AD-A063 214 BOEING VERTOL CO PHILADELPHIA PA F/G 1/3
INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFI--ETC(U)
SEP 78 P F SHERIDAN DAAJ02-77-C-0020
UNCLASSIFIED USARTL-TR-78-23D NL

1 OF 5
AD A063214



USARTL-TR-78-23D

LEVEL II

A063000

# INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFIGURATION

## VOLUME IV-D - One-Third Octave Band Spectrograms of Wake Split-Film Data, Open Hubcaps


Philip F. Sheridan

Boeing Vertol Company
P.O. Box 16858
Philadelphia, Pa. 19142



DDC RECEIVED JAN 11 1979 F



AD A063214


September 1978

Final Report for Period March 1977 - February 1978


Approved for public release; distribution unlimited.


Prepared for

APPLIED TECHNOLOGY LABORATORY
U. S. ARMY RESEARCH AND TECHNOLOGY LABORATORIES (AVRADCOM)
Fort Eustis, Va. 23604


DDC FILE COPY



79 01 11 236

## APPLIED TECHNOLOGY LABORATORY POSITION STATEMENT

In 1975 a wind tunnel test program was conducted in the Boeing-Vertol 20-foot V/STOL Wind Tunnel on a 1/5th-scale UTTAS model to investigate and find solutions for several aerodynamic problems encountered during the UTTAS flight-testing. Specifically, these tests focused upon (a) the structure of the hub/rotor wake in the vicinity of the empennage, (b) the formulation of the ground vortex and its relation to hub loads and fuselage loads during transition, and (c) the occurrence of vibratory air pressures from the blade passing over the fuselage. Only portions of the above-mentioned wind tunnel test data were reduced and analyzed in addressing the flight-test problems of the UTTAS aircraft.

Under Contract DAAJ02-77-C-0020, Boeing-Vertol completed analyses on the data to understand more completely the aerodynamic interactions that are involved and to formulate instructions for the guidance of designers in these respects. The results of these studies are applicable to all existing and future single-rotor/tail rotor helicopters. The data have been segregated according to aerodynamic interactions and associated phenomena/problem areas. From this body of knowledge, a generalized set of design guidelines meaningful to the single-rotor helicopter design concept formulation were developed and are included in these reports.

Mr. Robert P. Smith of the Aeronautical Technology Division, Aeromechanics Technical Area, served as project engineer for this effort.


### DISCLAIMERS

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission, to manufacture, use, or sell any patented invention that may in any way be related thereto.

Trade names cited in this report do not constitute an official endorsement or approval of the use of such commercial hardware or software.

### DISPOSITION INSTRUCTIONS

Destroy this report when no longer needed. Do not return it to the originator.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

| REPORT DOCUMENTATION PAGE | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|---|---|
| 1. REPORT NUMBER: USARTL TR-78-23D | 2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER |
| 4. TITLE (and Subtitle): INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFIGURATION, Volume IV, One-Third Octave Band Spectrograms of Wake Split-Film Data, Sub-Volume D, Open Hubcaps. | 5. TYPE OF REPORT & PERIOD COVERED: FINAL REPORT, 15 Mar 1977 - 13 Feb 1978 / 6. PERFORMING ORG. REPORT NUMBER |
| 7. AUTHOR(s): Philip F. Sheridan | 8. CONTRACT OR GRANT NUMBER(s): DAAJ02-77-C-0020 |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS: Boeing Vertol Company, P.O. Box 16858, Philadelphia, Pa. 19142 | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: 62209A 1L262209AH76 00 189 EK |
| 11. CONTROLLING OFFICE NAME AND ADDRESS: Applied Technology Laboratory, U.S. Army Research and Technology Laboratories (AVRADCOM), Fort Eustis, Virginia 23604 | 12. REPORT DATE: Sept 1978 / 13. NUMBER OF PAGES: 400 |
| 14. MONITORING AGENCY NAME & ADDRESS *(If different from Controlling Office)*: 402p. | 15. SECURITY CLASS. *(of this report)*: Unclassified / 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE |

