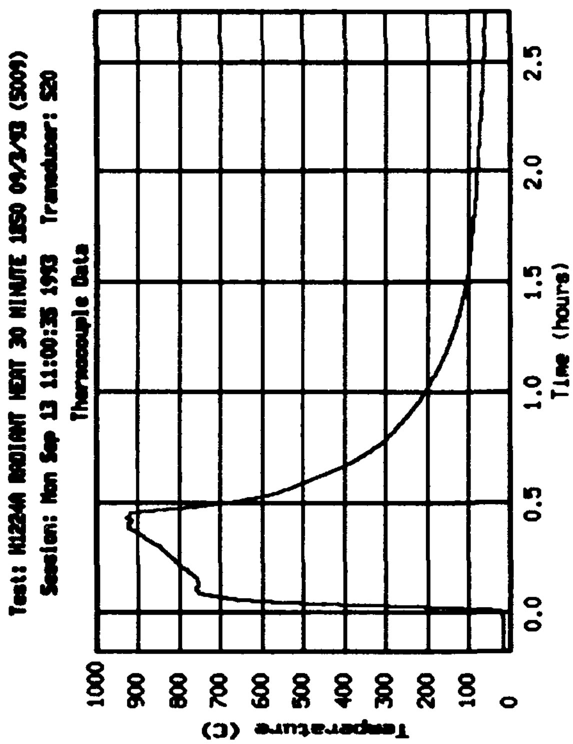

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 11:00:11 1993 Transducer: S16
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
0.0
0.5
1.0
1.5
2.0
2.5

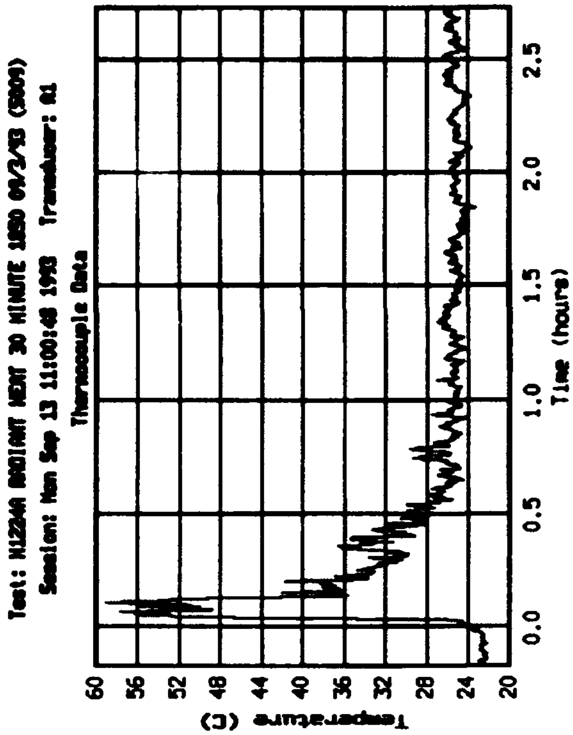

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 11:00:16 1993 Transducer: S17
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
0.0
0.5
1.0
1.5
2.0
2.5

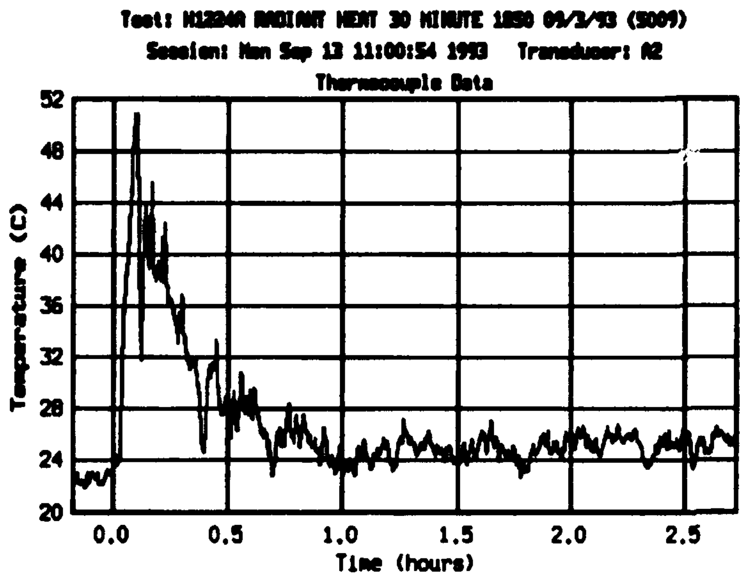

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (5009)
Session: Mon Sep 13 11:00:22 1993 Transducer: S18
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
0.0
0.5
1.0
1.5
2.0
2.5

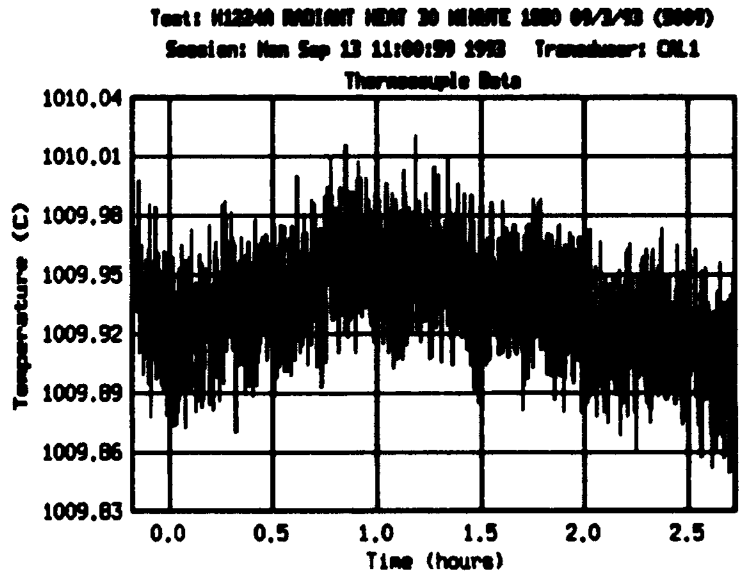

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/13/93 (5009)
Session: Mon Sep 13 11:00:28 1993 Transducer: S19
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5


Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/13/93 (5009)
Session: Mon Sep 13 11:00:42 1993 Transducer: S21
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5


Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/13/93 (5009)
Session: Mon Sep 13 11:00:35 1993 Transducer: S20
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5

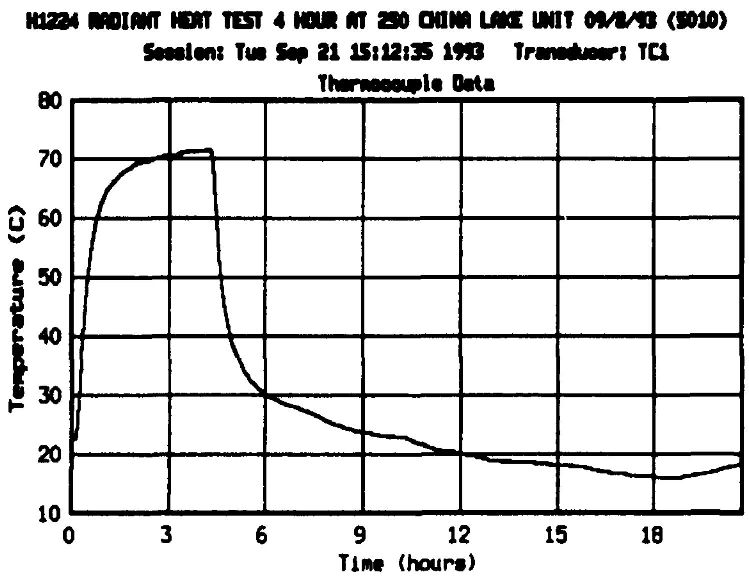

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/13/93 (5009)
Session: Mon Sep 13 11:00:48 1993 Transducer: S1
Thermocouple Data
Temperature (C)
60
56
52
48
44
40
36
32
28
24
20
Time (hours)
0.0
0.5
1.0
1.5
2.0
2.5

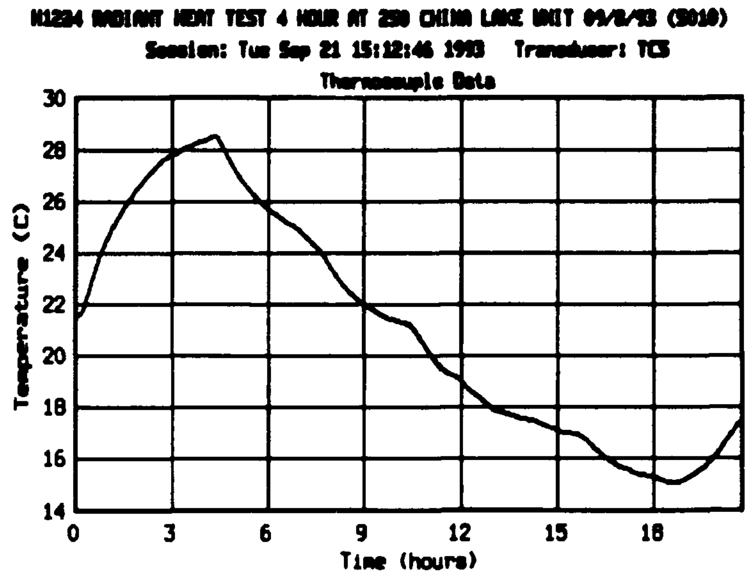

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 11:00:54 1993 Transducer: A2
Thermocouple Data
Temperature (C)
52
48
44
40
36
32
28
24
20
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

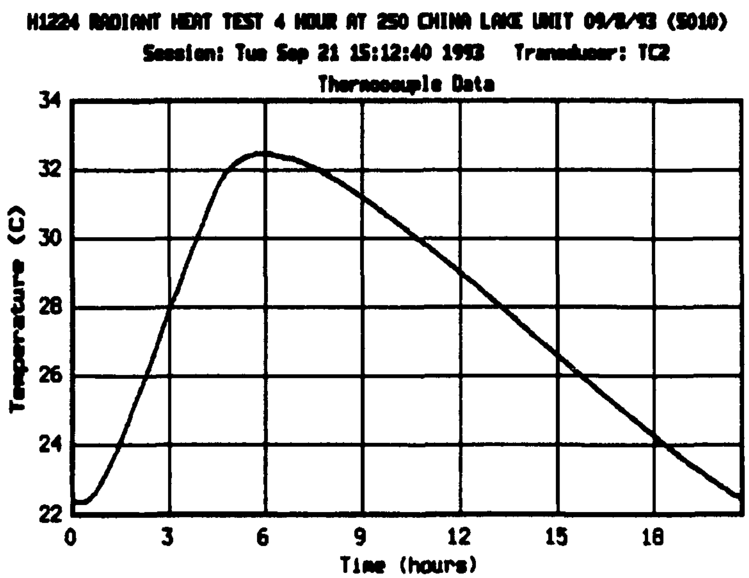

Test: H1224A RADIANT HEAT 30 MINUTE 1850 09/3/93 (S009)
Session: Mon Sep 13 11:00:59 1993 Transducer: CAL1
Thermocouple Data
Temperature (C)
1010.04
1010.01
1009.98
1009.95
1009.92
1009.89
1009.86
1009.83
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

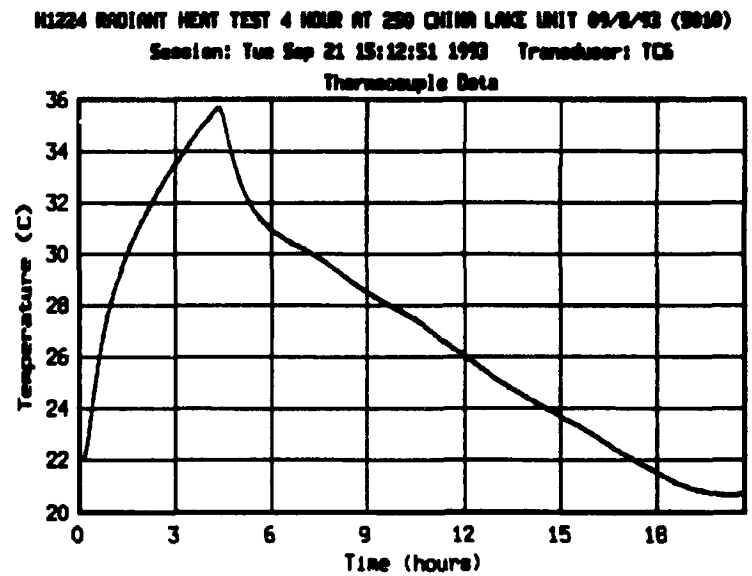
Appendix C

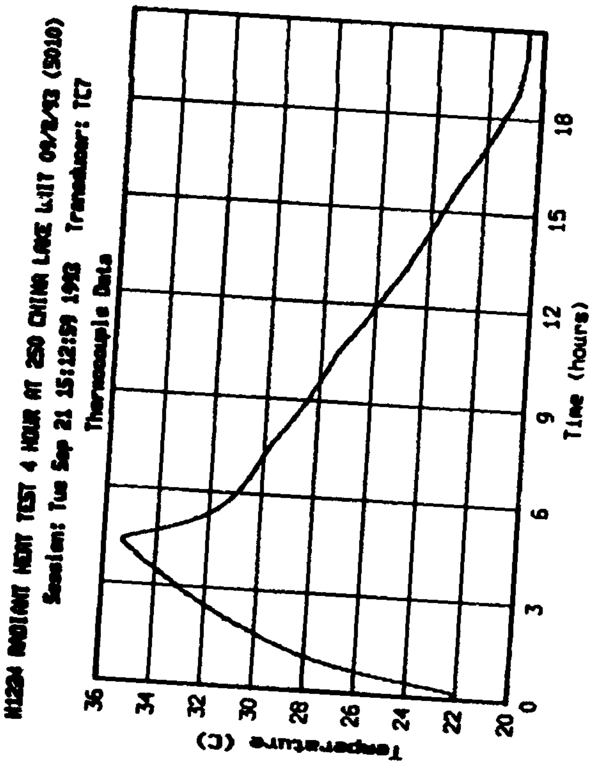
The following pages show temperature data for the 4-hour, 121° C (250° F) radiant heat test of the NAWC (simulated H1224A) shipping/storage container with hollow Mk12 midsection aeroshell inside. Two time windows are provided: 20 hours and a narrow window of approximately 5 hours. The longer duration data plots include each entire test, including the cool-down period to steady state. The shorter duration data plots provide more detail throughout the 4 hour application of radiant heat.

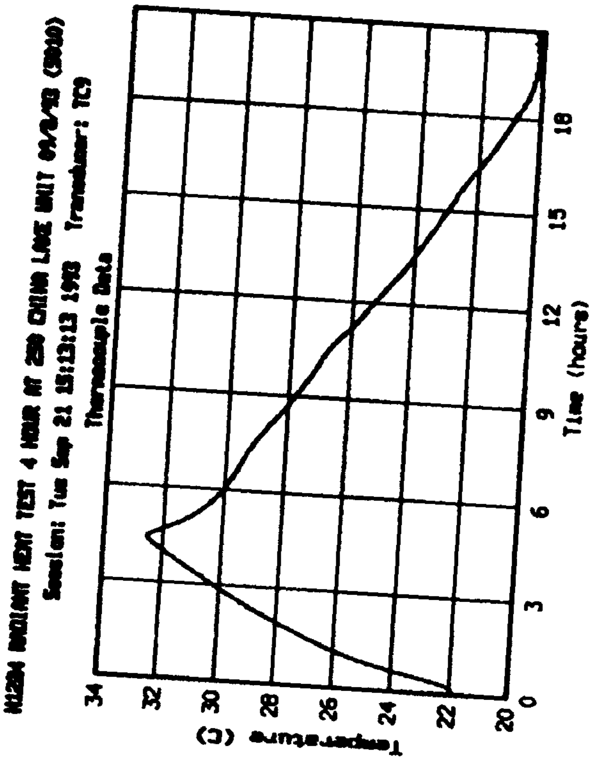

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:12:35 1993 Transducer: TC1
Thermocouple Data
Temperature (C)
80
70
60
50
40
30
20
10
0
3
6
9
12
15
18
Time (hours)

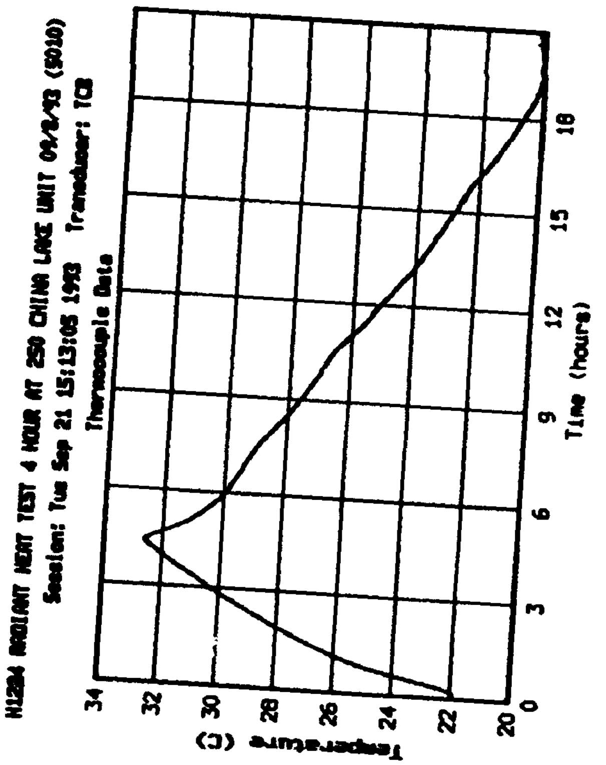

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:12:46 1993 Transducer: TC5
Thermocouple Data
Temperature (C)
30
28
26
24
22
20
18
16
14
0
3
6
9
12
15
18
Time (hours)

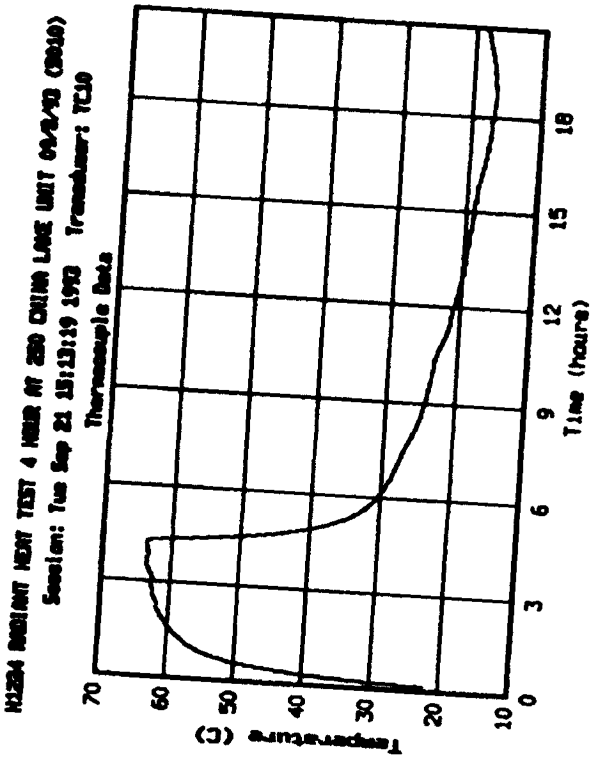

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:12:40 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
34
32
30
28
26
24
22
0
3
6
9
12
15
18
Time (hours)

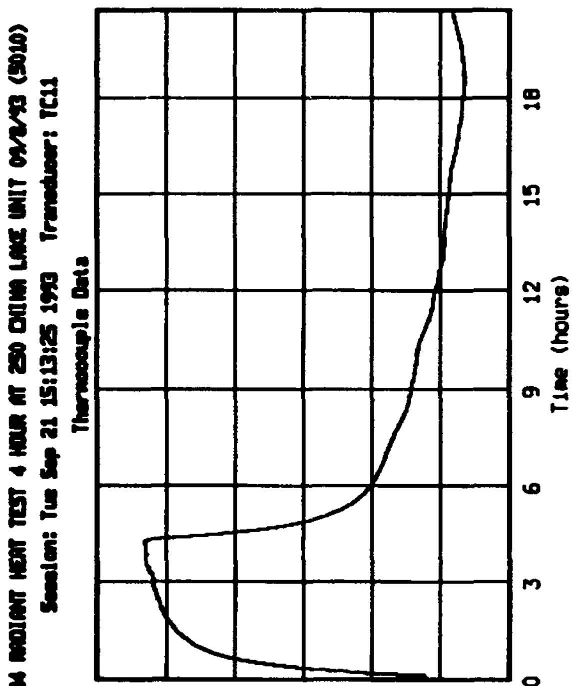

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:12:51 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
36
34
32
30
28
26
24
22
20
0
3
6
9
12
15
18
Time (hours)

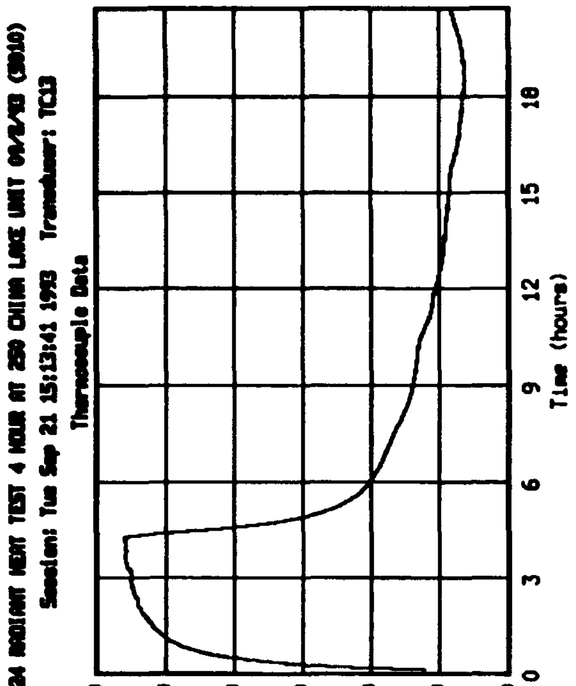

H1284 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:12:59 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
Time (hours)

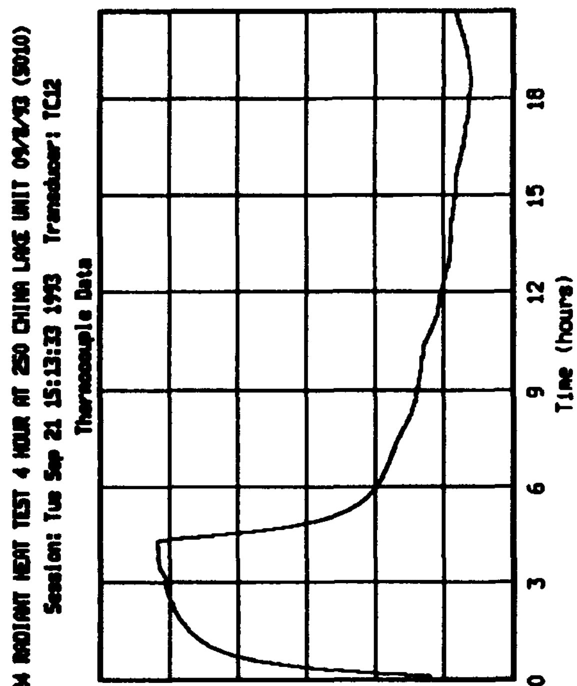

H1284 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:13 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
Time (hours)

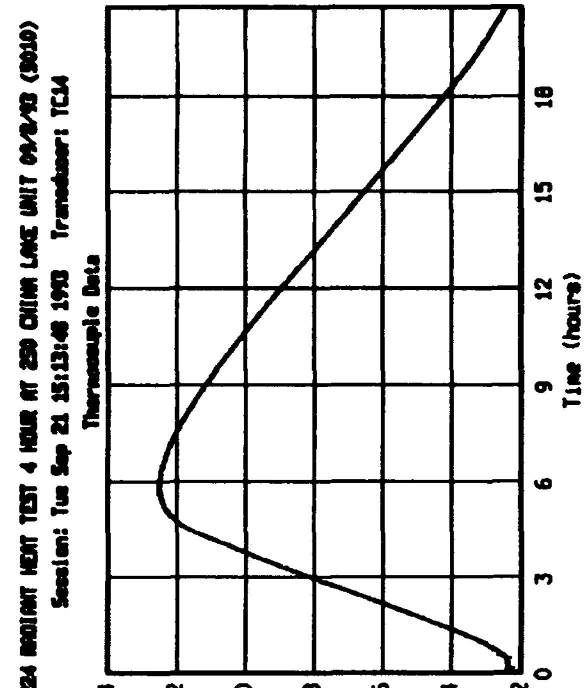

H1284 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:05 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
Time (hours)

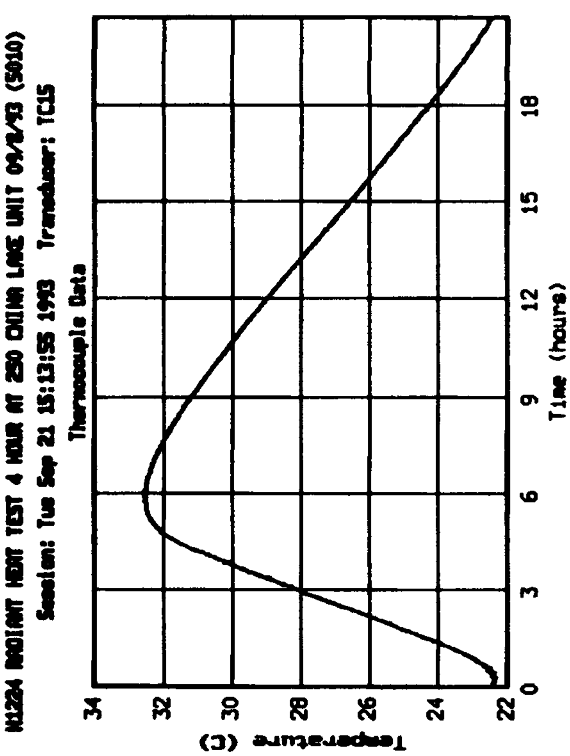

H1284 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:19 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
Time (hours)

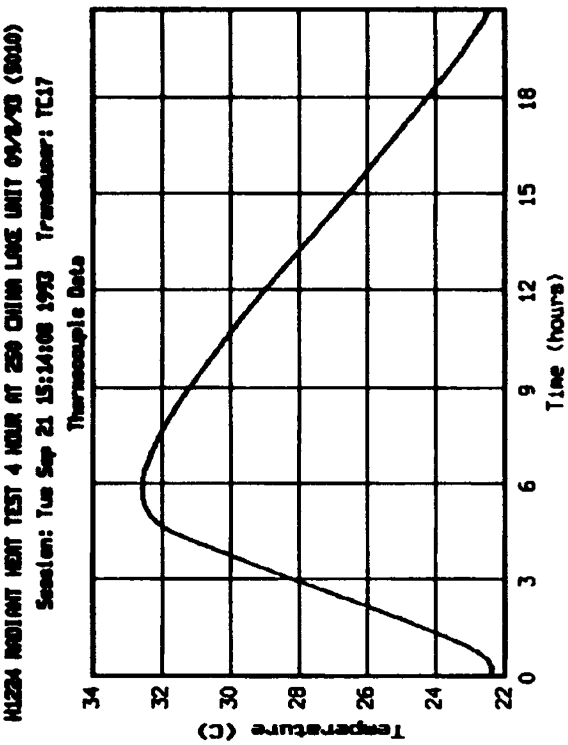

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:25 1993 Transducer: TC11
Thermocouple Data
Temperature (C)
Time (hours)

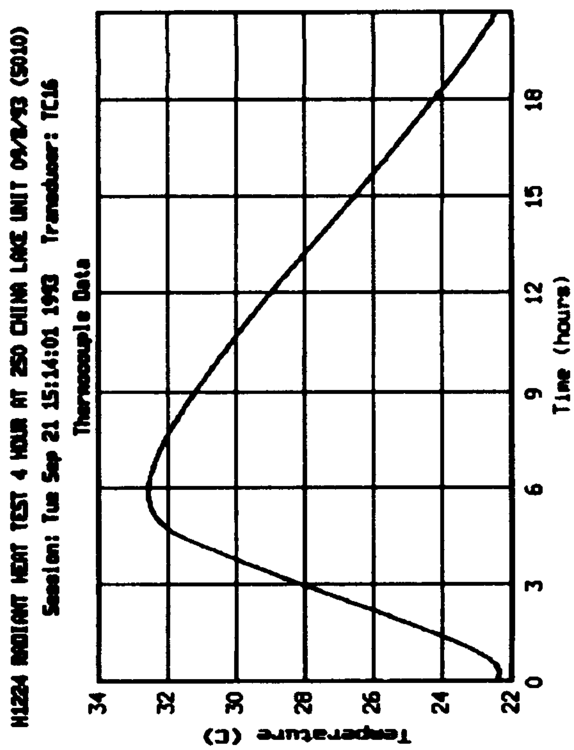

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:41 1993 Transducer: TC13
Thermocouple Data
Temperature (C)
Time (hours)

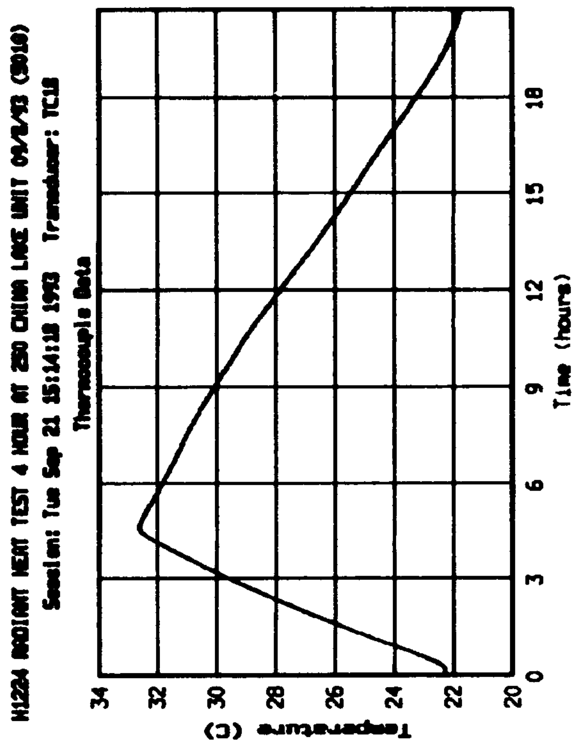

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:33 1993 Transducer: TC12
Thermocouple Data
Temperature (C)
Time (hours)

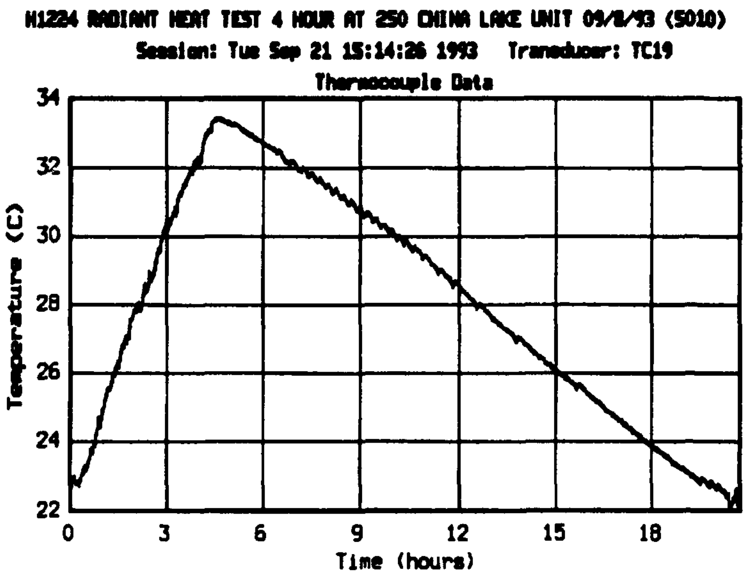

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:13:48 1993 Transducer: TC14
Thermocouple Data
Temperature (C)
Time (hours)

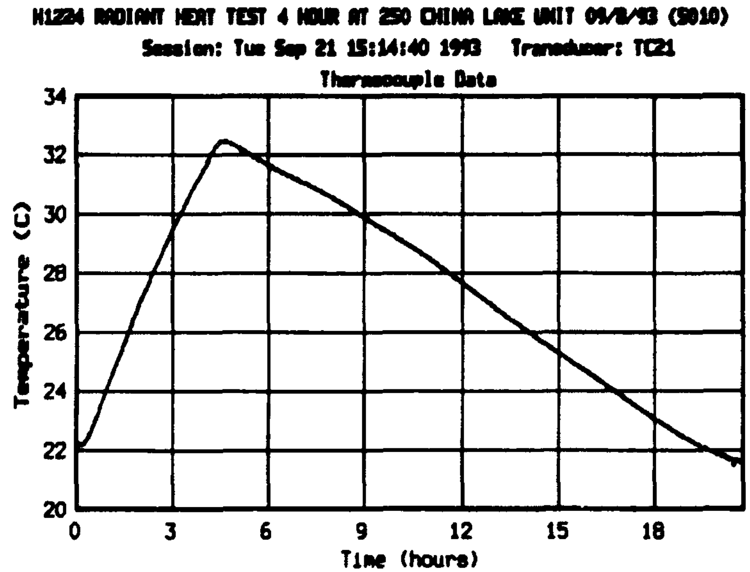

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT
(5010)
Session: Tue Sep 21 15:13:55 1993 Transducer: TC15
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
0
3
6
9
12
15
18

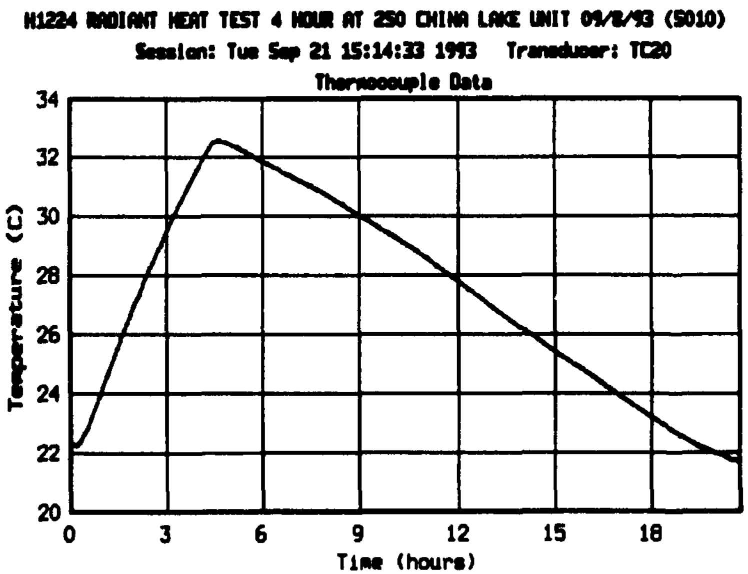

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT
(5010)
Session: Tue Sep 21 15:14:08 1993 Transducer: TC17
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
0
3
6
9
12
15
18

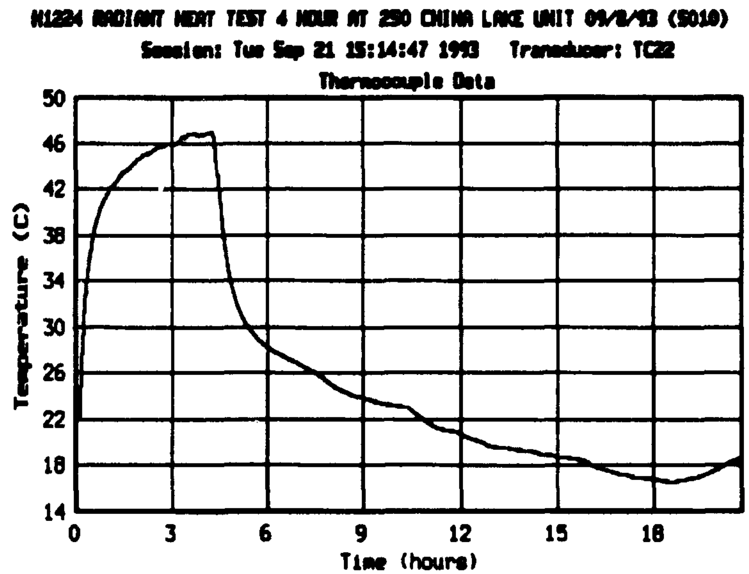

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT
(5010)
Session: Tue Sep 21 15:14:01 1993 Transducer: TC16
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
0
3
6
9
12
15
18


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT
(5010)
Session: Tue Sep 21 15:14:18 1993 Transducer: TC18
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
20
0
3
6
9
12
15
18

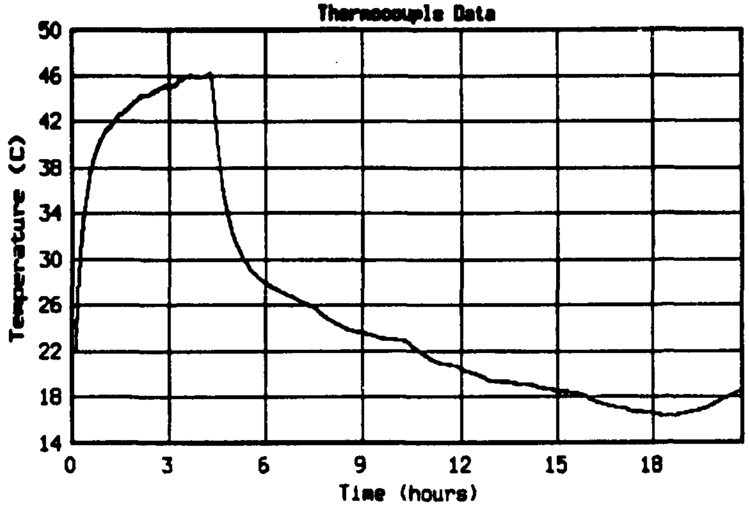

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:14:26 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:14:40 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
Time (hours)

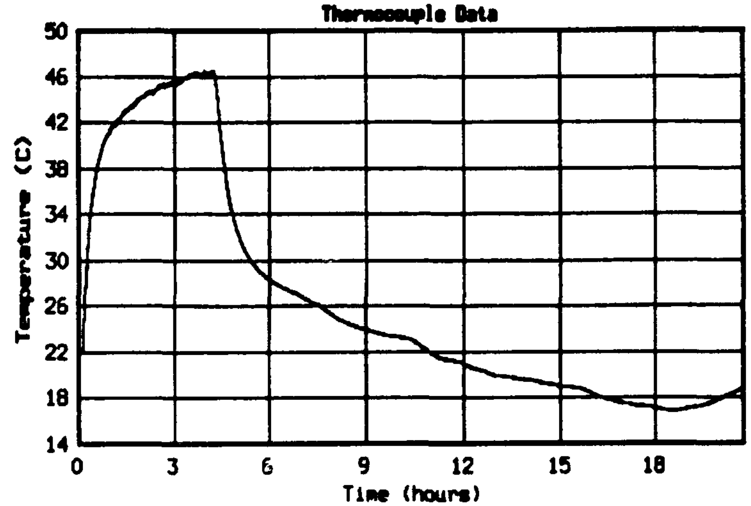

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:14:33 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:14:47 1993 Transducer: TC22
Thermocouple Data
Temperature (C)
Time (hours)

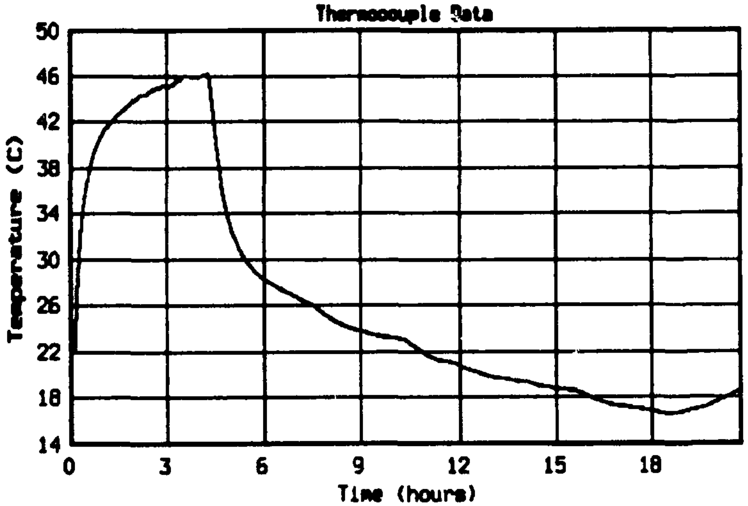
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:14:56 1993 Transducer: TC23
Thermocouple Data



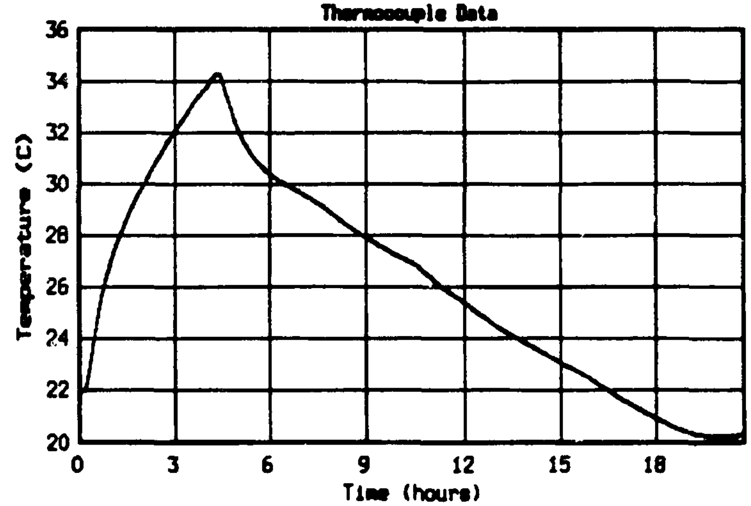
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:15:12 1993 Transducer: TC25
Thermocouple Data

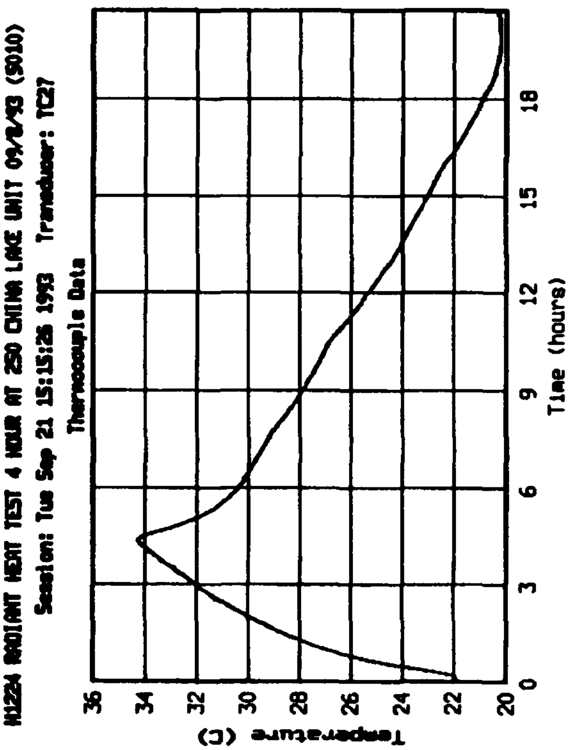


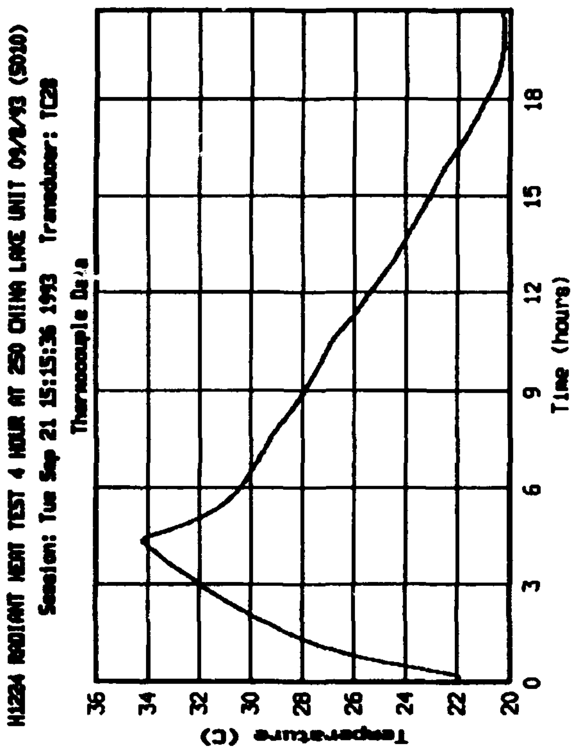
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:15:05 1993 Transducer: TC24
Thermocouple Data

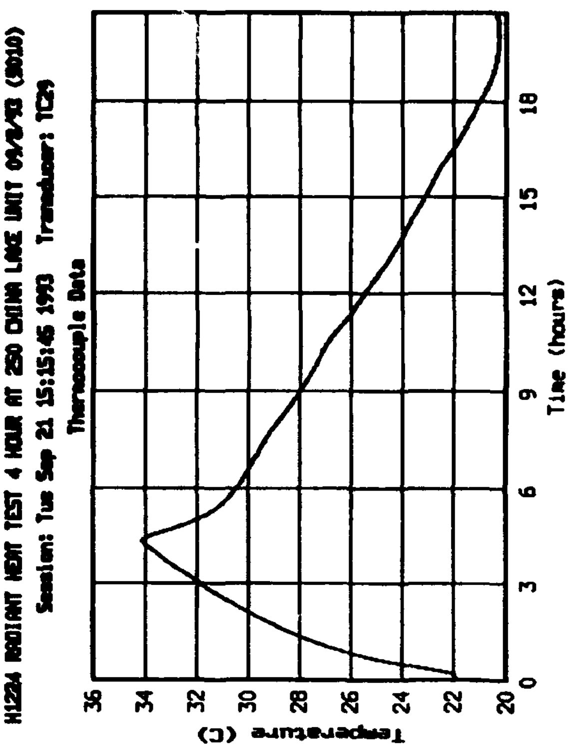


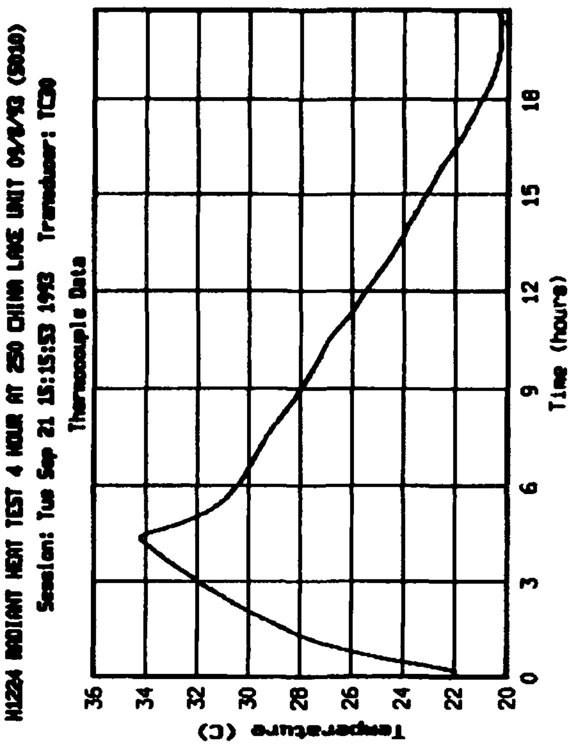
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:15:20 1993 Transducer: TC26
Thermocouple Data

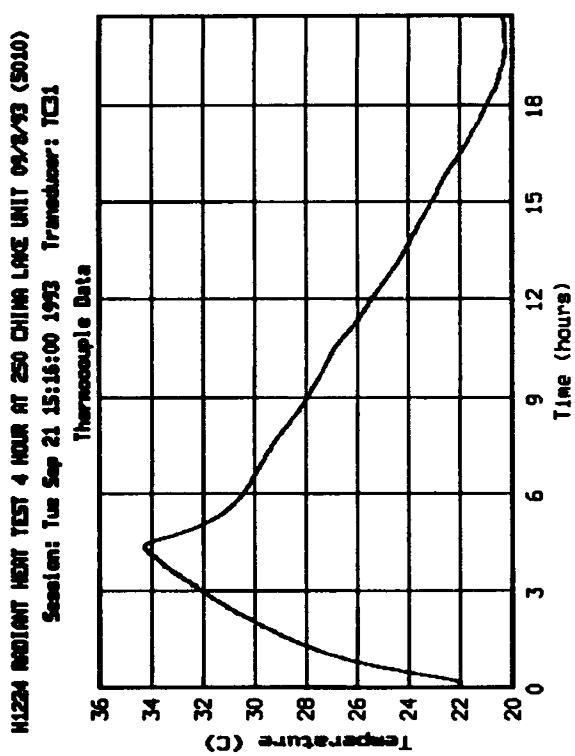


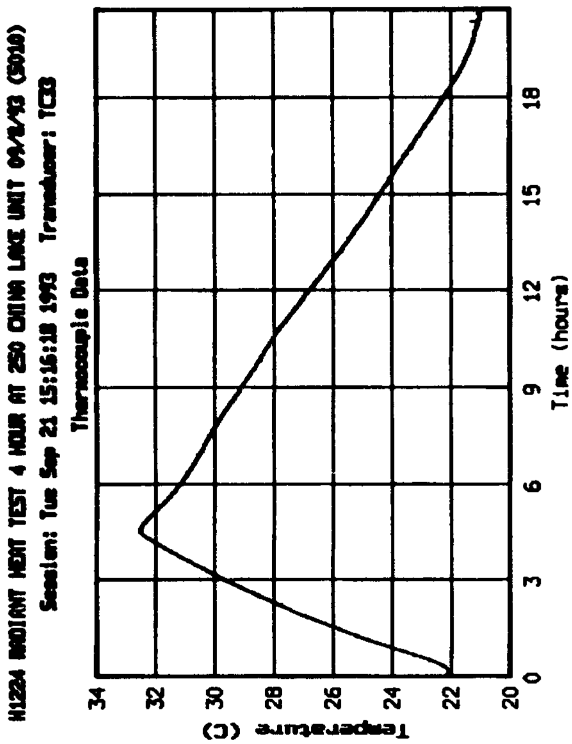

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:15:26 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
Time (hours)

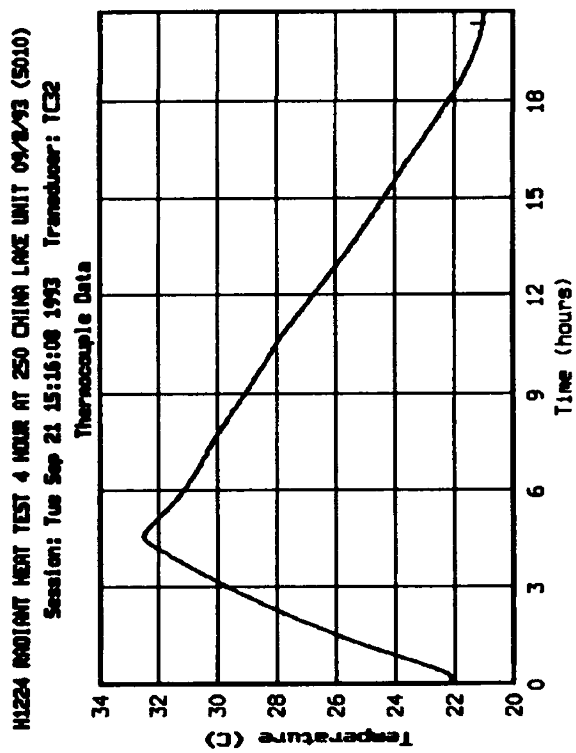

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:15:36 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
Time (hours)

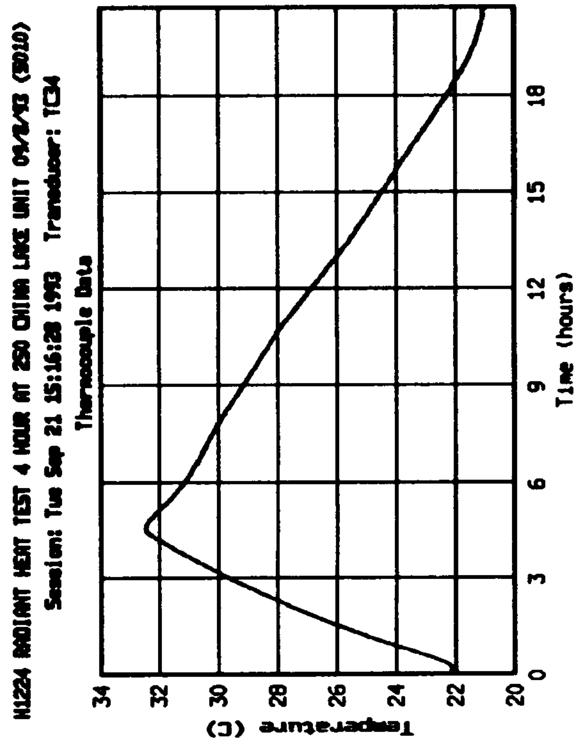

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:15:45 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
Time (hours)

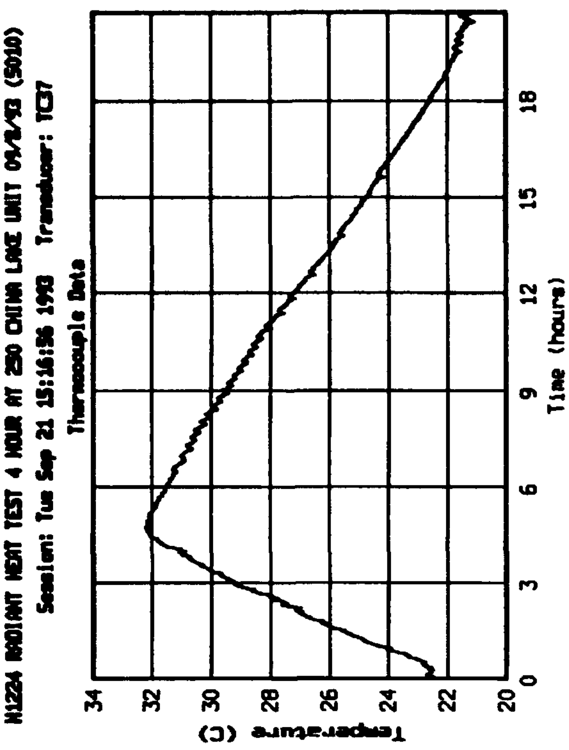

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:15:53 1993 Transducer: TC30
Thermocouple Data
Temperature (C)
Time (hours)