16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

Volume IV of an eight volume report.
Volume IV is comprised of seven sub-volumes (A thru G)

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

| | | |
|---|---|---|
| Wake | Flow Environment | Powered Model |
| Flow | Configuration | Hub Cap |
| Interaction | Empennage | |
| Aerodynamic Interaction | Flow Modifier | |

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This is the fourth of the seven sub-volumes of Volume IV containing one-third octave band spectrographs of the model helicopter hub/rotor wake as it was modified by various aerodynamic devices. This sub-volume deals with the effects of various open hubcaps. Open caps have parallel undersides and uppersides.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

403 682

79 01 11 236

## PREFACE

The entire report describing the investigation of INTERACTIONAL AERODYNAMICS OF THE SINGLE-ROTOR HELICOPTER CONFIGURATION comprises eight numbered volumes bound as 33 separate documents. The complete list of these documents is as follows:

Volume I, Final Report

Volume II, Harmonic Analyses of Airframe Surface Pressure Data
- A – Runs 7-14, Forward Section
- B – Runs 7-14, Mid Section
- C – Runs 7-14, Aft Section
- D – Runs 15-22, Forward Section
- E – Runs 15-22, Mid Section
- F – Runs 15-22, Aft Section
- G – Runs 23-33, Forward Section
- H – Runs 23-33, Mid Section
- I – Runs 23-33, Aft Section

Volume III, Flow Angle and Velocity Wake Profiles in Low-Frequency Band
- A – Basic Investigations and Hubcap Variations
- B – Air Ejector Systems and Other Devices

Volume IV, One-Third Octave Band Spectrograms of Wake Split-Film Data
- A – Buildup to Baseline
- B – Basic Configuration Wake Explorations
- C – Solid Hubcaps
- D – Open Hubcaps
- E – Air Ejectors
- F – Air Ejectors With Hubcaps; Wings
- G – Fairings and Surface Devices




Volume V, Harmonic Analyses of Hub Wake

Volume VI, One-Third Octave Band Spectrograms of Wake Single Film Data
- A – Buildup to Baseline
- B – Basic Configuration Wake Exploration
- C – Hubcaps and Air Ejectors

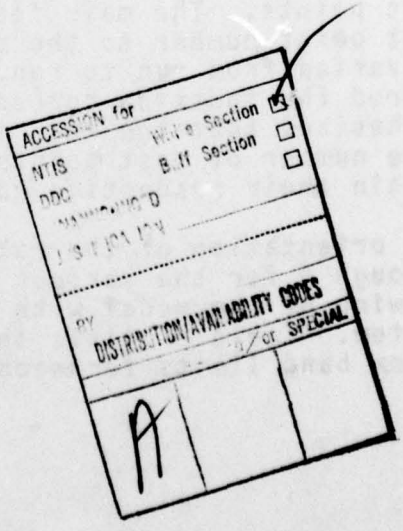
Volume VII, Frequency Analyses of Wake Split-Film Data
- A – Buildup to Baseline
- B – Basic Configuration Wake Explorations
- C – Solid Hubcaps

D – Open Hubcaps
E – Air Ejectors
F – Air Ejectors With Hubcaps; Wings
G – Fairings and Surface Devices

Volume VIII, Frequency Analyses of Wake Single Film Data
A – Buildup to Baseline
B – Basic Configuration Wake Exploration
C – Hubcaps and Air Ejectors

## TABLE OF CONTENTS


| | PAGE |
|---|---|
| INTRODUCTION . . . . . | 6 |
| OUTLINE OF WAKE INVESTIGATIONS (TABLE 1) . . . . . | 7 |
| LIST OF TEST RUNS (TABLE 2) . . . . . | 11 |
| INDEX TO RAKE POSITIONS (TABLE 3) . . . . . | 18 |
| RAKE ORIENTATION DIAGRAM (FIGURE 1) . . . . . | 24 |
| HOT FILM RAKE LOCATIONS (FIGURE 2-6) . . . . . | 25 |
| UTTAS 1/4.85 - SCALE MODEL GEOMETRY AND PRESSURE TRANSDUCER LOCATIONS (FIGURE 7) . . . . | 30 |
| ONE-THIRD OCTAVE BAND IDENTIFICATION (TABLE 4) . . . | 31 |
| SPLIT-FILM 1/3 OCTAVE BAND CHARTS . . . . . | 32 |

## INTRODUCTION

Volume IV presents spectrograms of the flow angles and velocity components for each run and its test points. Specifically, these machine plots show the root mean square value of each wake parameter over discrete frequency intervals one-third of an octave band in width. The octave arrangement is selected to provide 19 spectral increments from 3.9 to 250.0 Hz centerband frequency. A special computer program is employed to derive wake parameters within these bands consistent with corresponding basic spectral functions depicted in Volume VII.

The graphs showing the one-third octave band values are sequenced in the same order as the Outline of Wake Investigations (Table 1). These graphs are distributed among Volumes IV-A through IV-G by the major categories of Table I in the following arrangement:

| | |
|---|---|
| Volume IV-A | Build-up to Baseline |
| Volume IV-B | Basic Configuration |
| Volume IV-C | Effect of Hub Caps Section 1 & 2 |
| Volume IV-D | Effect of Hub Caps Section 3 & 4 |
| Volume IV-E | Effect of Hub Caps Section 5 and Effect of Air Ejectors |
| Volume IV-F | Air Ejectors with Open Hub Caps and Effect of Wings and Misc. Section |
| Volume IV-G | Effect of Wings and Misc. Sections 2 and 3 |

The Table I outline and other material is included for reference and as a context to the work of each sub-volume. Table 2, the List of Test Runs, arranges the runs in numerical order and gives pertinent text parameters.

The Index of Rake Positions, Table 3, lists the hot film transducer rake positions in the model coordinate system for each run and its test points. The main feature of Table 3 is the indexing of the test point number to the model waterline station and butt line as it varied from run to run. The table groups the runs as they shared the indexing correspondence of point with position. It is emphasized that the runs in a group do not necessarily all share the same number of test points but they do have same correspondence within their respective ranges of test points.

The orientation of the rake is shown pictorially in Figures 1 through 6 for the various test runs. Figure 7 presents a scaled drawing of the model with reference to the three-axis coordinate system. Table 4 lists the center frequency and the upper and lower band limits for each of the numbered one-third octave bands.

TABLE 1

OUTLINE OF WAKE INVESTIGATIONS

| Description | Configuration Code | Run No. | Base-line |
|---|---|---|---|
| **Build-up to Baseline** | | | |
| 1. Nacelles removed | $K_{13}+H_1-N$ | 149 | 150 |
| 2. Blades off, rotating hub | $K_{13}-M+H_{1.0}$ | 160 | 156 |
| 3. " " , non-rotating hub | $K_{13}-M+H_{1.0}$ | 158 | 156 |
| 4. " " , hub off | $K_{13}-M-H_{1.0}$ | 159 | 156 |
| **Basic Configuration** | | | |
| 1. Wake Explorations near Empennage | | | |
| (a) 15" Long. + traverse at T/R C.L. | $K_{11}$ | 111 | --- |
| (b) 9" Vert. + " above T/R " | " | 112 | --- |
| (c) 2" " " in vortex | " | 113 | --- |
| (d) 8" " " (continue 112) | " | 114 | --- |
| (e) 13" " " behind stab. | " | 115 | --- |
| (f) Lateral traverse, left stab. (One T.P. only) | " | 116 | --- |
| (g) Same continued | " | 117 | --- |
| (h) Same continued (One T.P. only) | " | 118 | --- |
| (i) Lateral traverse right stab. | " | 119 | --- |
| (j) T/R effect on wake | $K_{11}+T_2^0$ | 121 | 115 |
| 2. Climb/Descent Studies | | | |
| (a) Climb 900 FPM | $K_{11}$ | 135 | --- |
| (b) Descent 800 FPM | " | 136 | --- |
| **Effect Of Hub Caps** | | | |
| 1. Solid Caps on Canister | | | |
| (a) 7.6" diam. 2.17" ht. soft Pitch Arms | $K_{11}-H_{1.0}+H_{1.2}$ | 137 | 136 |
| (b) 7.6" diam. 2.17" ht. stiff Pitch Arms | $K_{13}+H_{1.2}$ | 153 | 156 |
| (b) 7.6" diam. 2.45" ht. flt. test config. | $K_{13}+H_{1.2.1}+I_\Gamma+E_{1.0}$ | 207 | 188 |