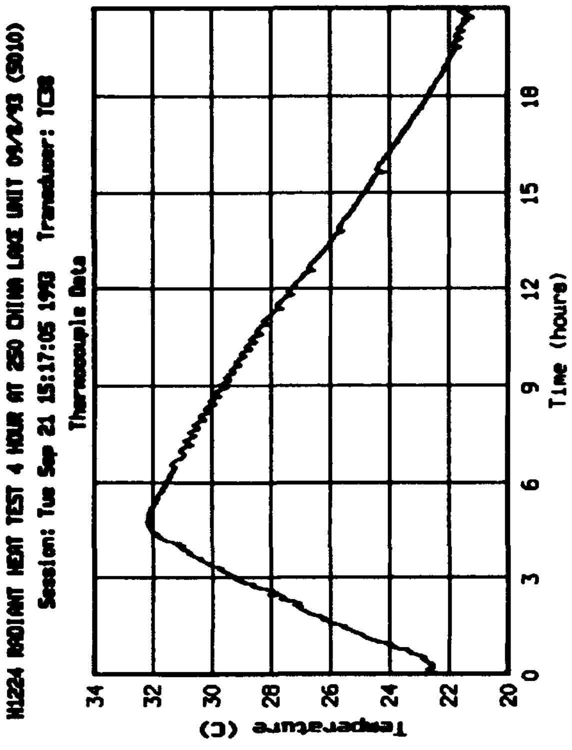

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:00 1993 Transducer: TC31
Thermocouple Data
Temperature (C)
Time (hours)
36
34
32
30
28
26
24
22
20
0
3
6
9
12
15
18

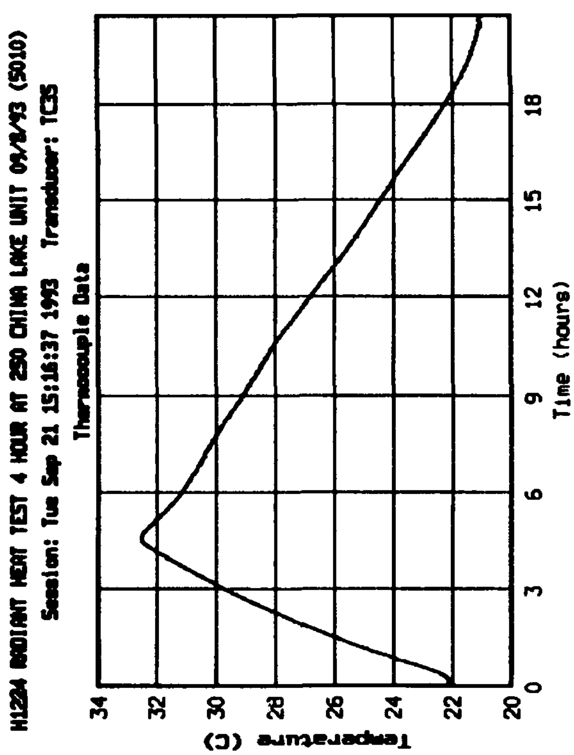

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:18 1993 Transducer: TC33
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
20
0
3
6
9
12
15
18

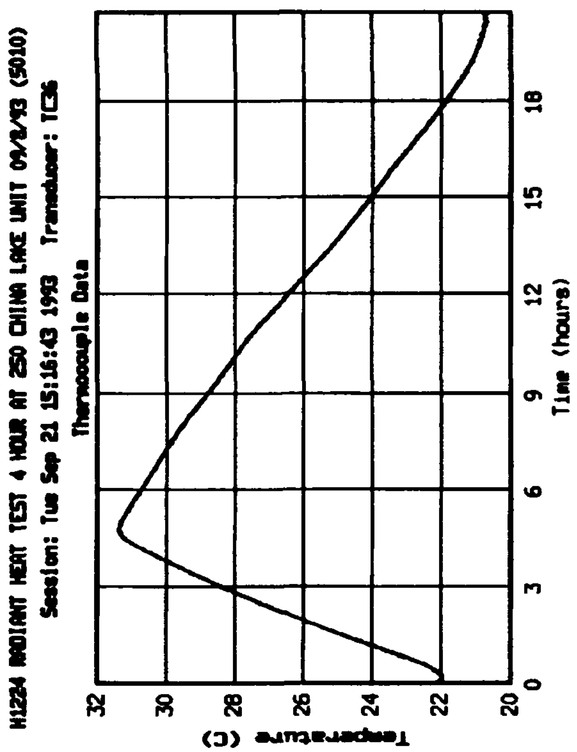

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:08 1993 Transducer: TC32
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
20
0
3
6
9
12
15
18

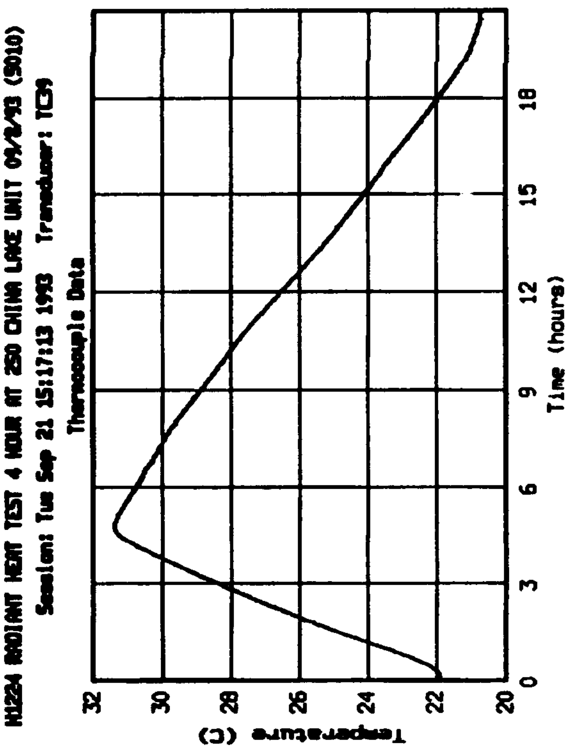

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:28 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
20
0
3
6
9
12
15
18

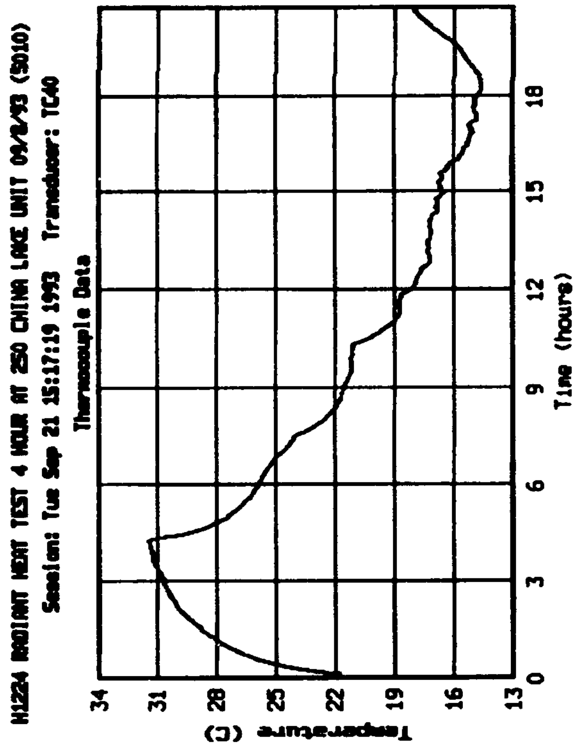

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:36 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
34 32 30 28 26 24 22 20
Time (hours)
0 3 6 9 12 15 18

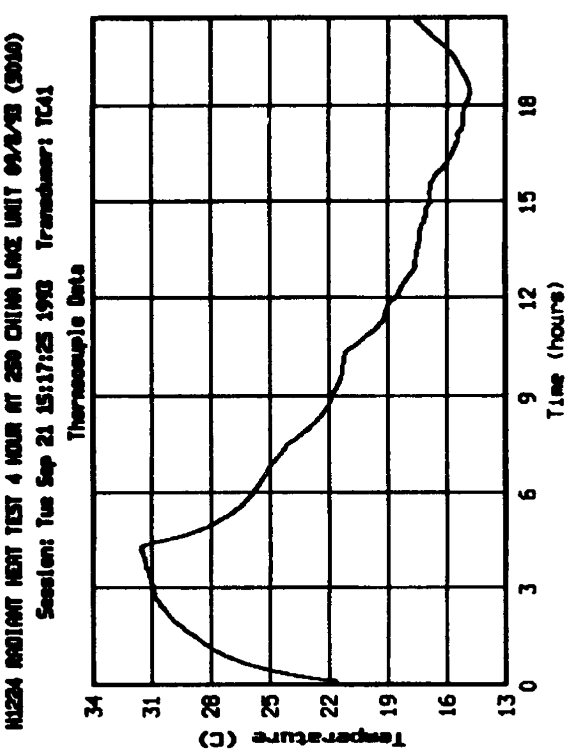

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:05 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
34 32 30 28 26 24 22 20
Time (hours)
0 3 6 9 12 15 18

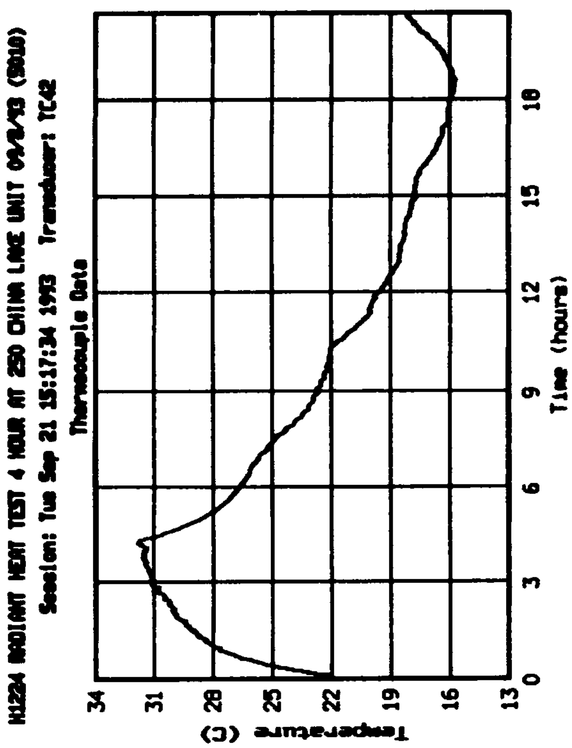

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:37 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
34 32 30 28 26 24 22 20
Time (hours)
0 3 6 9 12 15 18

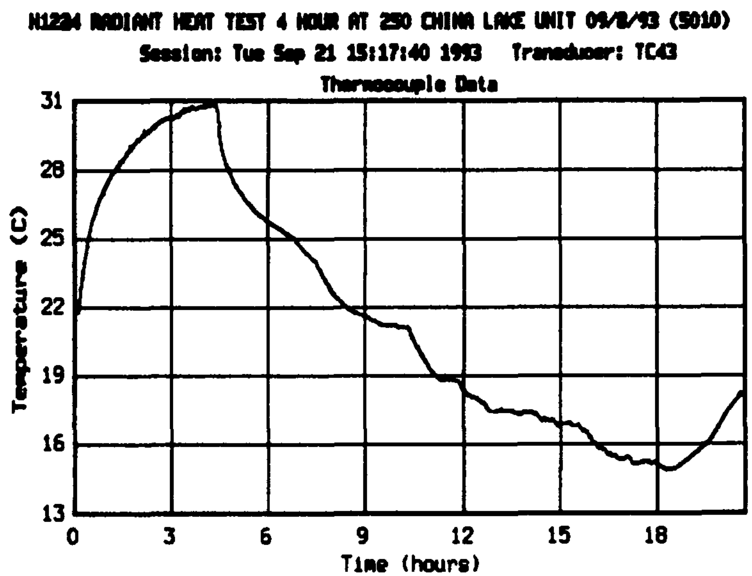

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:16:43 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
32 30 28 26 24 22 20
Time (hours)
0 3 6 9 12 15 18

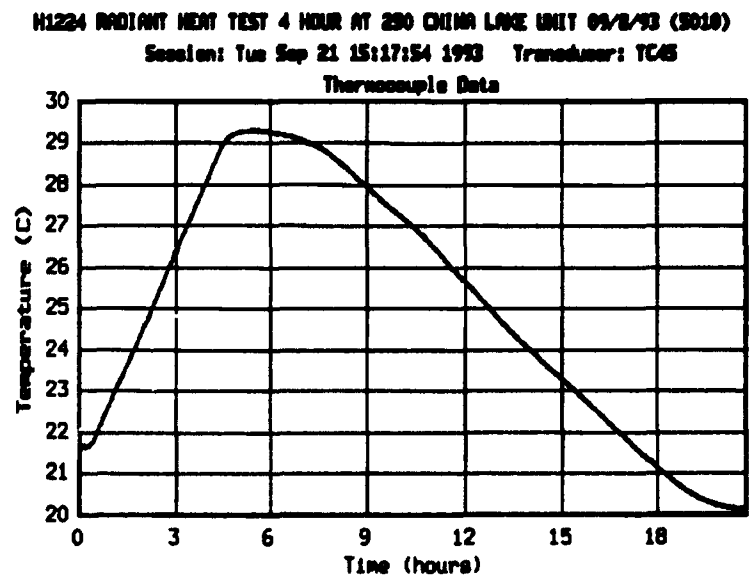

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:13 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
Time (hours)

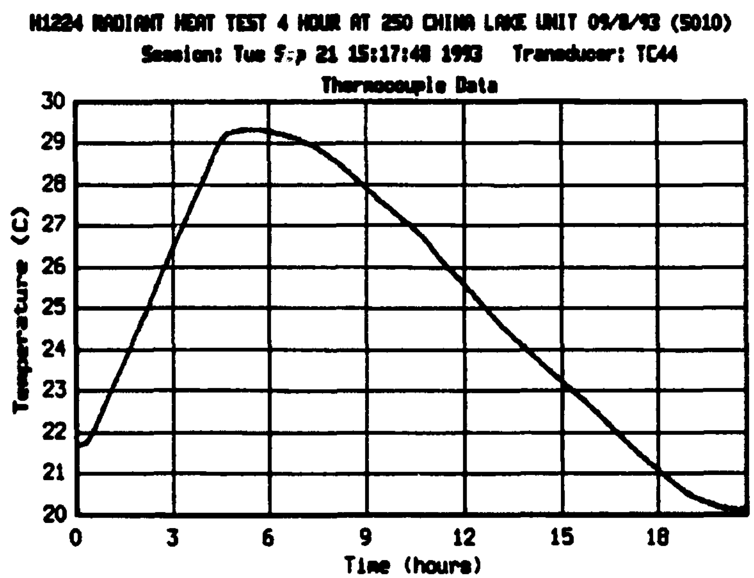

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:19 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
Time (hours)

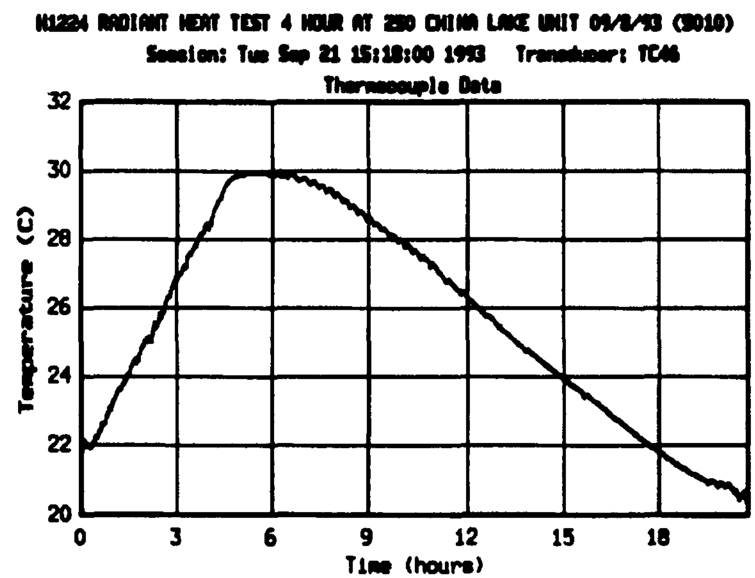

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:25 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)

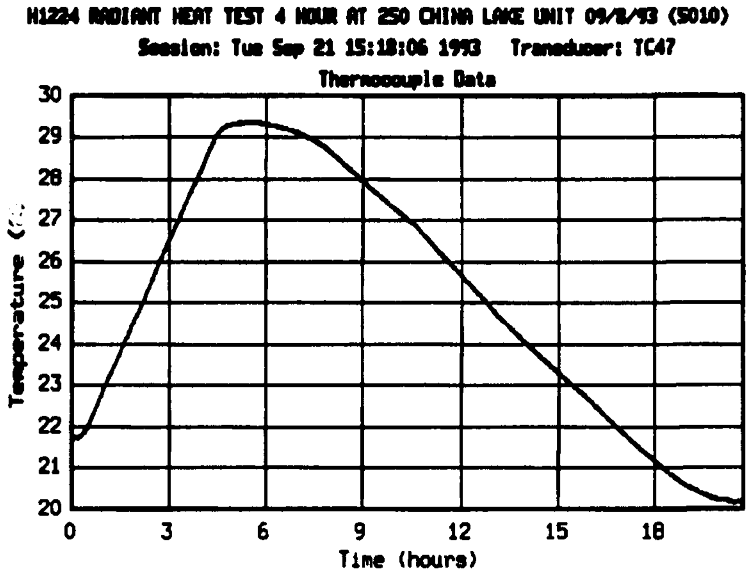

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:34 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)

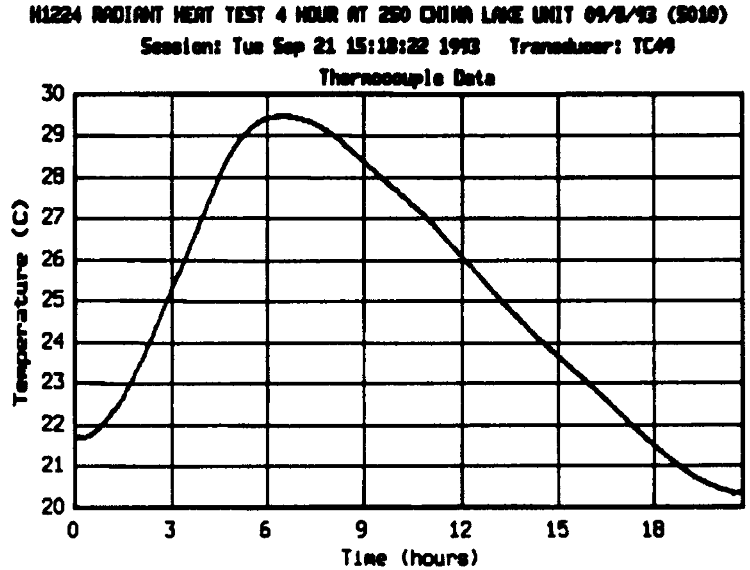

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:40 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
31
28
25
22
19
16
13
0
3
6
9
12
15
18
Time (hours)

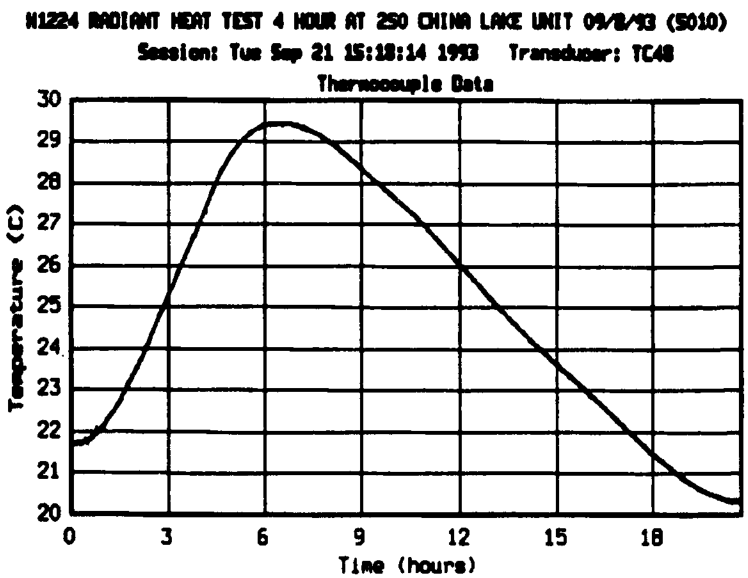

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:17:54 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
30
29
28
27
26
25
24
23
22
21
20
0
3
6
9
12
15
18
Time (hours)

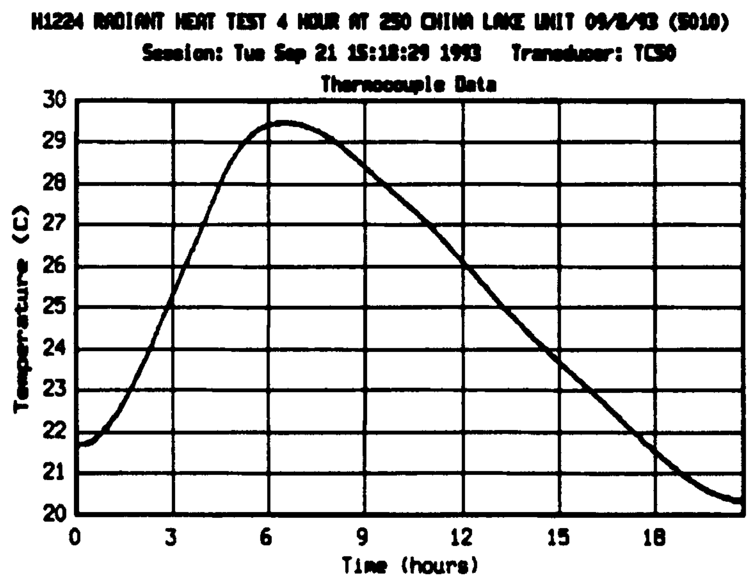

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue S:p 21 15:17:48 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
30
29
28
27
26
25
24
23
22
21
20
0
3
6
9
12
15
18
Time (hours)

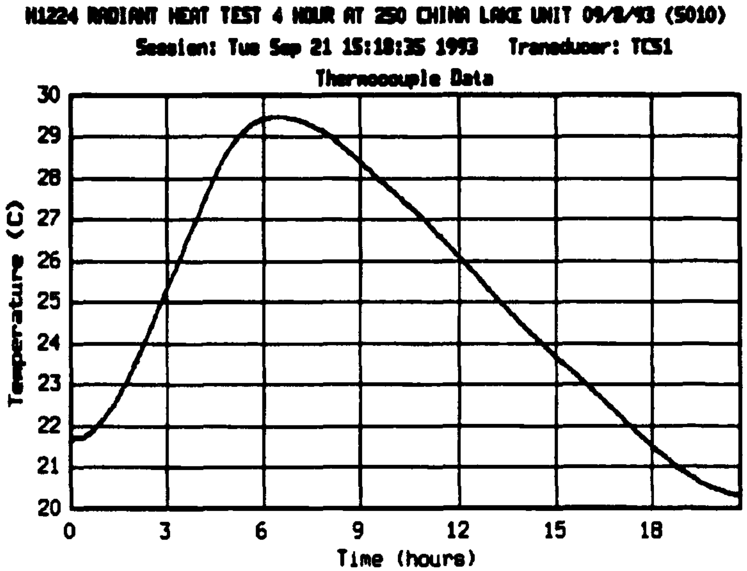

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:00 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
32
30
28
26
24
22
20
0
3
6
9
12
15
18
Time (hours)

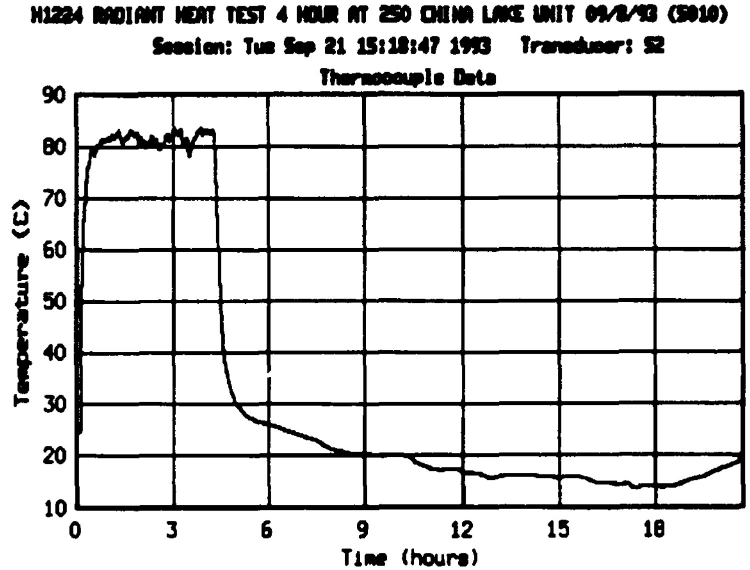

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:06 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
Time (hours)
30
29
28
27
26
25
24
23
22
21
20
0
3
6
9
12
15
18

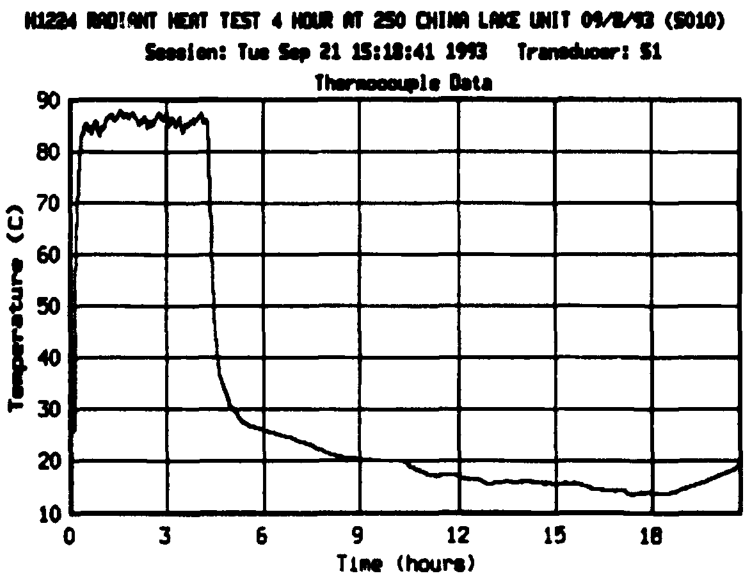

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:22 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
Time (hours)
30
29
28
27
26
25
24
23
22
21
20
0
3
6
9
12
15
18

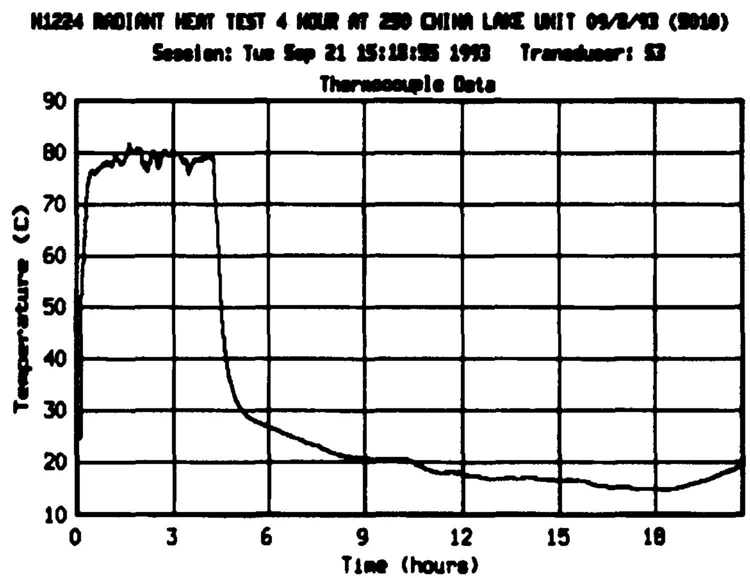

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:14 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
Time (hours)
30
29
28
27
26
25
24
23
22
21
20
0
3
6
9
12
15
18

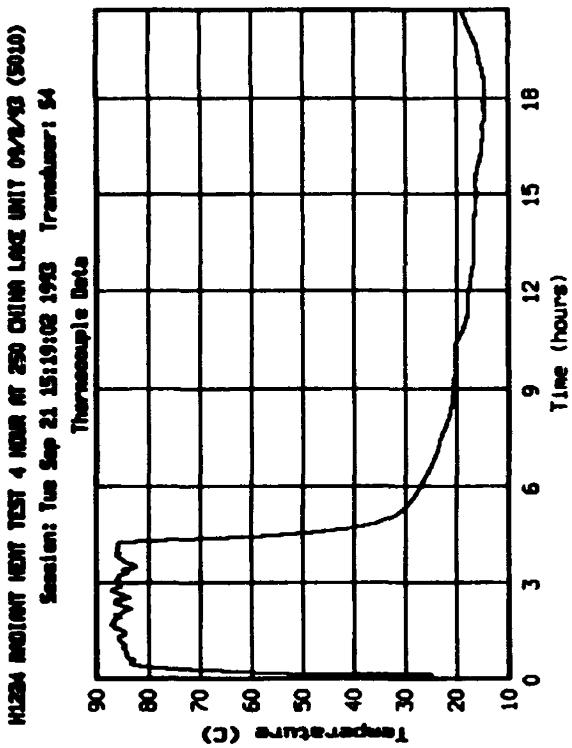

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:29 1993 Transducer: TC50
Thermocouple Data
Temperature (C)
Time (hours)
30
29
28
27
26
25
24
23
22
21
20
0
3
6
9
12
15
18

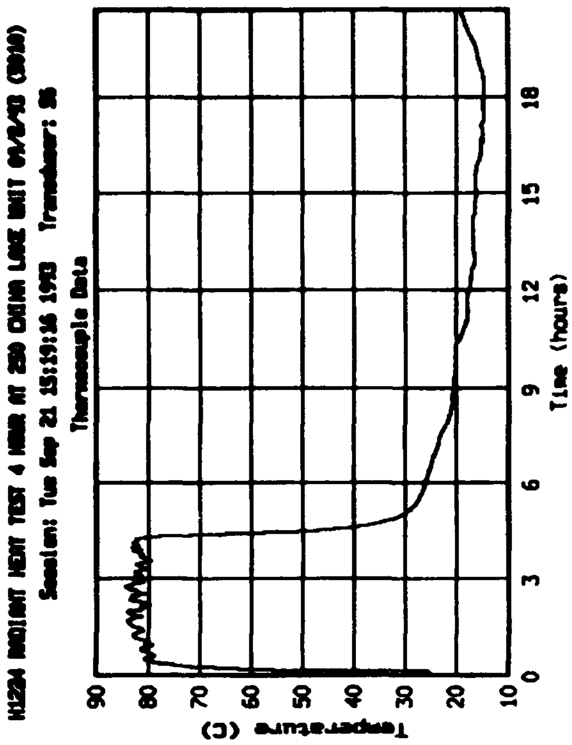

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:35 1993 Transducer: TCS1
Thermocouple Data
Temperature (C)
Time (hours)

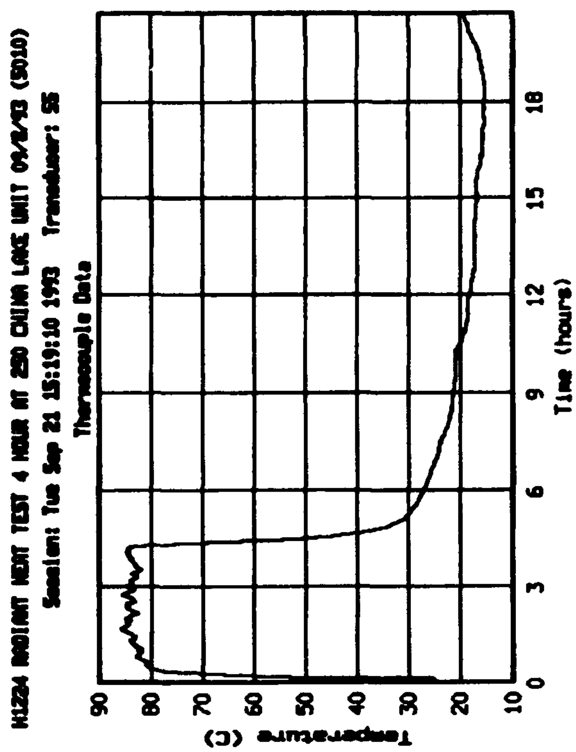

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:47 1993 Transducer: S2
Thermocouple Data
Temperature (C)
Time (hours)

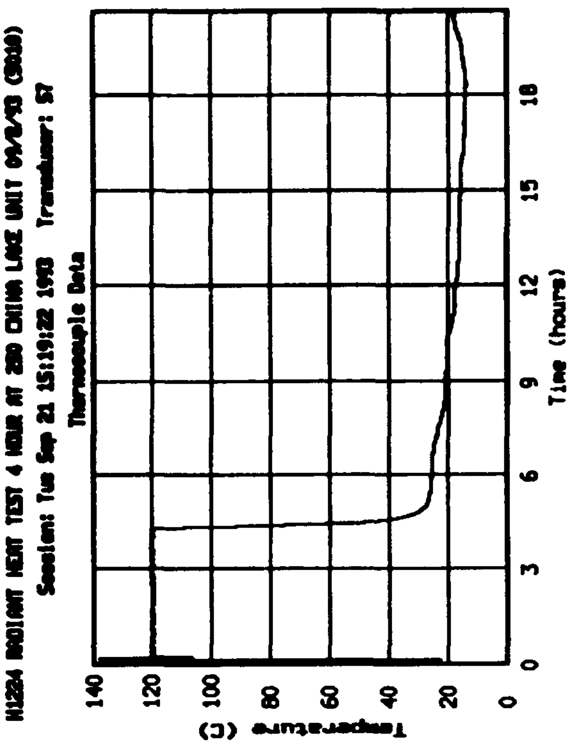

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:41 1993 Transducer: S1
Thermocouple Data
Temperature (C)
Time (hours)

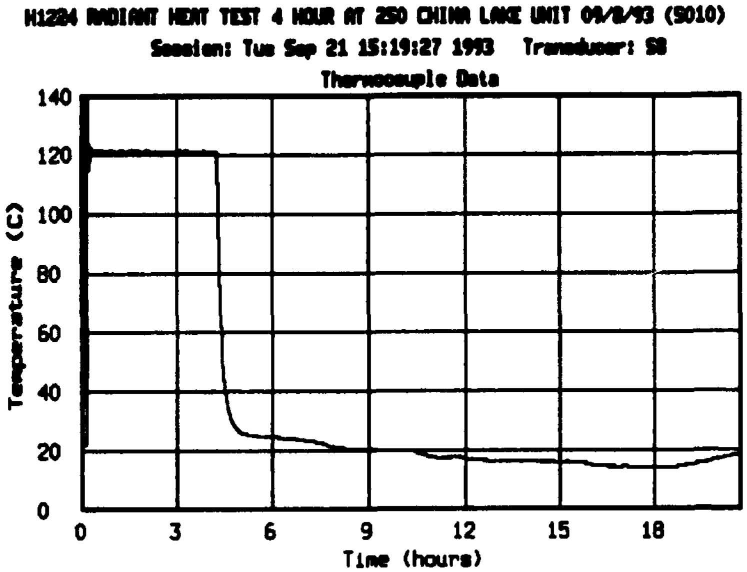

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:18:55 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)

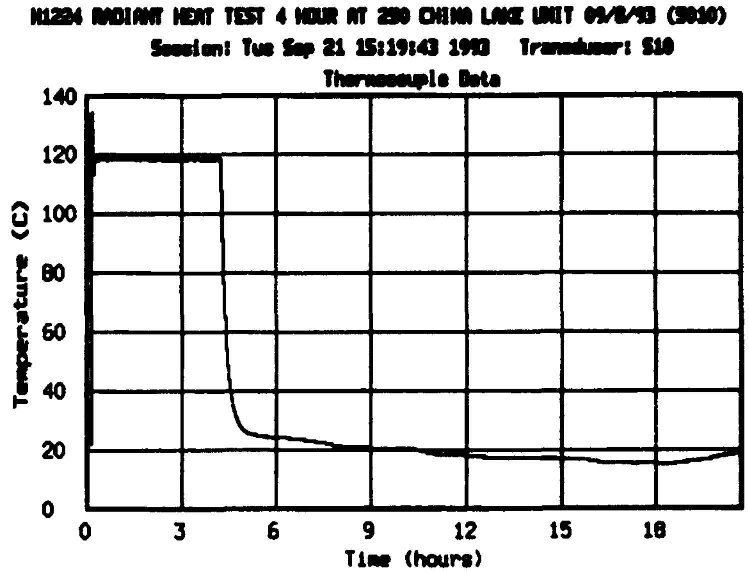

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT (5010)
Session: Tue Sep 21 15:19:02 1993 Transducer: S4
Thermocouple Data
Temperature (C)
Time (hours)

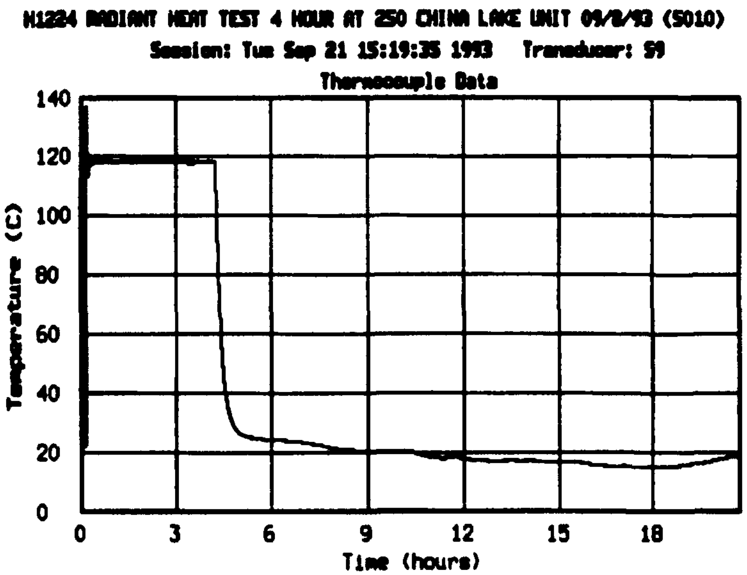

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT
Session: Tue Sep 21 15:19:16 1993 Transducer: S6
Thermocouple Data
Temperature (C)
Time (hours)

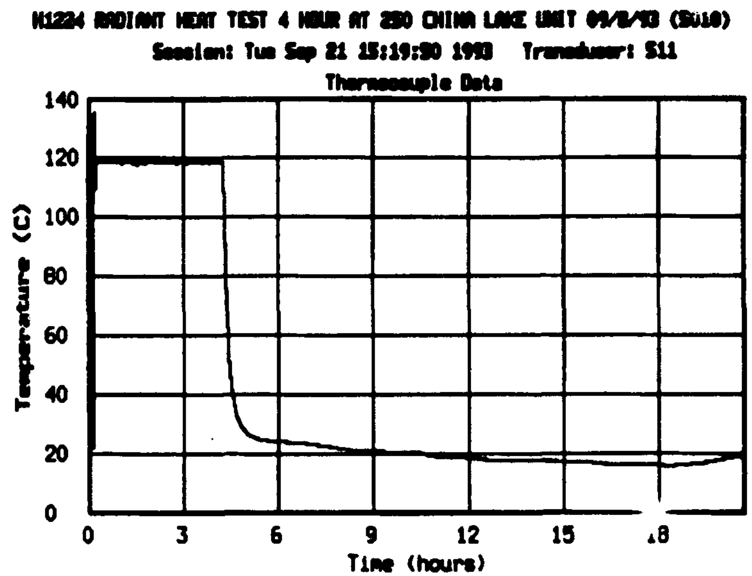

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT (5010)
Session: Tue Sep 21 15:19:10 1993 Transducer: S5
Thermocouple Data
Temperature (C)
Time (hours)

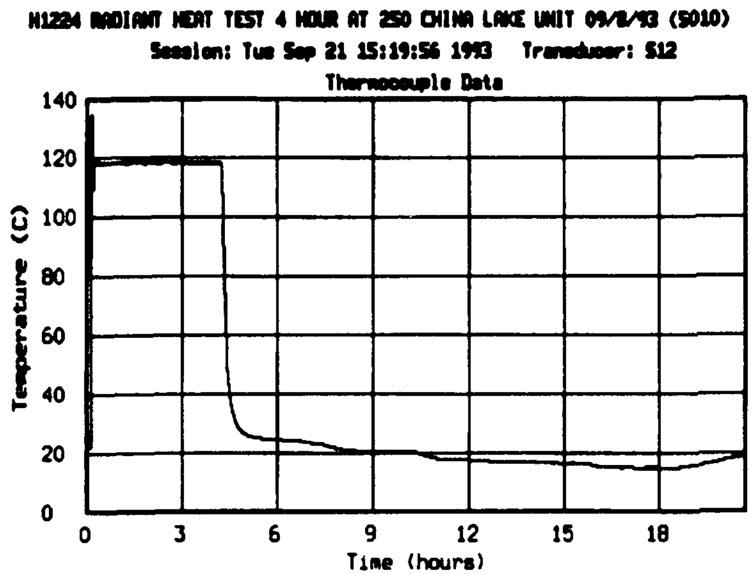

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT
Session: Tue Sep 21 15:19:22 1993 Transducer: S7
Thermocouple Data
Temperature (C)
Time (hours)

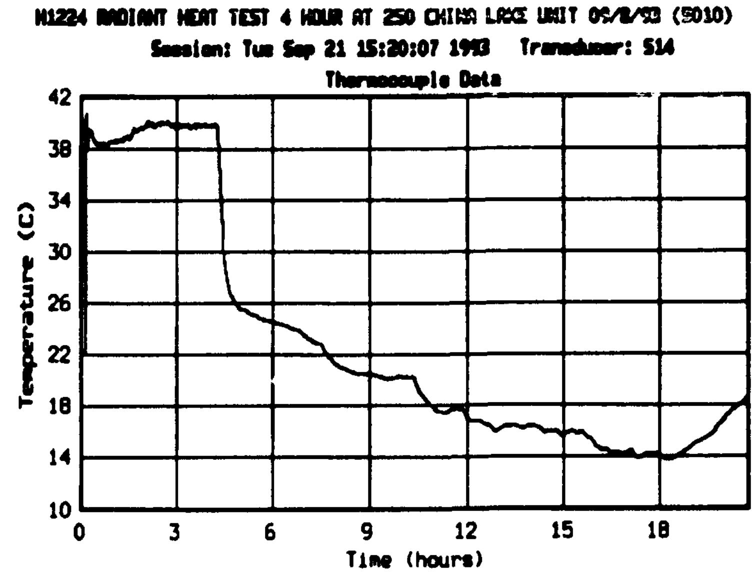

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:19:27 1993 Transducer: S8
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
0
3
6
9
12
15
18
Time (hours)

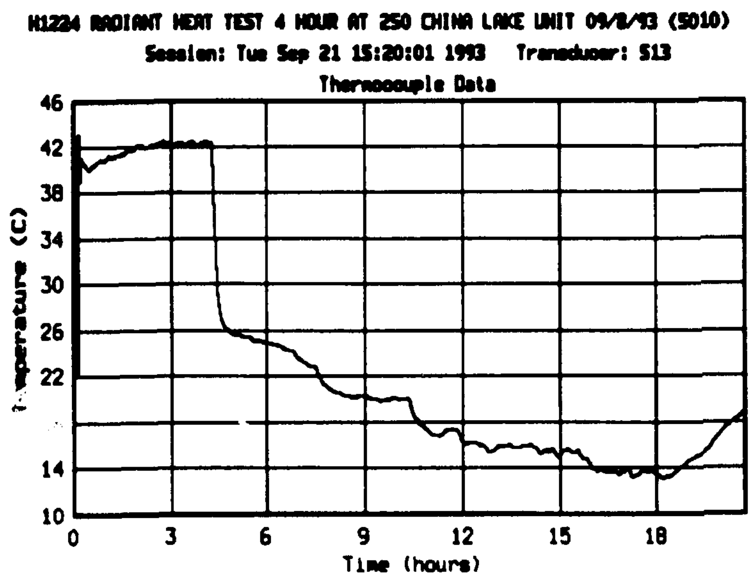

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:19:43 1993 Transducer: S10
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
0
3
6
9
12
15
18
Time (hours)

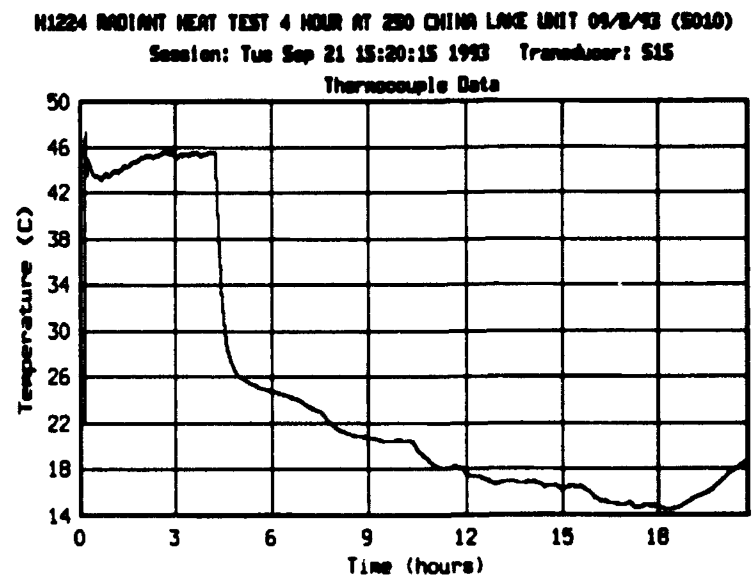

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:19:35 1993 Transducer: S9
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
0
3
6
9
12
15
18
Time (hours)

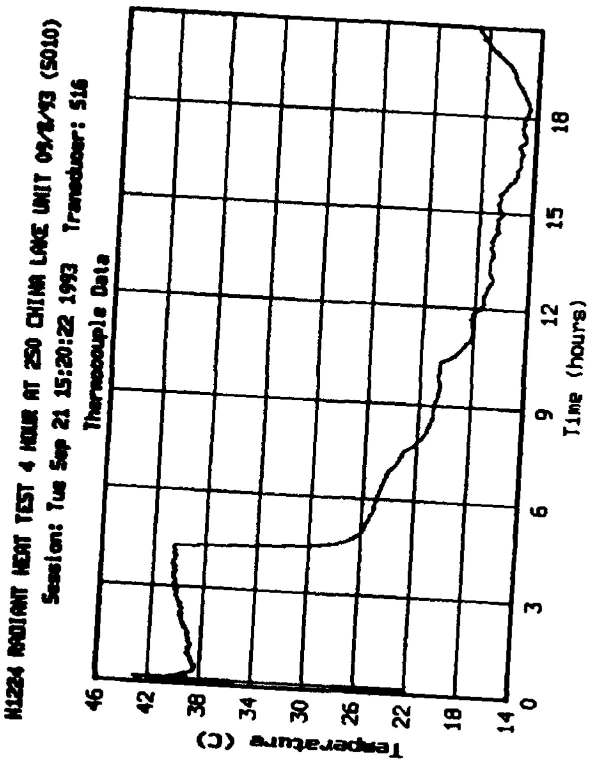

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:19:50 1993 Transducer: S11
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
0
3
6
9
12
15
Time (hours)

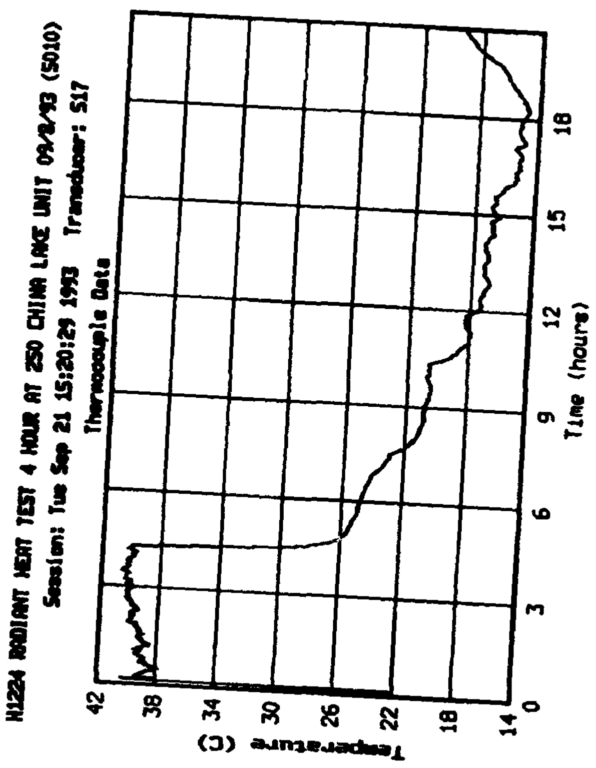

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:19:56 1993 Transducer: S12
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
0
3
6
9
12
15
18
Time (hours)

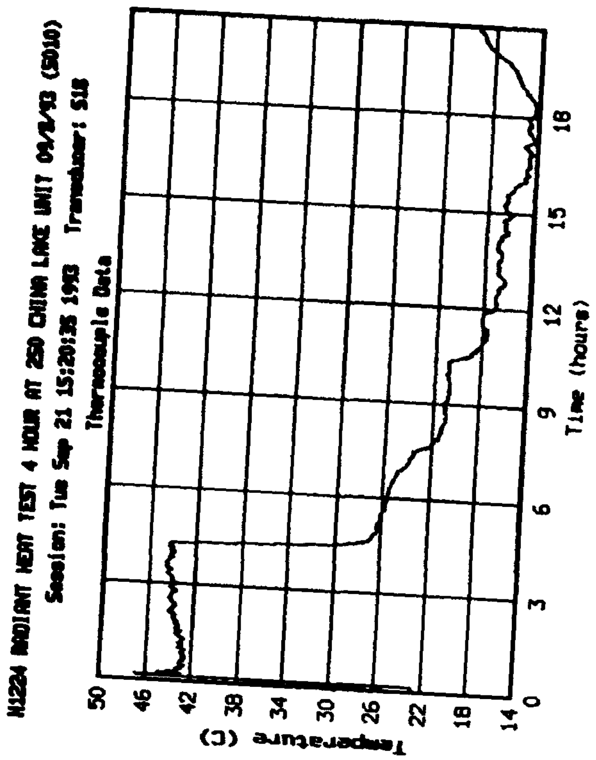

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:07 1993 Transducer: S14
Thermocouple Data
Temperature (C)
42
38
34
30
26
22
18
14
10
0
3
6
9
12
15
18
Time (hours)

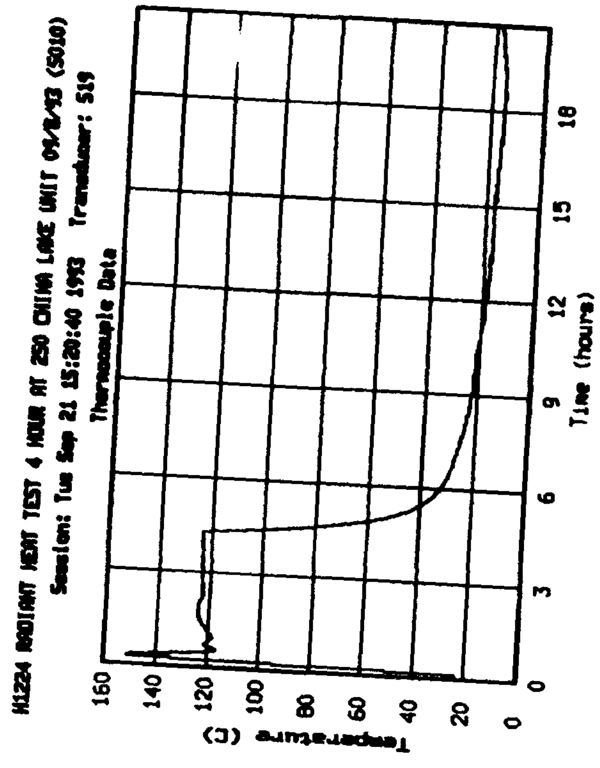

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:01 1993 Transducer: S13
Thermocouple Data
46
42
38
34
30
26
22
14
10
0
3
6
9
12
15
18
Time (hours)

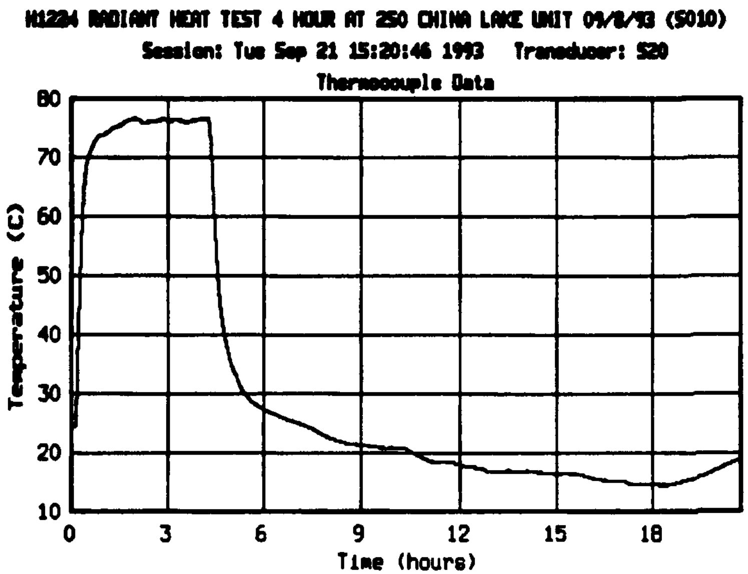

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:15 1993 Transducer: S15
Thermocouple Data
Temperature (C)
50
46
42
38
34
30
26
22
18
14
0
3
6
9
12
15
18
Time (hours)

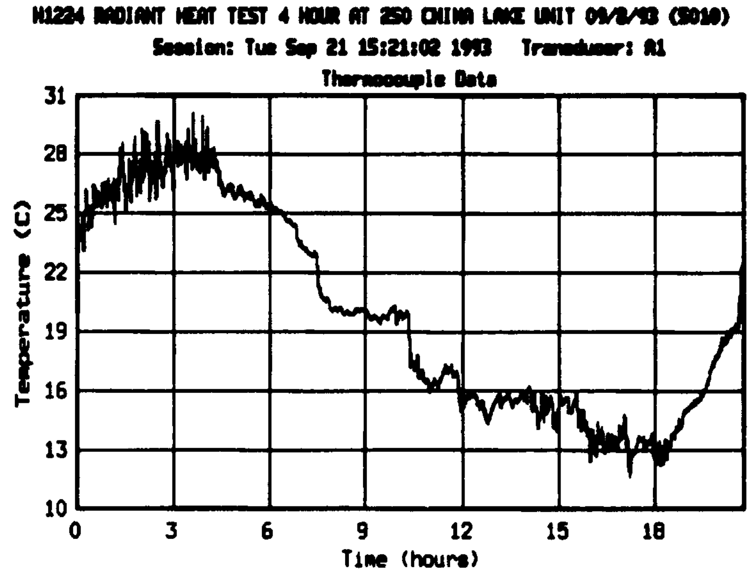

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:22 1993 Transducer: S16
Thermocouple Data
Temperature (C)
Time (hours)