TABLE 1 (CONTINUED)

OUTLINE OF WAKE INVESTIGATIONS

| Description | Configuration Code* | Run No. | Base-line |
|---|---|---|---|
| Effect of Hub Caps (Continued) | | | |
| 2. Solid Caps Raised Above Canister | | | |
| (a) 7.6" diam. 2.45" ht. 70" depth, .55 gap | $H_{1.2.2}+I_1+E_{1.0}$ | 208 | 188 |
| (b) 10.0" diam. 3.25" ht. 1.55" depth, .50" gap | $H_{1.8.1}+I_1+E_{1.0}$ | 189 | 188 |
| (c) 10.0" diam. 4.125" ht. 2.05" depth, .875" gap | $H_{1.8.2}+I_1+E_{1.0}$ | 190 | 188 |
| (d) Repeat of 189 | " " " | 210 | 188 |
| 3. Open Caps Without Underbody | | | |
| (a) 10.0" diam. 1.25" gap,blades | $H_{1.0.2}+I_1+E_{1.0}$ | 193 | 188/166 |
| (b) " " " gap, no blades | $H_{1.0.1}-M$ | 166 | 158 |
| (c) " " 2.05" gap,blades | $H_{1.14.1}+I_1+E_{1.0}$ | 211 | 188 |
| (d) " " 1.75" gap, no blades | $H_{1.0.1}-M$ | 165 | 158 |
| (e) " " 1.87" gap,blades | $H_{1.0.3}+I_1+E_{1.0}$ | 191 | 188 |
| (f) 16" diam. 2.00" gap,blades | $H_{1.7.1}$ | 168 | 156/167 |
| (g) " " " gap, no blades | $H_{1.7.1}-M$ | 167 | 158 |
| (h) " " 4.00" gap,blades | $H_{1.7.2}$ | 169 | 156 |
| 4. Open Caps with Underbody | | | |
| (a) 7.6" diam. 1.25" gap | $H_{1.11.1}+I_2+E_{1.0}$ | 194 | 188 |
| (b) " " " " | $H_{1.11.1}+I_2+E_{4.0}$ | 198 | 188 |
| (c) " " " " center post | $H_{1.11.2}+I_2$ | 202 | 194 |
| (d) 10.0" diam. .5" gap, no blades | $H_{1.5.1}-M$ | 164 | 158 |
| (e) " " 1.25" gap, no blades | $H_{1.5.2}-M$ | 161 | 158 |
| (f) " " 2.0" gap, no blades | $H_{1.5.4}-M$ | 163 | 158 |
| (g) " " 4.0" gap, no blades | $H_{1.5.3}-M$ | 162 | 158 |
| (h) " " 1.25" gap | $H_{1.5.2}$ | 154 | 156/161 |

*Basic Code is K13.

TABLE 1 (CONTINUED)

OUTLINE OF WAKE INVESTIGATIONS

| Description | Configuration Code* | Run No. | Base-line |
|---|---|---|---|
| 5. Miscellaneous Hub Covers | | | |
| (a) Hub fairing 16" diam. | $H_{1.3}$ | 151 | 150 |
| (b) Wham-O-Frisbee 10" diam. | $H_{1.9.0}+E_{1.2}$ | 182 | 181 |
| (c) Fab. glass Frisbee 16" diam. | $H_{1.9.1}+E_{1.2}$ | 183 | 181 |
| Effect of Air Ejectors | | | |
| 1. Basic system no blowing | $H_{1.0}+E_{1.0}$ | 172 | 156 |
| 2. " " 40 psi | " " | 173 | 156/172 |
| 3. " " 150 psi | " " | 174 | 156/172 |
| 4. Wide chord shroud 40 psi | $H_{1.0}+E_{2.5.1}$ | 175 | 156/173 |
| 5. Wide " " 150 psi | " " | 176 | 156/174 |
| 6. W/C shroud w. lip 40 psi | $H_{1.0}+E_{3.5.2}$ | 184 | 156/173 |
| 7. Same Contoured Parallel 150 psi | $H_{1.0}+E_{3.5.4}$ | 187 | 156/174 |
| 8. Bifurcated duct 0 psi | $H_{1.0}+E_{5.0}$ | 203 | 156 |
| 9. " " 40 psi | " " | 204 | 156/203 |
| 10. " " 150 psi | " " | 205 | 156/203 |
| Air Ejectors with Open Hub Caps with Underbodies | | | |
| 1. 7.6" diam. 1.25" gap, 0 psi | $H_{1.11.1}+I_2+E_{1.0}$ | 194 | 188/172 |
| 2. " " " " 20 psi | " " " | 195 | 188 |
| 3. " " " " 40 psi | " " " | 196 | 188/173 |
| 4. " " " " 150 psi | " " " | 197 | 188/174 |
| 5. " " " " 0 psi | $H_{1.11.1}+I_2+E_{4.0}$ | 198 | 188/194 |
| 6. " " " " 40 psi | " " " | 199 | 188/196 |
| 7. " " " " 150 psi | " " " | 200 | 188/196 |
| 8. Same with center post | $H_{1.11.2}+I_2+E_{4.6}$ | 201 | 188/200 |
| 9. 10.0" diam. 2.0" gap wide ch'd. shroud (150 psi) | $H_{1.5.4}+E_{2.5.1}$ | 177 | 156/176 |
| Effect of Wings and Misc. | | | |
| 1. Wings | | | |
| (a) Nacelle-mounted stub wing | $H_{1.0}+W_{1.0}+E_{1.1}$ | 178 | 181 |
| (b) Single slotted flapped wing | $H_{1.0}+W_{3.0}+E_{1.0}$ | 180 | 181 |
| (c) Dougle slotted flapped wing | $H_{1.0}+W_{2.0}+E_{1.0}$ | 179 | 181 |
| (d) Boom-mounted stub wing | $H_{1.0}+W_{4.0}$ | 186 | 156 |

*Basic Code is K13.

TABLE 1 (CONTINUED)

OUTLINE OF WAKE INVESTIGATIONS

| Description | Configuration Code* | Run No. | Base-line |
|---|---|---|---|
| 2. Crown Fairings | | | |
| (a) Flat top behind shaft | $K_{11}+D_1$ | 140 | 138 |
| (b) Round top behind shaft | $K_{11}+D_2$ | 141 | 138 |
| (c) Extended flat top fairing | $H_1+D_4$ | 170 | 156 |
| (d) Flat top + 16" cap, 4" gap | $H_{1.7.2}+D_4$ | 171 | 170 |
| (e) Forward fairing/nacelle fairing | $P_{1.0}$ | 152 | 156 |
| 3. Surface Devices | | | |
| (a) Vortex generators | $K_{11}+VG_{2.1}$ | 139 | 138 |
| (b) Guidevane between nacelles | $K_{11}+FV_1$ | 142 | 138 |
| (c) Longitudinal strakes | $H_{1.5.3}+S_4$ | 155 | 156 |
| (d) 14% porosity spoiler | $K_{11}+X_1$ | 143 | 138 |

*Basic Code is K13 unless noted otherwise.