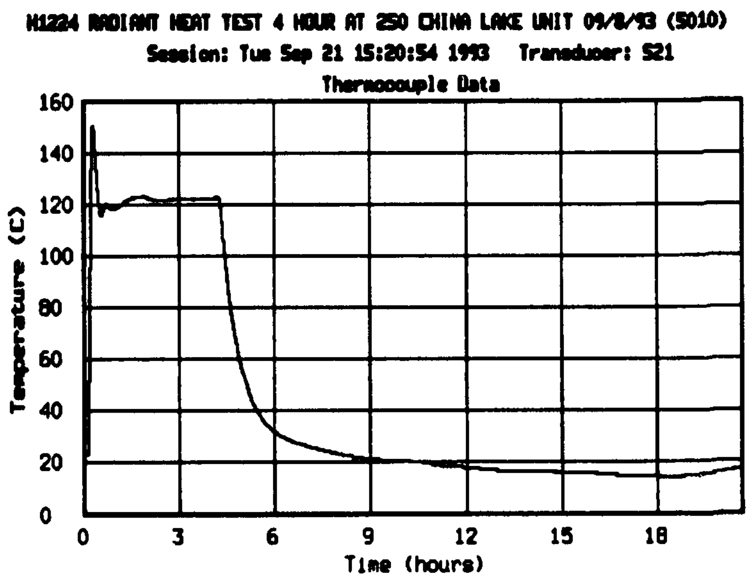

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:29 1993 Transducer: S17
Thermocouple Data
Temperature (C)
Time (hours)

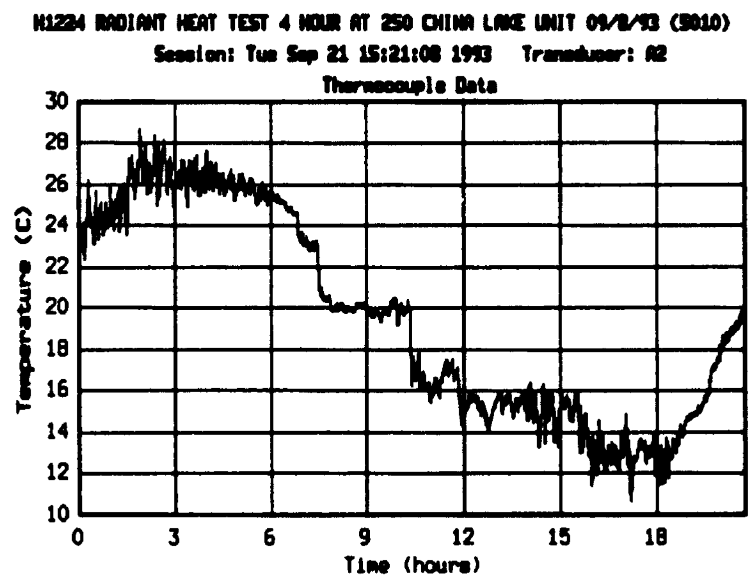

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:35 1993 Transducer: S18
Thermocouple Data
Temperature (C)
Time (hours)

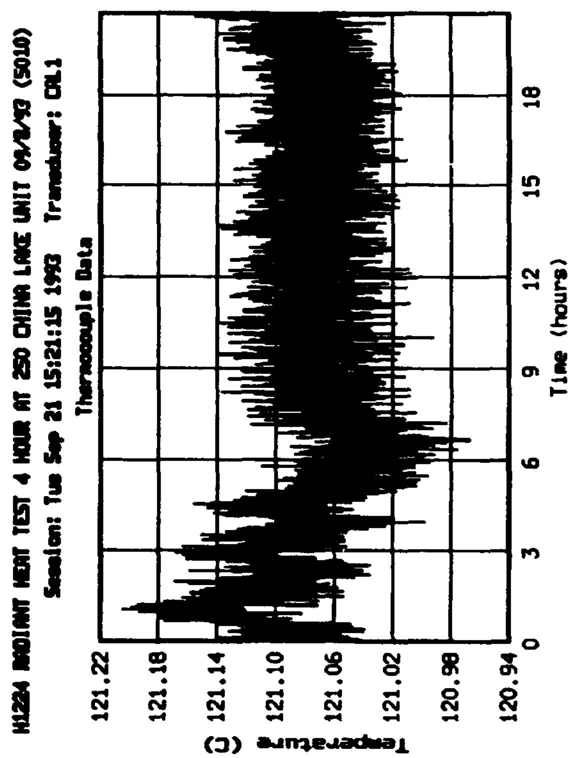

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:40 1993 Transducer: S19
Thermocouple Data
Temperature (C)
Time (hours)

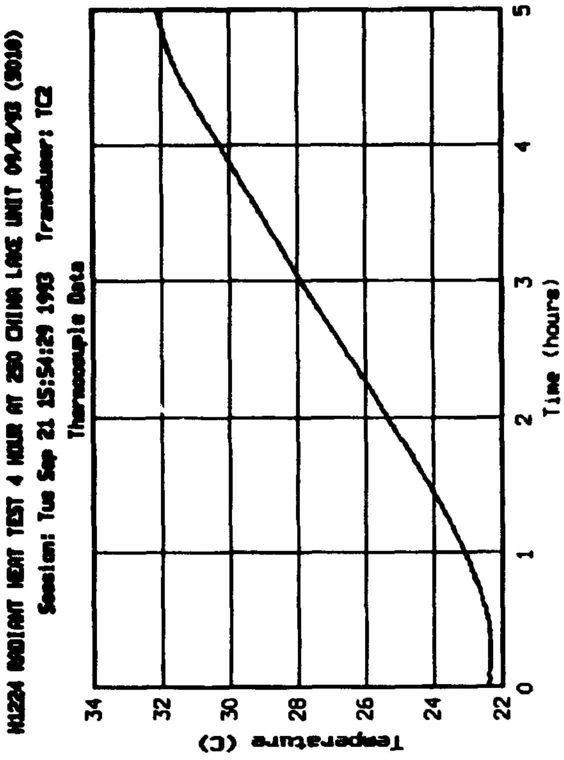

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:46 1993 Transducer: S20
Thermocouple Data
Temperature (C)
Time (hours)

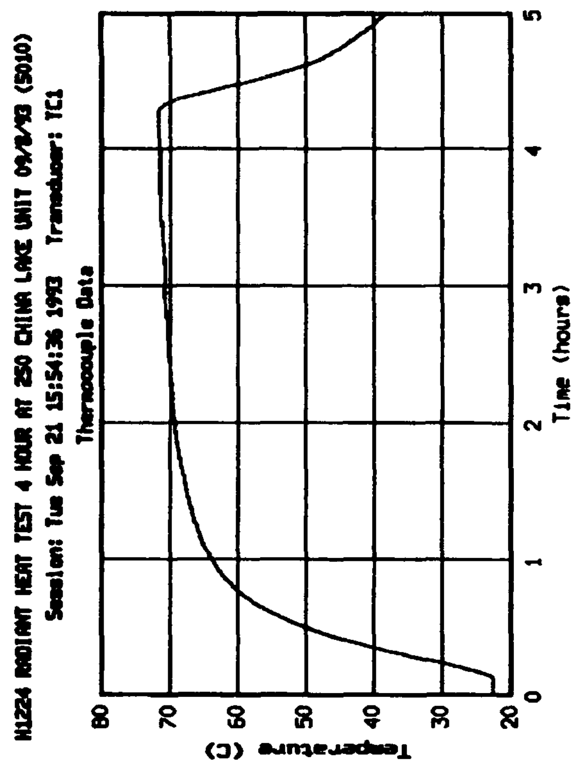

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:21:02 1993 Transducer: A1
Thermocouple Data
Temperature (C)
Time (hours)

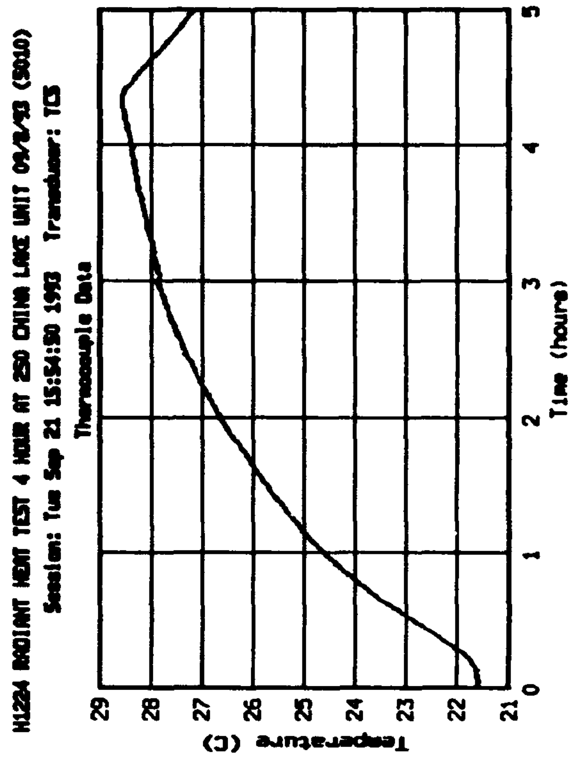

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:20:54 1993 Transducer: S21
Thermocouple Data
Temperature (C)
Time (hours)

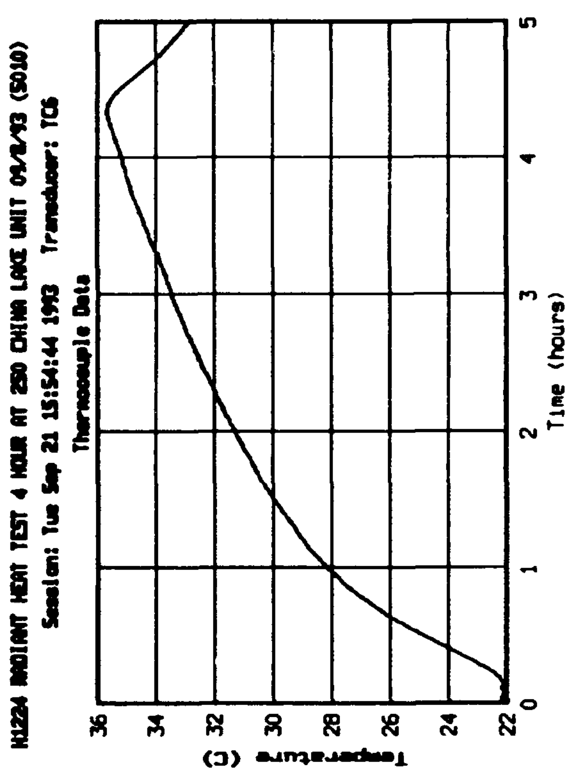

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:21:08 1993 Transducer: A2
Thermocouple Data
Temperature (C)
Time (hours)

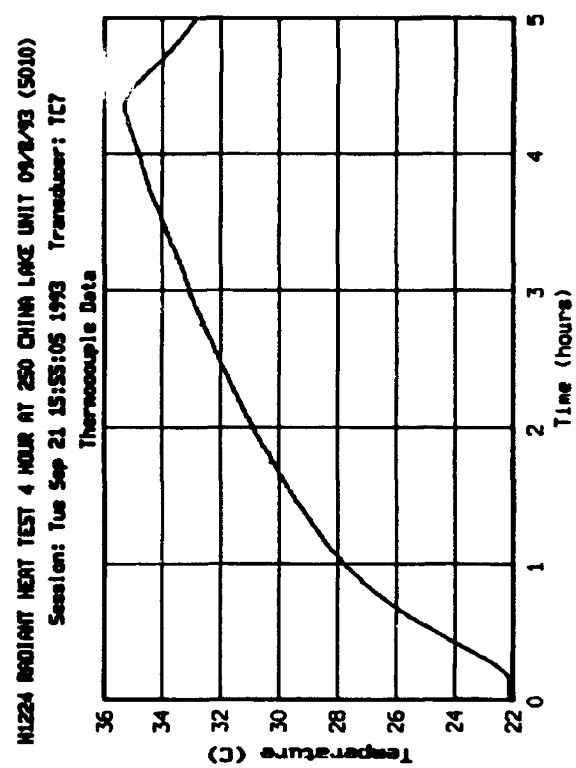

Session: Tue Sep 21 15:21:15 1993 Transducer: CAL1
Thermocouple Data
Temperature (C)
Time (hours)

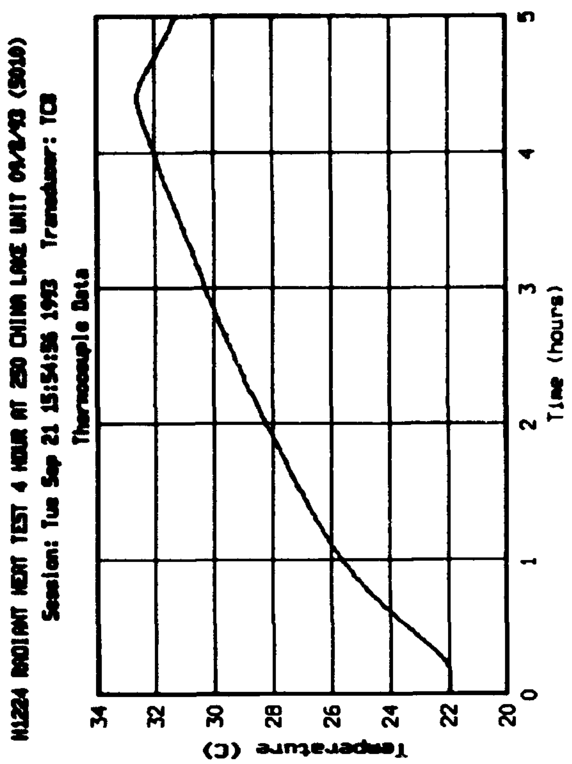

Session: Tue Sep 21 15:54:29 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
Time (hours)

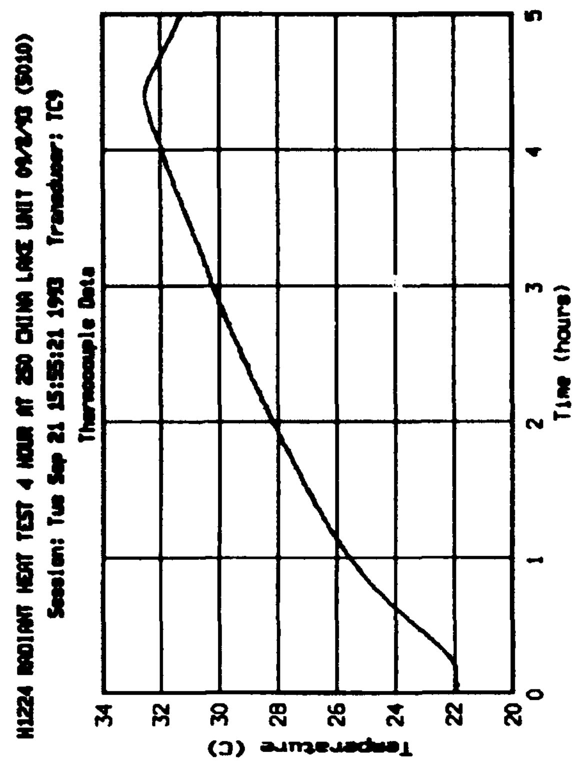

Session: Tue Sep 21 15:54:36 1993 Transducer: TC1
Thermocouple Data
Temperature (C)
Time (hours)

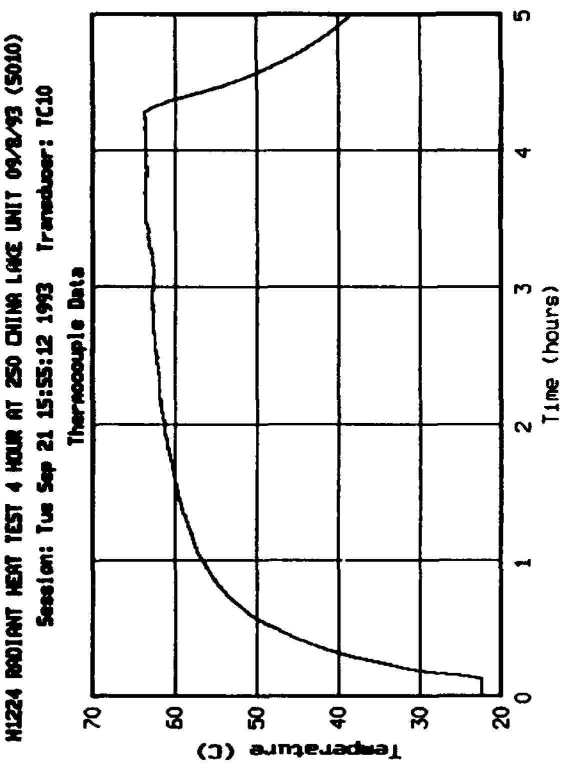

Session: Tue Sep 21 15:54:50 1993 Transducer: TC3
Thermocouple Data
Temperature (C)
Time (hours)

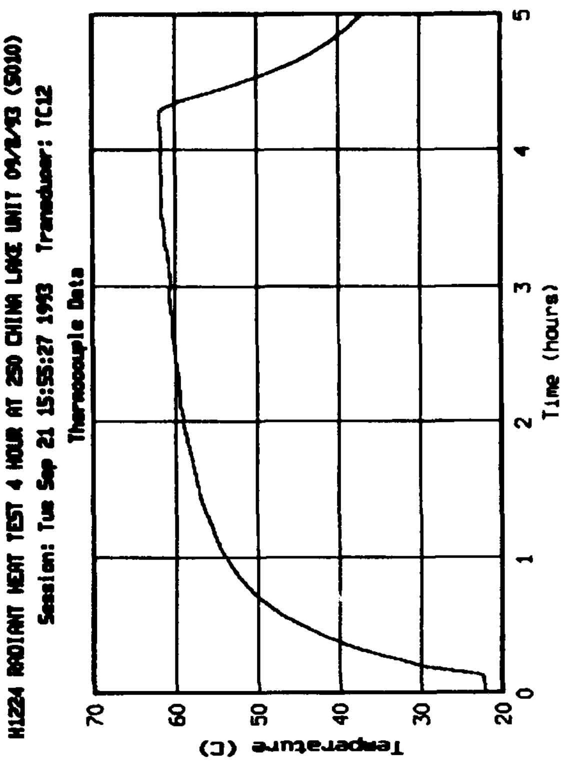

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:54:44 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
Time (hours)

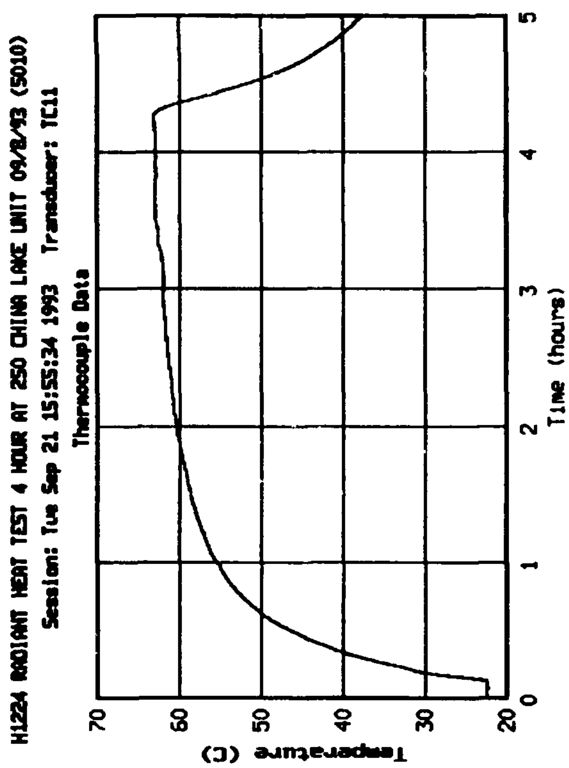

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:55:05 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
Time (hours)

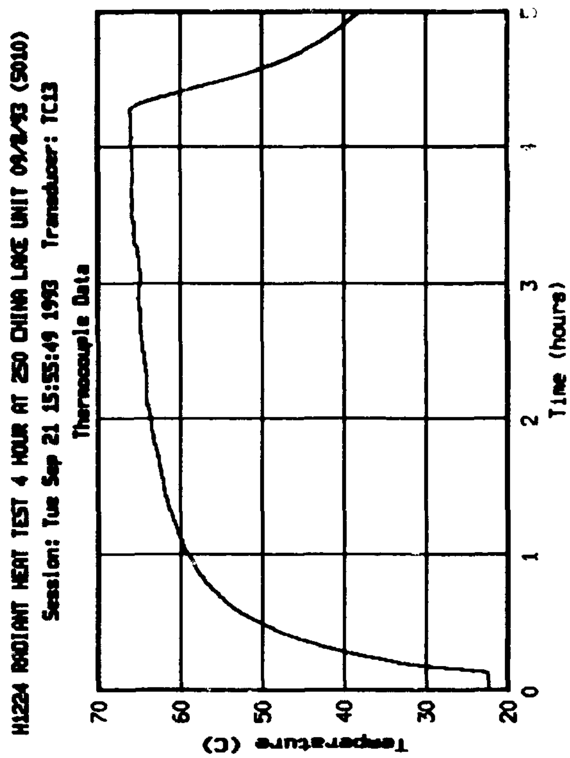

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:54:56 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
Time (hours)

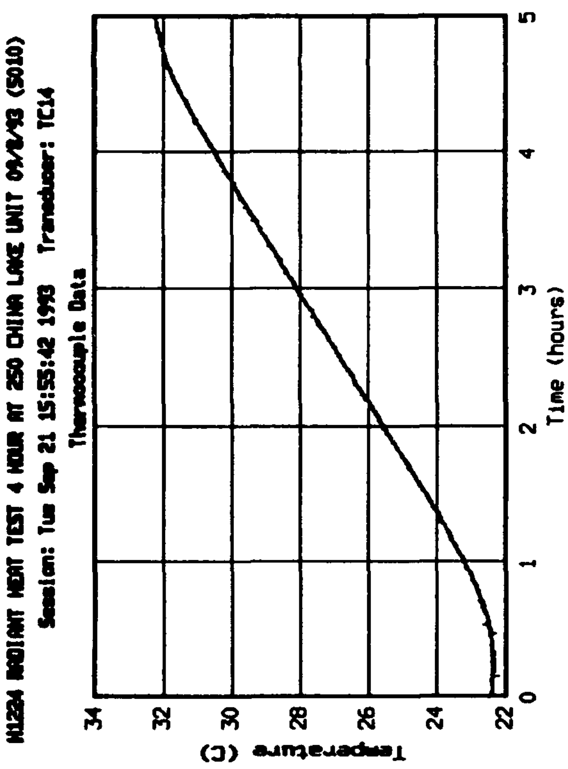

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:55:21 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
Time (hours)

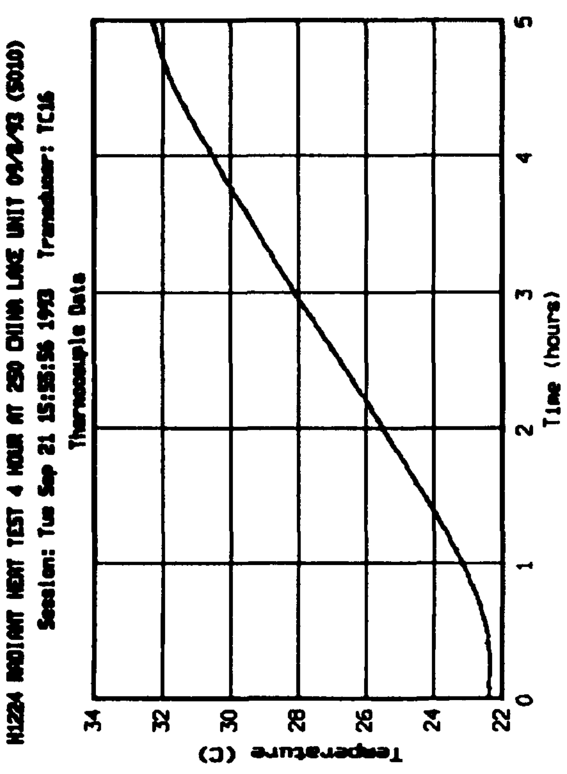

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:55:12 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
70
60
50
40
30
20
0
1
2
3
4
5
Time (hours)

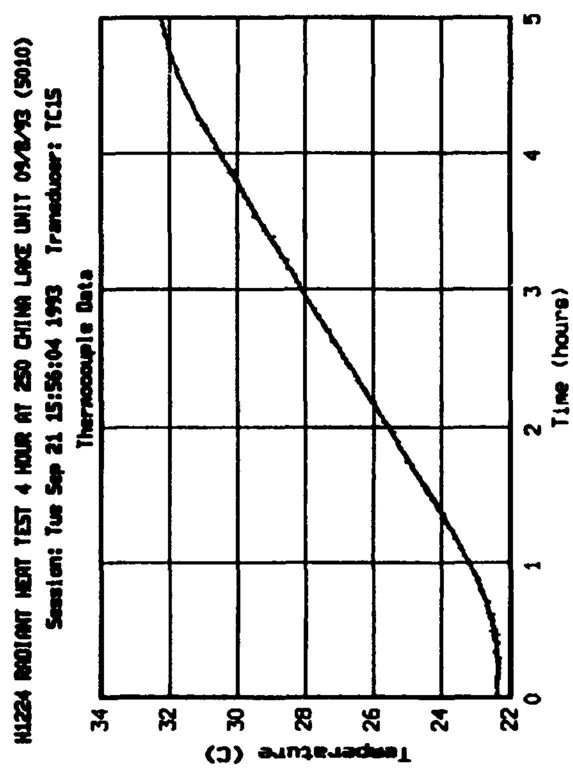

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:55:27 1993 Transducer: TC12
Thermocouple Data
Temperature (C)
70
60
50
40
30
20
0
1
2
3
4
5
Time (hours)

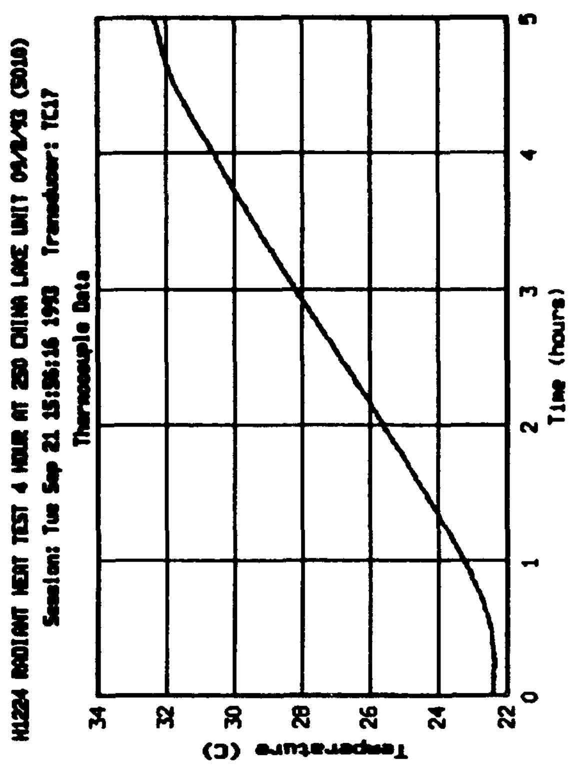

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:55:34 1993 Transducer: TC11
Thermocouple Data
Temperature (C)
70
60
50
40
30
20
0
1
2
3
4
5
Time (hours)

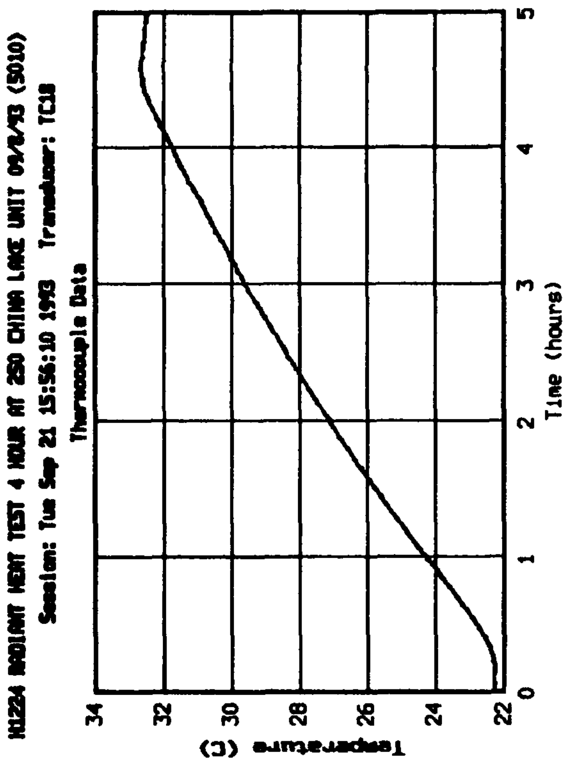

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:55:49 1993 Transducer: TC13
Thermocouple Data
Temperature (C)
70
60
50
40
30
20
0
1
2
3
Time (hours)

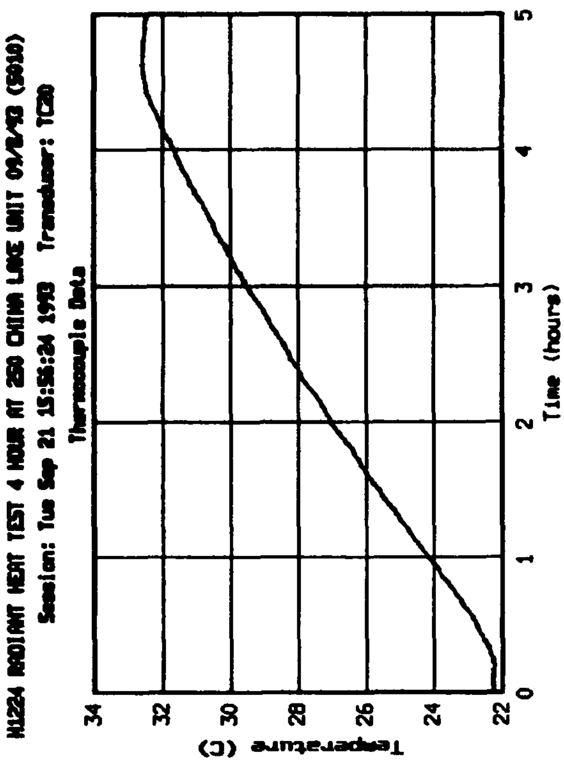

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:55:42 1993 Transducer: TC14
Thermocouple Data
Temperature (C)
Time (hours)

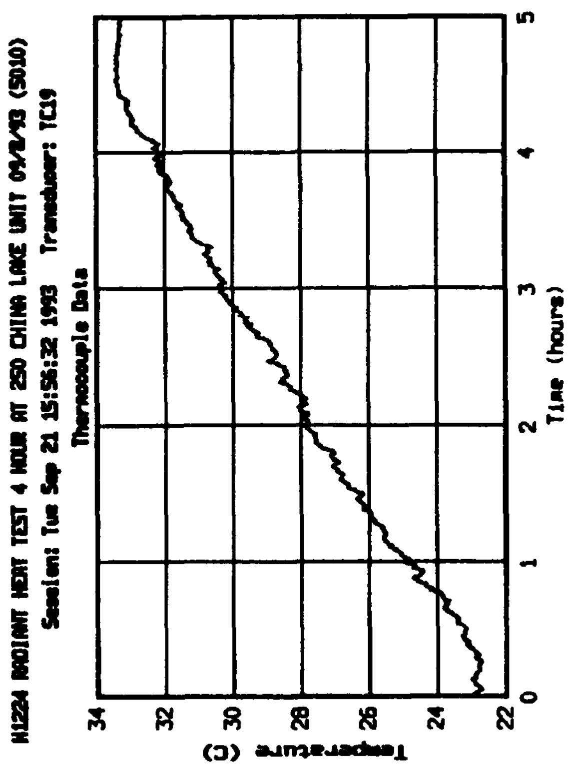

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:55:56 1993 Transducer: TC16
Thermocouple Data
Temperature (C)
Time (hours)

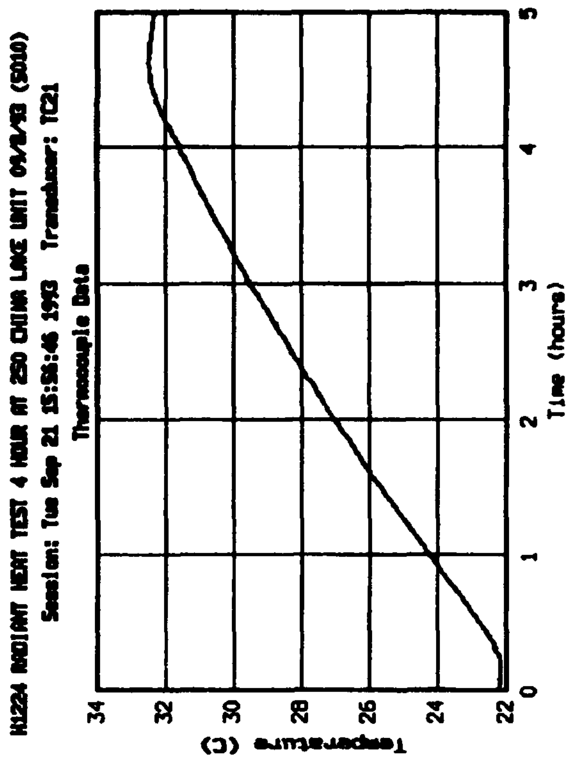

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:56:04 1993 Transducer: TC15
Thermocouple Data
Temperature (C)
Time (hours)

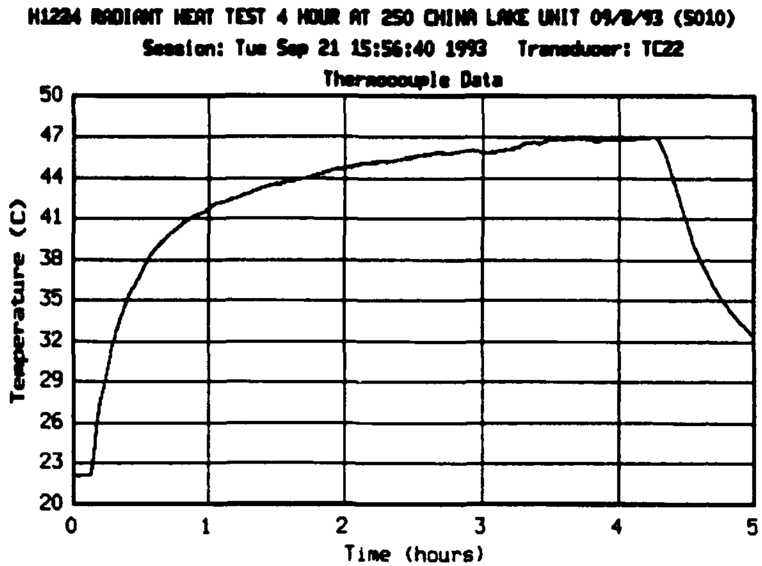

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:56:16 1993 Transducer: TC17
Thermocouple Data
Temperature (C)
Time (hours)

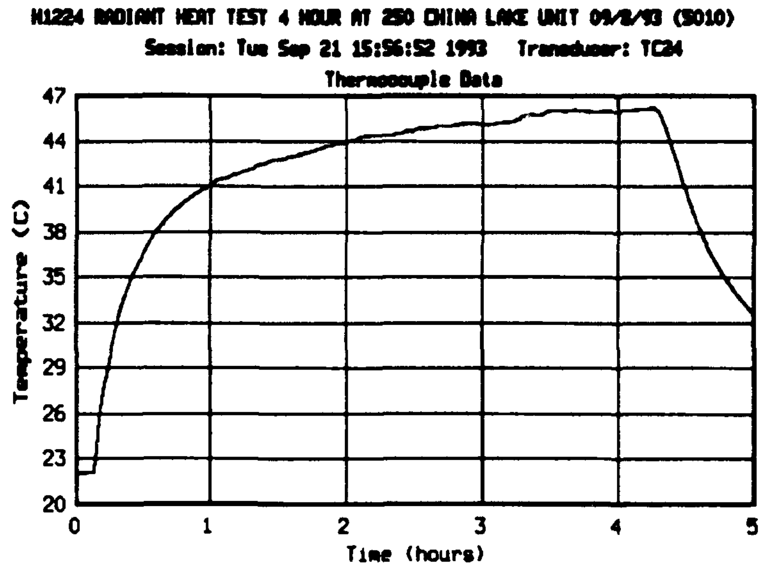

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:56:10 1993 Transducer: TC18
Thermocouple Data
Temperature (C)
34
32
30
28
26
24
22
0
1
2
3
4
5
Time (hours)

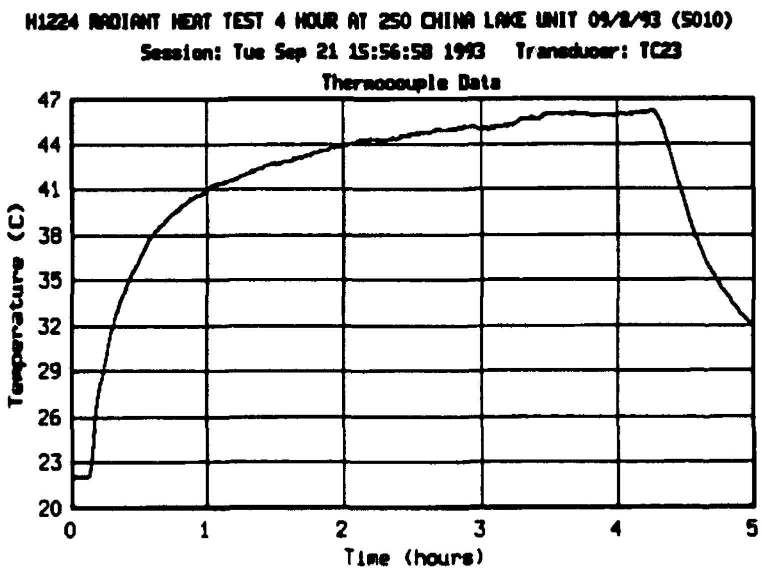

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:56:24 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
34
32
30
28
26
24
22
0
1
2
3
4
5
Time (hours)

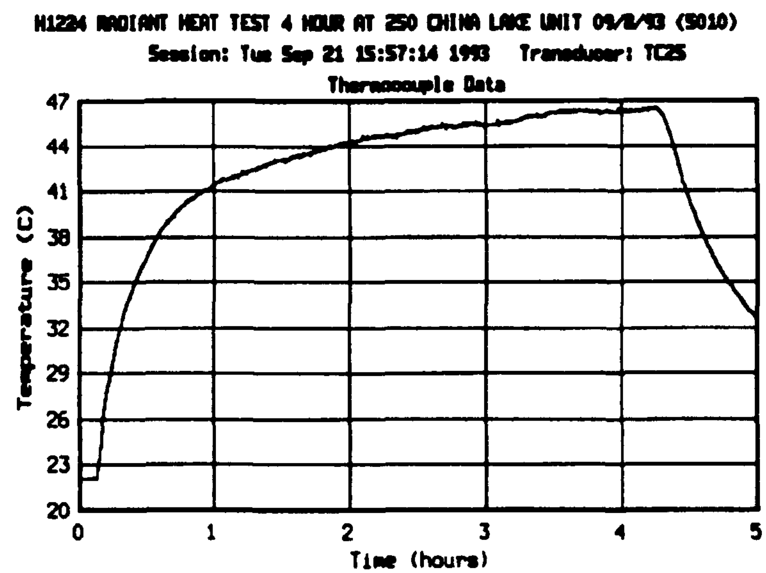

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:56:32 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
34
32
30
28
26
24
22
0
1
2
3
4
5
Time (hours)

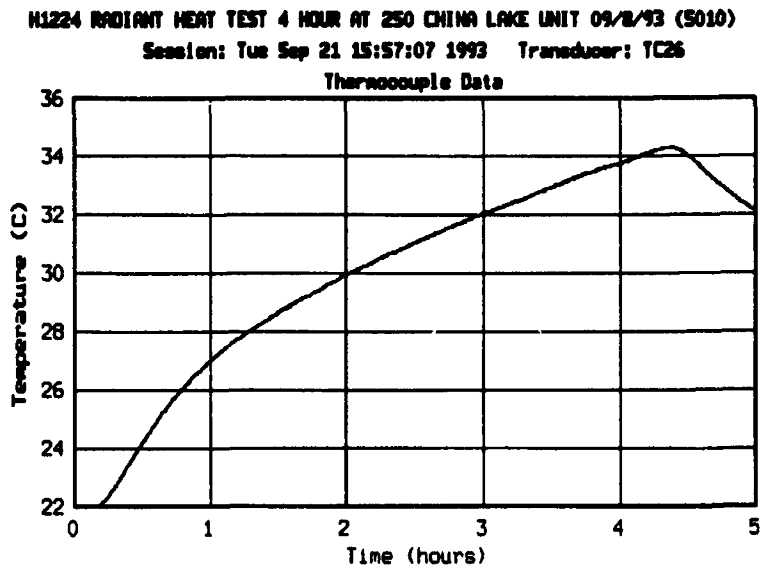

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/08/93 (5010)
Session: Tue Sep 21 15:56:46 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
34
32
30
28
26
24
22
0
1
2
3
4
5
Time (hours)

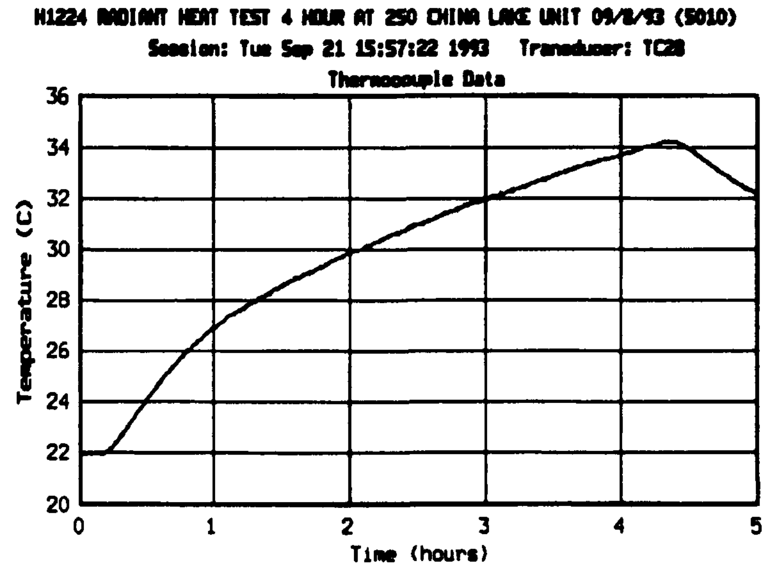

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:56:40 1993 Transducer: TC22
Thermocouple Data
Temperature (C)
50
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
5
Time (hours)

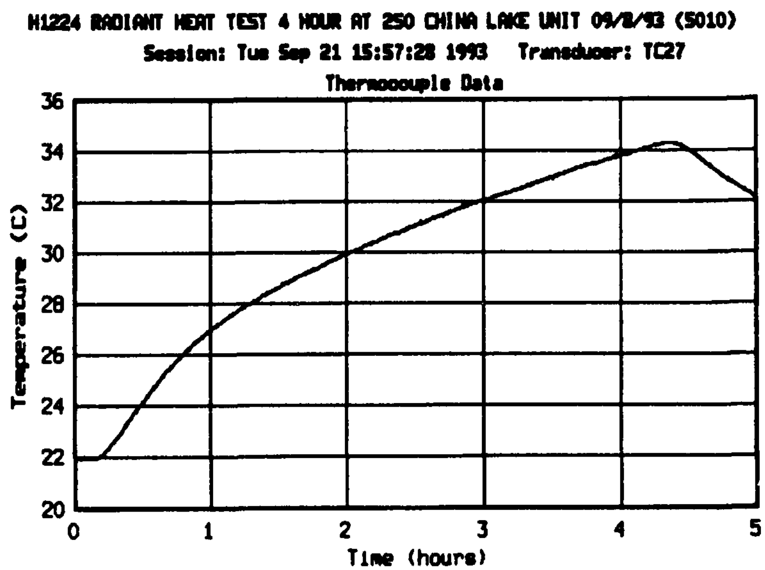

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:56:52 1993 Transducer: TC24
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
5
Time (hours)

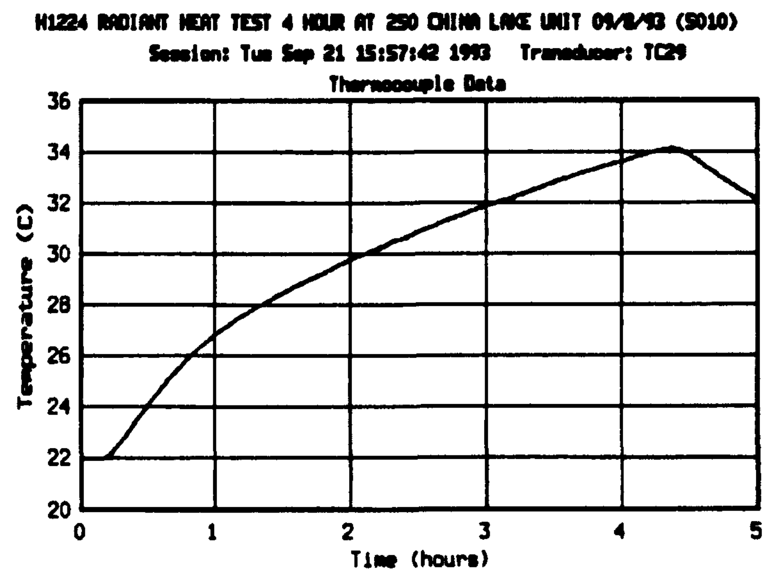

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:56:58 1993 Transducer: TC23
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
5
Time (hours)

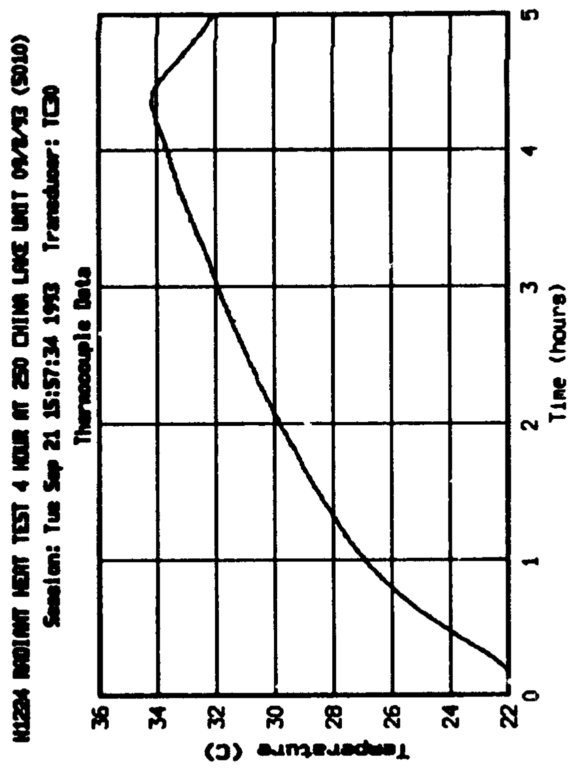

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:57:14 1993 Transducer: TC25
Thermocouple Data
Temperature (C)
47
44
41
38
35
32
29
26
23
20
0
1
2
3
4
5
Time (hours)

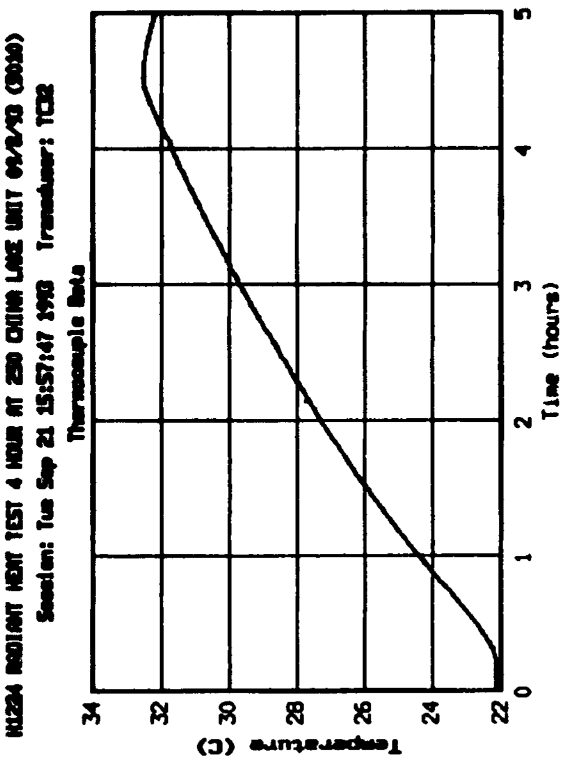

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:57:07 1993 Transducer: TC26
Thermocouple Data
Temperature (C)
Time (hours)

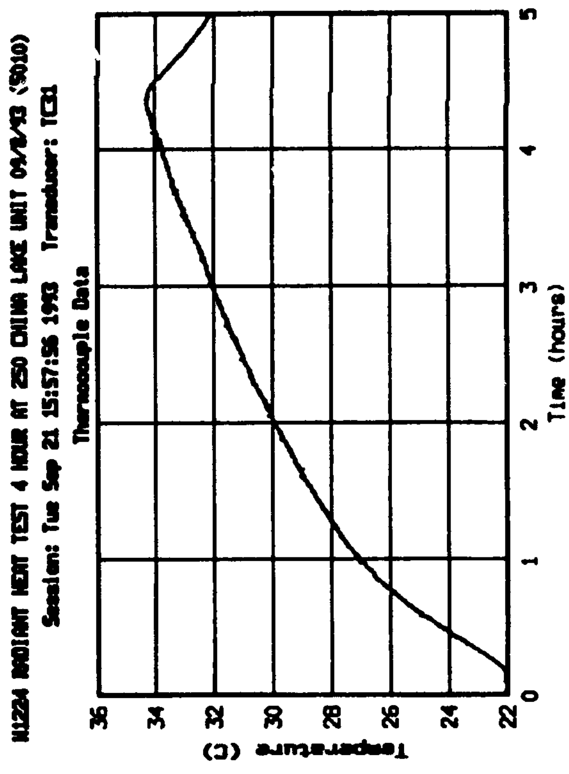

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:57:22 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
Time (hours)

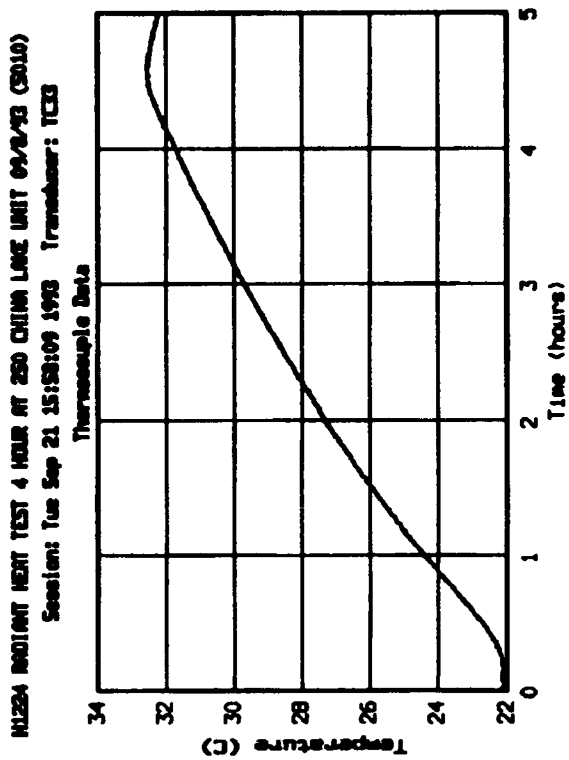

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:57:28 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
Time (hours)

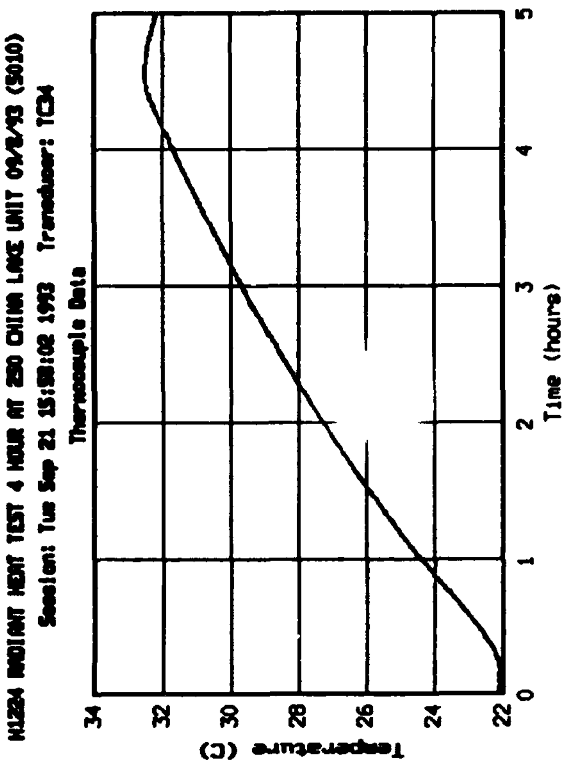

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:57:42 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
Time (hours)

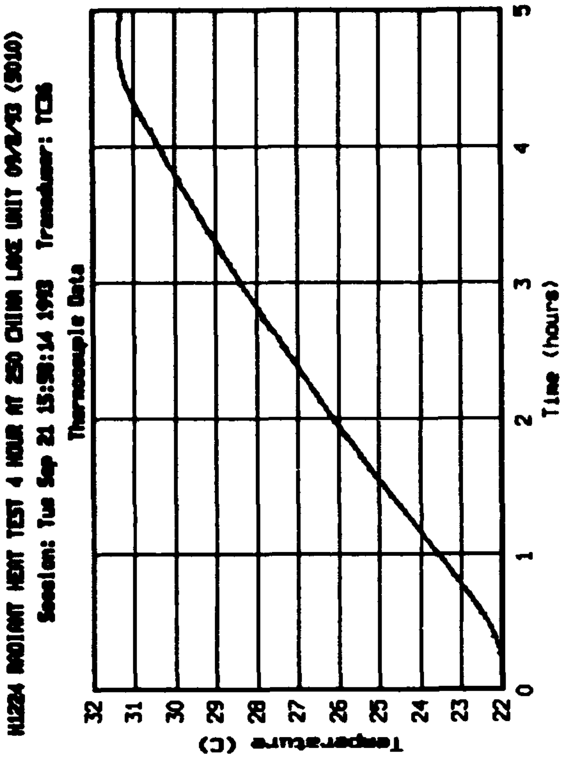

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:57:34 1993 Transducer: TC30
Thermocouple Data
Temperature (C)
Time (hours)
36
34
32
30
28
26
24
22
0
1
2
3
4
5

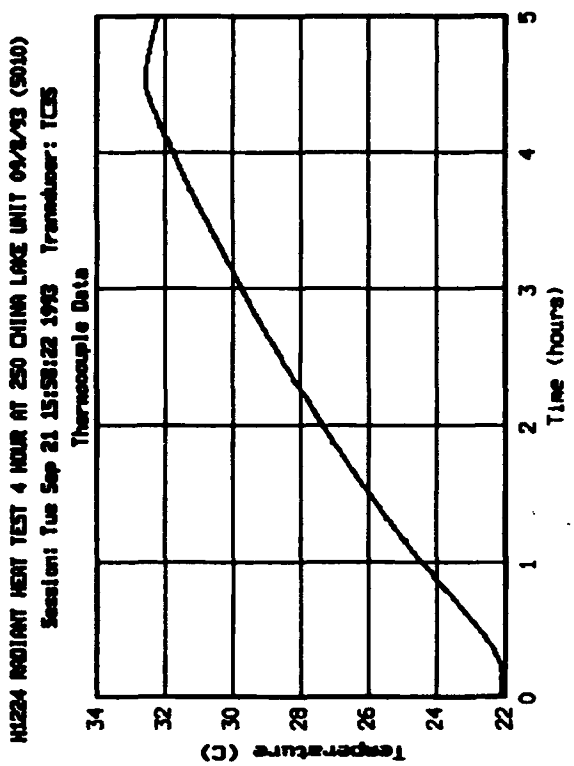

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:57:47 1993 Transducer: TC32
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
0
1
2
3
4
5

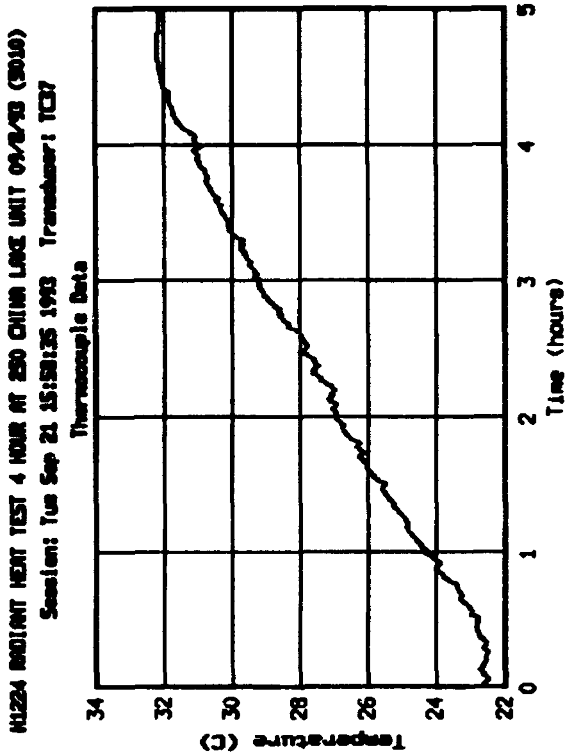

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:57:56 1993 Transducer: TC31
Thermocouple Data
Temperature (C)
Time (hours)
36
34
32
30
28
26
24
22
0
1
2
3
4
5

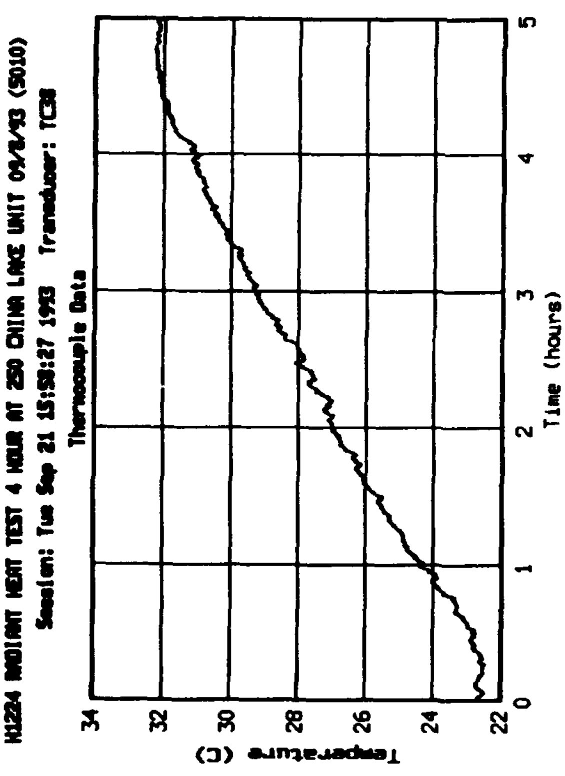

N1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (S010)
Session: Tue Sep 21 15:58:09 1993 Transducer: TC33
Thermocouple Data
Temperature (C)
Time (hours)
34
32
30
28
26
24
22
0
1
2
3
4
5

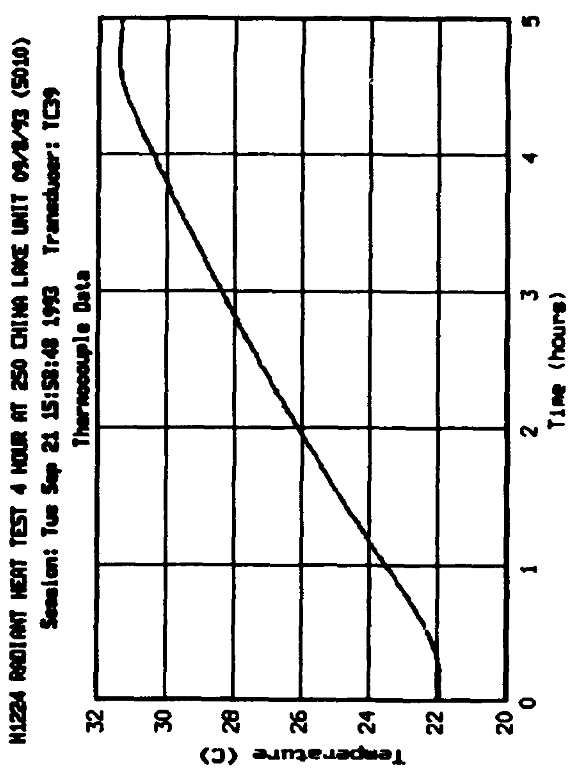

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:02 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
Time (hours)

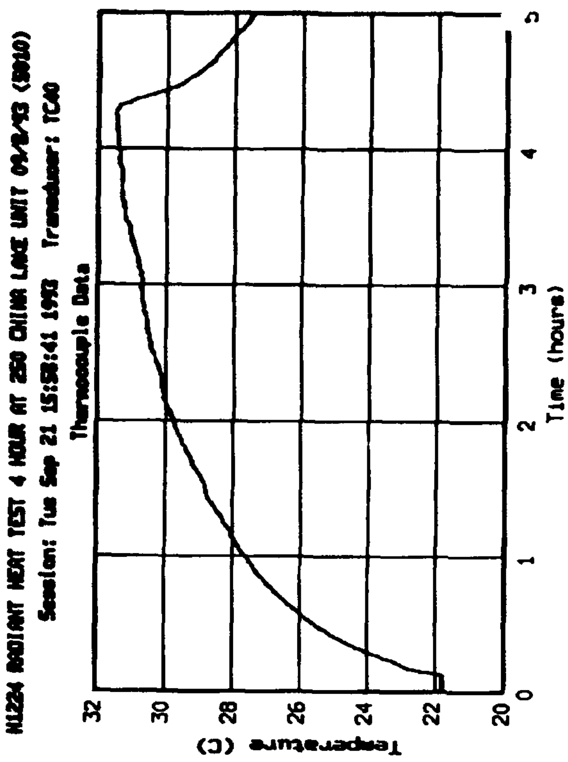

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:14 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
Time (hours)

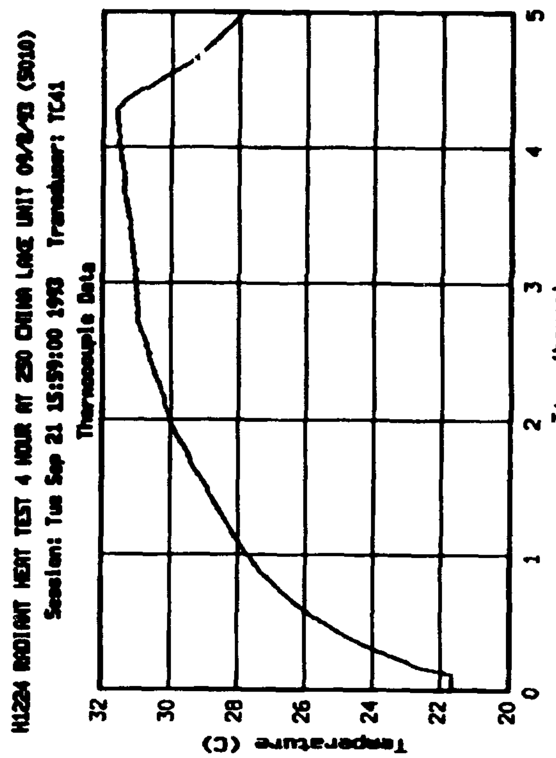

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:22 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
Time (hours)

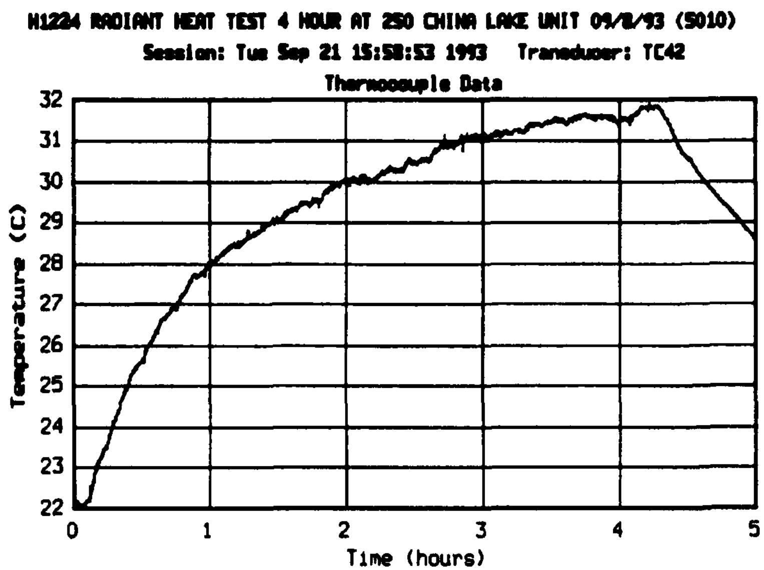

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:35 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
Time (hours)

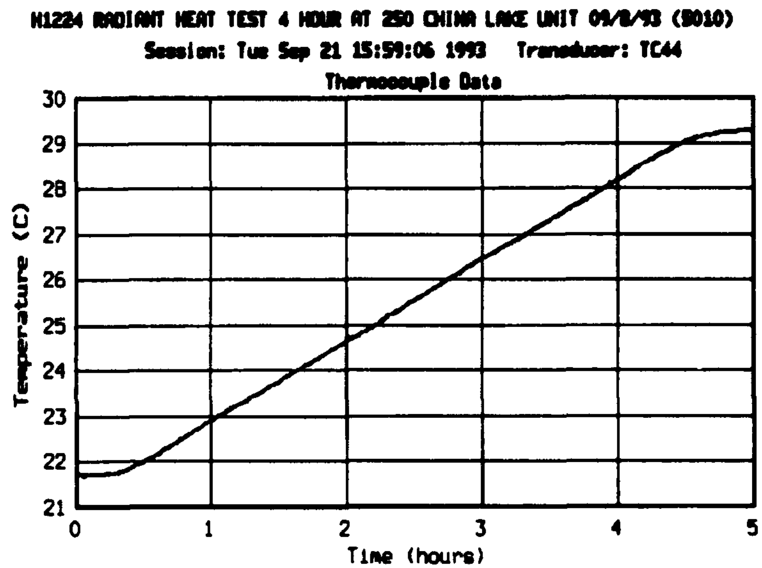

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:27 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
Time (hours)

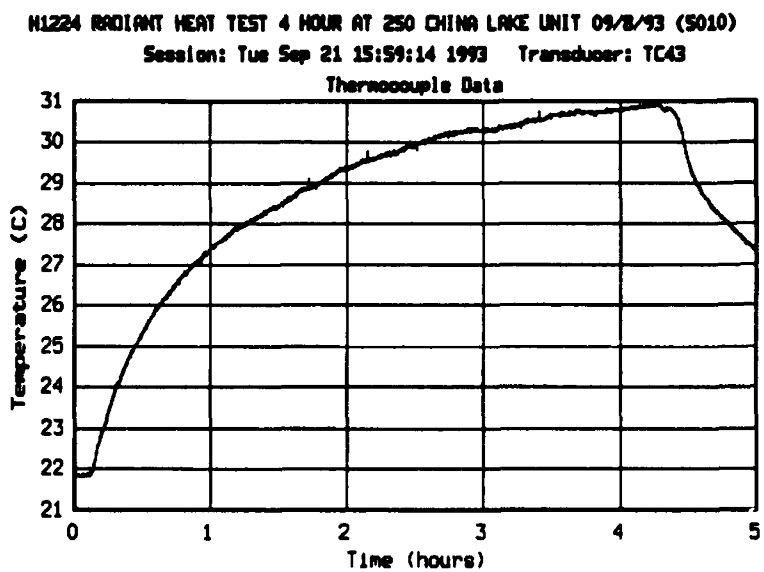

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:48 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
Time (hours)

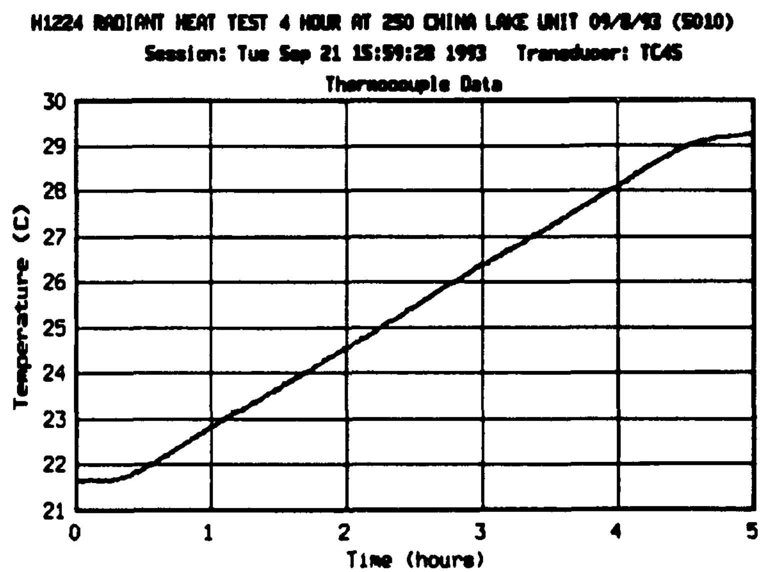

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:41 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
Time (hours)

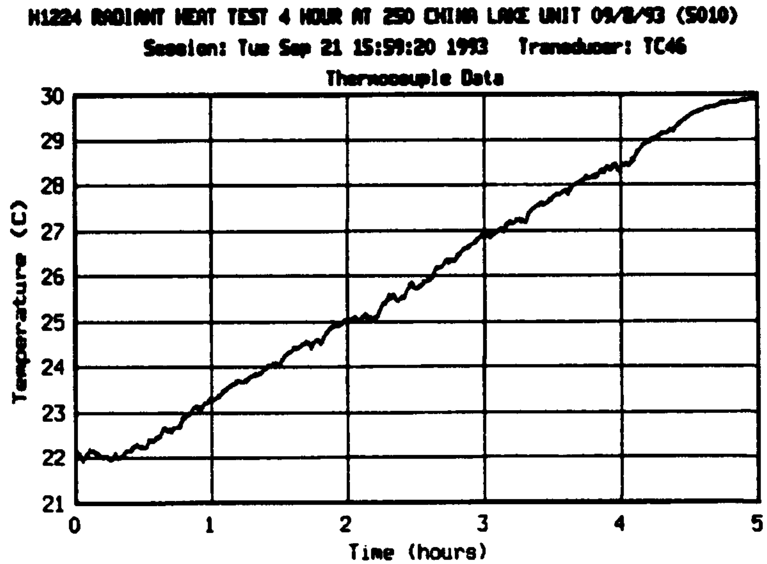

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:00 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)

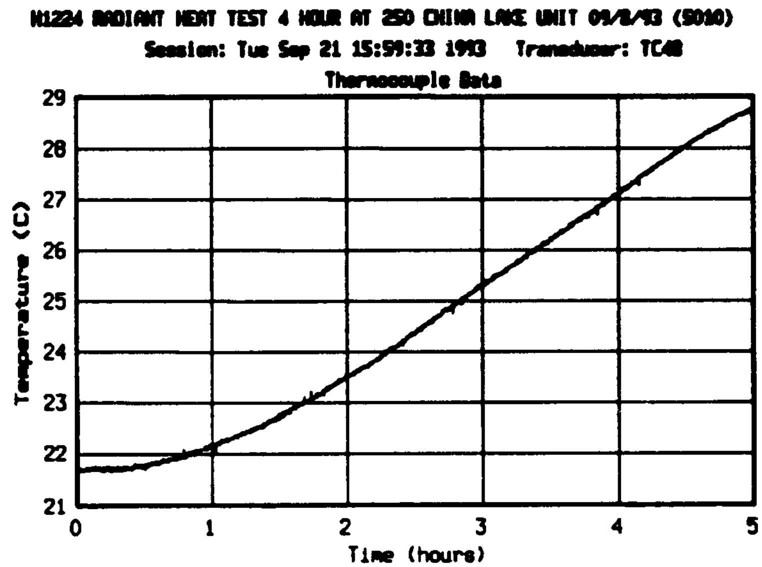

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:58:53 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)

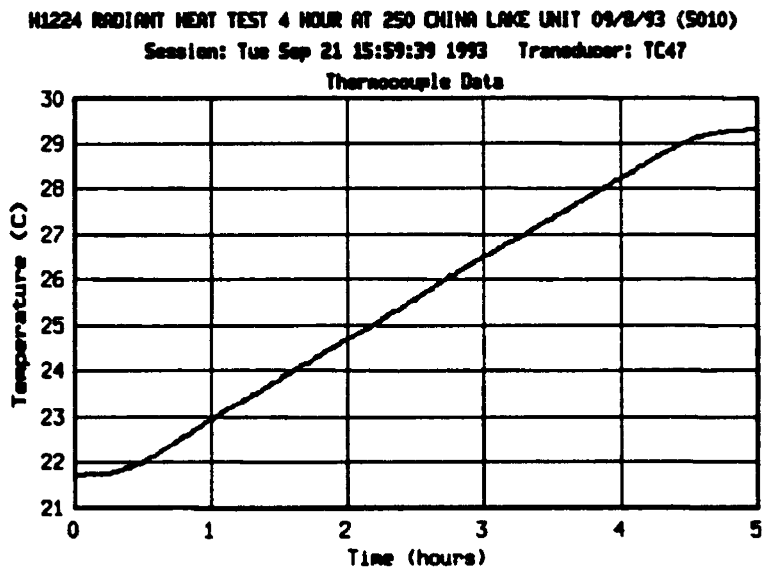

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:06 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
Time (hours)

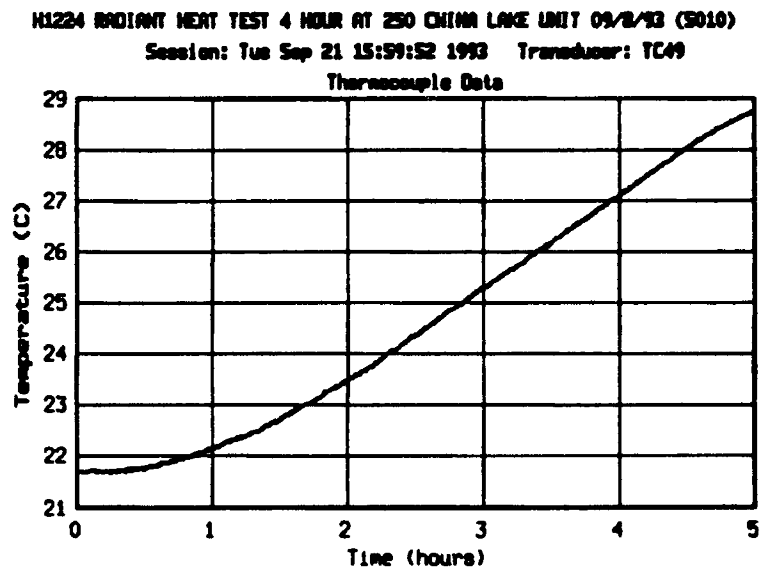

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:14 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:28 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
Time (hours)

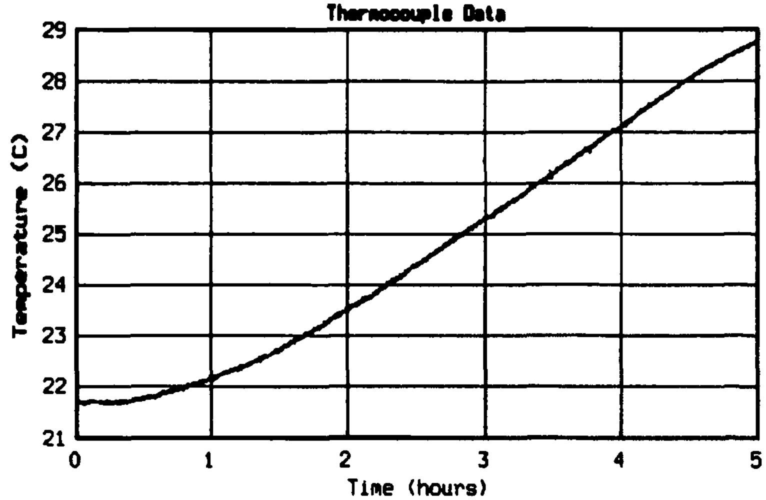

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:20 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:33 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
Time (hours)

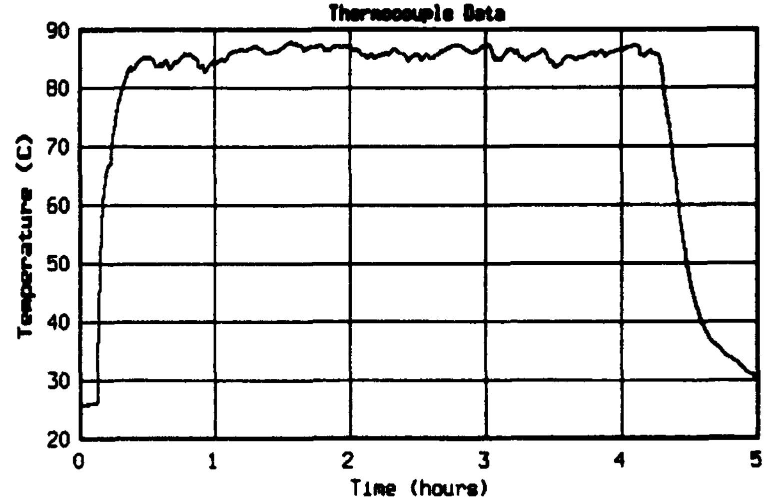

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:39 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:52 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
Time (hours)

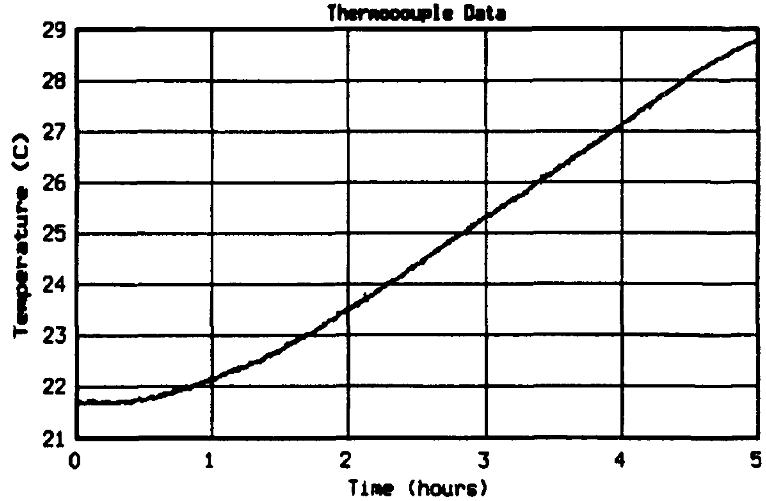
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:46 1993   Transducer: TC50
Thermocouple Data



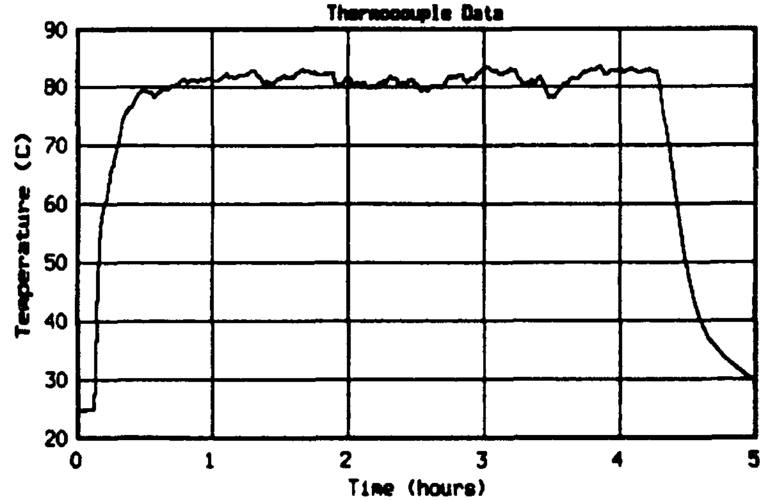
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 15:59:59 1993   Transducer: S1
Thermocouple Data

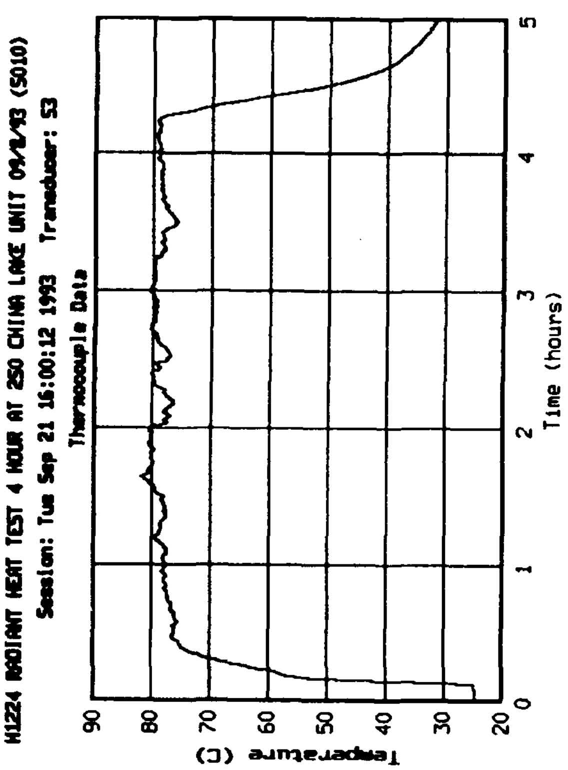


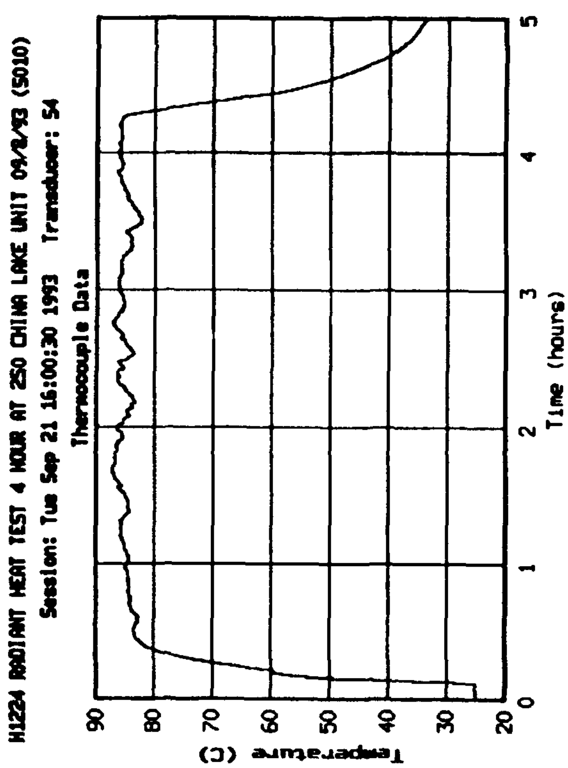
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:00:06 1993   Transducer: TC51
Thermocouple Data

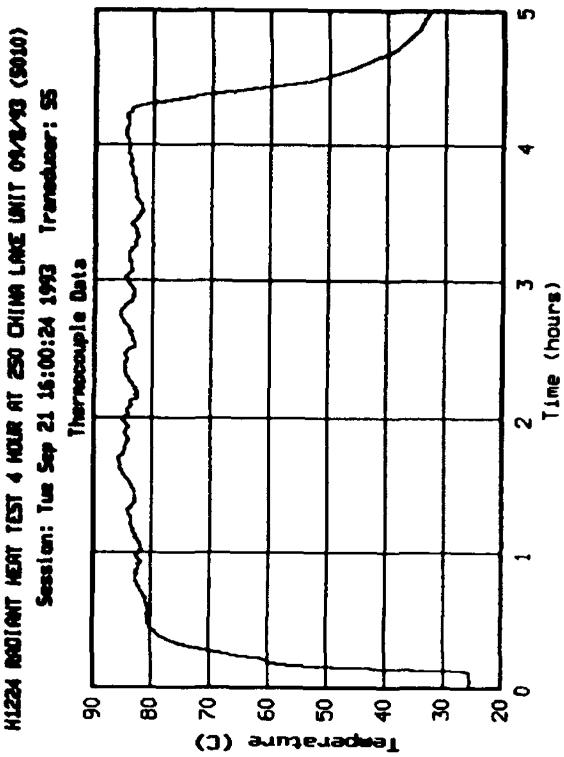


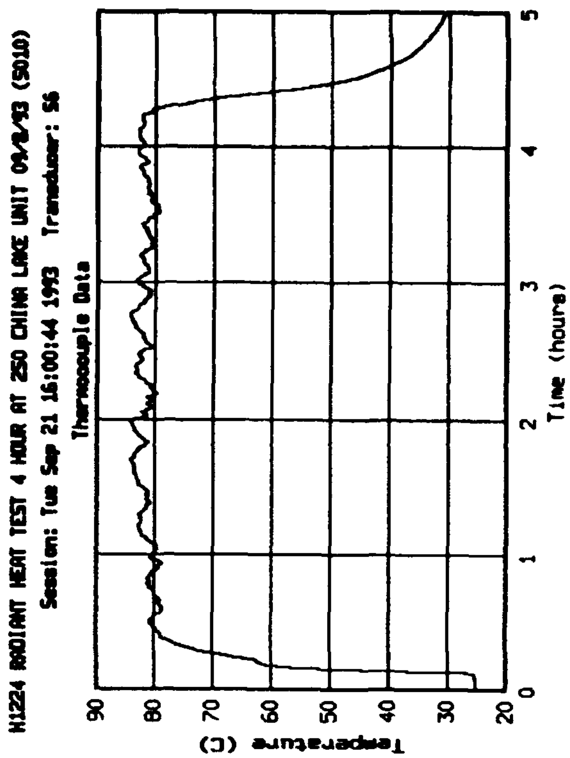
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:00:17 1993   Transducer: S2
Thermocouple Data

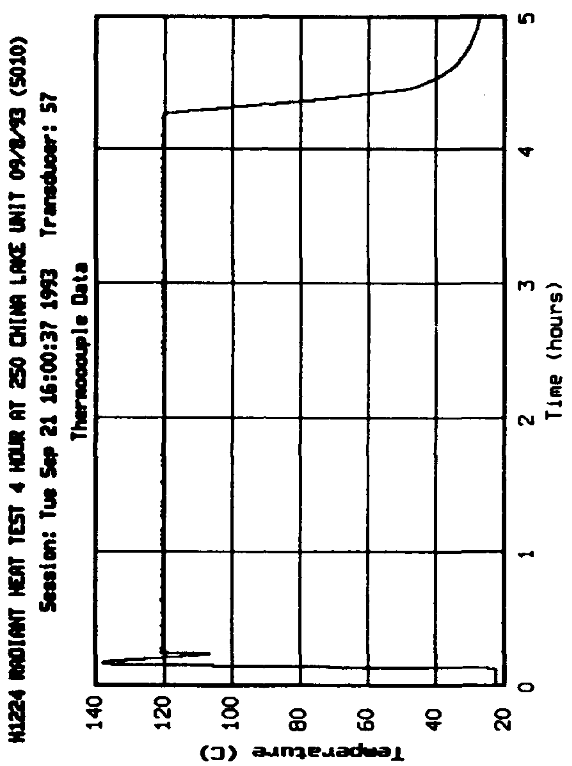


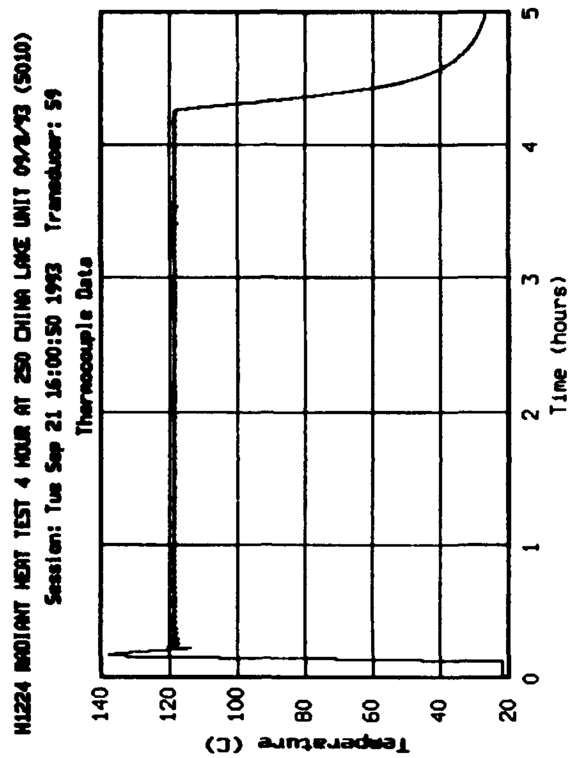

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/18/93 (S010)
Session: Tue Sep 21 16:00:12 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)
90
80
70
60
50
40
30
20
0
1
2
3
4
5

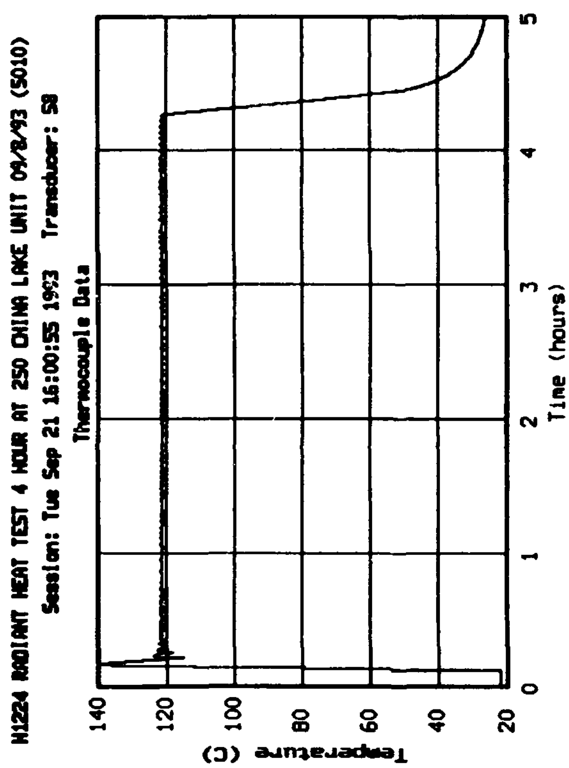

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/18/93 (S010)
Session: Tue Sep 21 16:00:30 1993 Transducer: S4
Thermocouple Data
Temperature (C)
Time (hours)
90
80
70
60
50
40
30
20
0
1
2
3
4
5

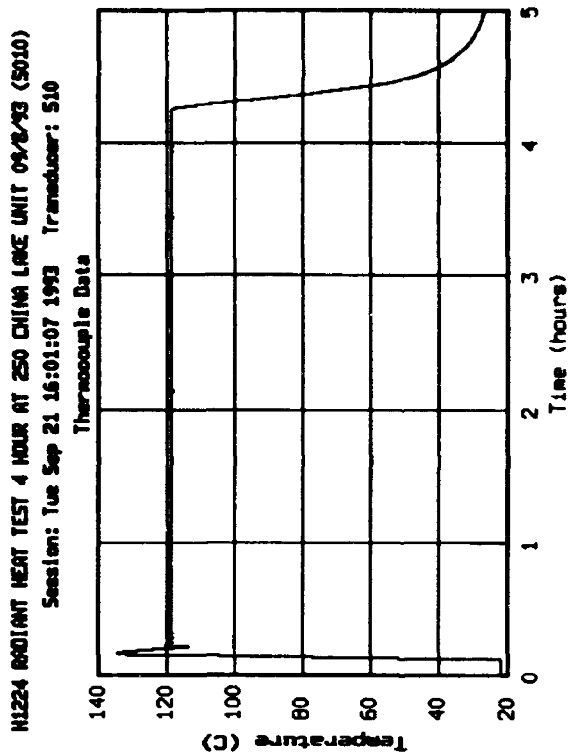

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/18/93 (S010)
Session: Tue Sep 21 16:00:24 1993 Transducer: S5
Thermocouple Data
Temperature (C)
Time (hours)
90
80
70
60
50
40
30
20
0
1
2
3
4
5

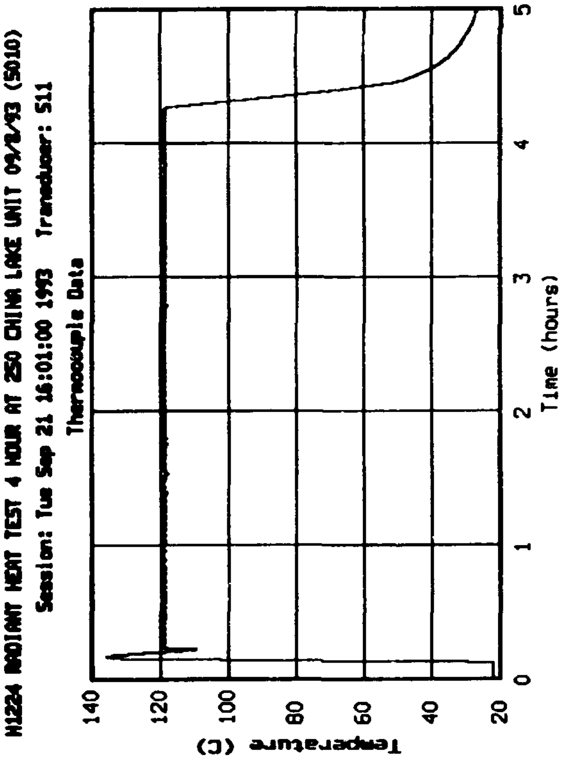

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/18/93 (S010)
Session: Tue Sep 21 16:00:44 1993 Transducer: S6
Thermocouple Data
Temperature (C)
Time (hours)
90
80
70
60
50
40
30
20
0
1
2
3
4
5

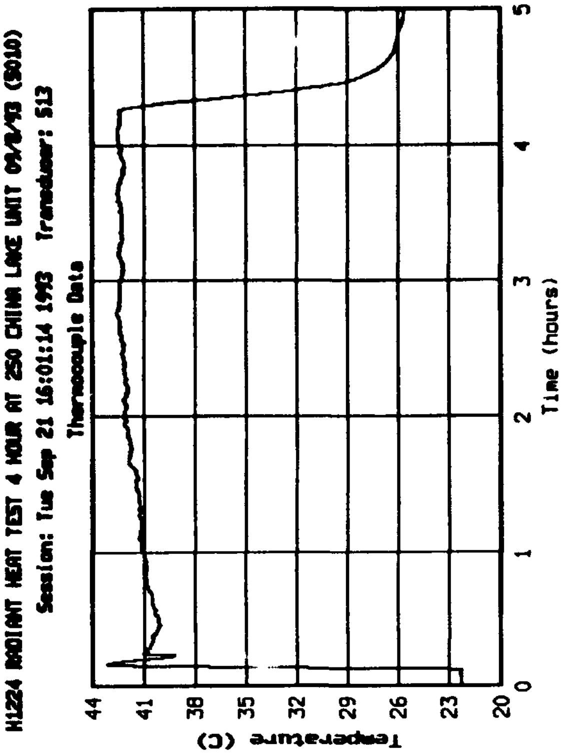

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:00:37 1993 Transducer: 57
Thermocouple Data
Temperature (C)
Time (hours)

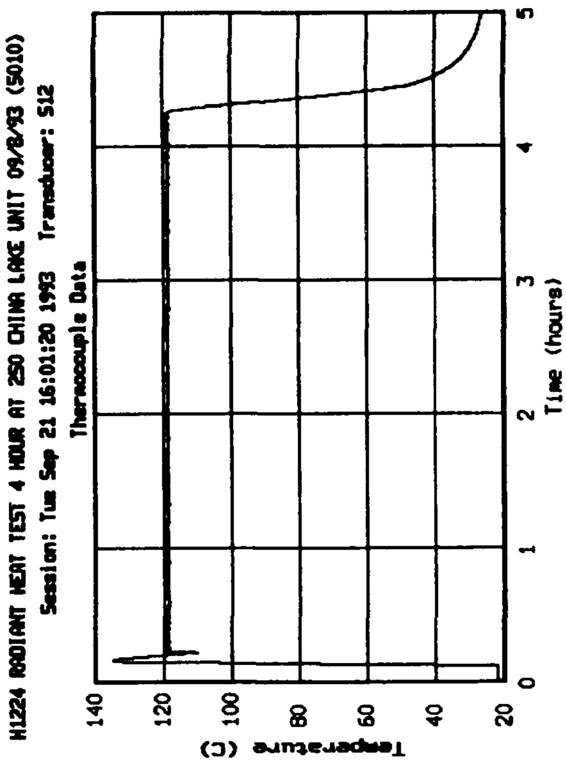

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:00:50 1993 Transducer: 59
Thermocouple Data
Temperature (C)
Time (hours)

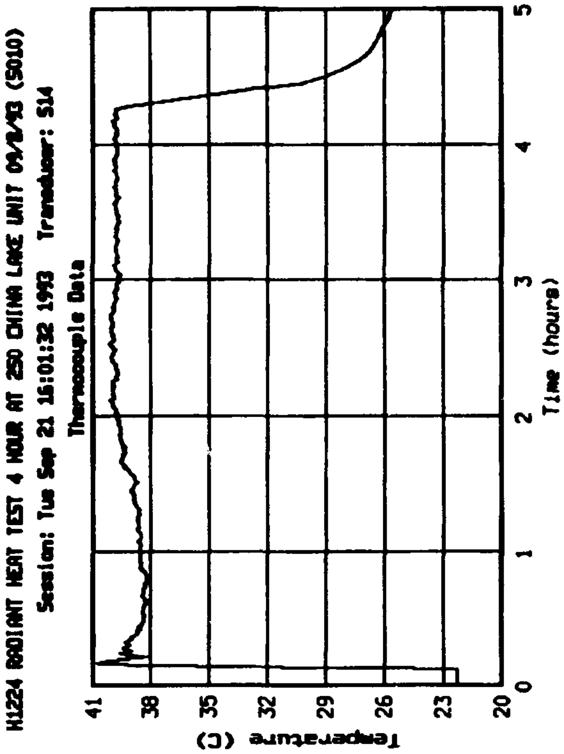

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:00:55 1993 Transducer: 58
Thermocouple Data
Temperature (C)
Time (hours)

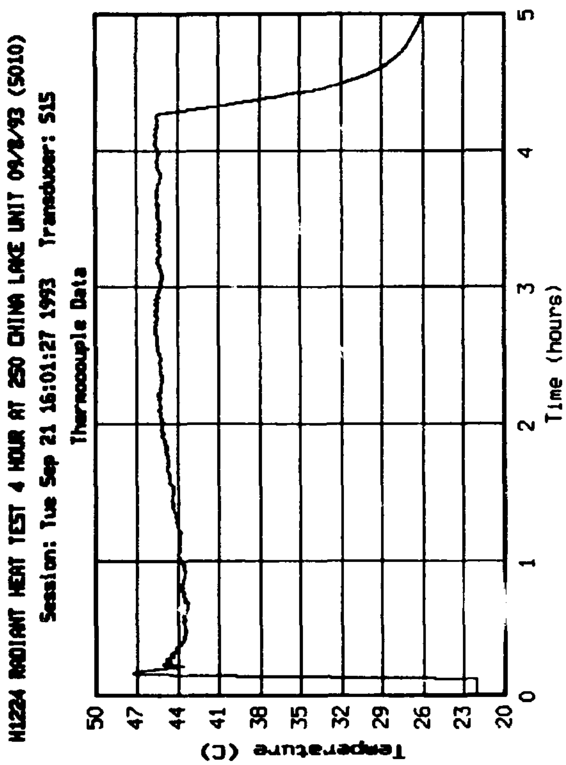

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:07 1993 Transducer: 510
Thermocouple Data
Temperature (C)
Time (hours)

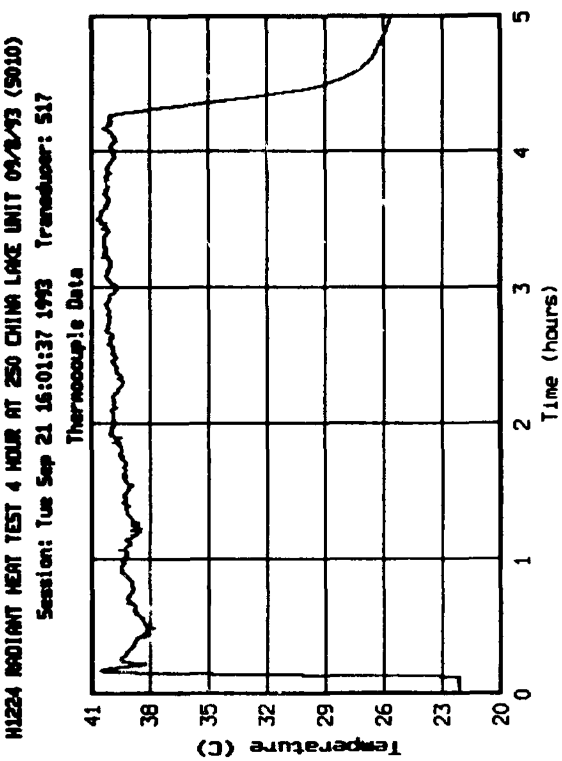

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:00 1993 Transducer: S11
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
1
2
3
4
5
Time (hours)

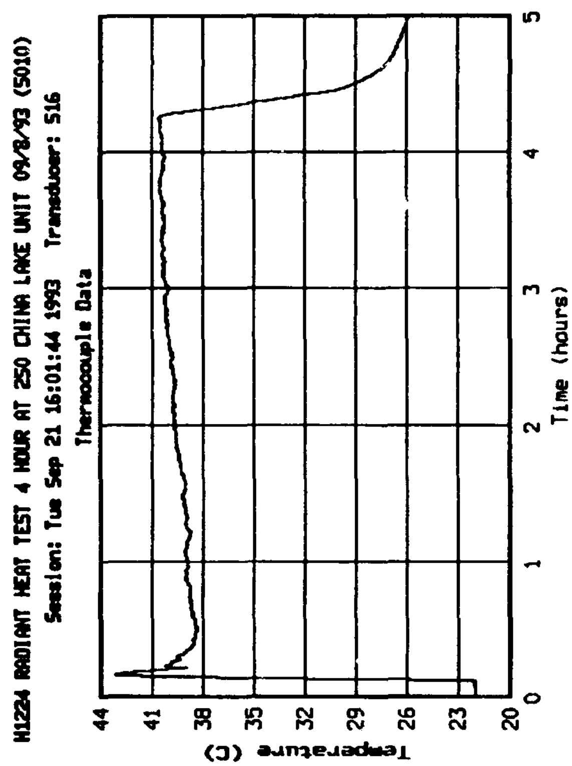

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:14 1993 Transducer: S13
Thermocouple Data
Temperature (C)
44
41
38
35
32
29
26
23
20
0
1
2
3
4
5
Time (hours)

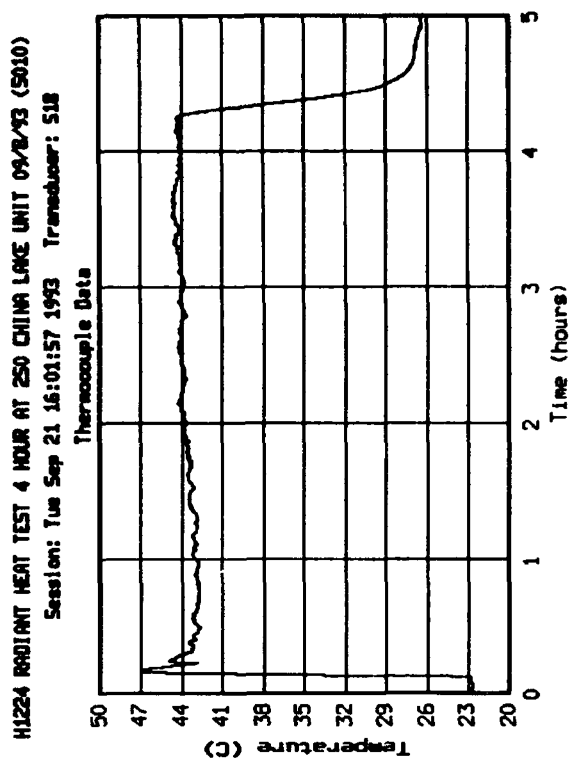

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:20 1993 Transducer: S12
Thermocouple Data
Temperature (C)
140
120
100
80
60
40
20
0
1
2
3
4
5
Time (hours)

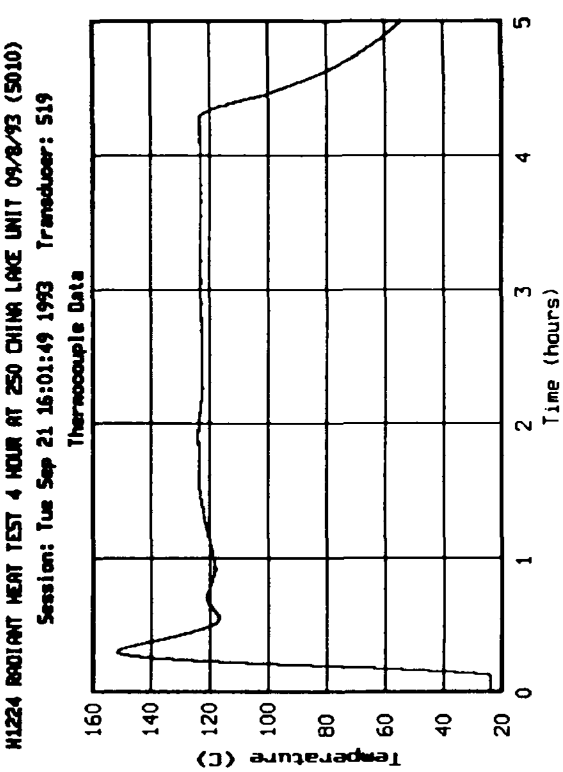

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:32 1993 Transducer: S14
Thermocouple Data
Temperature (C)
41
38
35
32
29
26
23
20
0
1
2
3
4
5
Time (hours)

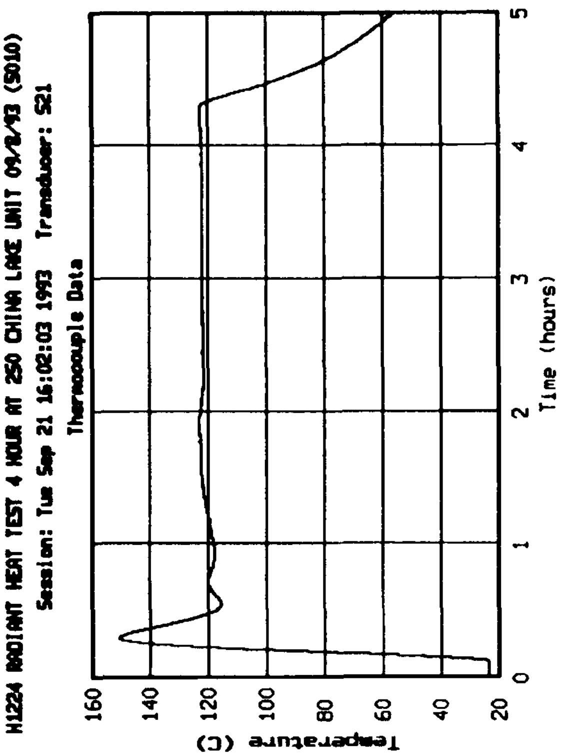

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:27 1993 Transducer: 515
Thermocouple Data
Temperature (C)
Time (hours)

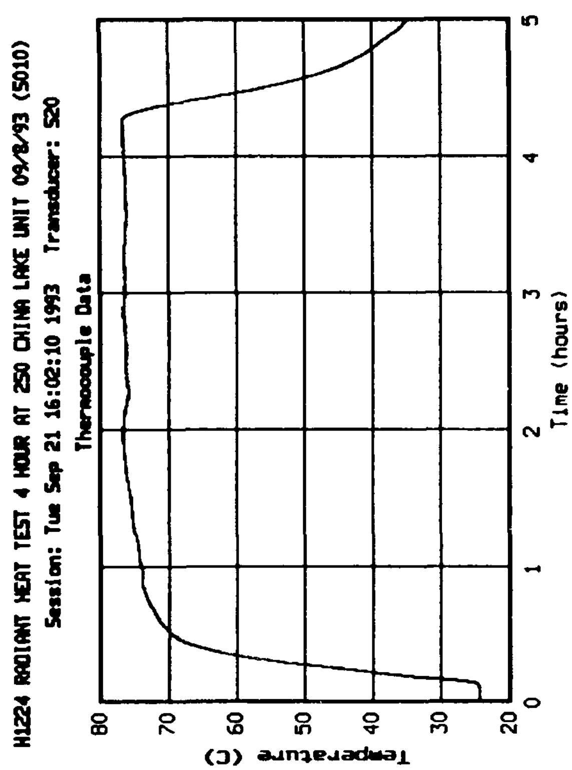

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:37 1993 Transducer: 517
Thermocouple Data
Temperature (C)
Time (hours)

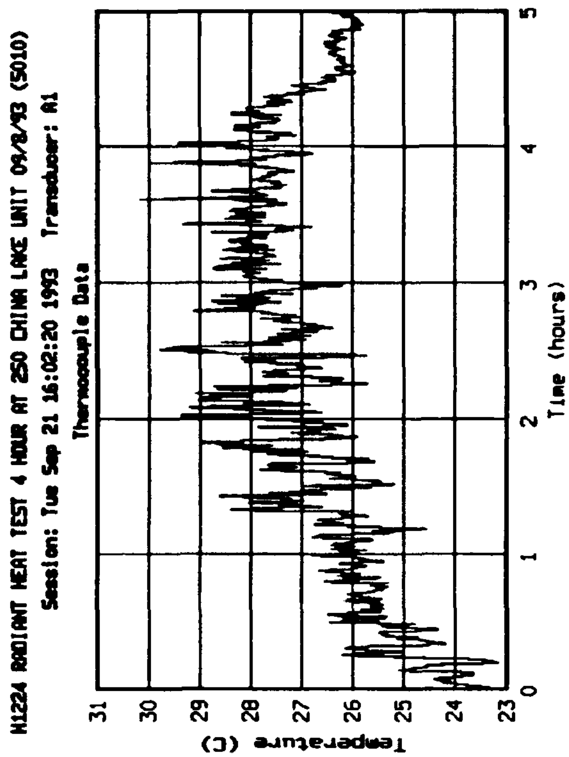

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:44 1993 Transducer: 516
Thermocouple Data
Temperature (C)
Time (hours)

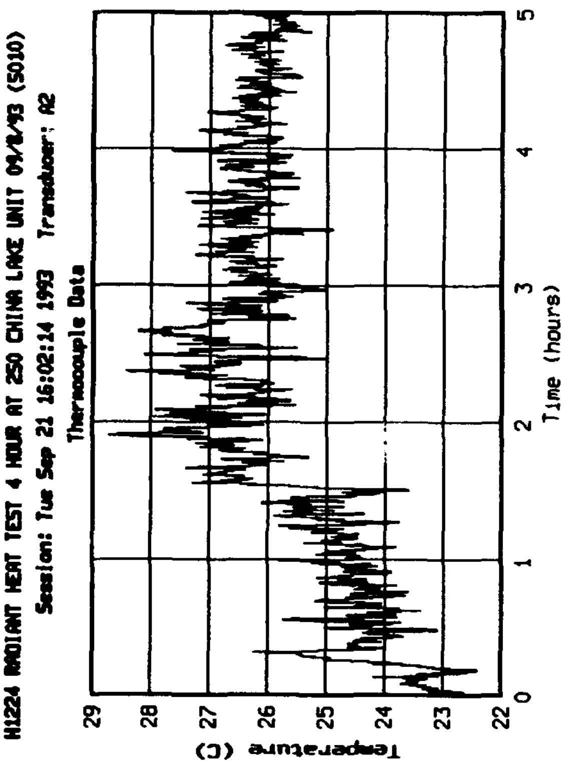

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:57 1993 Transducer: 518
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:01:49 1993 Transducer: S19
Thermocouple Data
Temperature (C)
Time (hours)

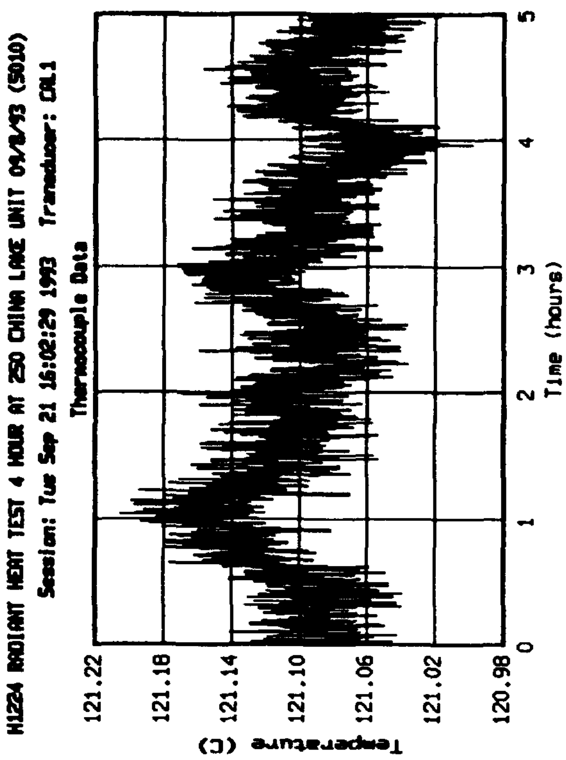

H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:02:03 1993 Transducer: S21
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:02:10 1993 Transducer: S20
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/8/93 (5010)
Session: Tue Sep 21 16:02:20 1993 Transducer: A1
Thermocouple Data
Temperature (C)
Time (hours)



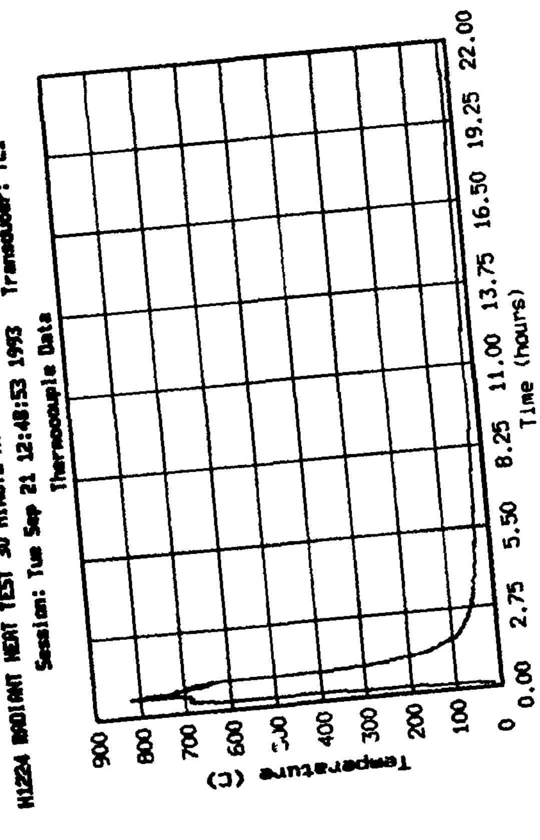
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/18/93 (5010)
Session: Tue Sep 21 16:02:14 1993 Transducer: A2
Thermocouple Data
Temperature (C)
29
28
27
26
25
24
23
22
0
1
2
3
4
5
Time (hours)

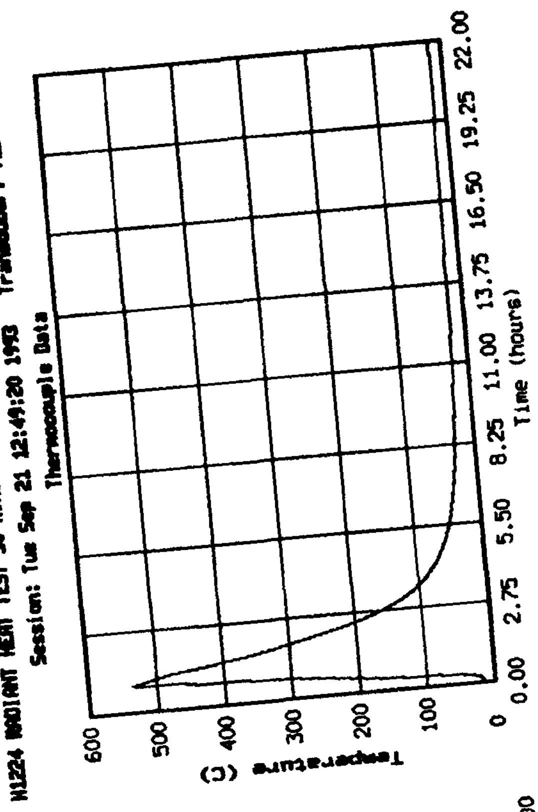


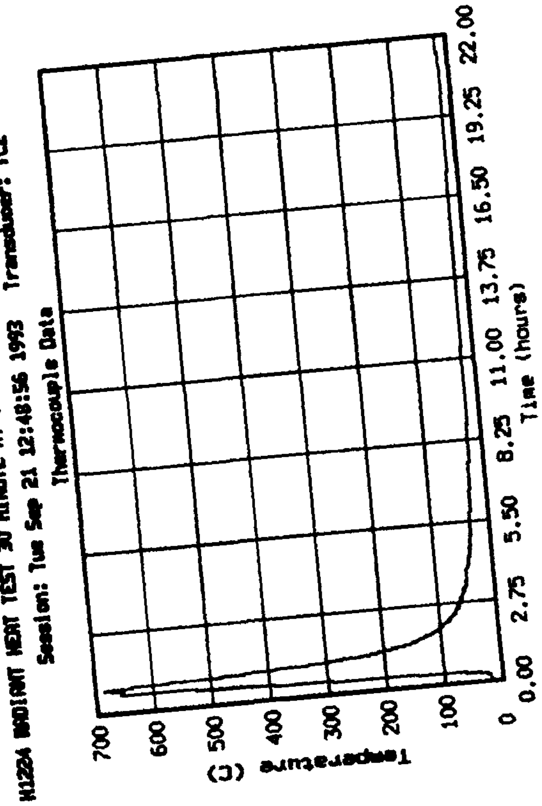
H1224 RADIANT HEAT TEST 4 HOUR AT 250 CHINA LAKE UNIT 09/18/93 (5010)
Session: Tue Sep 21 16:02:29 1993 Transducer: CAL1
Thermocouple Data
Temperature (C)
121.22
121.18
121.14
121.10
121.06
121.02
120.98
0
1
2
3
4
5
Time (hours)

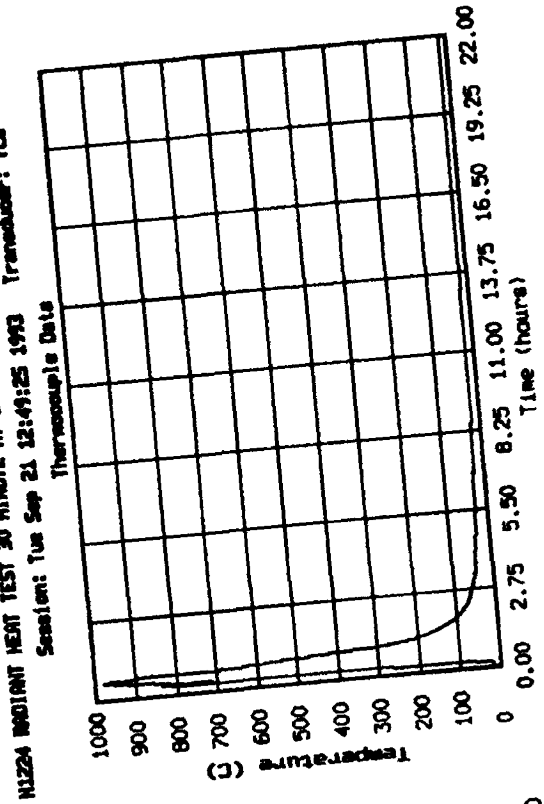
Appendix D

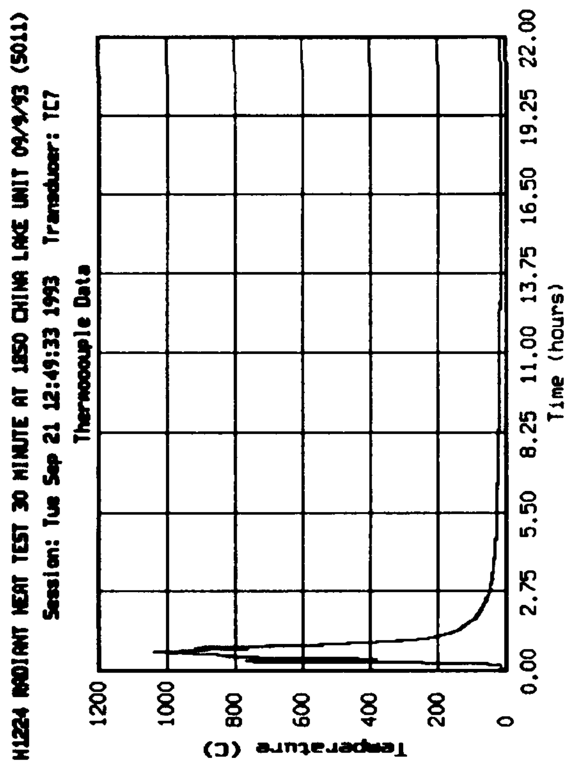
The following pages show temperature data for the 30-minute, 1010° C (1850° F) radiant heat test of the NAWC (simulated H1224A) shipping/storage container with hollow Mk12 mid-section aeroshell inside. Two time windows are provided: 22 hours and a narrow window of approximately 2.5 hours. The longer duration data plots include each entire test, including the cool-down period to steady state. The shorter duration data plots provide more detail throughout the 30 minute application of radiant heat.

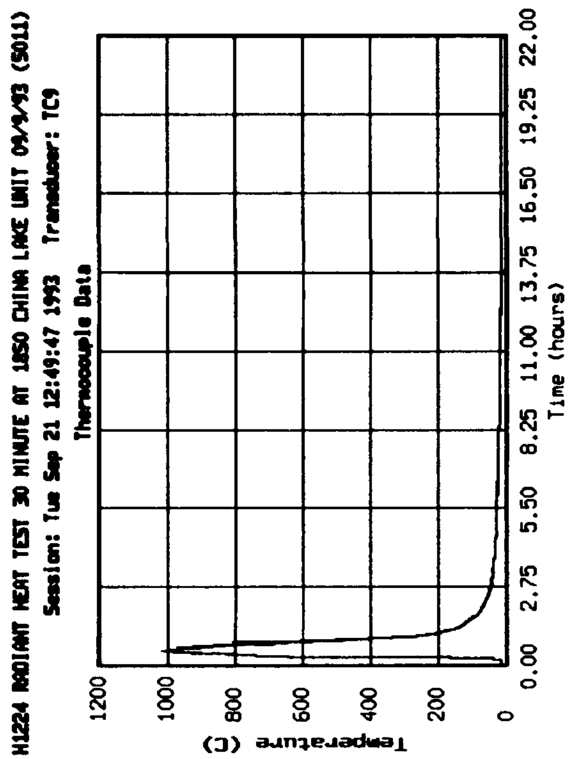

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:48:53 1993 Transducer: TC1
Thermocouple Data
Temperature (C)
0 100 200 300 400 500 600 700 800 900
Time (hours)
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00

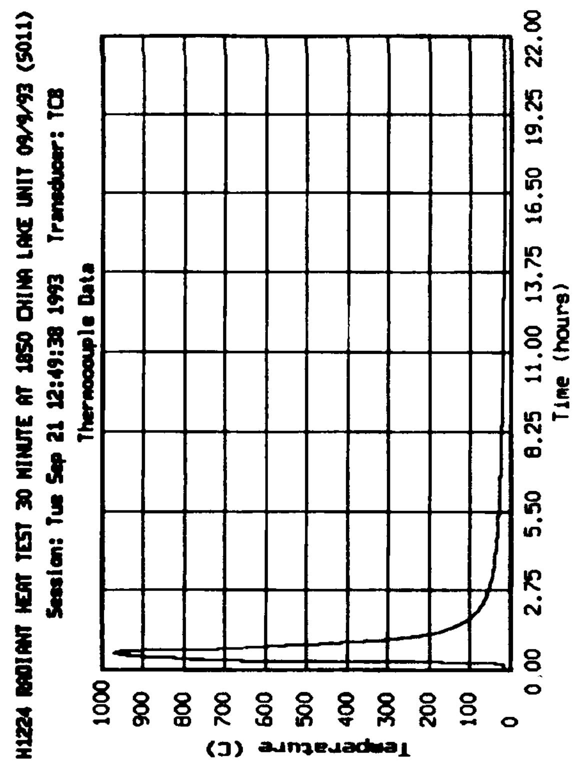

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:49:20 1993 Transducer: TC5
Thermocouple Data
Temperature (C)
0 100 200 300 400 500 600
Time (hours)
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00

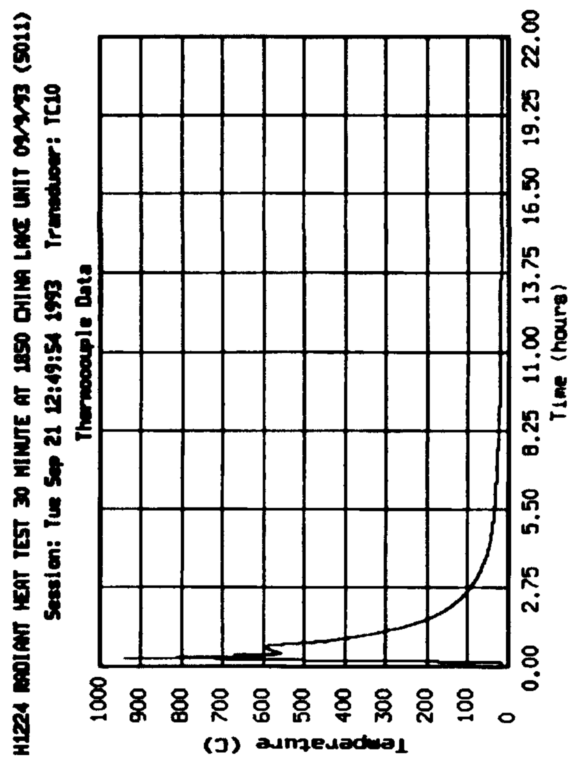

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:48:56 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
0 100 200 300 400 500 600 700
Time (hours)
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:49:25 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
0 100 200 300 400 500 600 700 800 900 1000
Time (hours)
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00

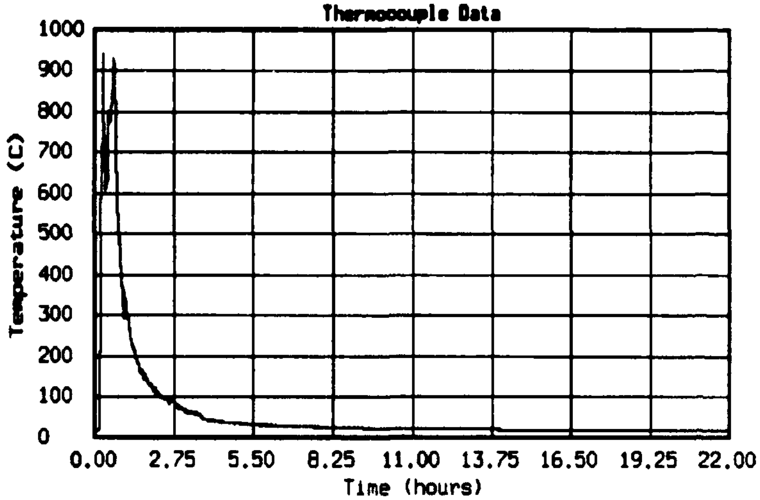

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:49:33 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
Time (hours)
0 200 400 600 800 1000 1200
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:49:47 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
Time (hours)
0 200 400 600 800 1000 1200
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00

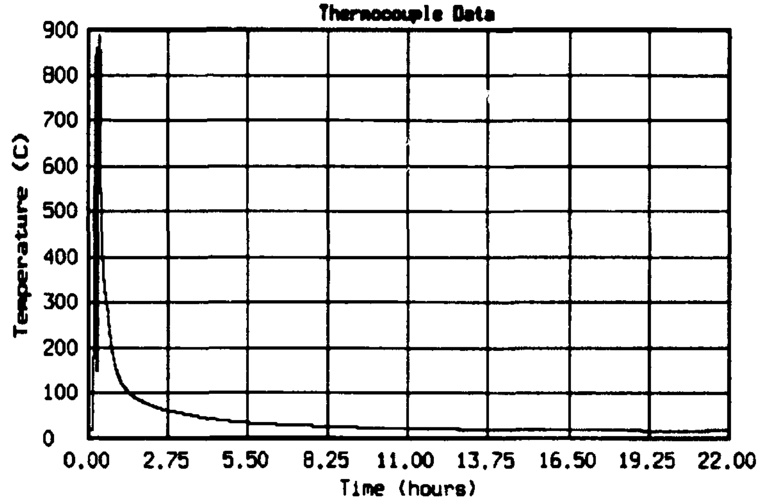

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:49:38 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
Time (hours)
0 100 200 300 400 500 600 700 800 900 1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:49:54 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
Time (hours)
0 100 200 300 400 500 600 700 800 900 1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00

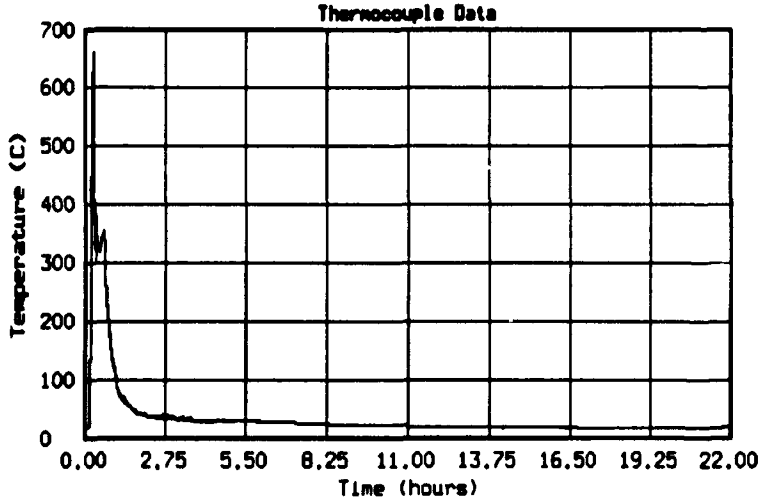
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:02 1993 Transducer: TC11
Thermocouple Data



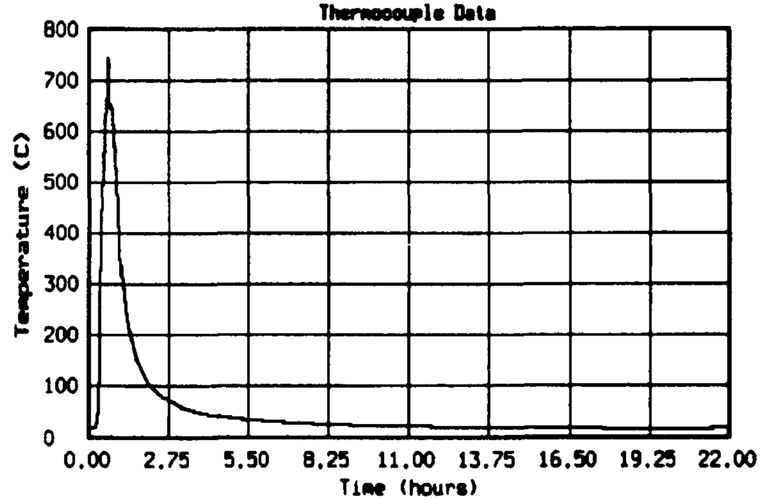
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:17 1993 Transducer: TC13
Thermocouple Data

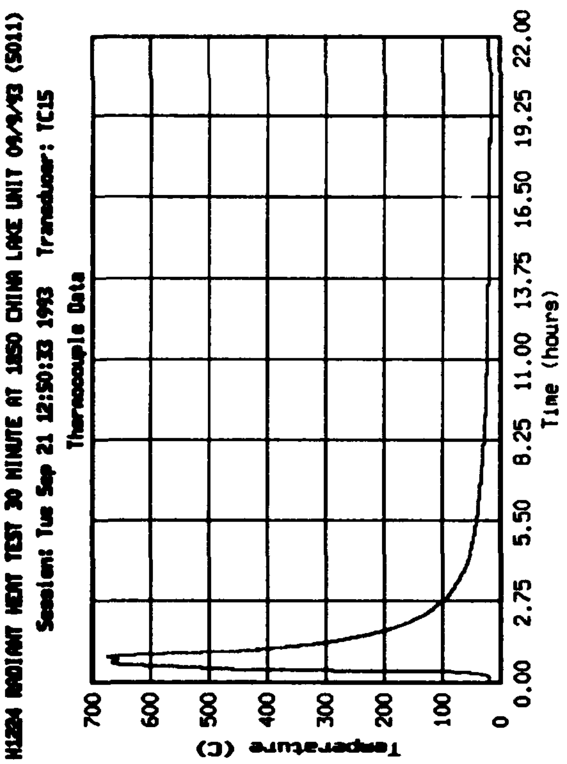


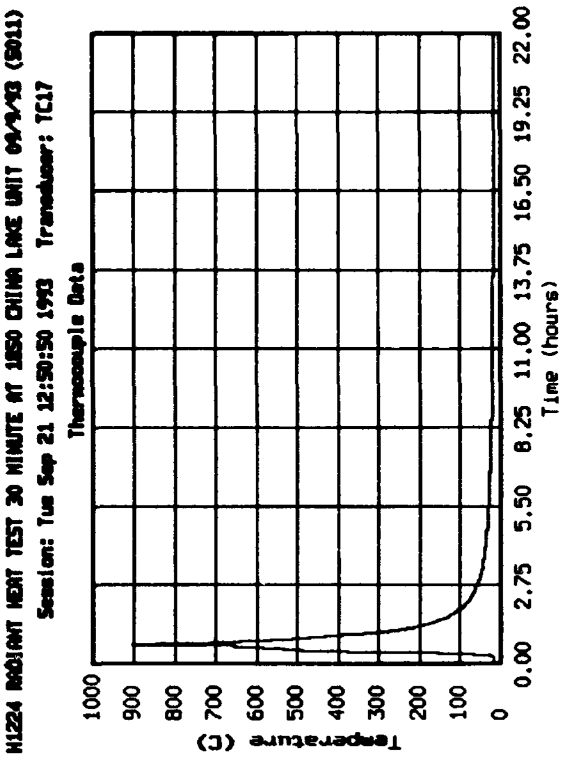
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:09 1993 Transducer: TC12
Thermocouple Data

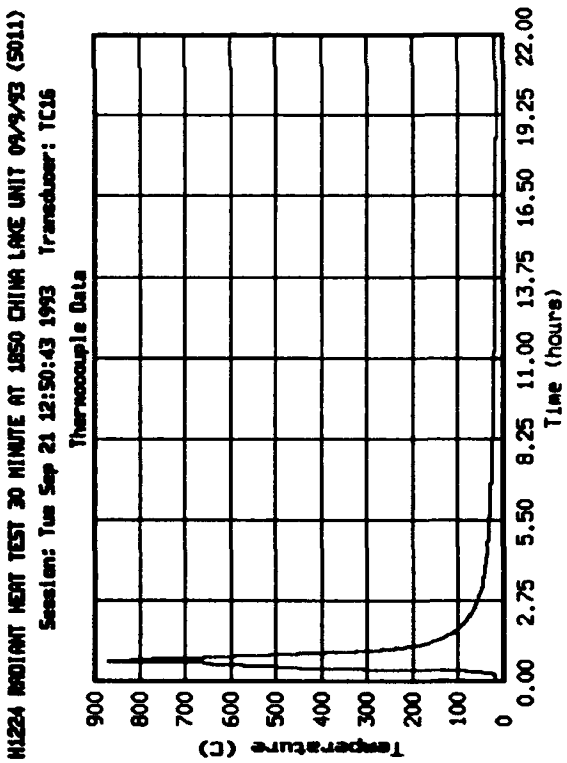


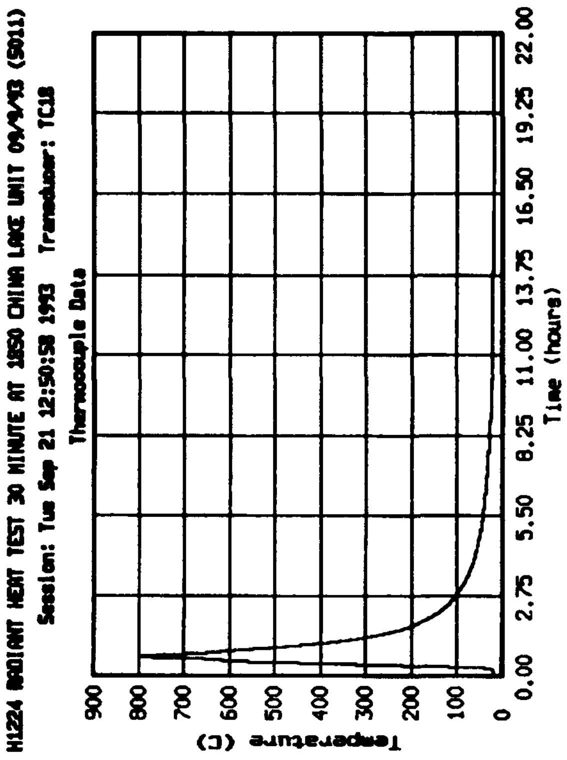
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:23 1993 Transducer: TC14
Thermocouple Data

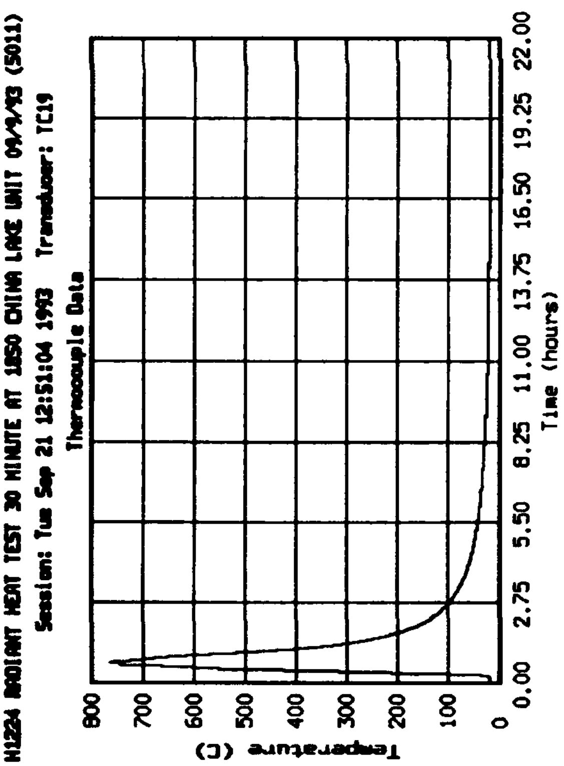


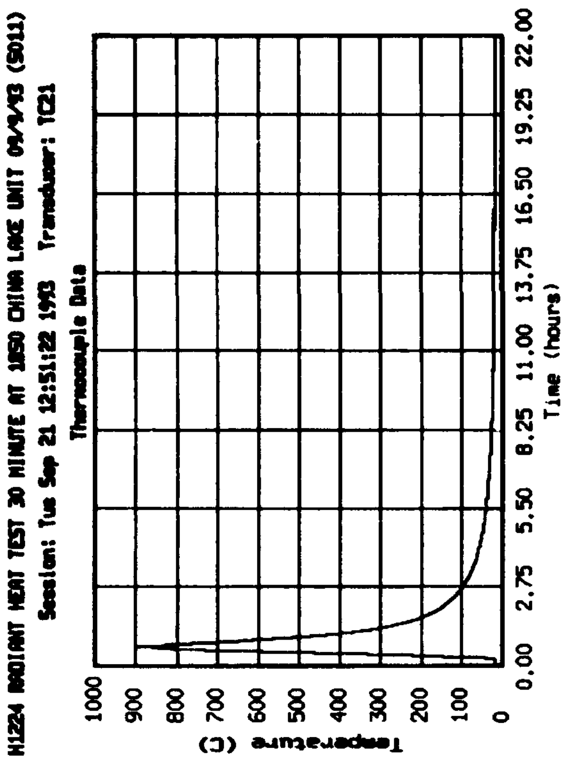

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:33 1993 Transducer: TC15
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
Time (hours)
0.00
2.75
5.50
8.25
11.00
13.75
16.50
19.25
22.00

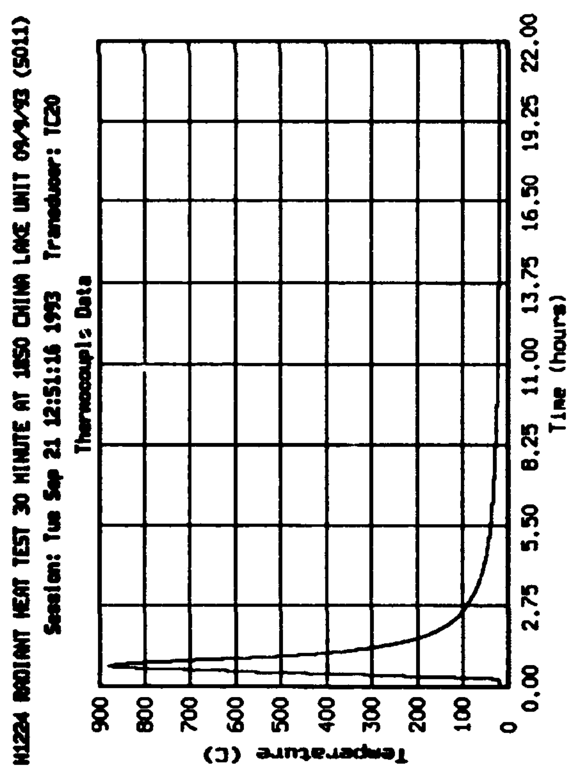

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:50 1993 Transducer: TC17
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
Time (hours)
0.00
2.75
5.50
8.25
11.00
13.75
16.50
19.25
22.00

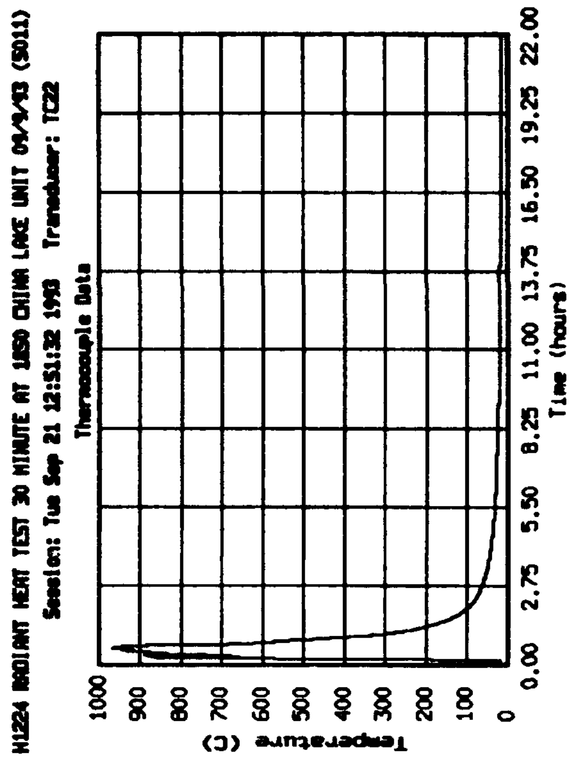

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:43 1993 Transducer: TC16
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
Time (hours)
0.00
2.75
5.50
8.25
11.00
13.75
16.50
19.25
22.00


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:50:58 1993 Transducer: TC18
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
Time (hours)
0.00
2.75
5.50
8.25
11.00
13.75
16.50
19.25
22.00

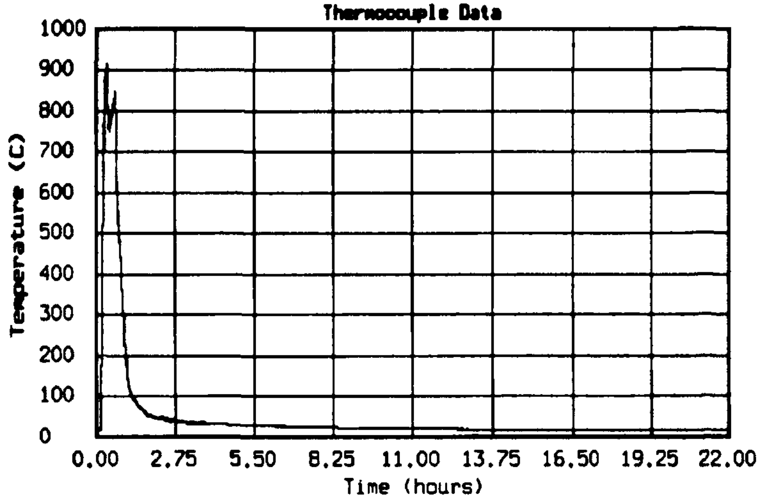

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:51:04 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:51:22 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

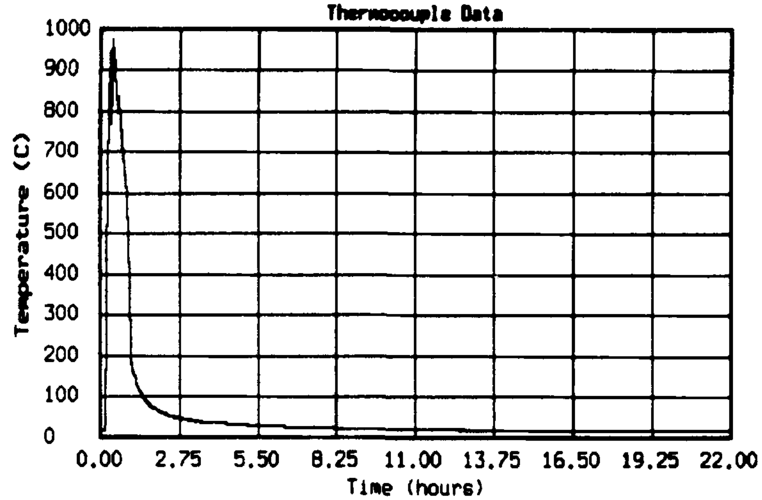

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:51:16 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:51:32 1993 Transducer: TC22
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

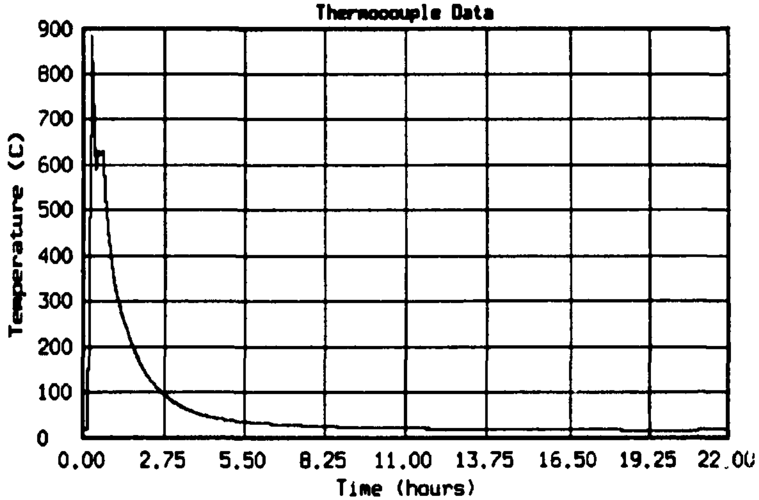
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 12:51:39 1993 Transducer: TC23
Thermocouple Data



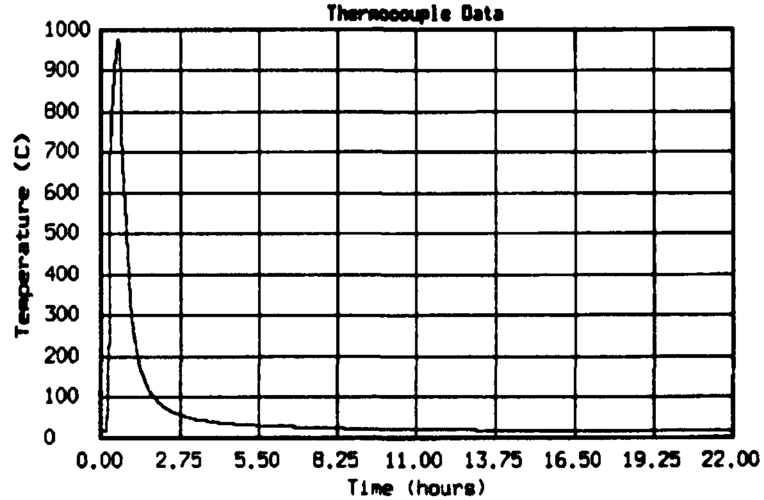
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 12:51:57 1993 Transducer: TC25
Thermocouple Data

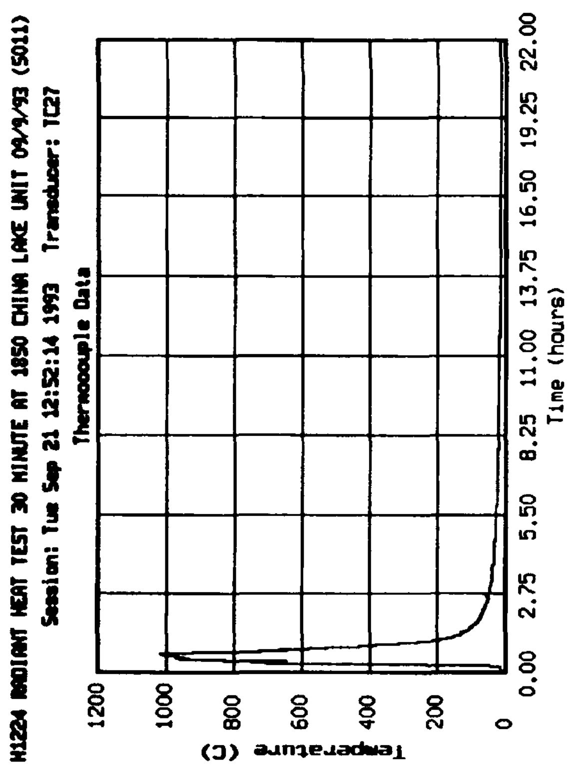


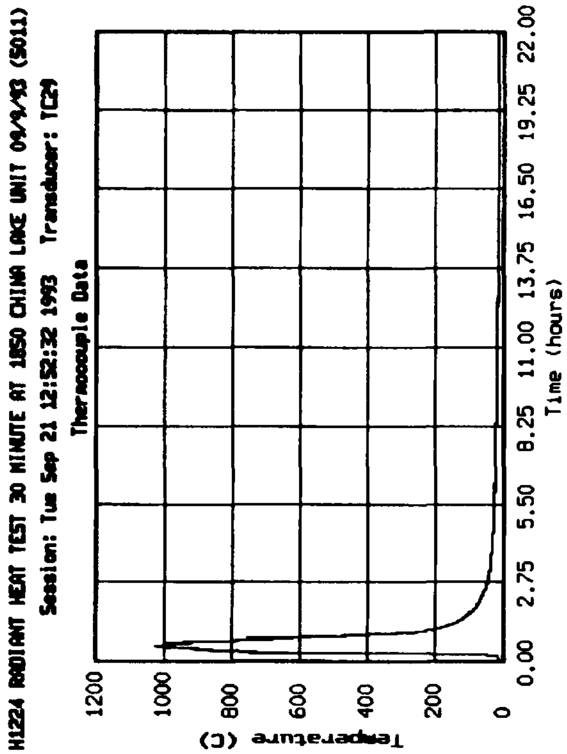
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 12:51:47 1993 Transducer: TC24
Thermocouple Data

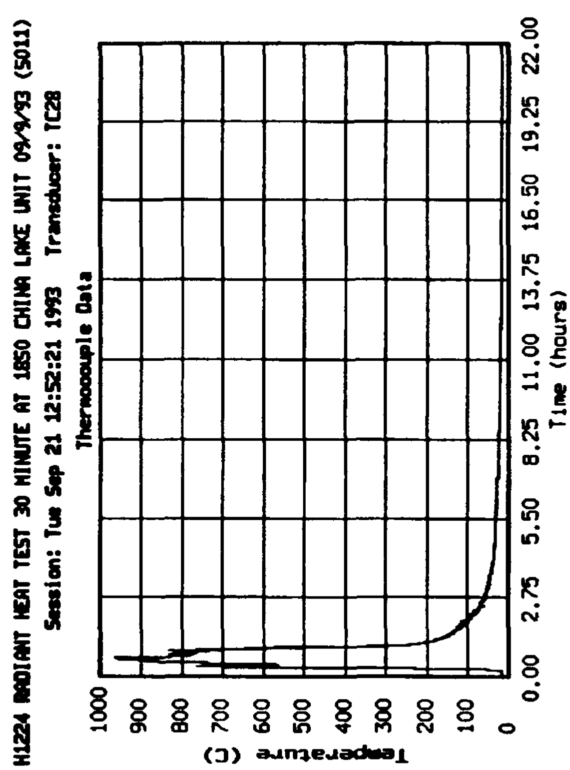


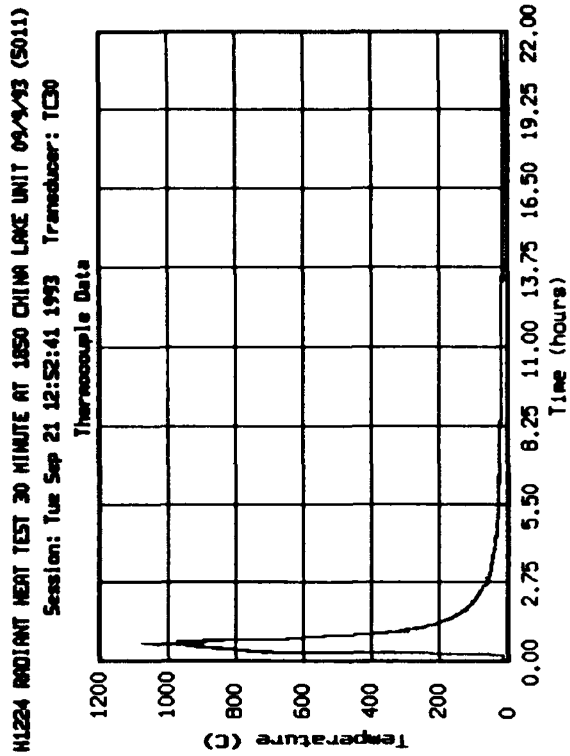
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 12:52:06 1993 Transducer: TC26
Thermocouple Data

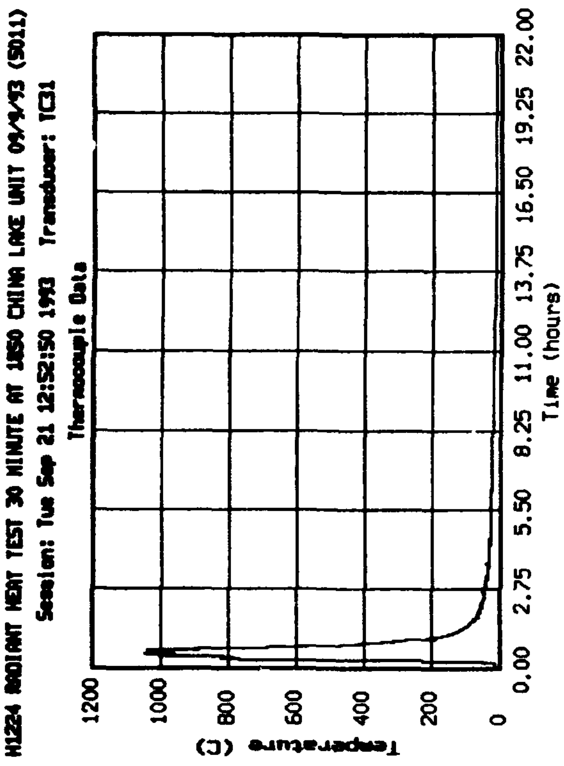


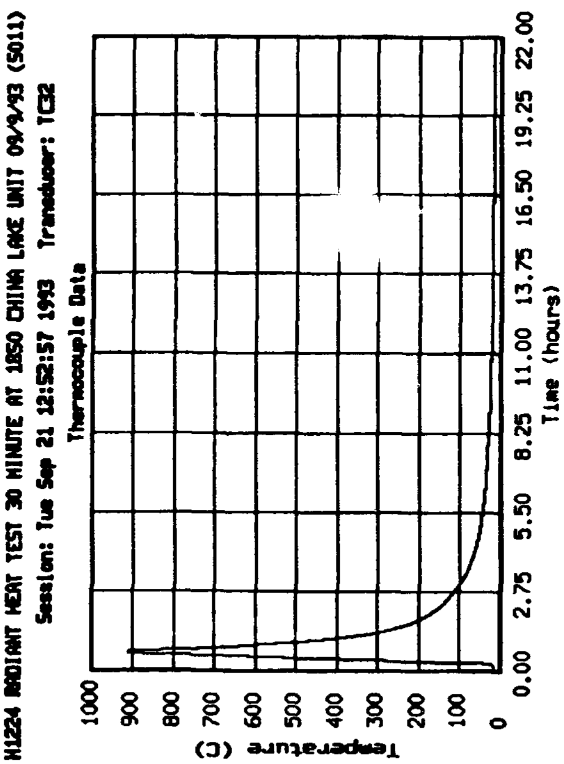

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:52:14 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

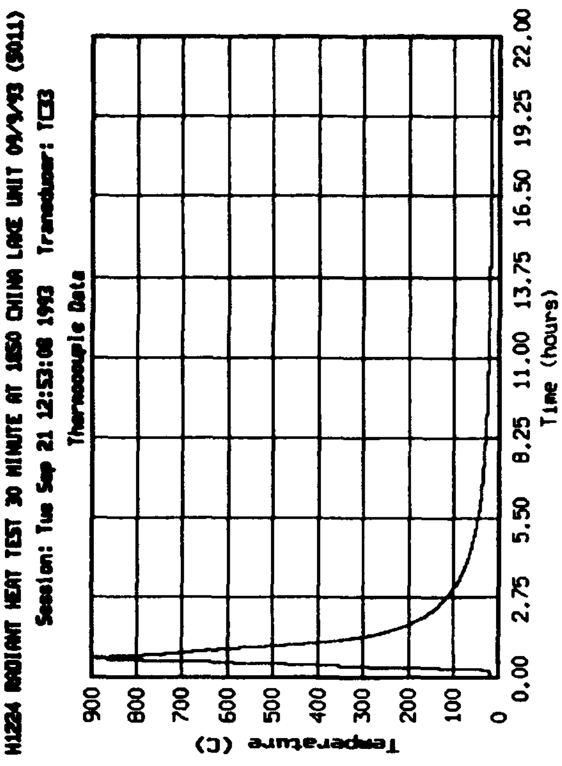

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:52:32 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

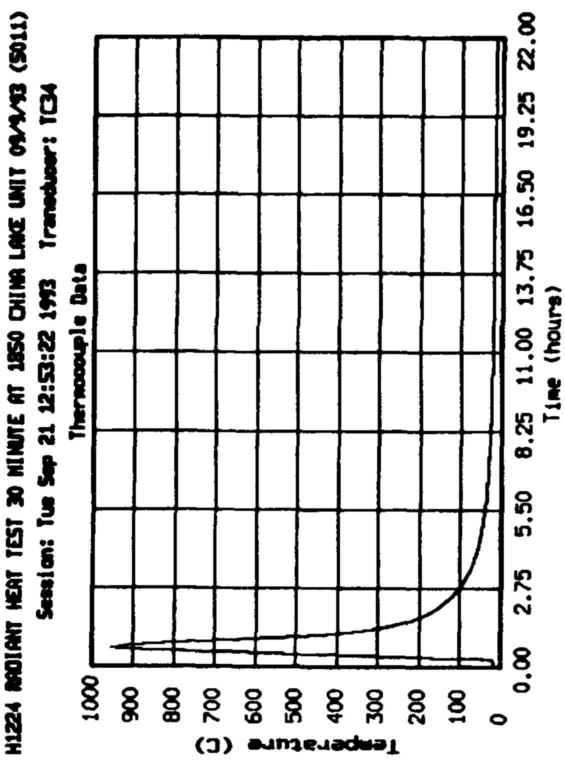

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:52:21 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

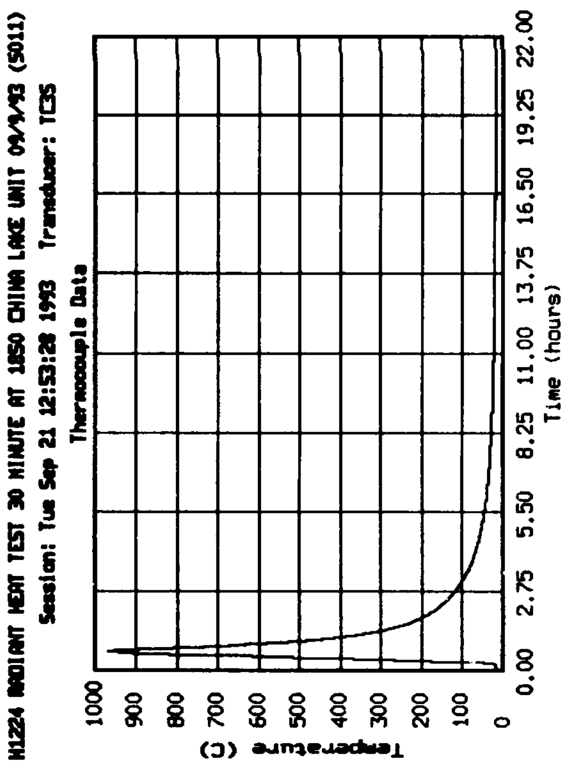

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:52:41 1993 Transducer: TC30
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

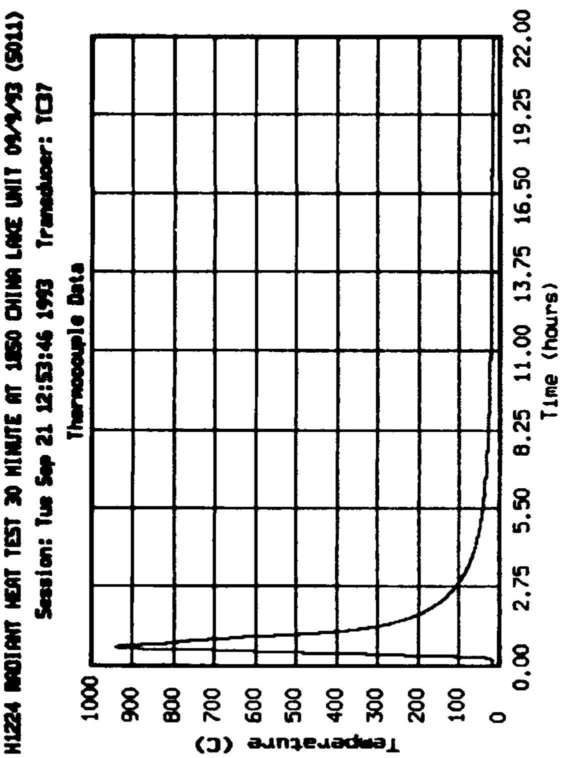

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:52:50 1993 Transducer: TC31
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

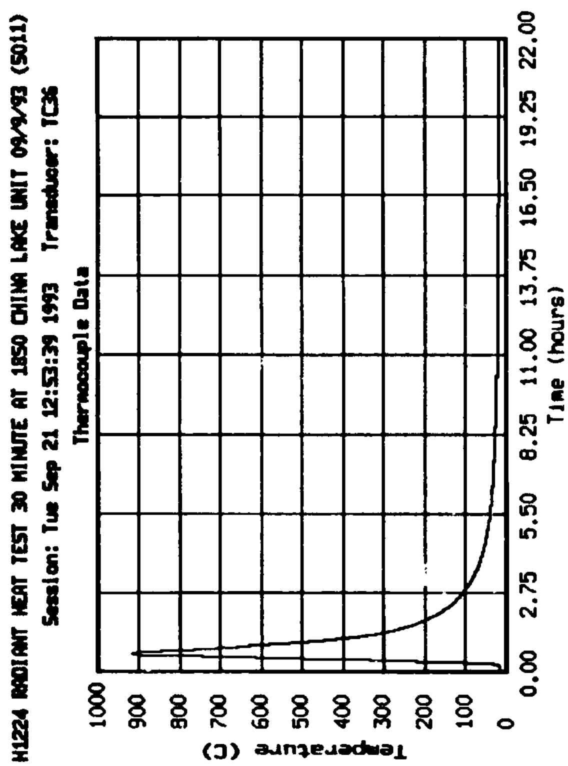

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:52:57 1993 Transducer: TC32
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

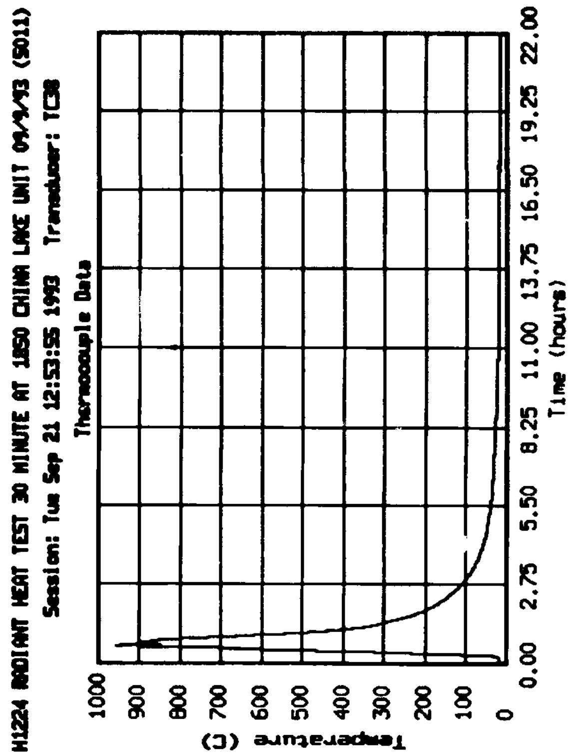

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:53:08 1993 Transducer: TC33
Thermocouple Data
Temperature (C)
900
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

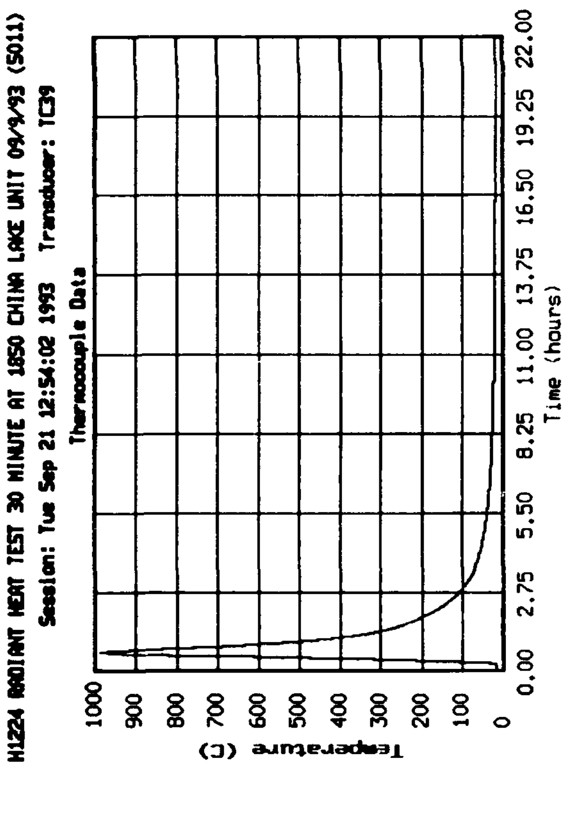

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:53:22 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

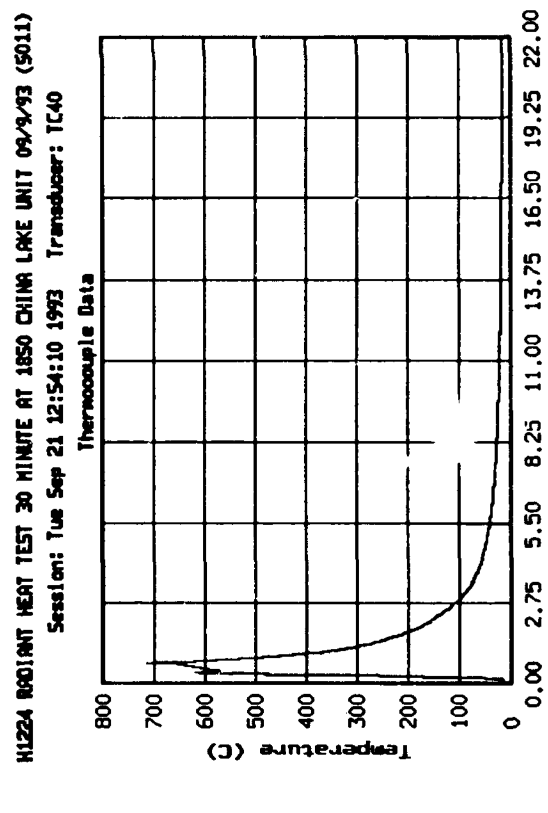

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:53:28 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
1000 900 800 700 600 500 400 300 200 100 0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

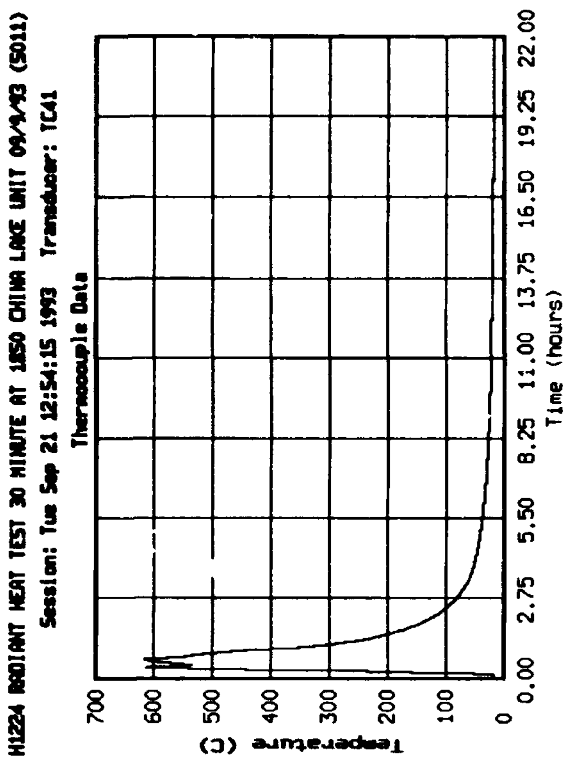

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:53:46 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
1000 900 800 700 600 500 400 300 200 100 0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

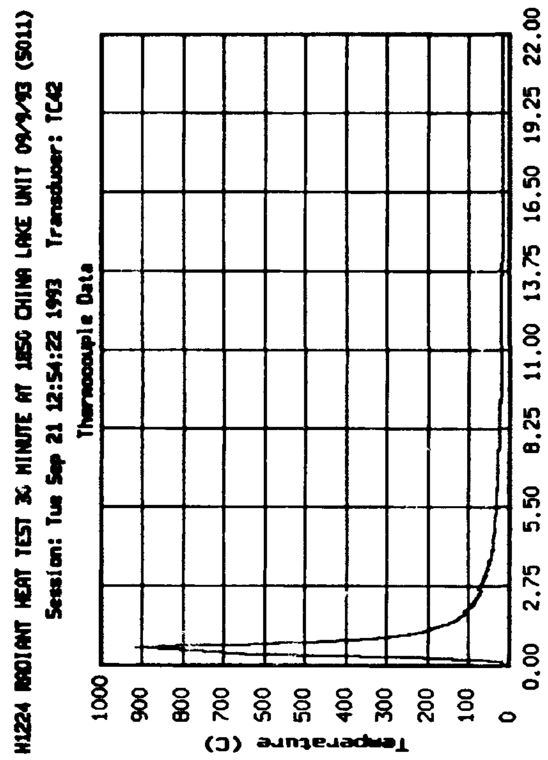

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:53:39 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
1000 900 800 700 600 500 400 300 200 100 0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

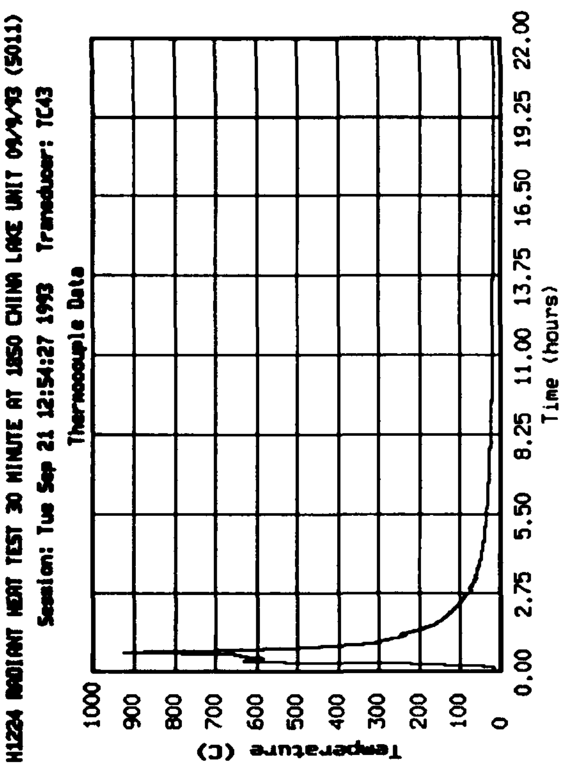

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:53:55 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
1000 900 800 700 600 500 400 300 200 100 0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

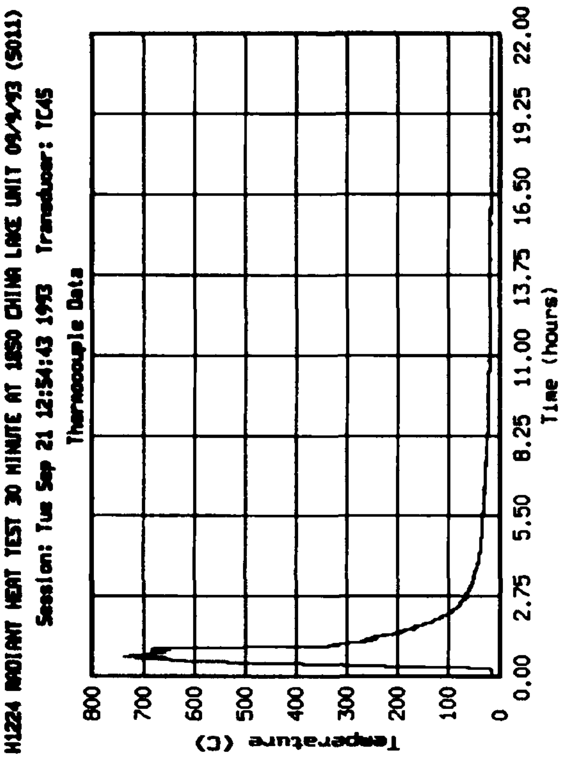

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:02 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
Time (hours)

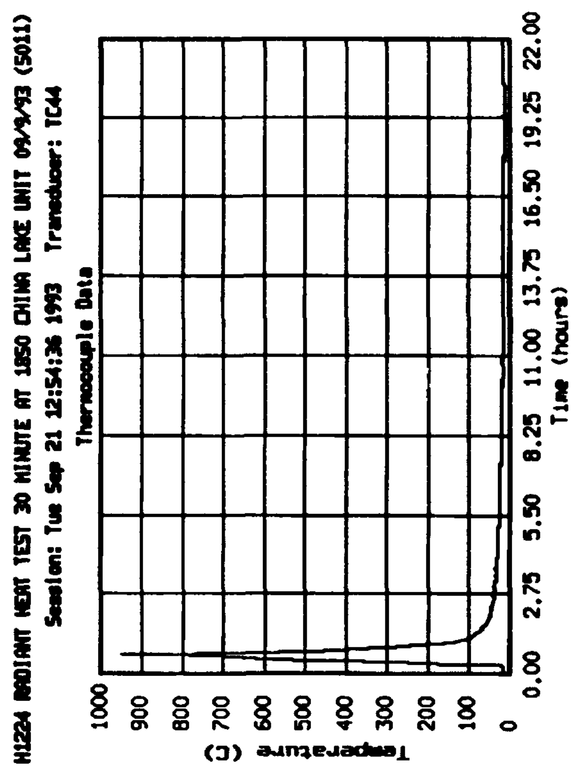

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:10 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
Time (hours)

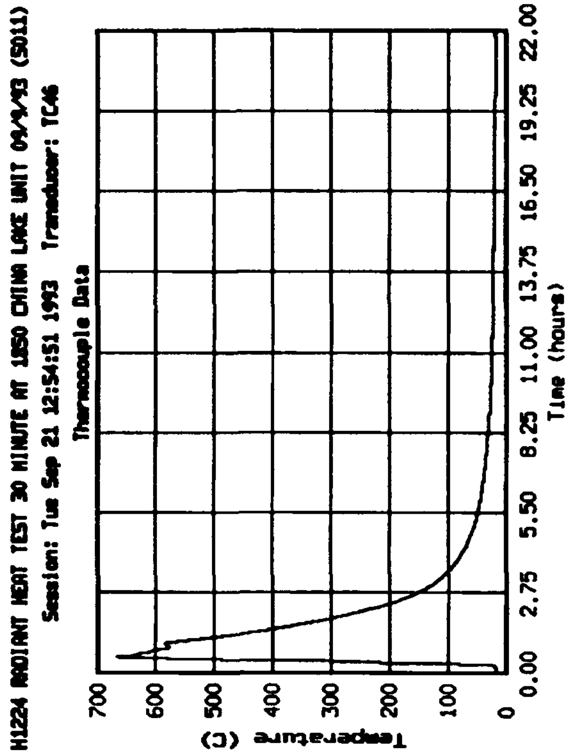

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:15 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:22 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)

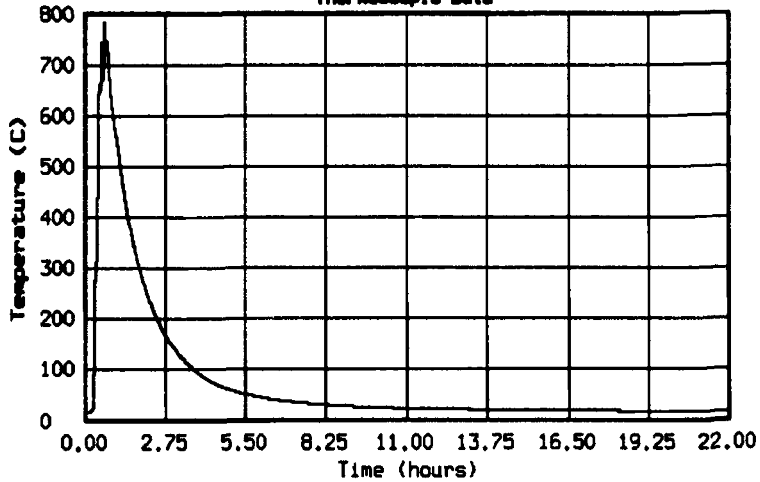

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:27 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:43 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

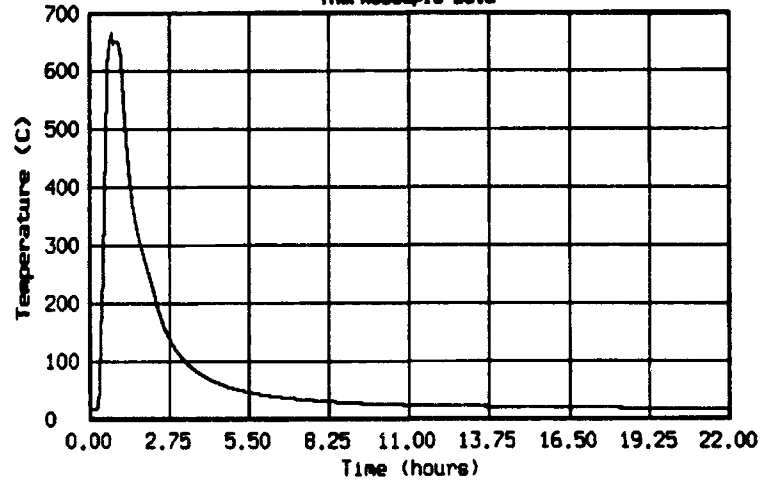

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:36 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:51 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

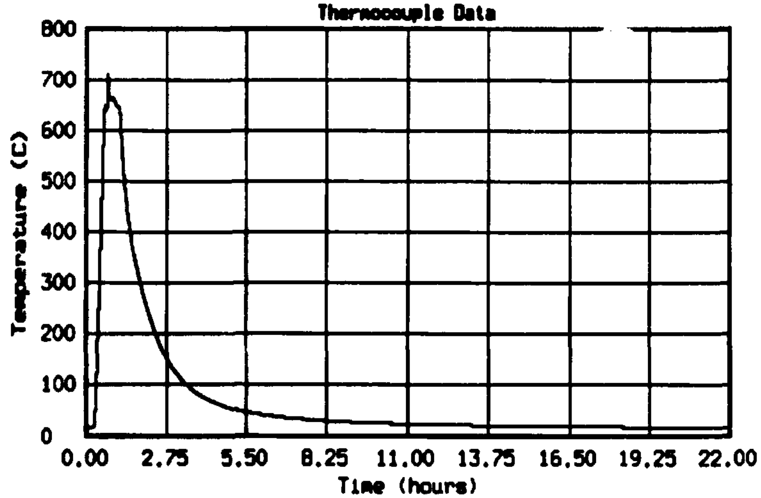
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:54:56 1993 Transducer: TC47
Thermocouple Data



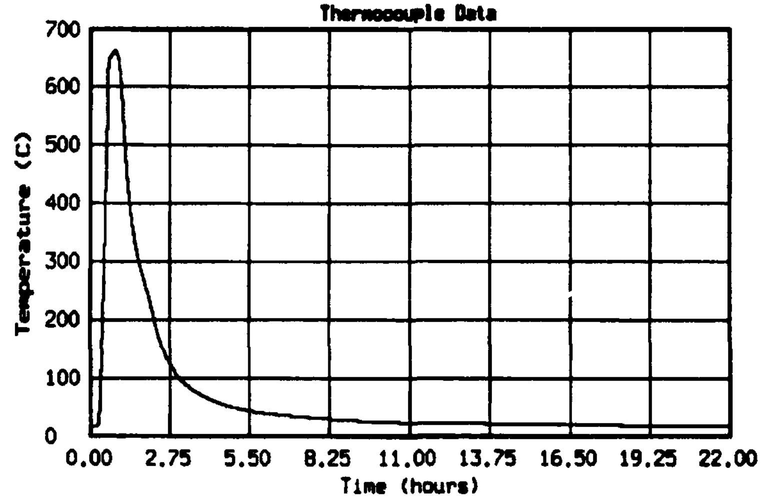
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:09 1993 Transducer: TC49
Thermocouple Data

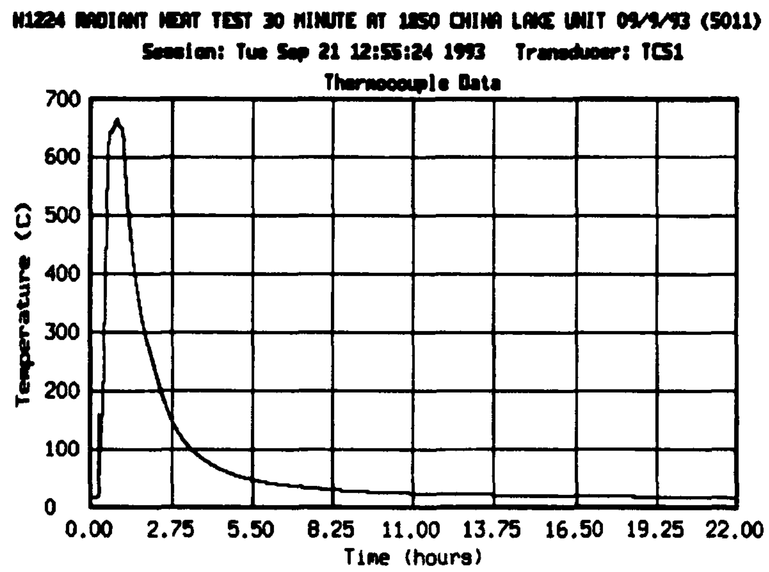


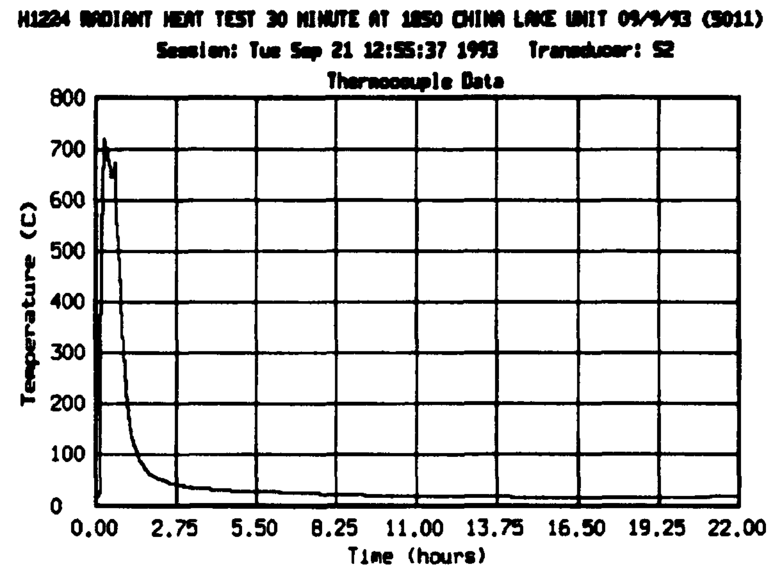
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:03 1993 Transducer: TC48
Thermocouple Data

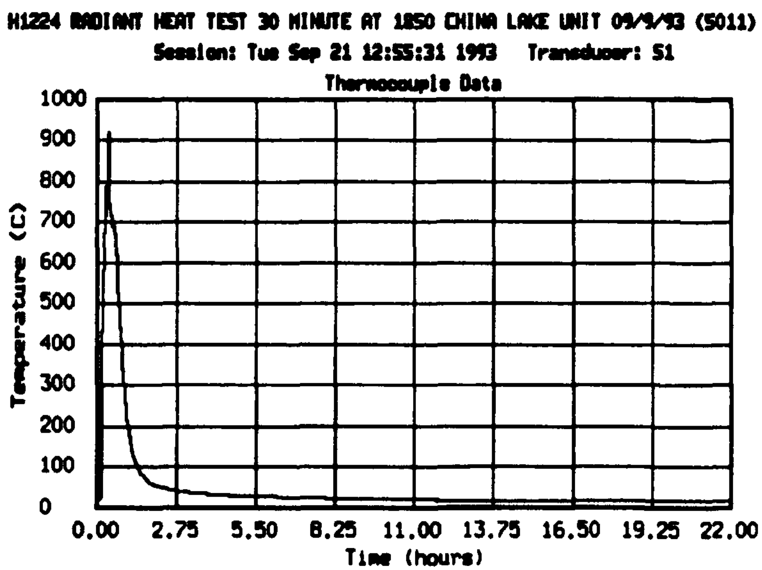


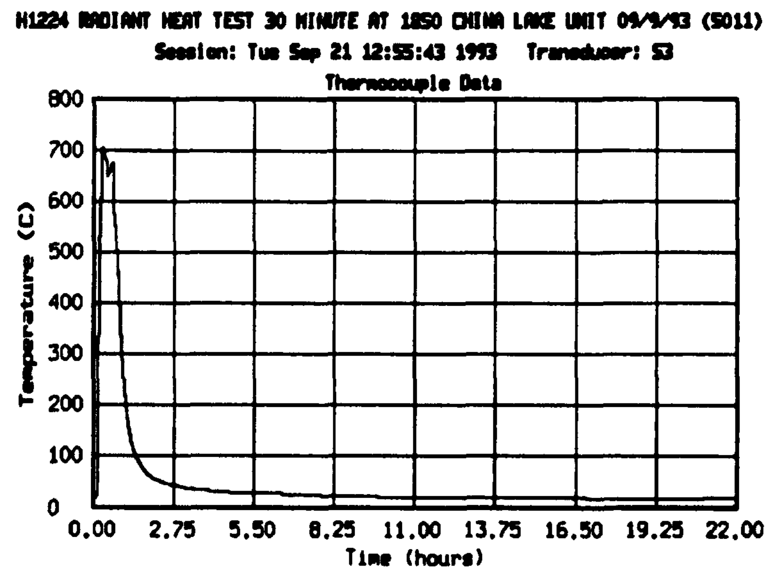
H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:17 1993 Transducer: TC50
Thermocouple Data

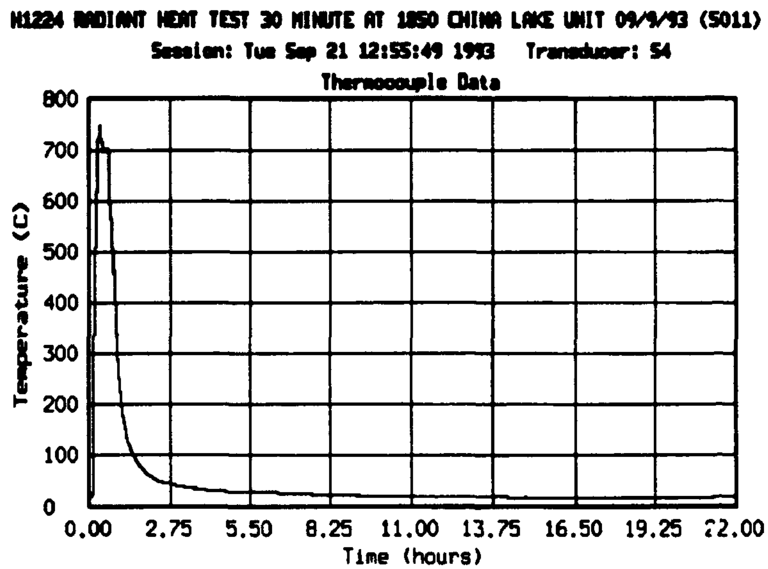


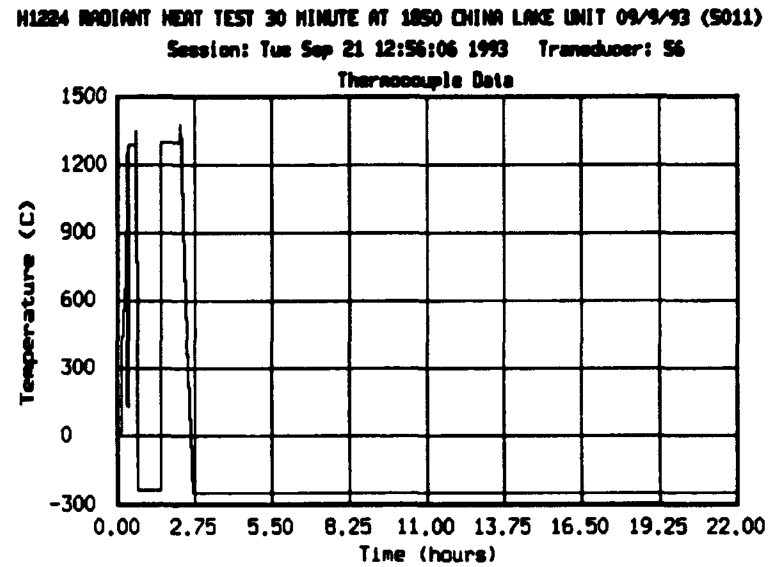

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:24 1993 Transducer: TCS1
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

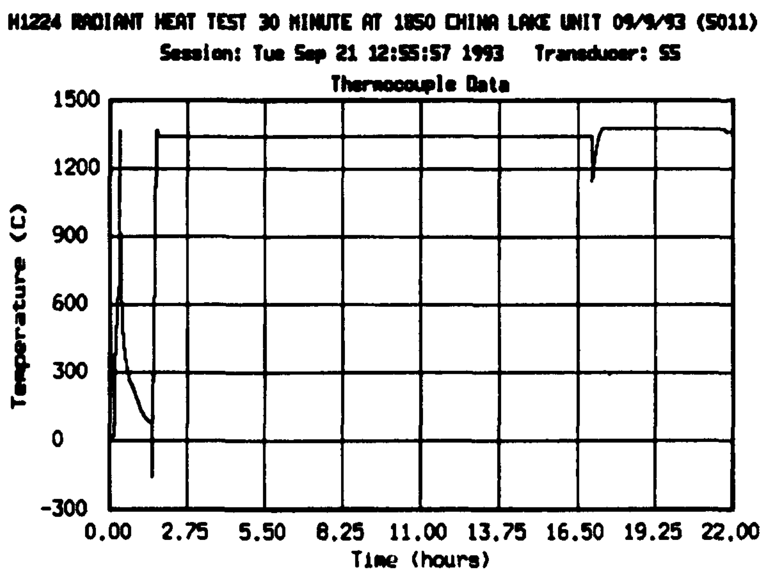

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:37 1993 Transducer: S2
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

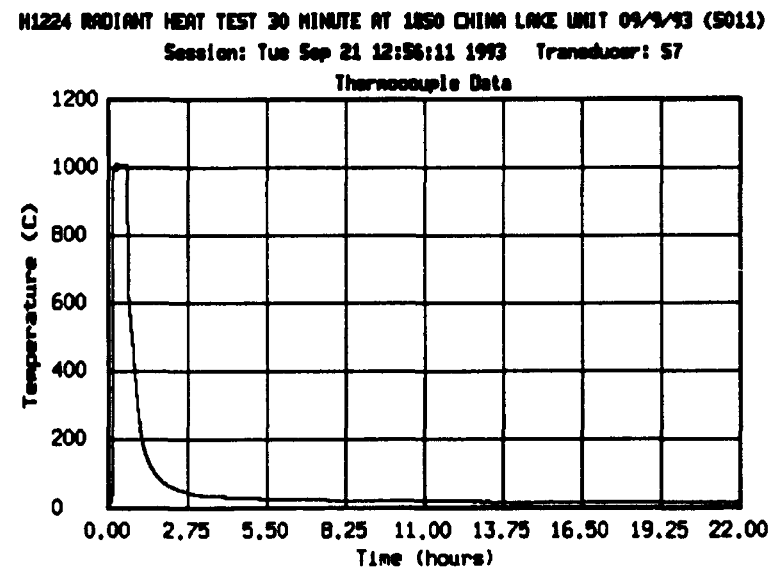

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:31 1993 Transducer: S1
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

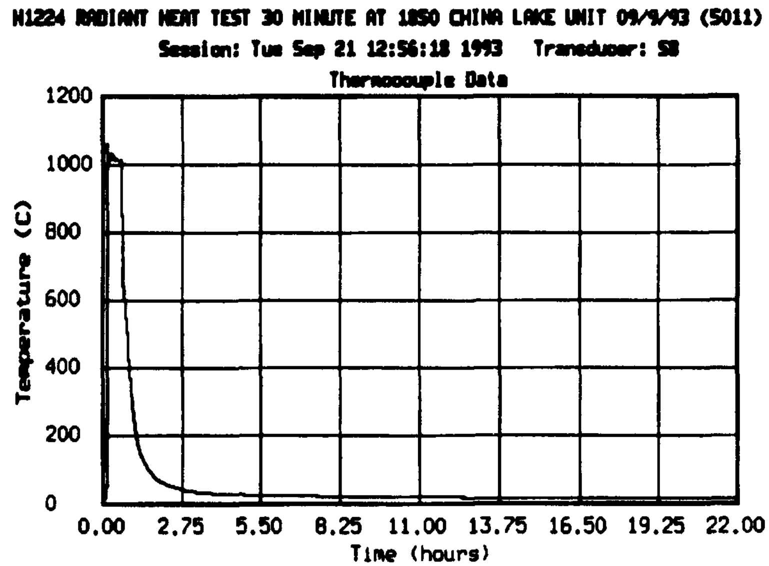

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:43 1993 Transducer: S3
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

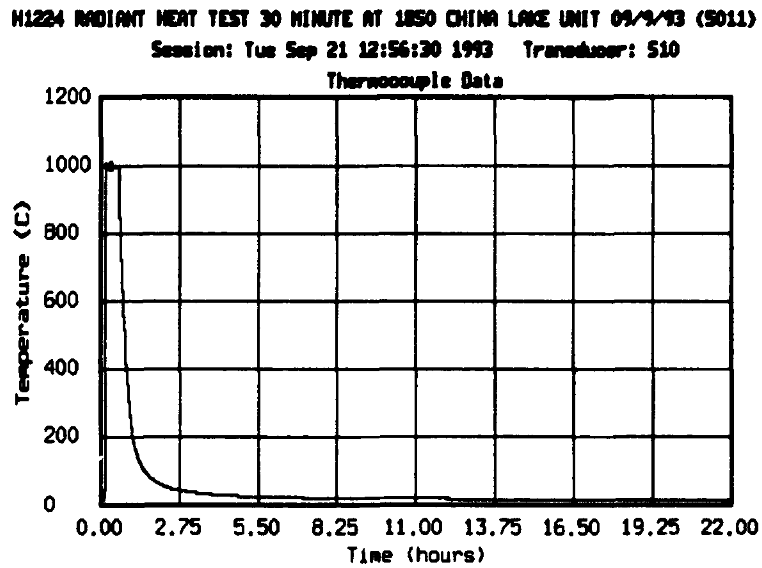

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:49 1993 Transducer: S4
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

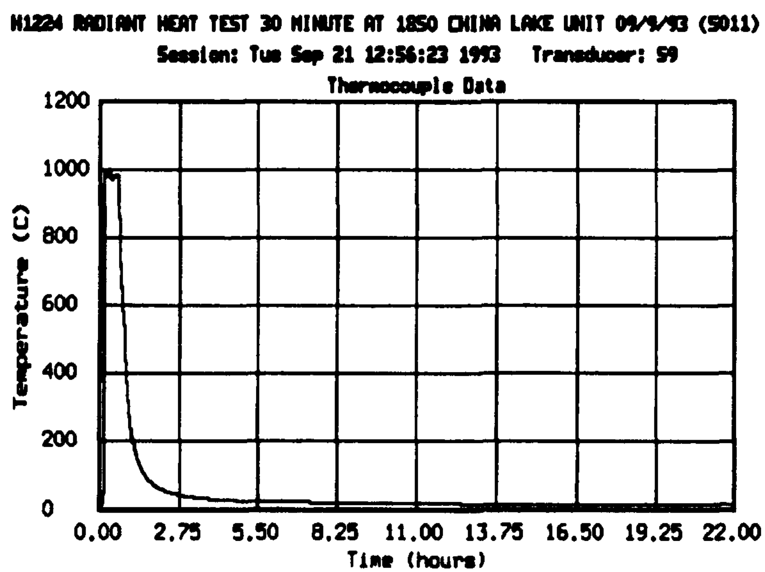

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:06 1993 Transducer: S6
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

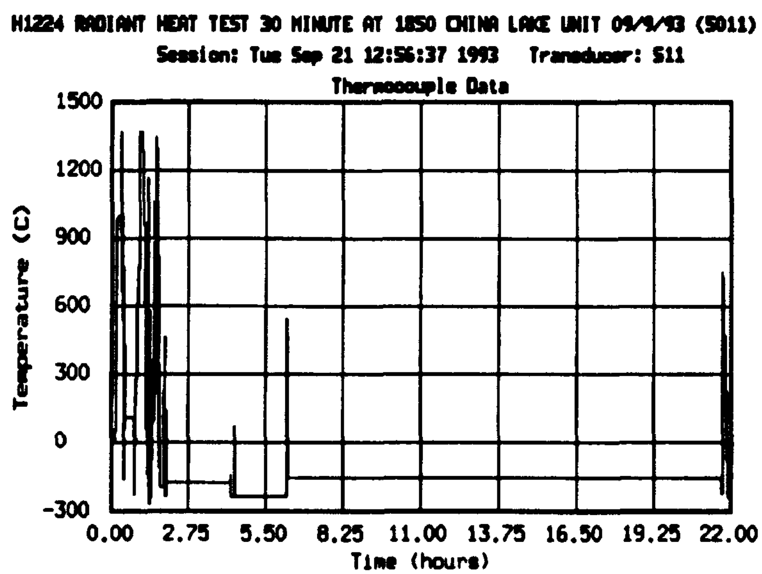

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:55:57 1993 Transducer: S5
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

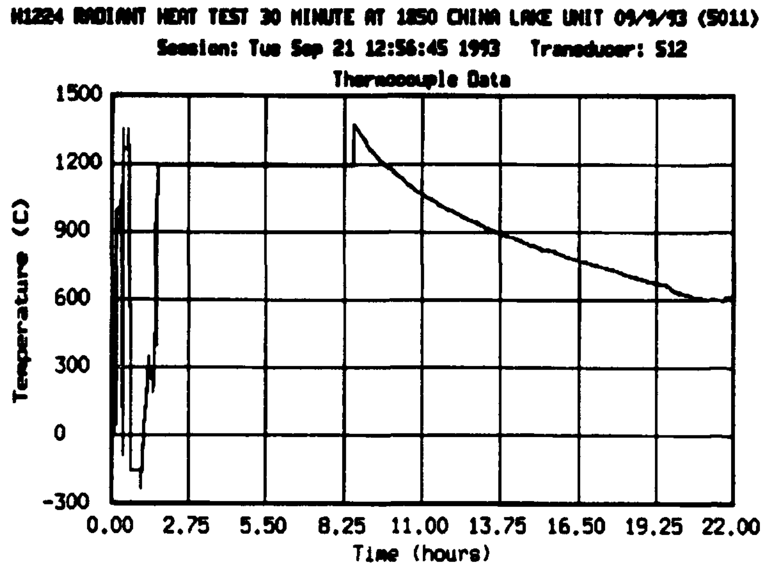

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:11 1993 Transducer: S7
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

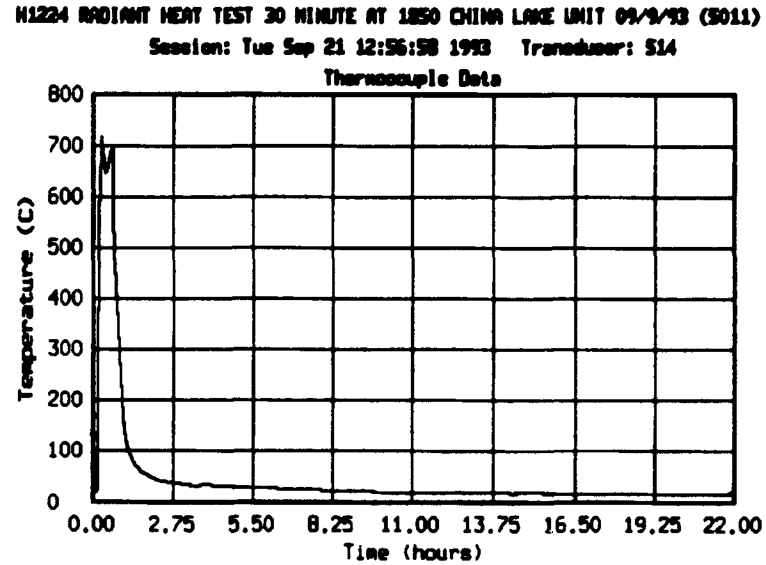

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:18 1993 Transducer: S8
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

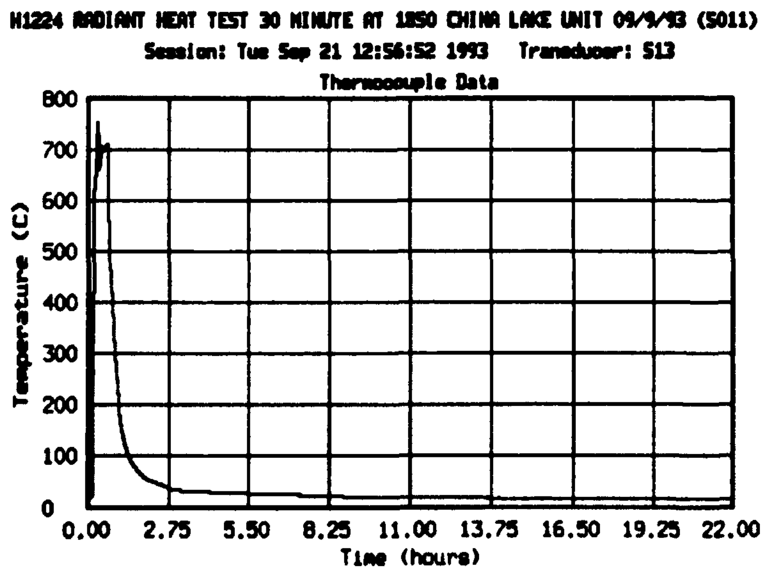

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:30 1993 Transducer: S10
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

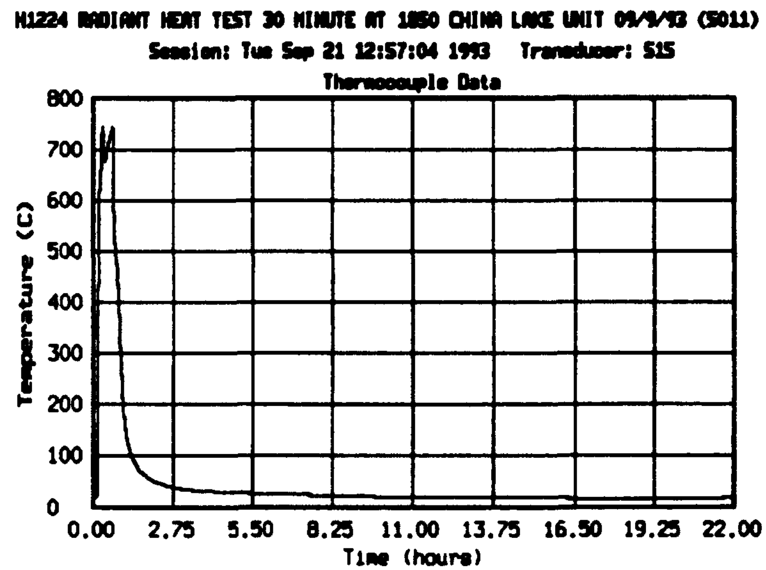

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:23 1993 Transducer: S9
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

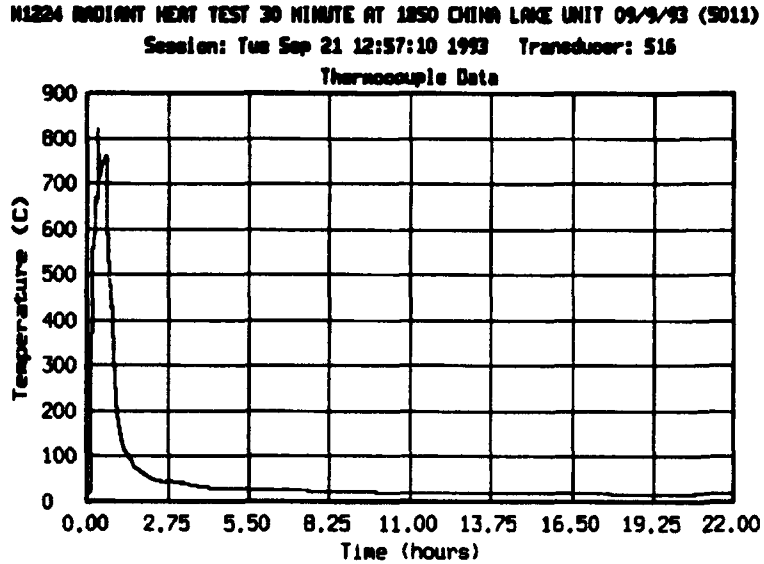

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:37 1993 Transducer: S11
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

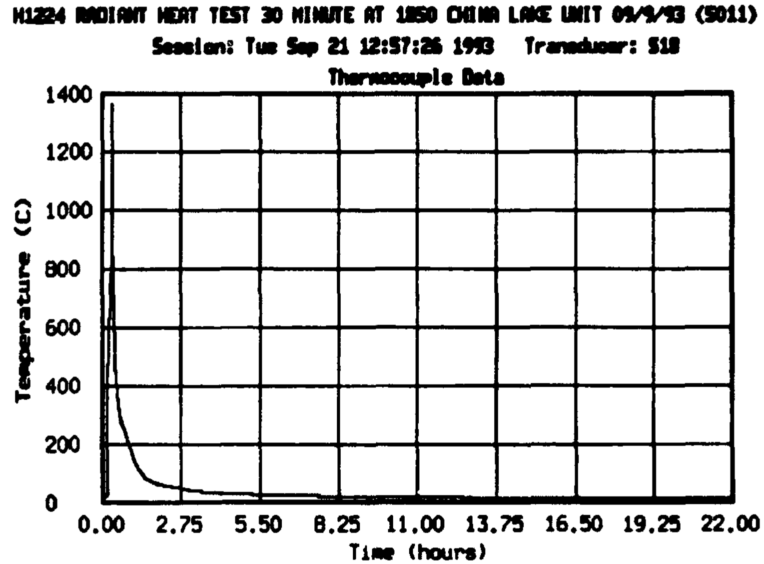

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:45 1993 Transducer: S12
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

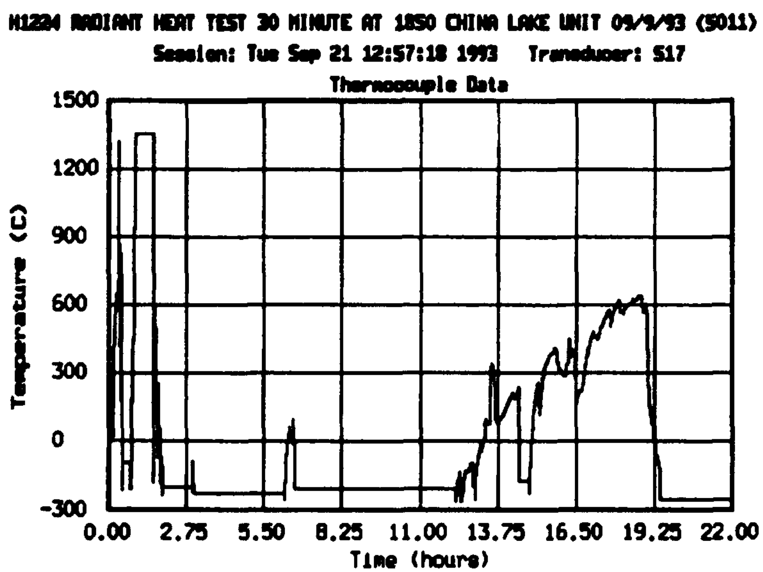

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:58 1993 Transducer: S14
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

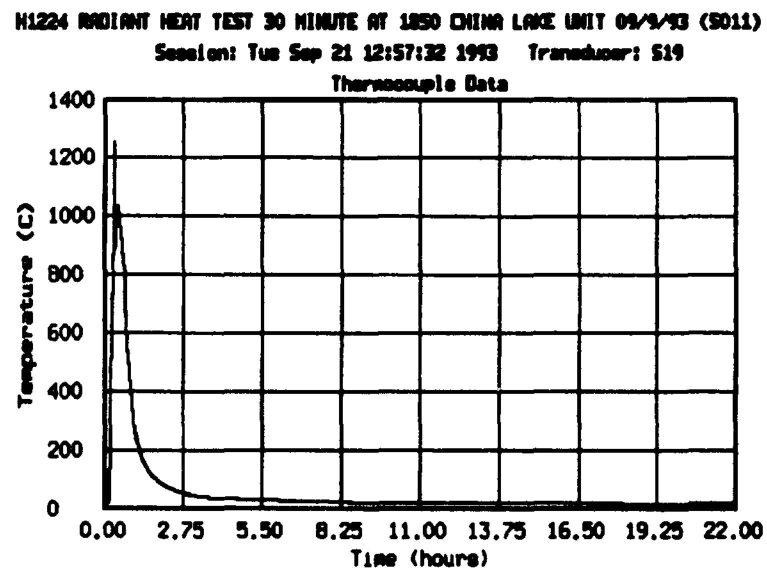

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:56:52 1993 Transducer: S13
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

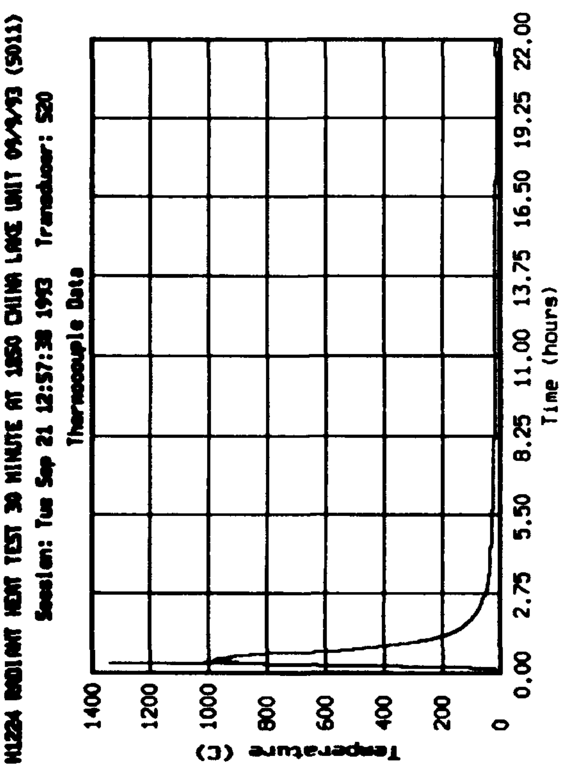

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:04 1993 Transducer: S15
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

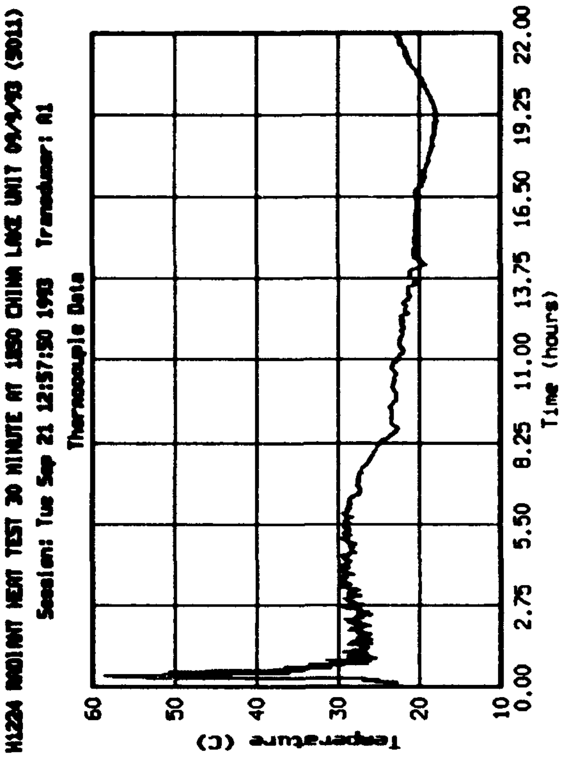

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:10 1993 Transducer: 516
Thermocouple Data
Temperature (C)
900
800
700
600
500
400
300
200
100
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

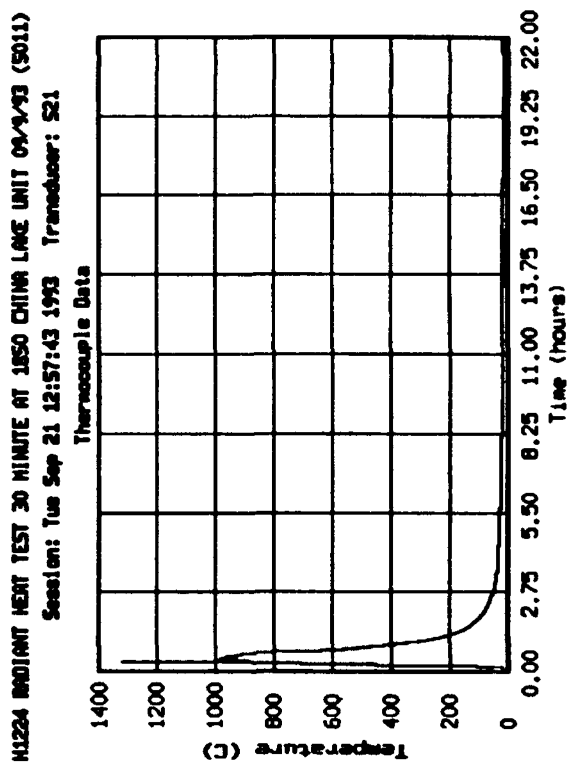

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:26 1993 Transducer: 518
Thermocouple Data
Temperature (C)
1400
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

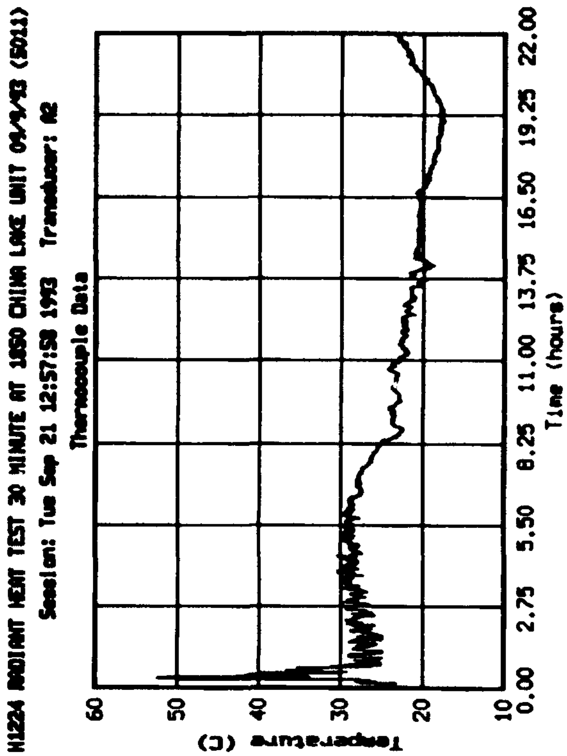

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:18 1993 Transducer: 517
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

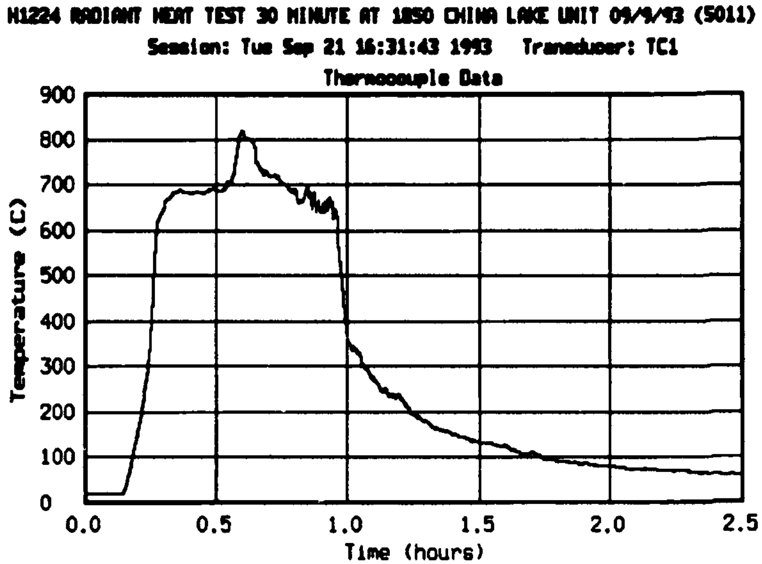

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:32 1993 Transducer: 519
Thermocouple Data
Temperature (C)
1400
1200
1000
800
600
400
200
0
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

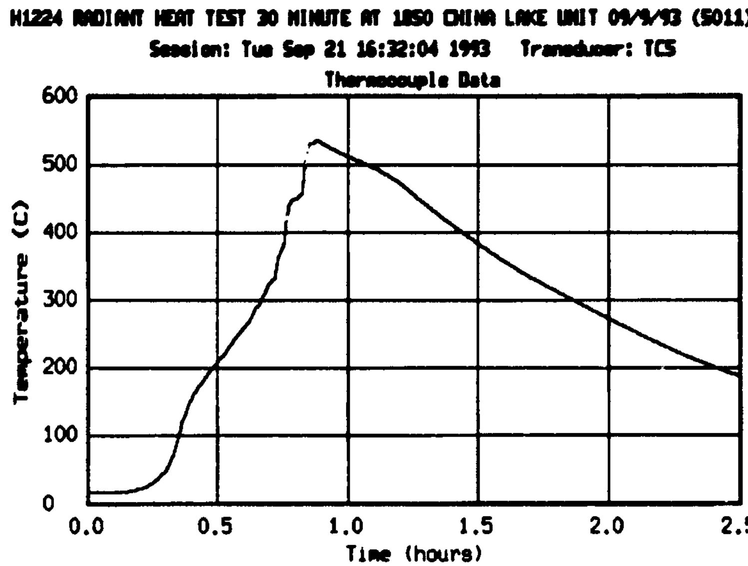

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:38 1993 Transducer: S20
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
1400
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

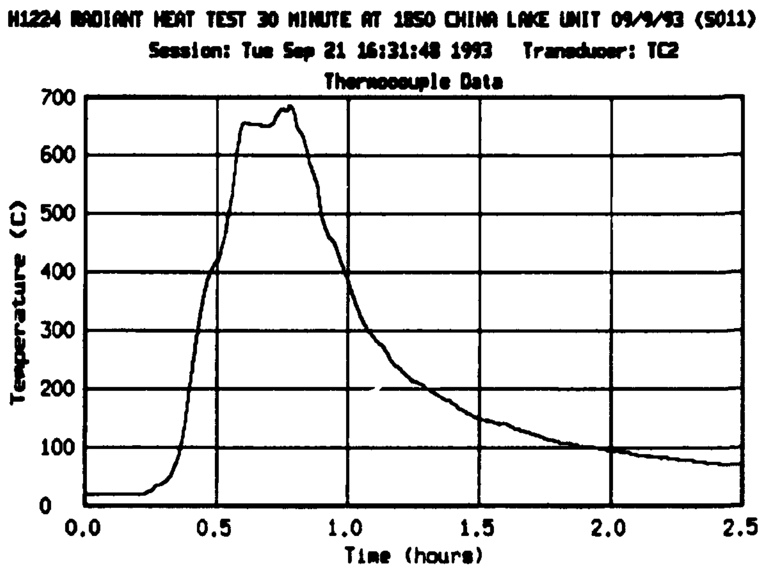

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:50 1993 Transducer: A1
Thermocouple Data
Temperature (C)
10
20
30
40
50
60
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

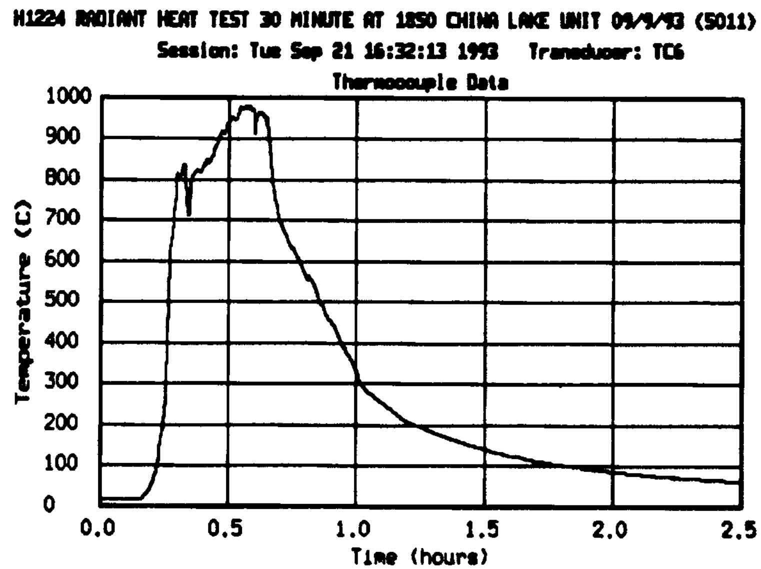

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:43 1993 Transducer: S21
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
1400
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

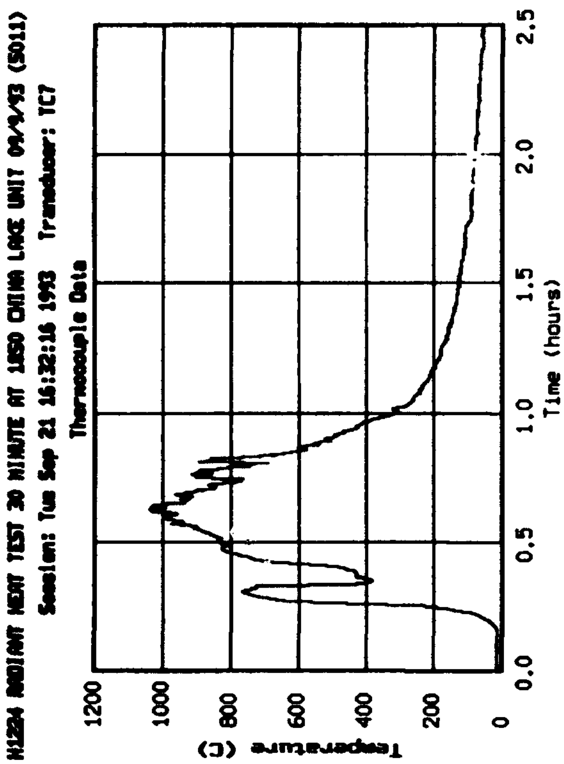

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 12:57:58 1993 Transducer: A2
Thermocouple Data
Temperature (C)
10
20
30
40
50
60
0.00 2.75 5.50 8.25 11.00 13.75 16.50 19.25 22.00
Time (hours)

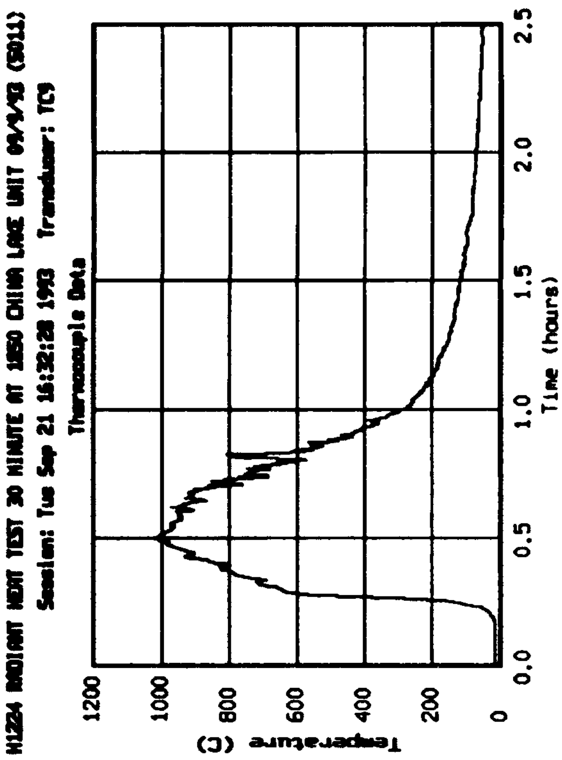

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:31:43 1993 Transducer: TC1
Thermocouple Data
Temperature (C)
Time (hours)

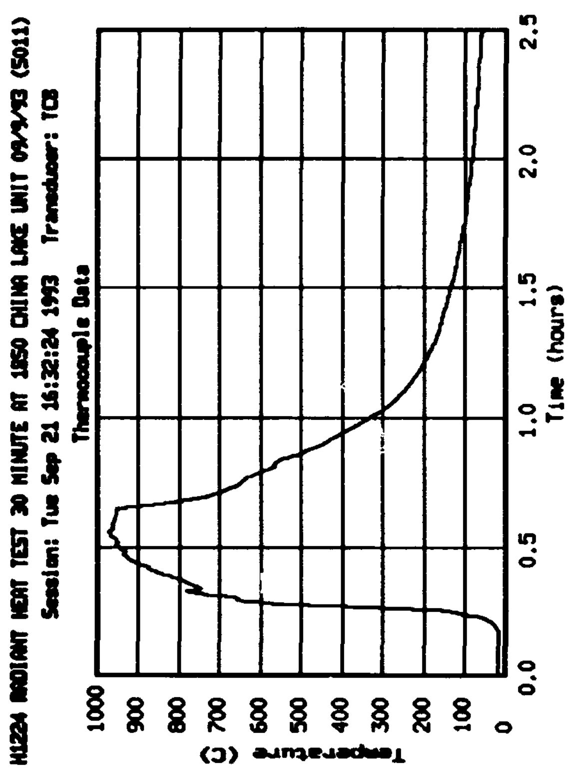

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:04 1993 Transducer: TC5
Thermocouple Data
Temperature (C)
Time (hours)

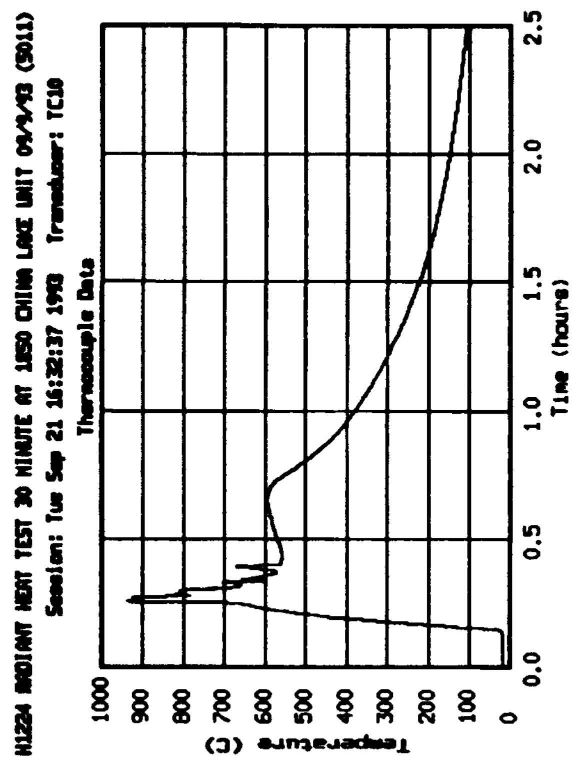

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:31:48 1993 Transducer: TC2
Thermocouple Data
Temperature (C)
Time (hours)

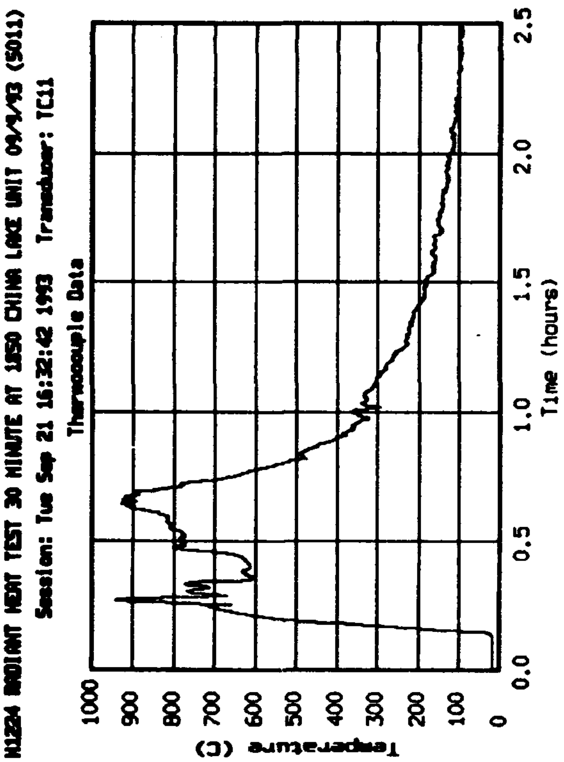

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:13 1993 Transducer: TC6
Thermocouple Data
Temperature (C)
Time (hours)

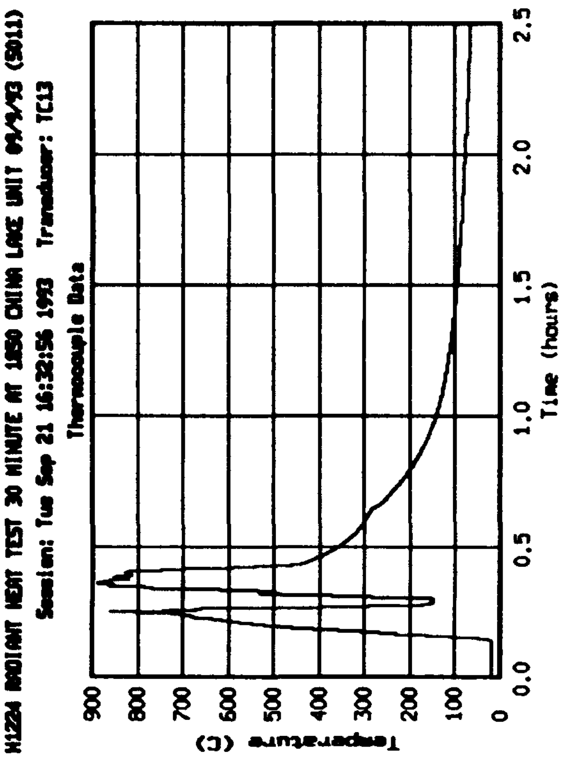

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:16 1993 Transducer: TC7
Thermocouple Data
Temperature (C)
Time (hours)

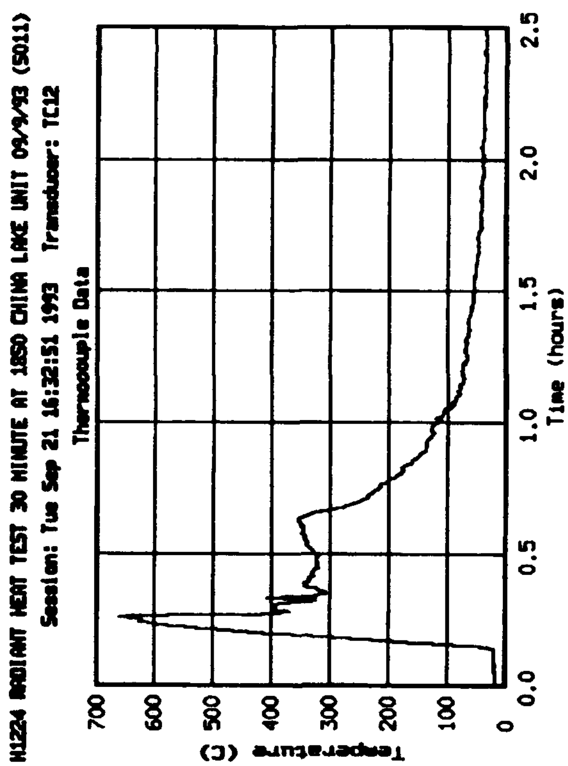

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:28 1993 Transducer: TC9
Thermocouple Data
Temperature (C)
Time (hours)

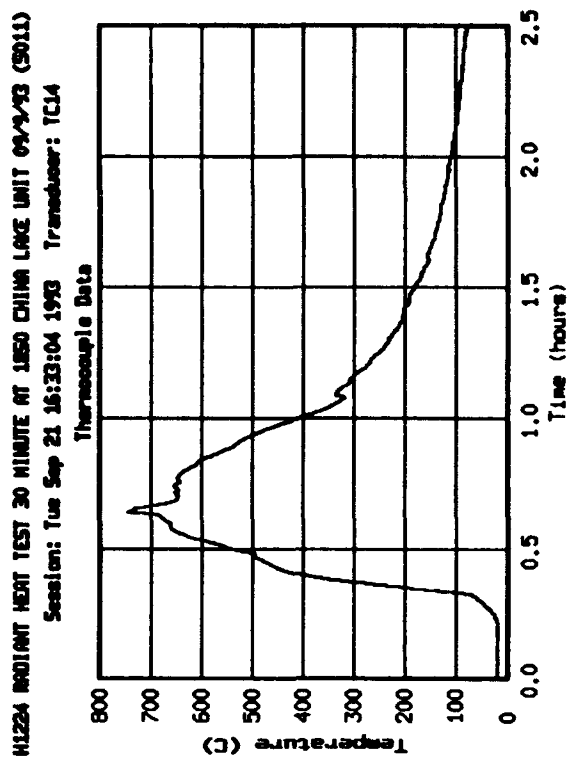

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:24 1993 Transducer: TC8
Thermocouple Data
Temperature (C)
Time (hours)

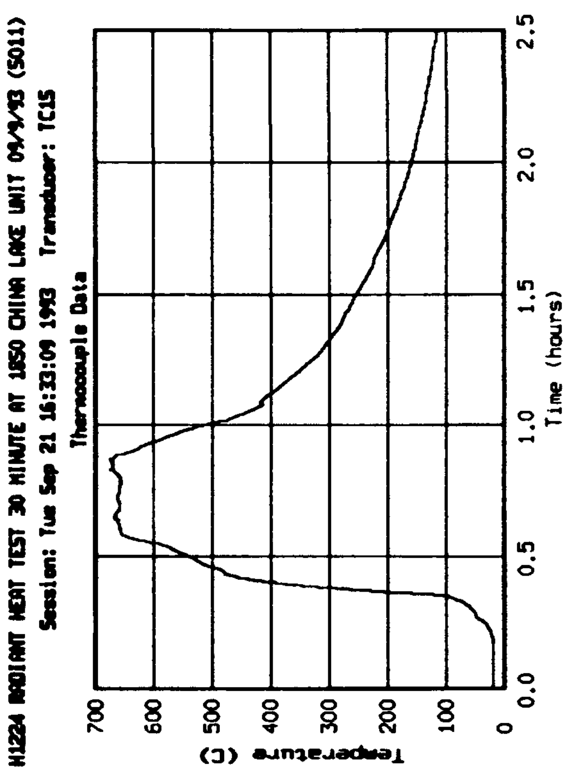

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:37 1993 Transducer: TC10
Thermocouple Data
Temperature (C)
Time (hours)

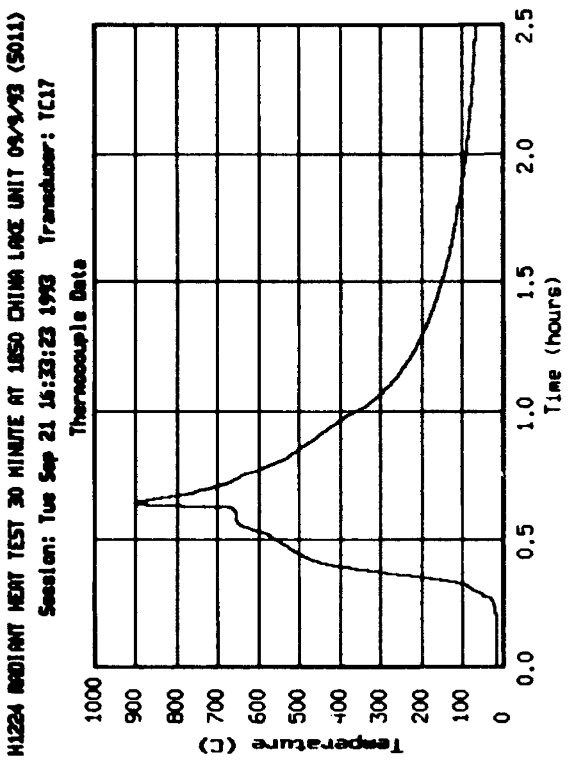

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:42 1993 Transducer: TC11
Thermocouple Data
Temperature (C)
Time (hours)

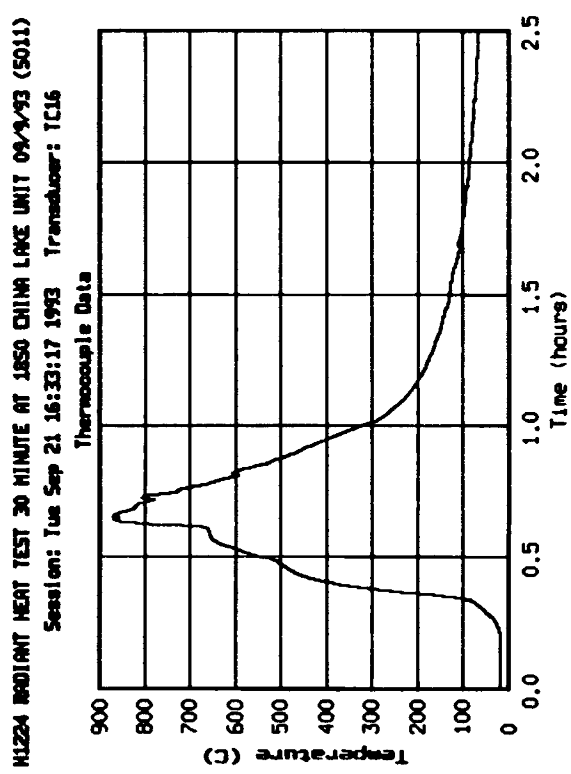

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:56 1993 Transducer: TC13
Thermocouple Data
Temperature (C)
Time (hours)

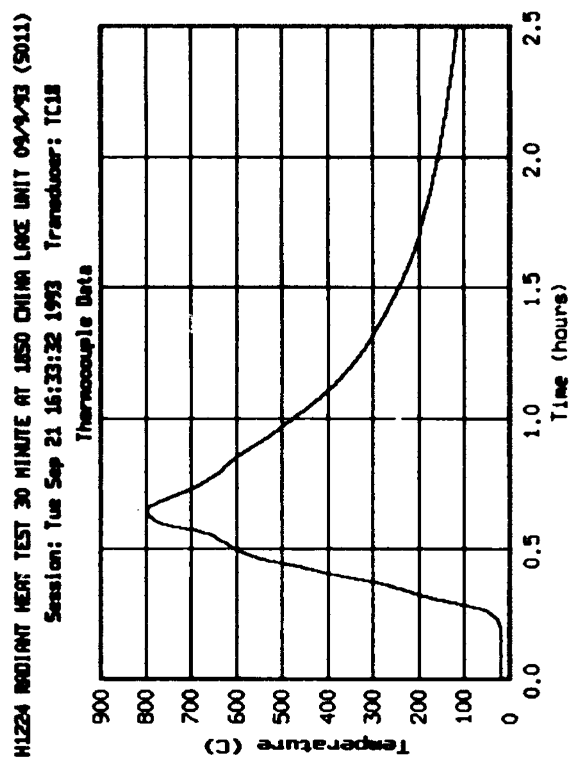

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:32:51 1993 Transducer: TC12
Thermocouple Data
Temperature (C)
Time (hours)

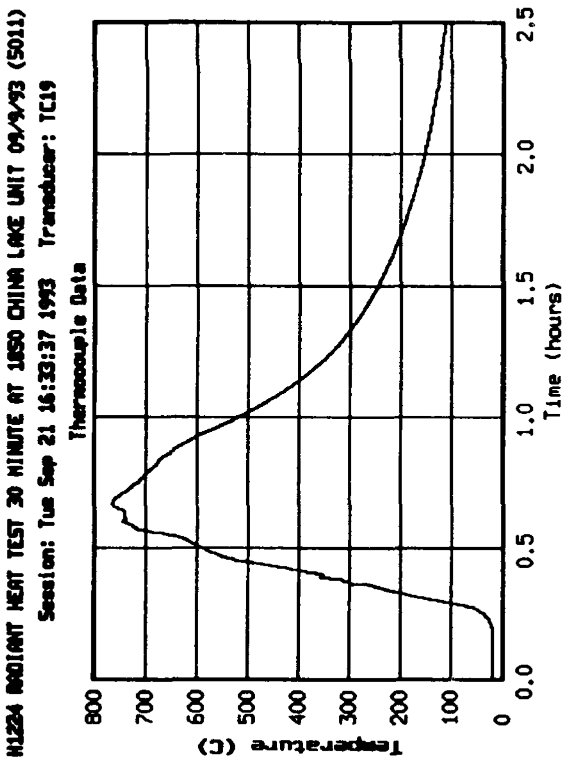

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:33:04 1993 Transducer: TC14
Thermocouple Data
Temperature (C)
Time (hours)

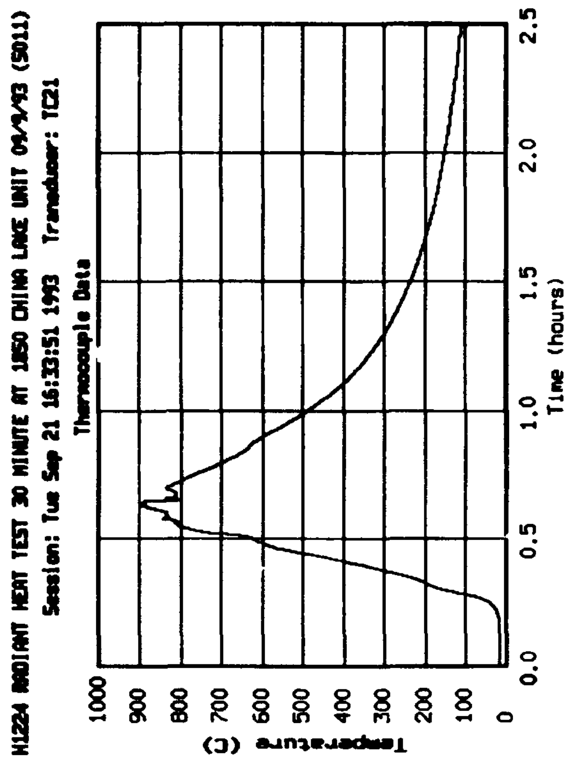

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:33:09 1993   Transducer: TC15
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
0.0
0.5
1.0
1.5
2.0
2.5

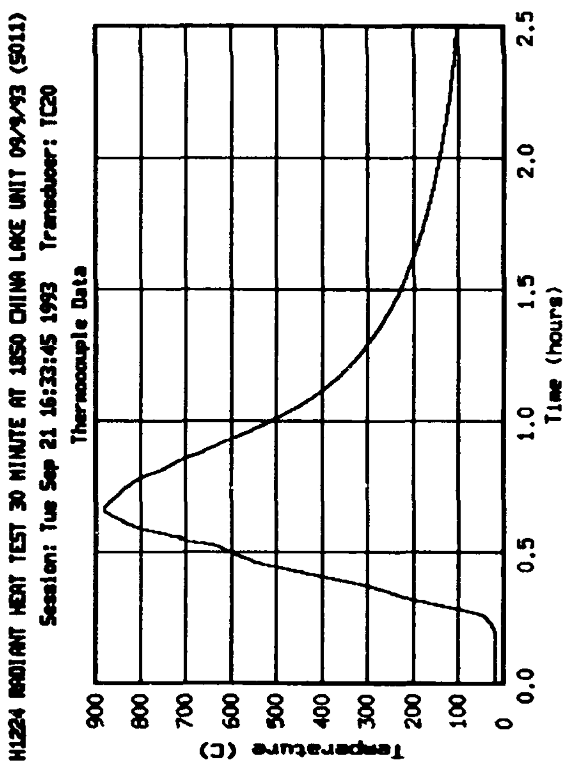

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:33:23 1993   Transducer: TC17
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5

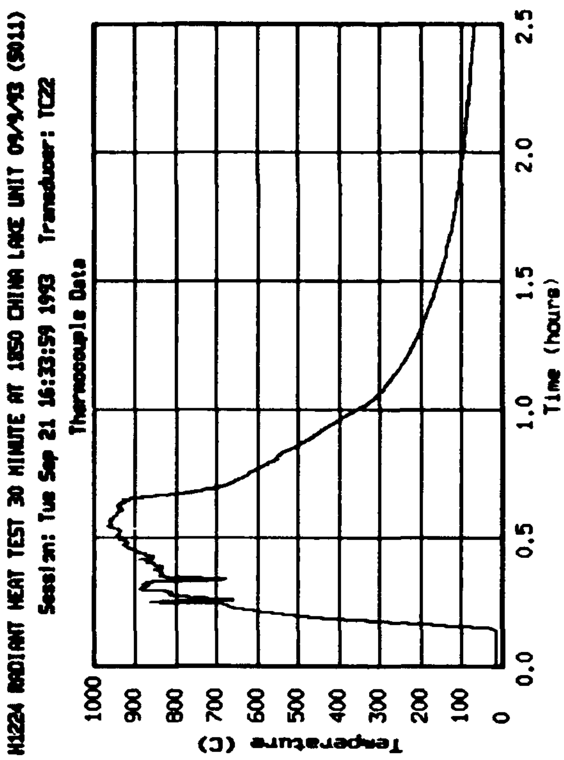

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:33:17 1993   Transducer: TC16
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
0.0
0.5
1.0
1.5
2.0
2.5

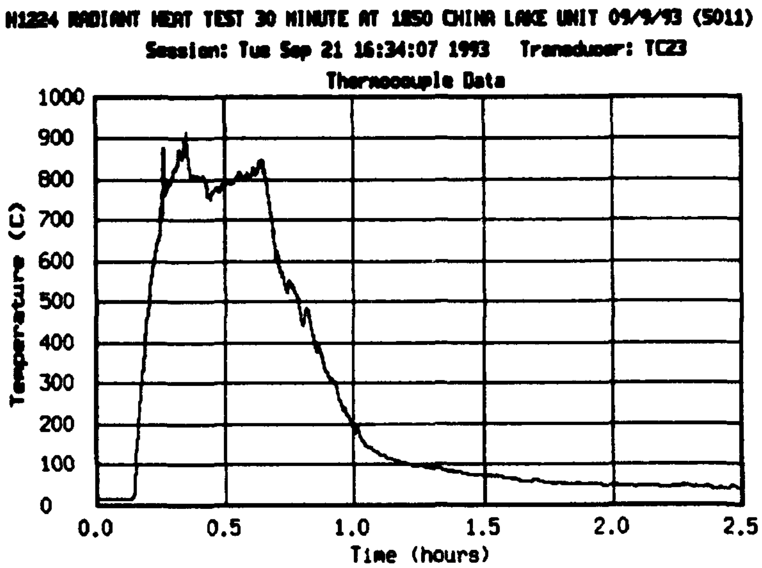

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:33:32 1993   Transducer: TC18
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
0.0
0.5
1.0
1.5
2.0
2.5

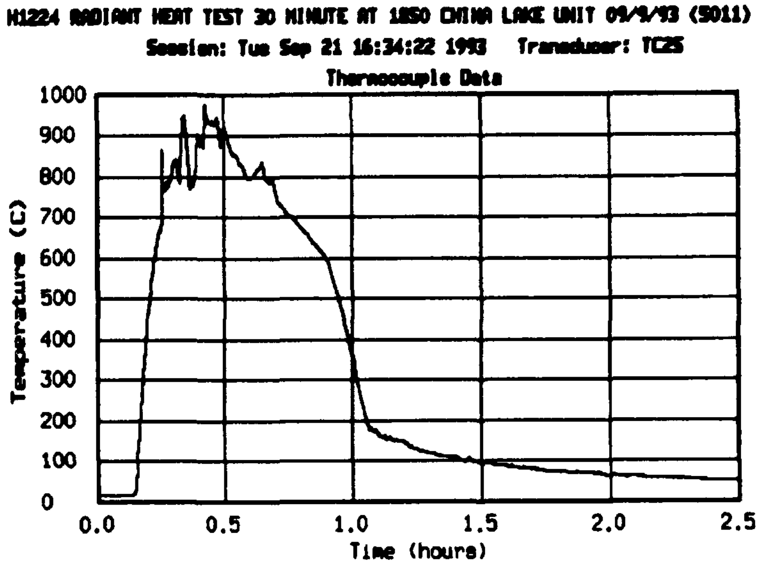

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:33:37 1993 Transducer: TC19
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

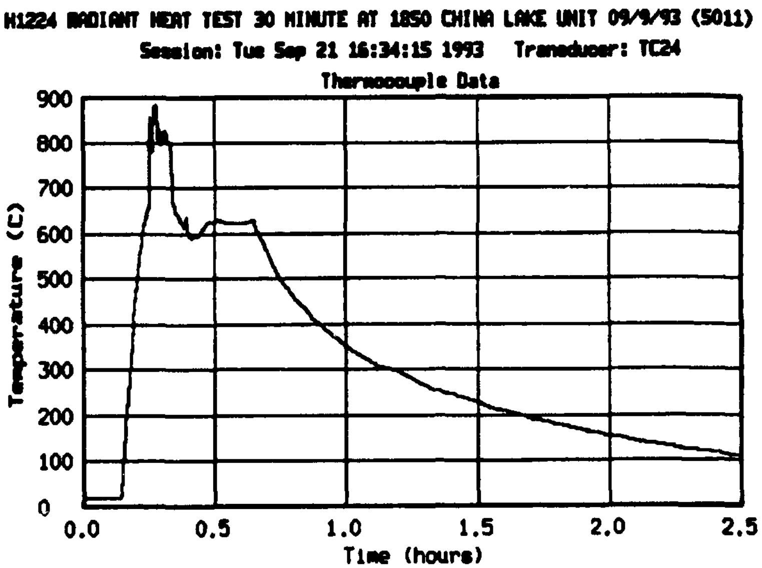

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:33:51 1993 Transducer: TC21
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

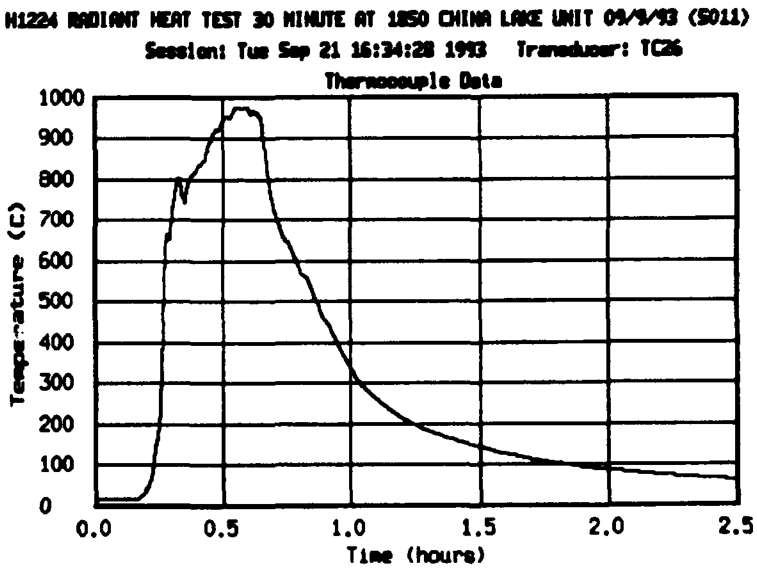

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:33:45 1993 Transducer: TC20
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

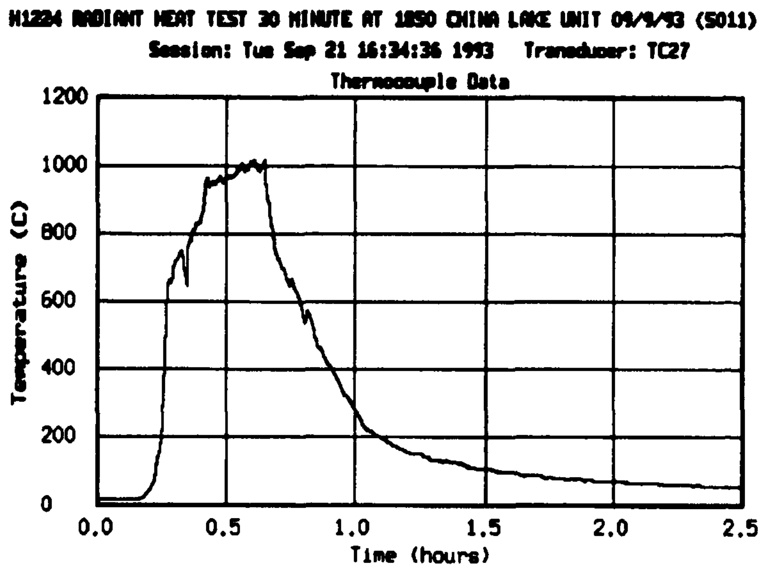

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:33:59 1993 Transducer: TC22
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

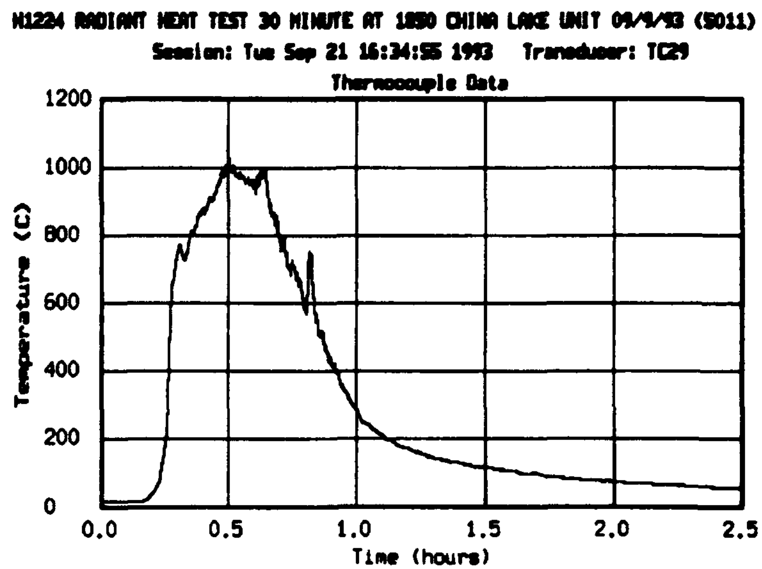

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:07 1993 Transducer: TC23
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

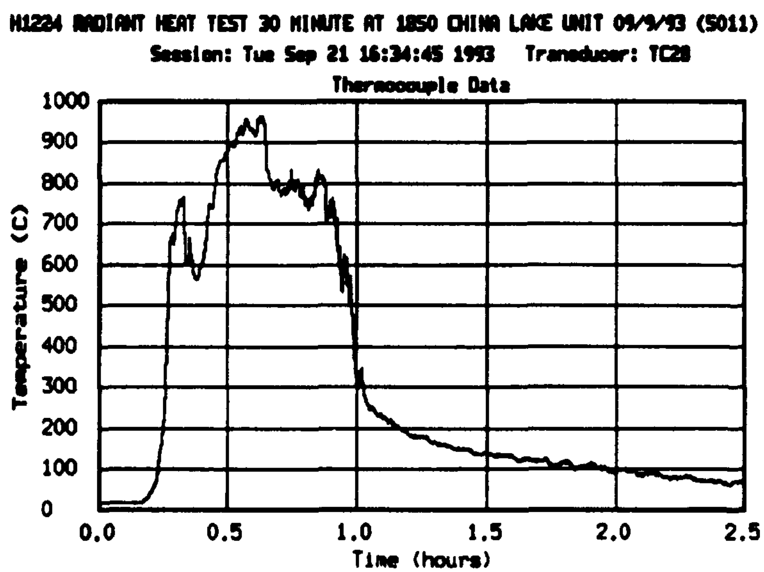

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:22 1993 Transducer: TC25
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

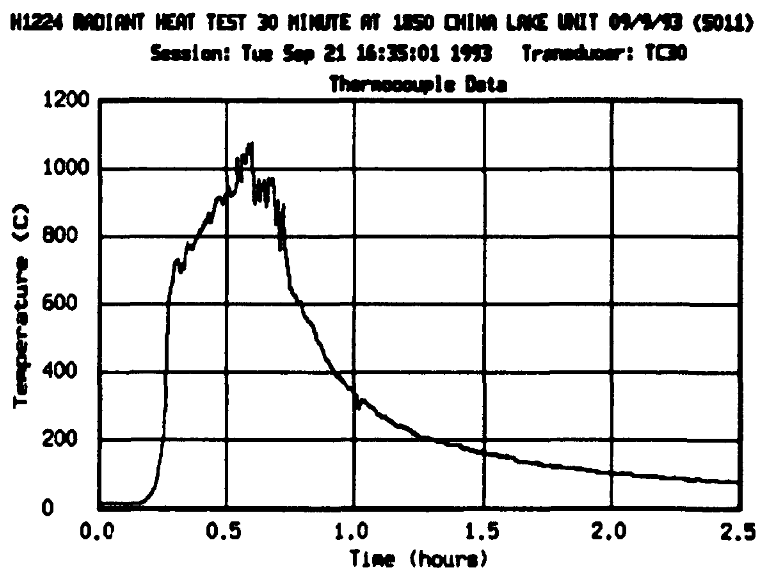

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:15 1993 Transducer: TC24
Thermocouple Data
Temperature (C)
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

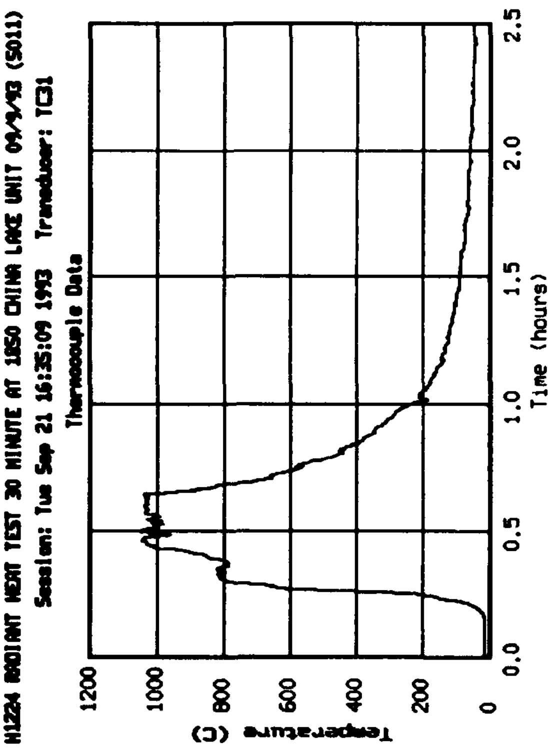

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:28 1993 Transducer: TC26
Thermocouple Data
Temperature (C)
1000
900
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

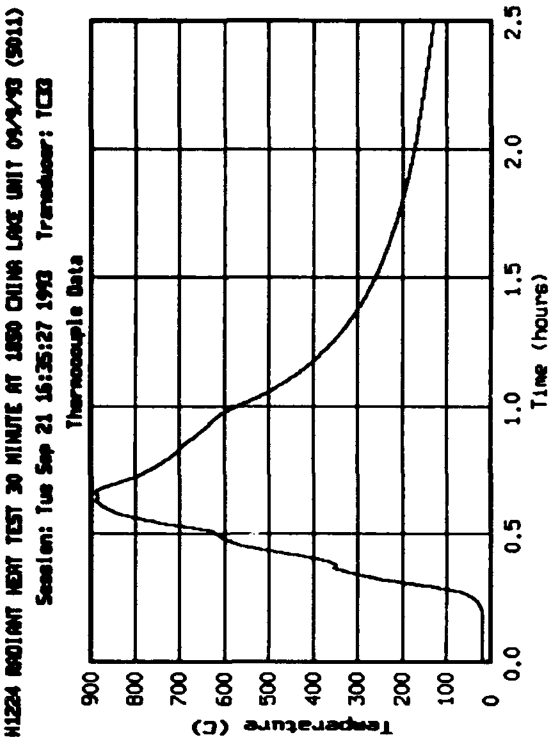

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:36 1993 Transducer: TC27
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

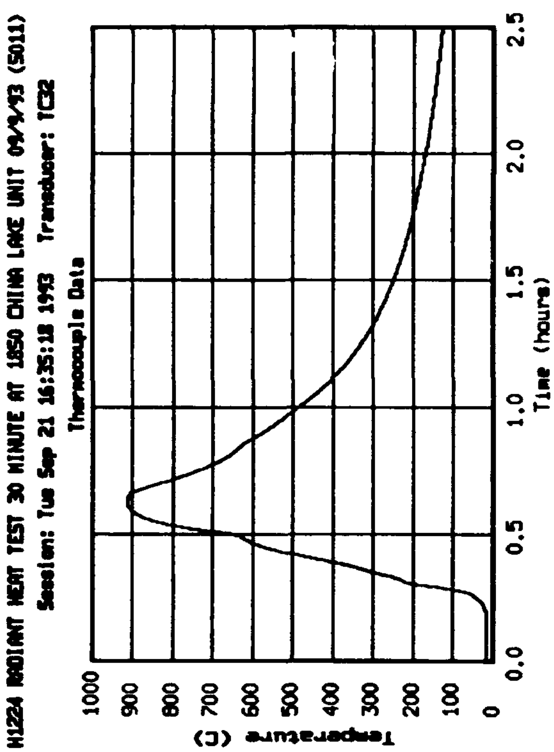

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:55 1993 Transducer: TC29
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

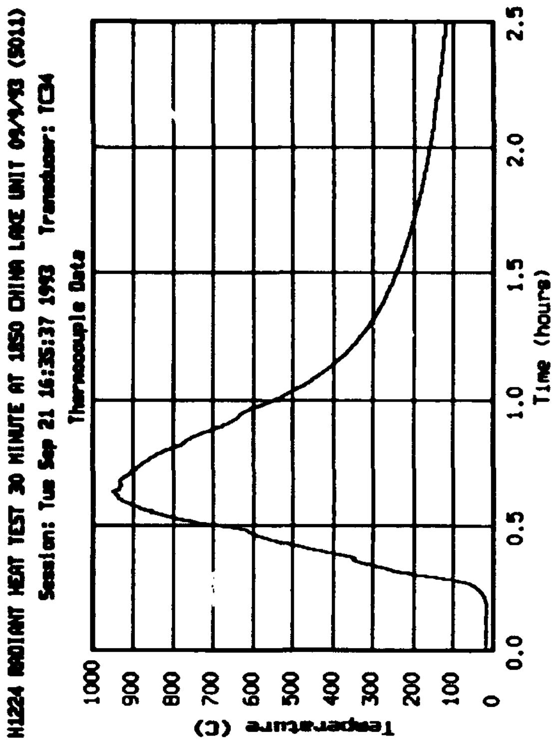

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:34:45 1993 Transducer: TC28
Thermocouple Data
Temperature (C)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

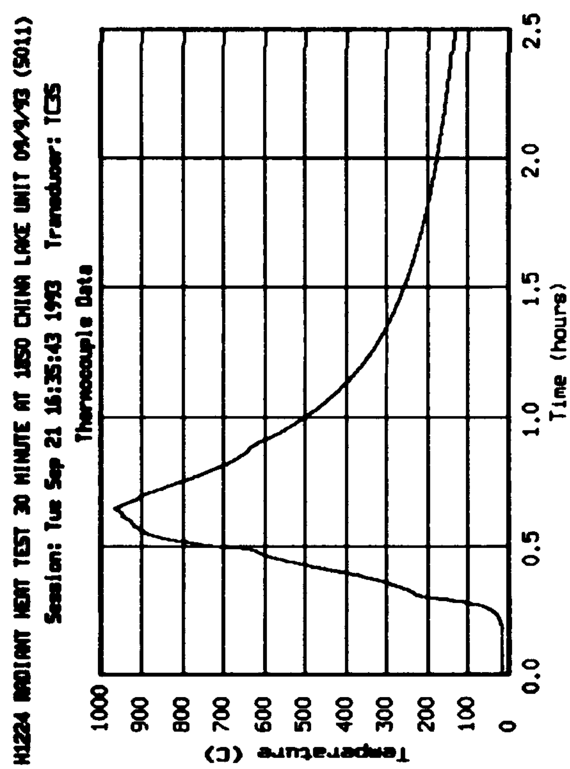

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:01 1993 Transducer: TC30
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

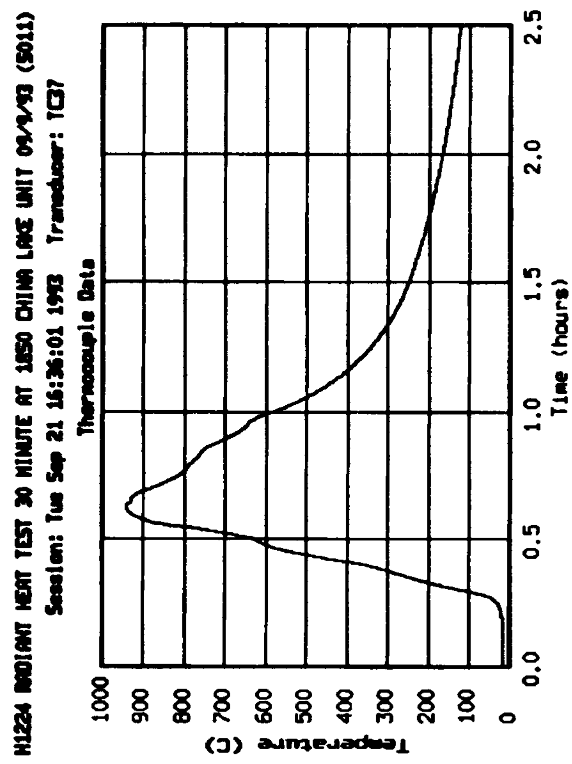

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:09 1993 Transducer: TC31
Thermocouple Data
Temperature (C)
Time (hours)

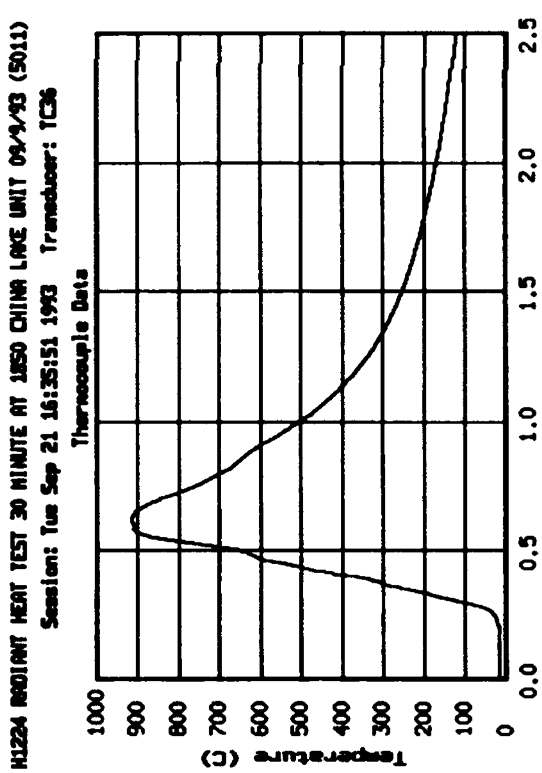

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:27 1993 Transducer: TC33
Thermocouple Data
Temperature (C)
Time (hours)

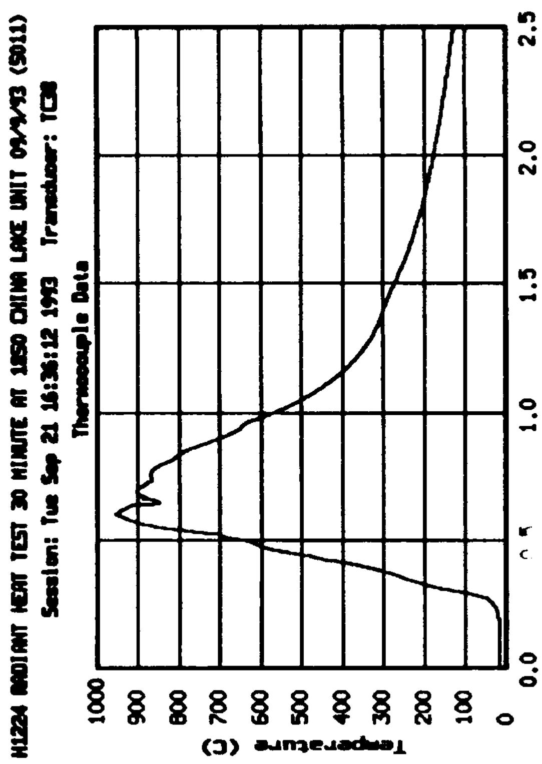

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:18 1993 Transducer: TC32
Thermocouple Data
Temperature (C)
Time (hours)

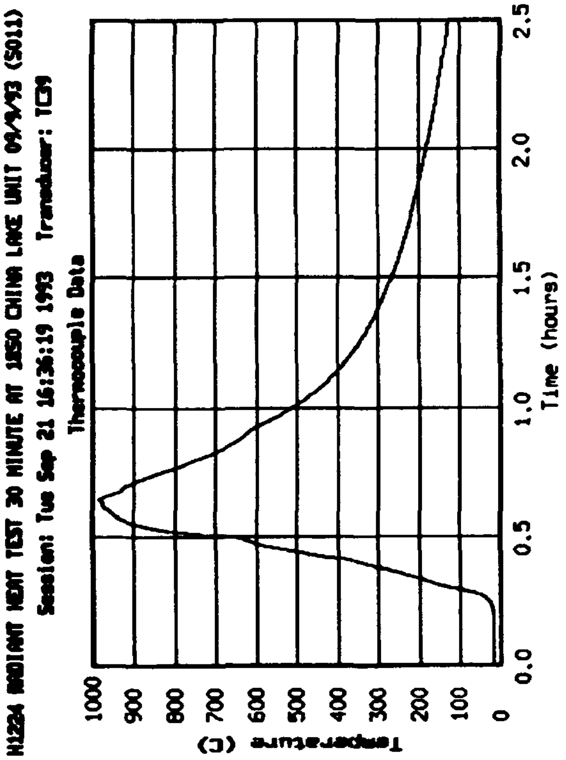

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:37 1993 Transducer: TC34
Thermocouple Data
Temperature (C)
Time (hours)

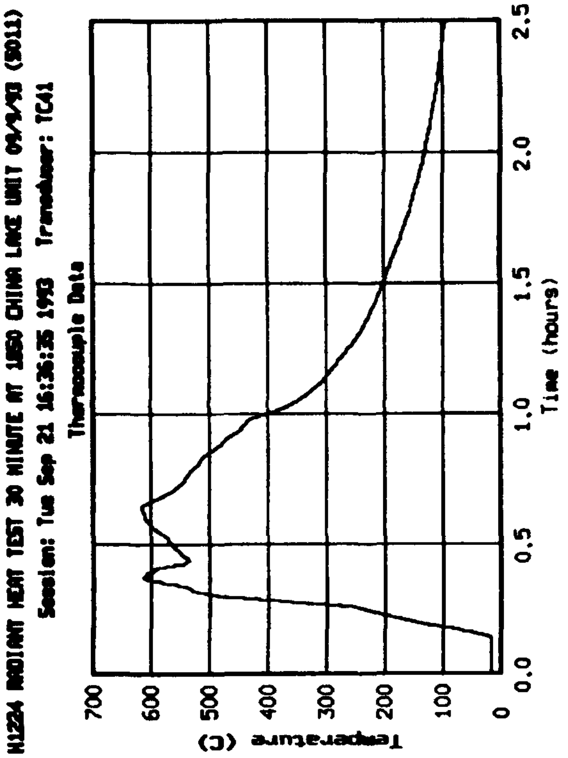

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:43 1993 Transducer: TC35
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5

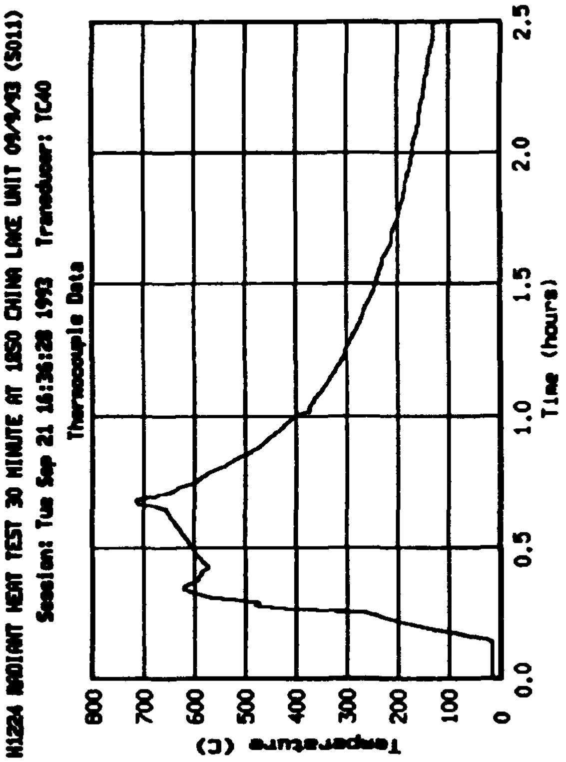

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:36:01 1993 Transducer: TC37
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5

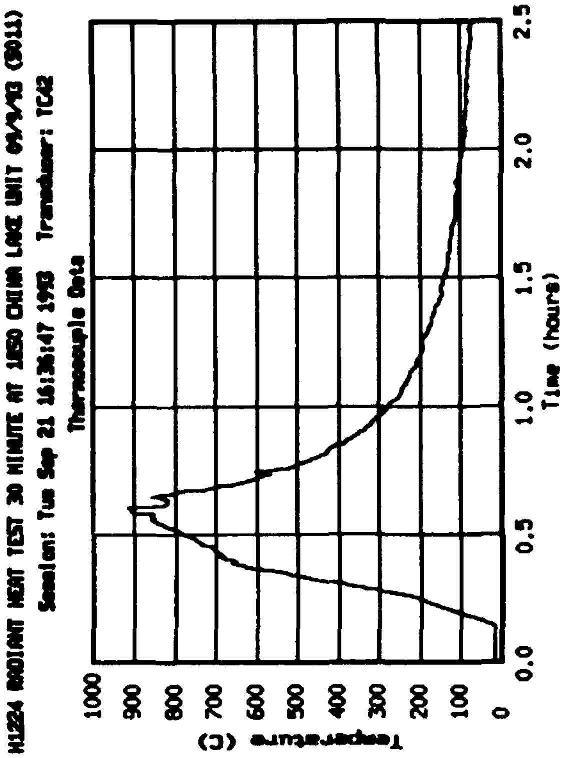

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:35:51 1993 Transducer: TC36
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
1000
0.0
0.5
1.0
1.5
2.0
2.5

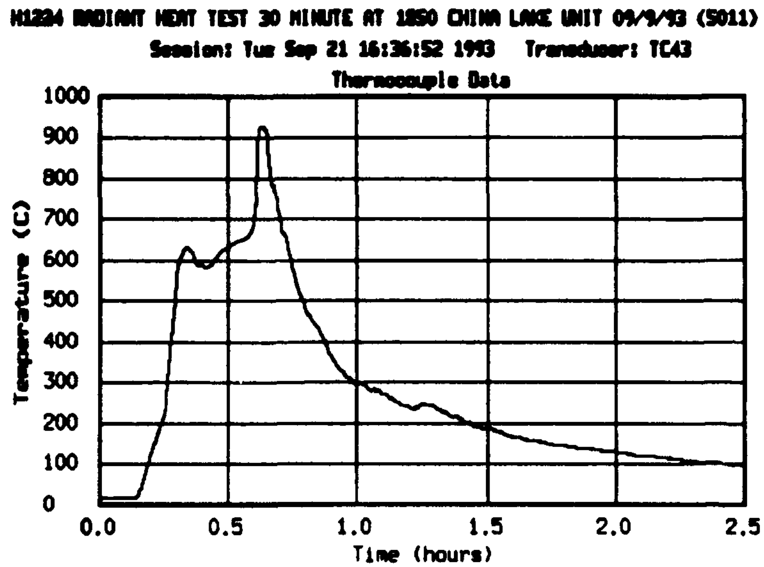

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:36:12 1993 Transducer: TC38
Thermocouple Data
Temperature (C)
Time (hours)
0
100
200
300
400
500
600
700
800
900
1000
0.0
1.0
1.5
2.0
2.5

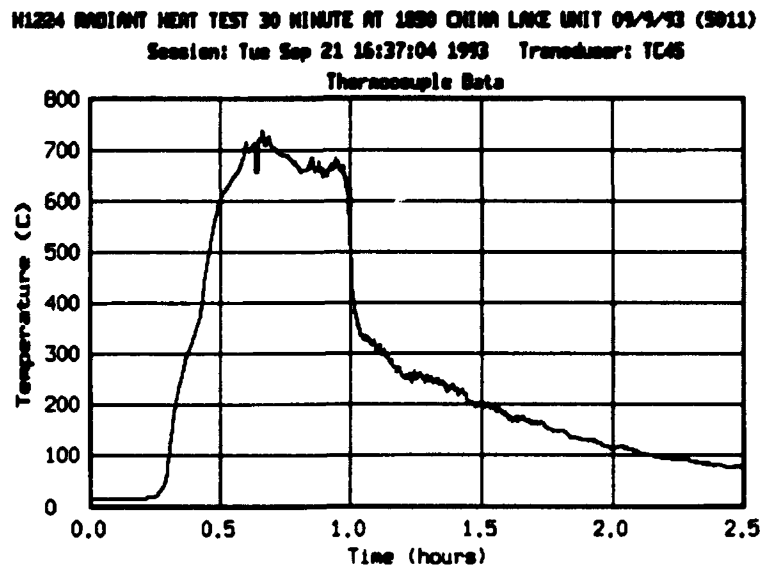

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:36:19 1993 Transducer: TC39
Thermocouple Data
Temperature (C)
Time (hours)

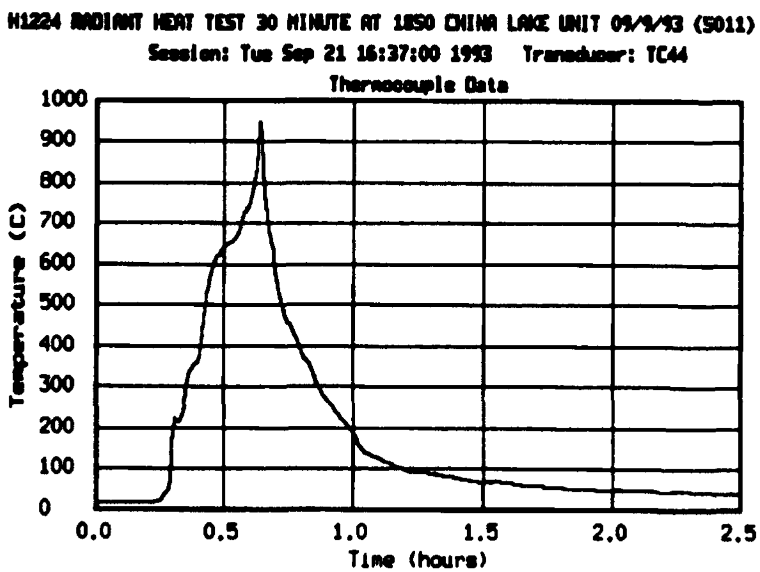

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:36:35 1993 Transducer: TC41
Thermocouple Data
Temperature (C)
Time (hours)

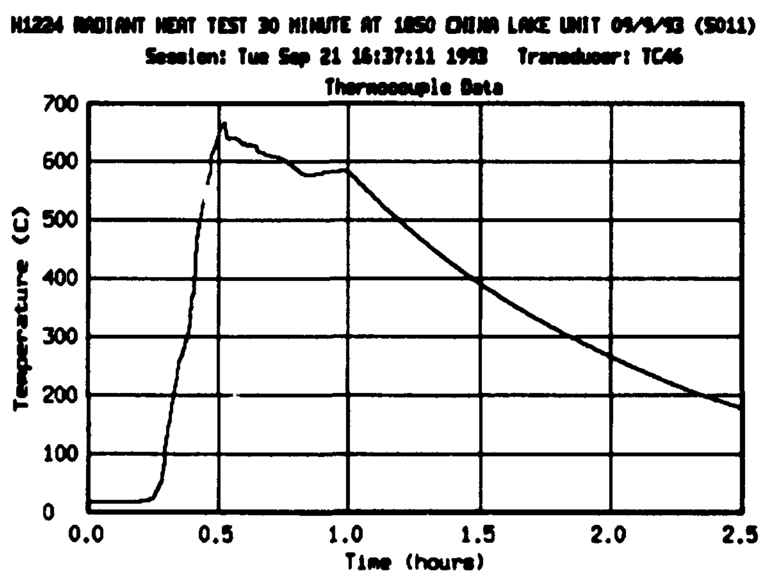

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:36:28 1993 Transducer: TC40
Thermocouple Data
Temperature (C)
Time (hours)

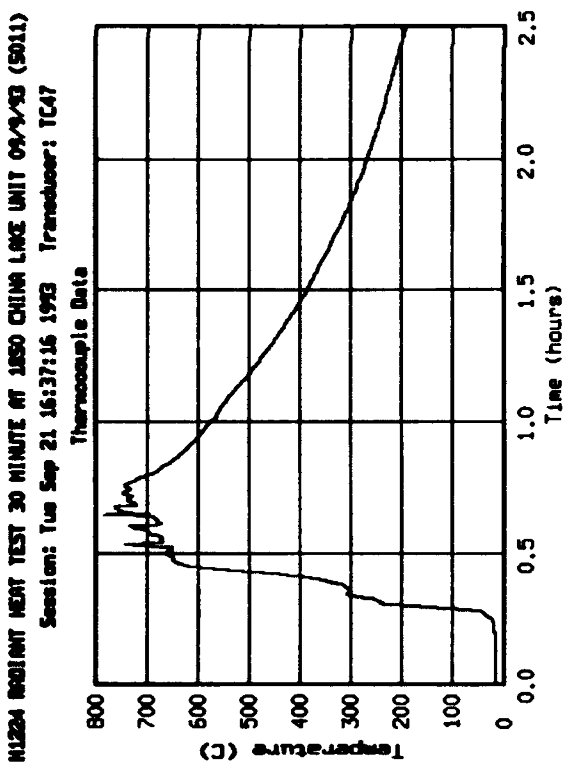

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:36:47 1993 Transducer: TC42
Thermocouple Data
Temperature (C)
Time (hours)

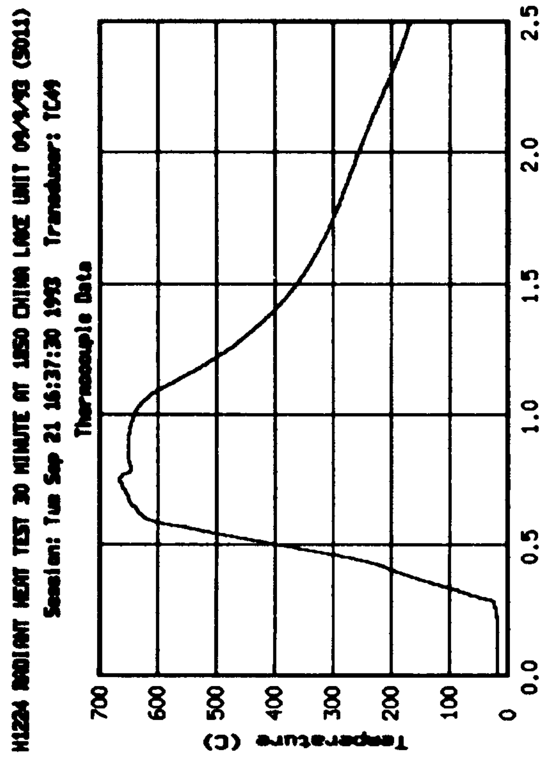

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:36:52 1993 Transducer: TC43
Thermocouple Data
Temperature (C)
Time (hours)
0 100 200 300 400 500 600 700 800 900 1000
0.0 0.5 1.0 1.5 2.0 2.5

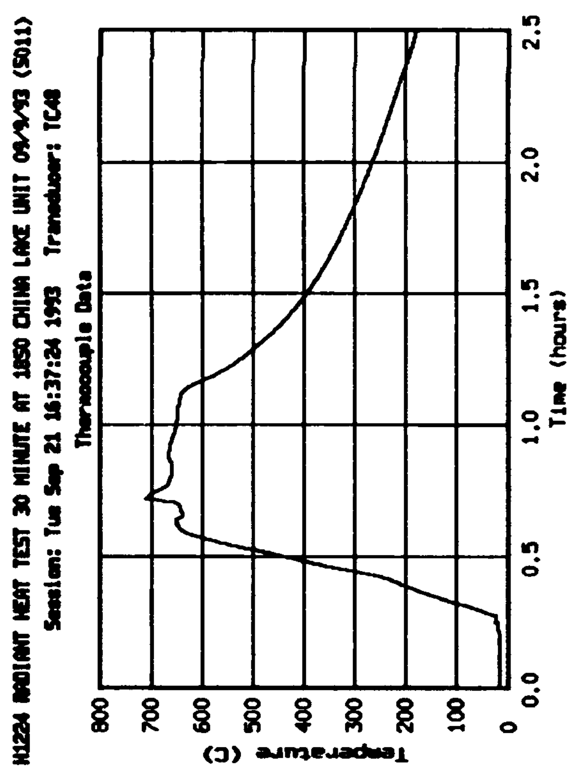

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:04 1993 Transducer: TC45
Thermocouple Data
Temperature (C)
Time (hours)
0 100 200 300 400 500 600 700 800
0.0 0.5 1.0 1.5 2.0 2.5

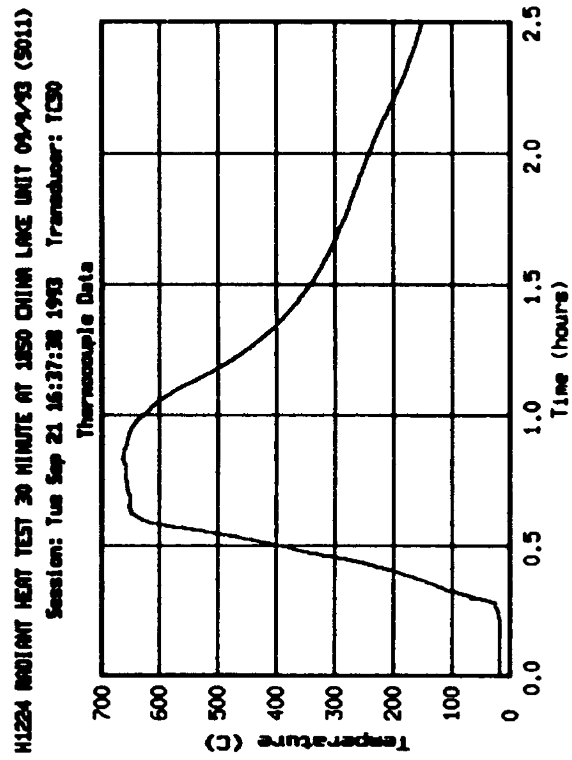

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:00 1993 Transducer: TC44
Thermocouple Data
Temperature (C)
Time (hours)
0 100 200 300 400 500 600 700 800 900 1000
0.0 0.5 1.0 1.5 2.0 2.5

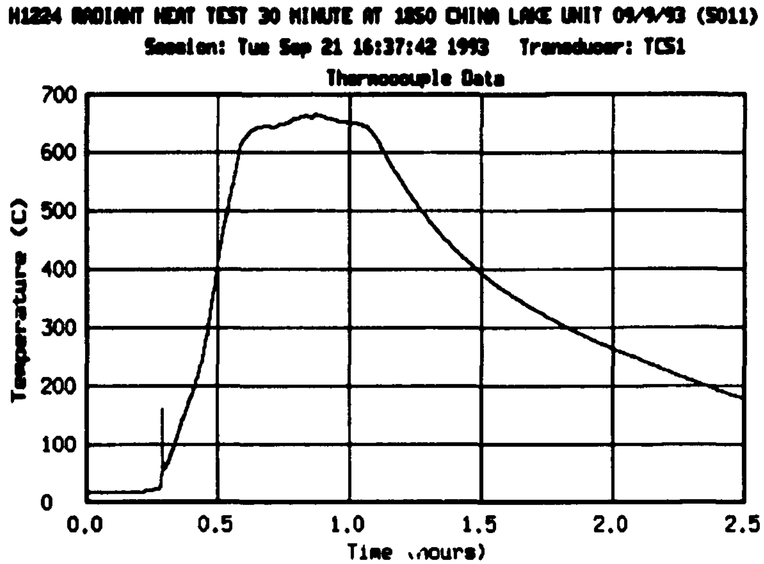

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:11 1993 Transducer: TC46
Thermocouple Data
Temperature (C)
Time (hours)
0 100 200 300 400 500 600 700
0.0 0.5 1.0 1.5 2.0 2.5

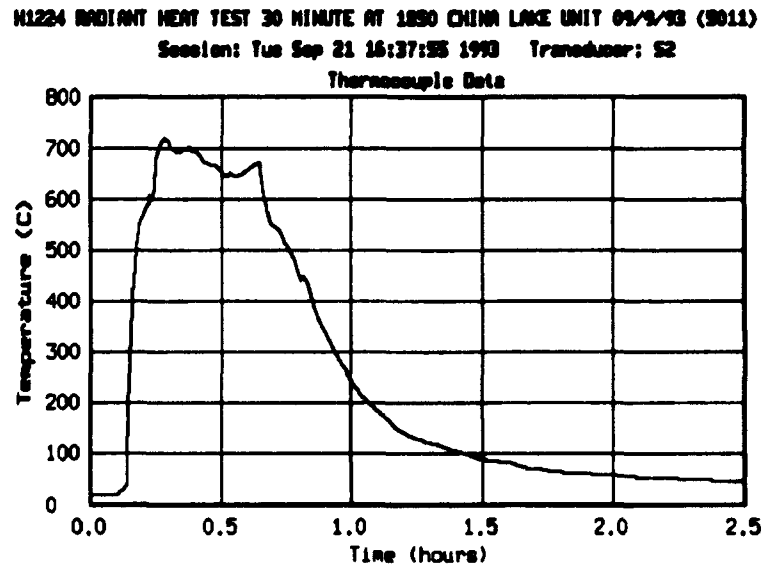

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:16 1993 Transducer: TC47
Thermocouple Data
Temperature (C)
Time (hours)

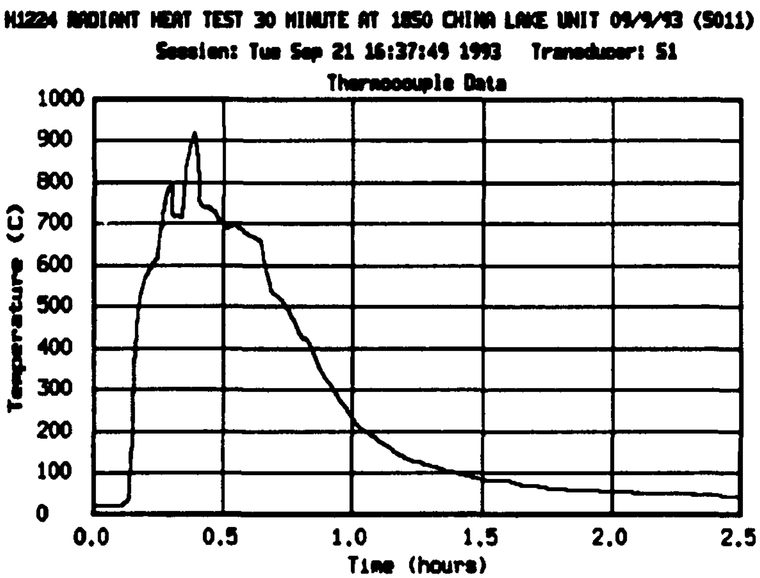

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:30 1993 Transducer: TC49
Thermocouple Data
Temperature (C)
Time (hours)

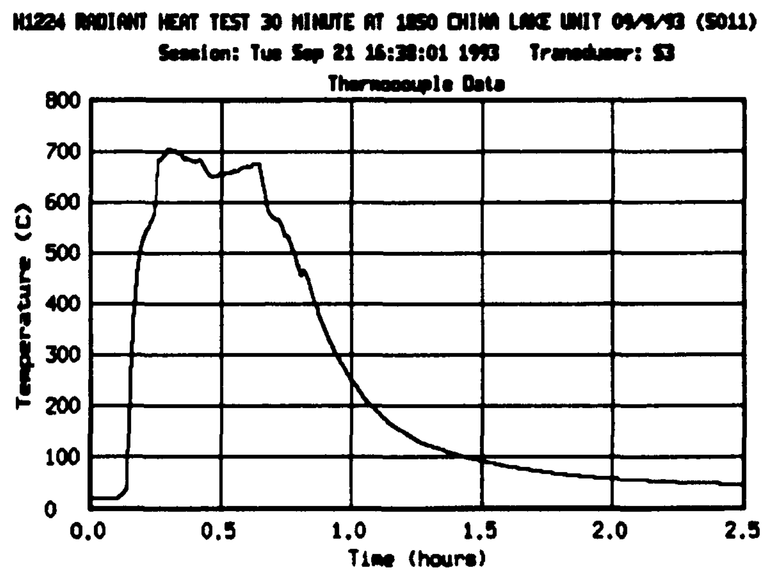

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:24 1993 Transducer: TC48
Thermocouple Data
Temperature (C)
Time (hours)

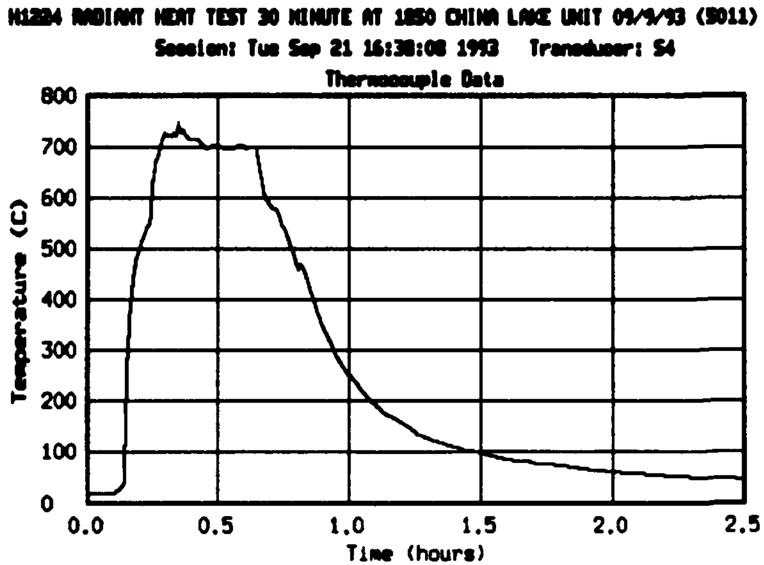

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:38 1993 Transducer: TC50
Thermocouple Data
Temperature (C)
Time (hours)

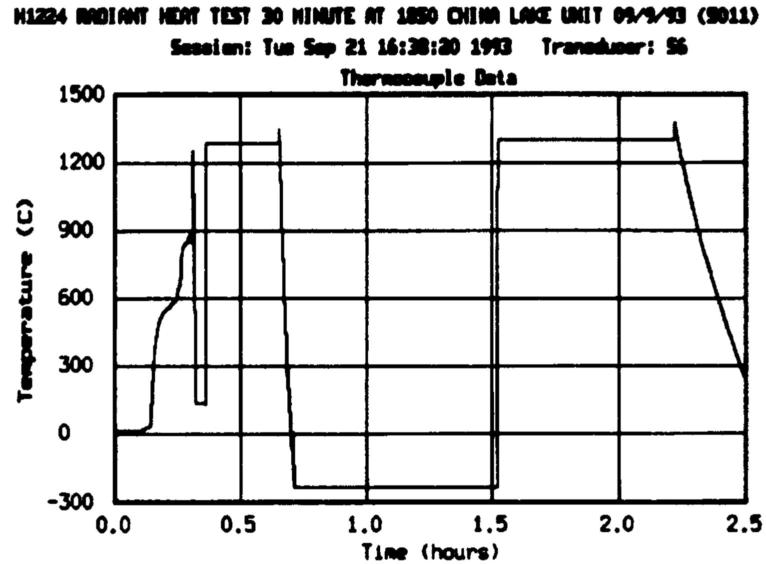

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:42 1993 Transducer: TCS1
Thermocouple Data
Temperature (C)
Time (hours)

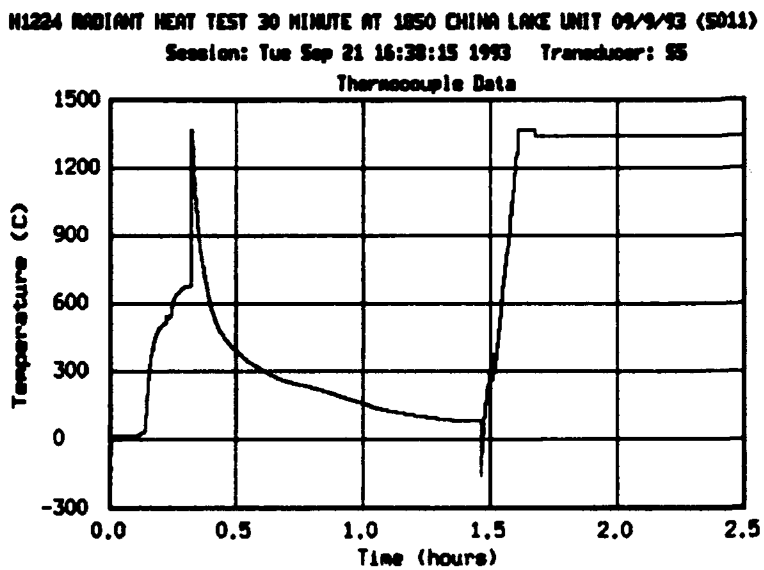

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:55 1993 Transducer: S2
Thermocouple Data
Temperature (C)
Time (hours)

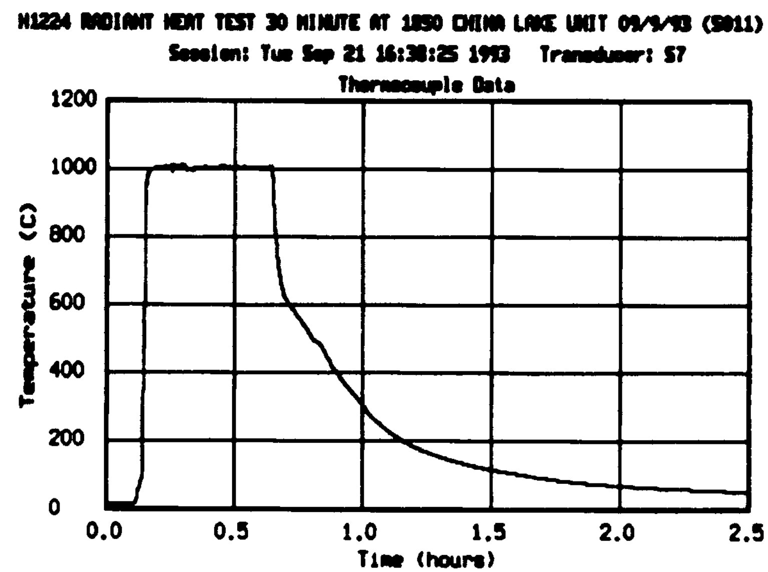

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:37:49 1993 Transducer: S1
Thermocouple Data
Temperature (C)
Time (hours)

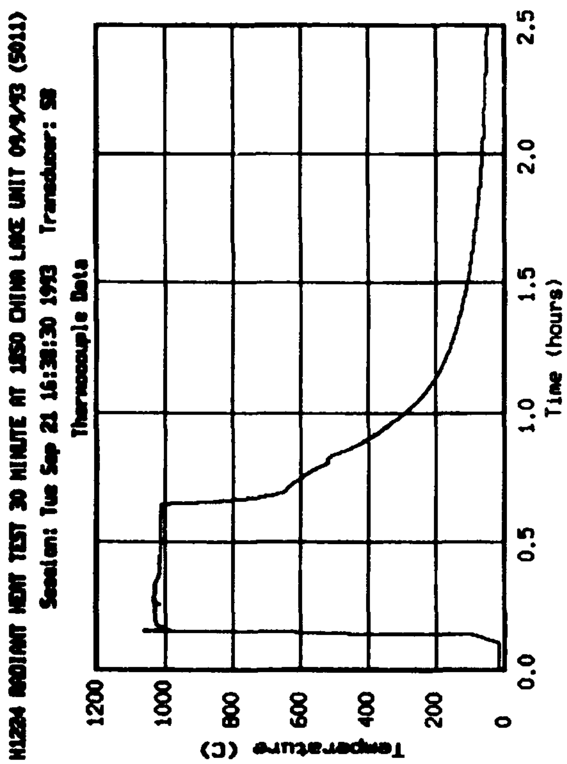

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:38:01 1993 Transducer: S3
Thermocouple Data
Temperature (C)
Time (hours)

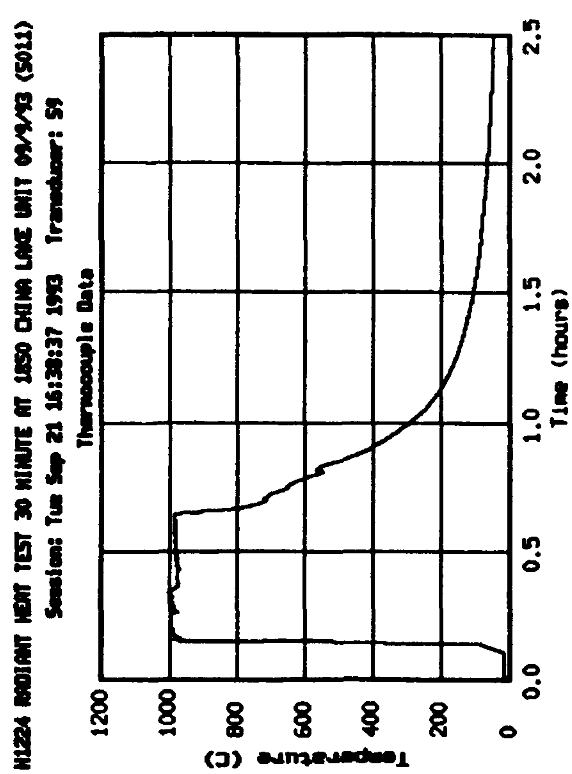

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:38:08 1993 Transducer: S4
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

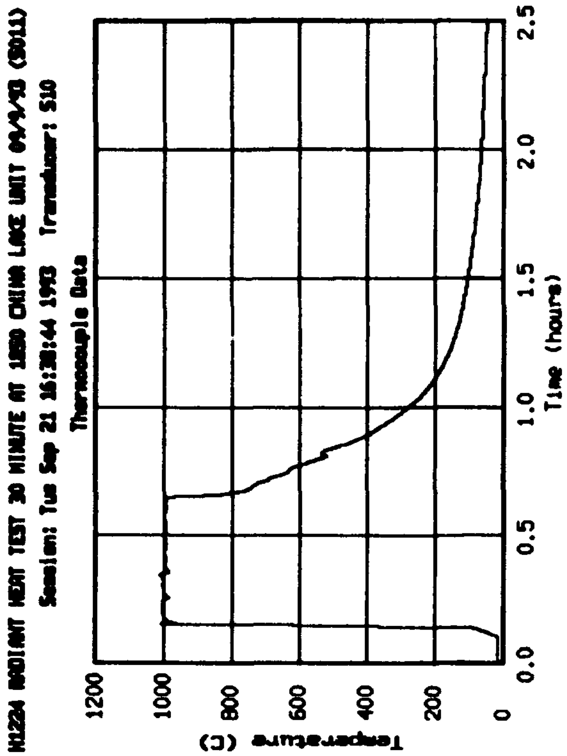

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:38:20 1993 Transducer: S6
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

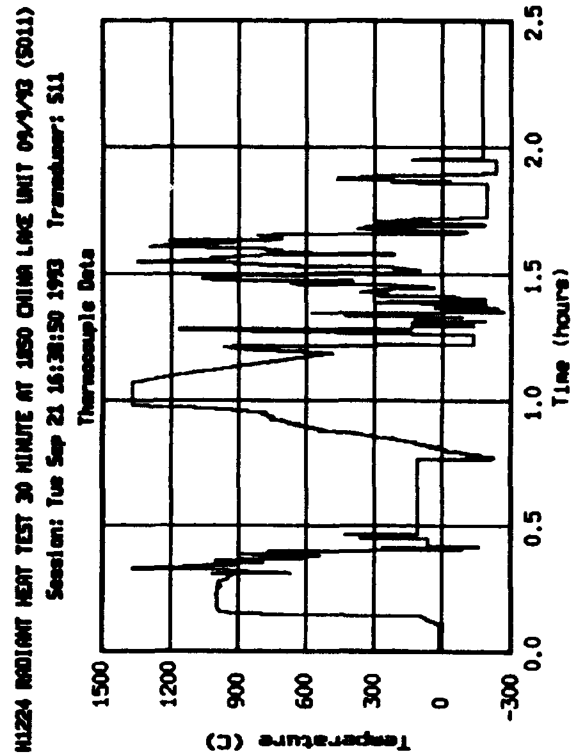

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:38:15 1993 Transducer: S5
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

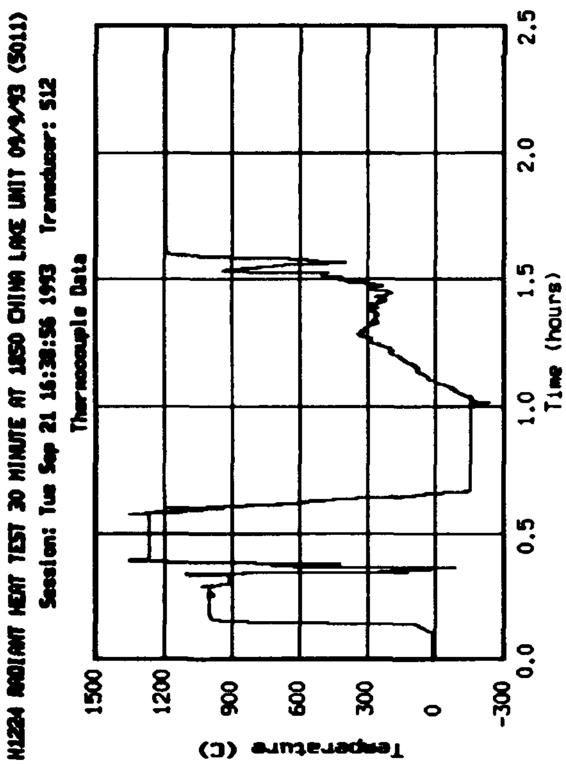

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (S011)
Session: Tue Sep 21 16:38:25 1993 Transducer: S7
Thermocouple Data
Temperature (C)
1200
1000
800
600
400
200
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

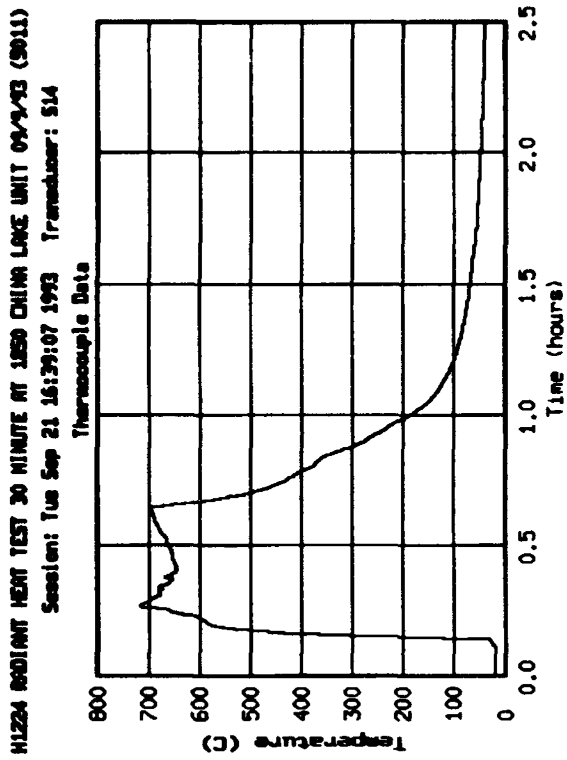

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:38:30 1993 Transducer: S8
Thermocouple Data
Temperature (C)
Time (hours)

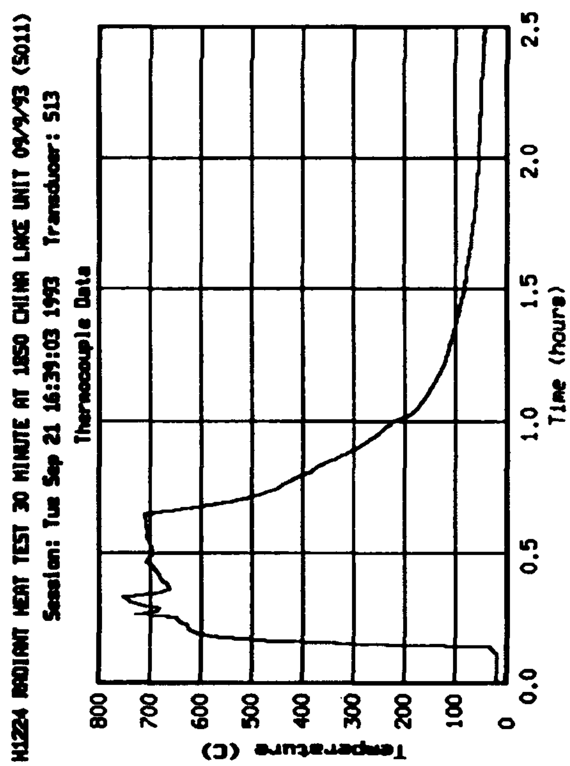

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:38:37 1993 Transducer: S9
Thermocouple Data
Temperature (C)
Time (hours)

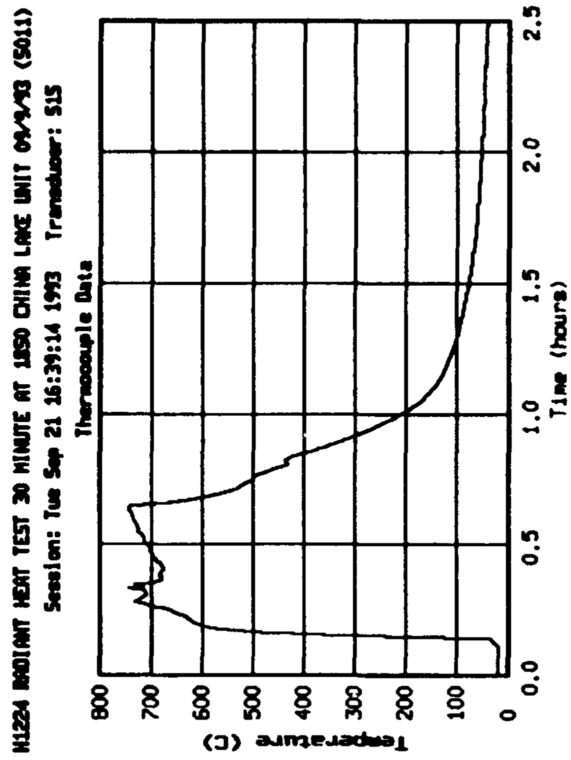

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:38:44 1993 Transducer: S10
Thermocouple Data
Temperature (C)
Time (hours)

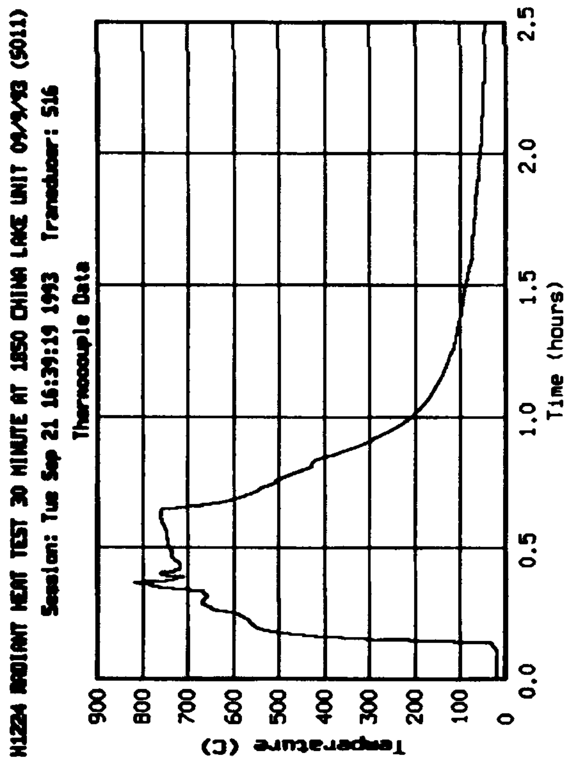

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:38:50 1993 Transducer: S11
Thermocouple Data
Temperature (C)
Time (hours)

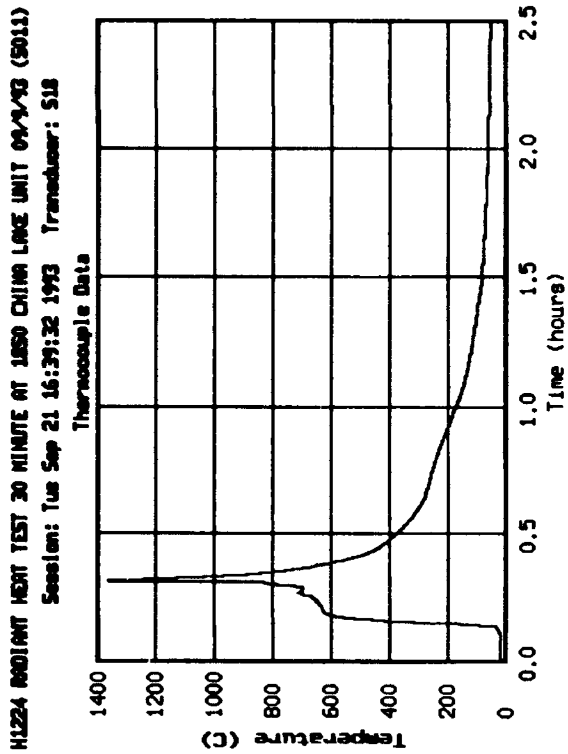

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:38:56 1993 Transducer: S12
Thermocouple Data
Temperature (C)
1500
1200
900
600
300
0
-300
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

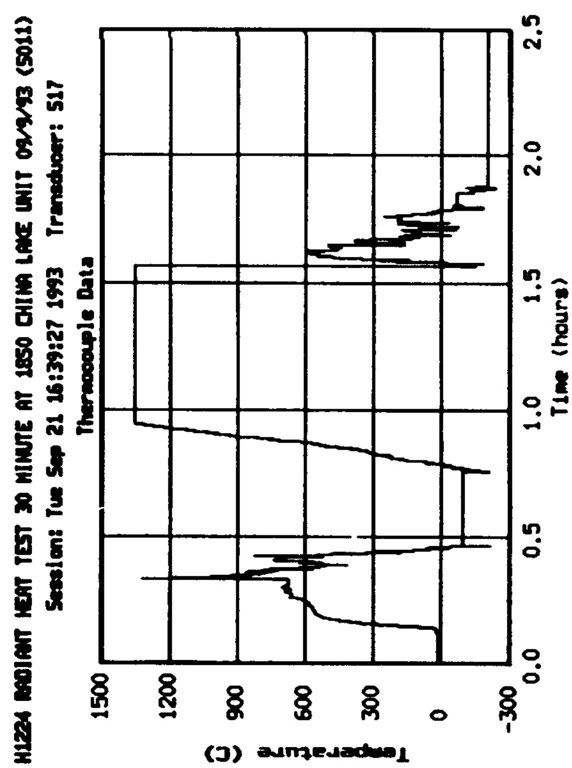

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:07 1993 Transducer: S14
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

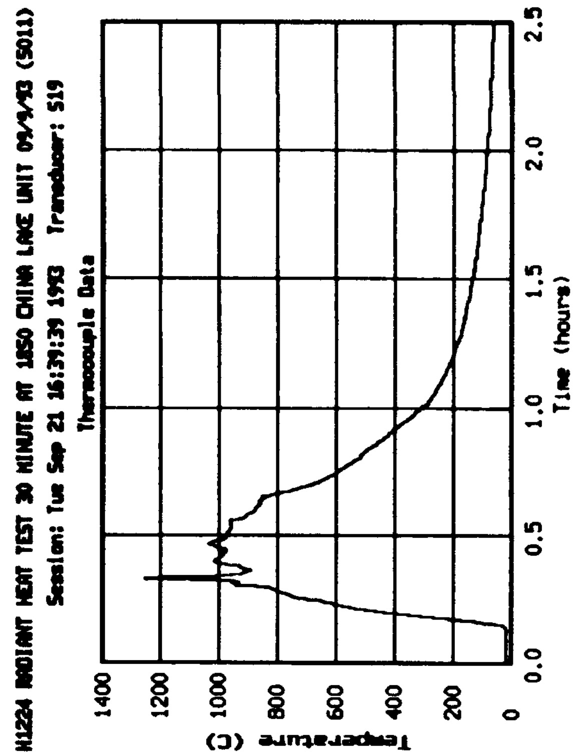

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:03 1993 Transducer: S13
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

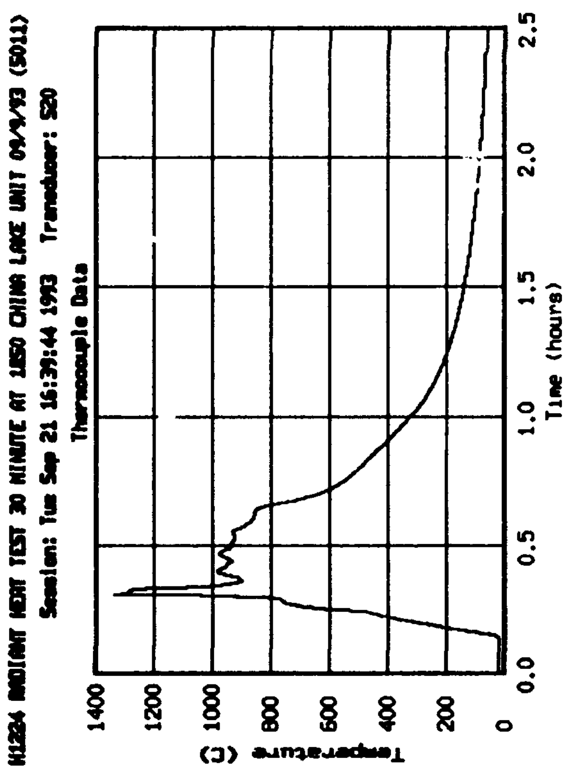

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:14 1993 Transducer: S15
Thermocouple Data
Temperature (C)
800
700
600
500
400
300
200
100
0
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

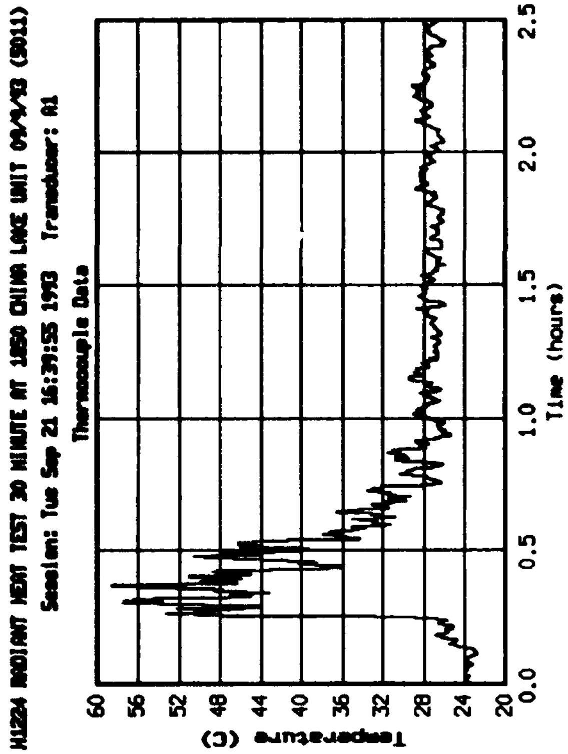

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:19 1993 Transducer: S16
Thermocouple Data
Temperature (C)
Time (hours)

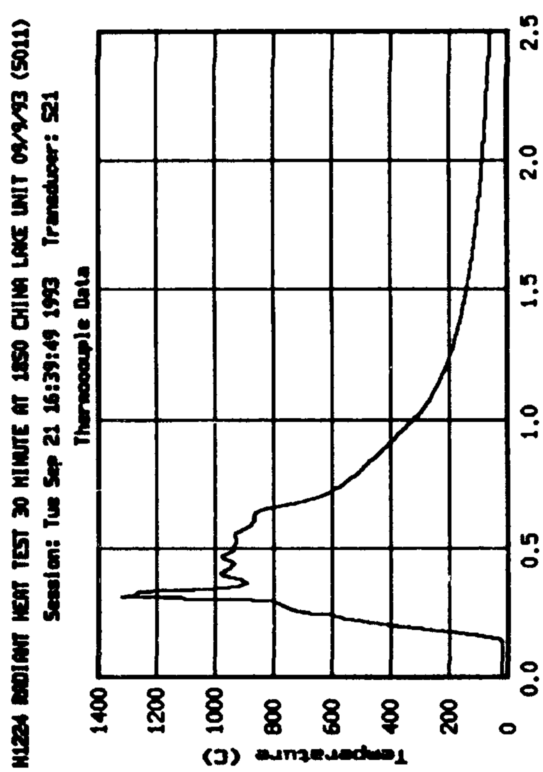

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:32 1993 Transducer: S18
Thermocouple Data
Temperature (C)
Time (hours)

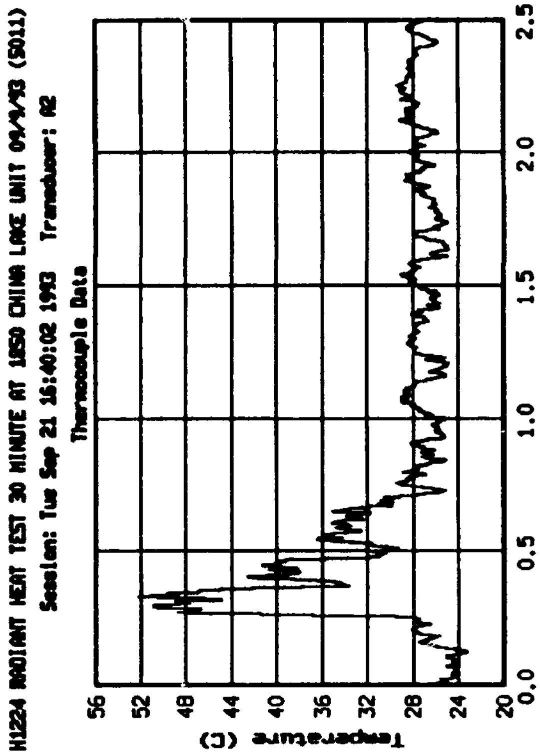

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:27 1993 Transducer: S17
Thermocouple Data
Temperature (C)
Time (hours)

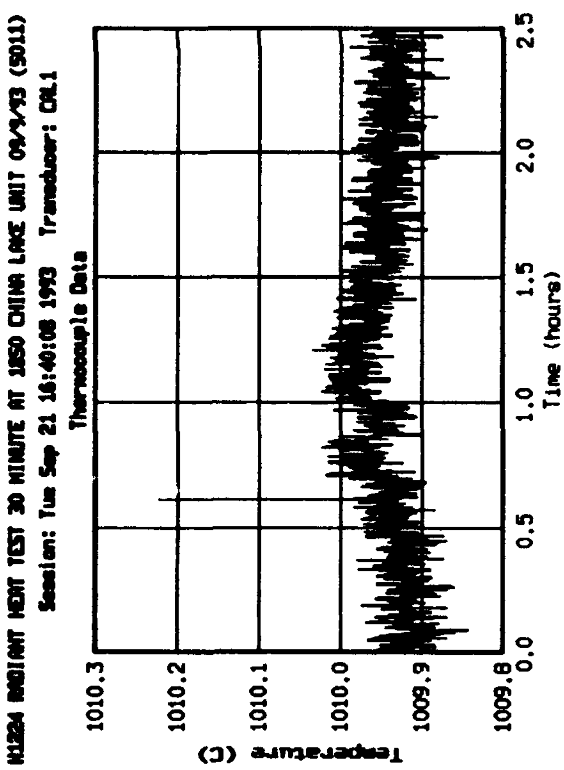

H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:39 1993 Transducer: S19
Thermocouple Data
Temperature (C)
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:44 1993 Transducer: S20
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
1400
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:55 1993 Transducer: A1
Thermocouple Data
Temperature (C)
20
24
28
32
36
40
44
48
52
56
60
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:39:49 1993 Transducer: S21
Thermocouple Data
Temperature (C)
0
200
400
600
800
1000
1200
1400
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)


H1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT 09/9/93 (5011)
Session: Tue Sep 21 16:40:02 1993 Transducer: A2
Thermocouple Data
Temperature (C)
20
24
28
32
36
40
44
48
52
56
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)


M1224 RADIANT HEAT TEST 30 MINUTE AT 1850 CHINA LAKE UNIT
Session: Tue Sep 21 16:40:08 1993 Transducer: CAL1
Thermocouple Data
Temperature (C)
1010.3
1010.2
1010.1
1010.0
1009.9
1009.8
0.0
0.5
1.0
1.5
2.0
2.5
Time (hours)

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