TABLE 2

**LIST OF TEST RUNS**

BASIC INVESTIGATIONS OF THE HUB WAKE

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | $\alpha°$ | $\psi°$ | h/d | |
| 111 | $K_{11}$/15" Long. wake traverse at TR center line | 80 | 1433/0 | 8 | 6.0 | -2.0 | ∞ | Off |
| 112 | " /9" Vert. wake traverse above TR center line | " | " | " | " | " | " | " |
| 113 | " /2" Vert traverse through MR vortex | " | " | " | " | " | " | " |
| 114 | " /8" Vert. traverse below TR center line | " | " | " | " | " | " | " |
| 115 | " /13" Vert. traverse behind stabilizer | " | " | " | " | " | " | " |
| 116 | " /Lateral traverse - left stabilizer | " | " | " | " | " | " | " |
| 117 | " /116 continued | " | " | " | " | " | " | " |
| 118 | " /116 continued | " | " | " | " | " | " | " |
| 119 | " /Lateral traverse - right stabilizer | " | " | " | " | " | " | " |
| 121 | $K_{11}+T_2$/Effect of tail rotor flow on wake | " | 1433/ 4500 | " | " | " | " | On |
| 135 | $K_{11}$/Wake in 900 fpm climb | " | " | " | -6.0 | -4.5 | " | Off |
| 136 | " /Wake in 800 fpm descent | " | " | " | 6.0 | -2.0 | " | " |

TABLE 2 (CONTINUED)
**LIST OF TEST RUNS**
EVALUATION OF WAKE-ALTERING DEVICES

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | α° | ψ° | h/d | |
| 137 | $K_{11}$-$H_{1.0}$+$H_{1.2}$/Effect of 7.6 inch diam. solid hub cap | 80 | 1433/0 | 8 | 6 | -3.8 | ∞ | Off |
| 138 | $K_{11}$/Repeat of base run | " | " | " | " | " | " | " |
| 139 | $K_{11}$+$VG_{2.1}$/Effect of vortex generators on aft crown | " | " | " | " | " | " | " |
| 140 | $K_{11}$+$D_1$/Flat-topped "doghouse" fairing on aft crown | " | " | " | " | " | " | " |
| 141 | $K_{11}$+$D_2$/Rounded-top fairing | " | " | " | " | " | " | " |
| 142 | $K_{11}$+$FV_1$/Deflection vane on crown between nacelles | " | " | " | " | " | " | " |
| 143 | $K_{11}$+$X_1$/Variable porosity spoiler | " | " | " | " | " | " | " |
| 149 | $K_{13}$+$H_1$-$N_1$/Effect of nacelles off also add stiff pitch arms ($K_{13}$) | 60 | 1075/0 | 4.5 | " | " | " | " |
| 150 | $K_{13}$+$H_1$/60 knot baseline | " | " | " | " | " | " | " |
| 151 | $K_{13}$+$H_{1.3}$/16 inch diam. helmet fairing | " | " | " | " | " | " | " |
| 152 | $K_{13}$+$P_{1.0}$/Pylon and intake fairings | 80 | 1433/0 | 8 | " | " | " | " |
| 153 | $K_{13}$+$H_{1.2}$/Repeat 137 with $K_{13}$ pitch arms | " | " | " | " | " | " | " |

TABLE 2 (CONTINUED)
**LIST OF TEST RUNS**

EVALUATION OF WAKE-ALTERING DEVICES

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | α° | ψ° | h/d | |
| 154 | $K_{13}+H_{1.5.2}$/10" open hub cap, 7" underbody, 1.25"gap | 80 | 1433/0 | 8 | 6 | -3.8 | ∞ | Off |
| 155 | $K_{13}+H_{1.5.2}+S_4$/Same as 154 except strakes on aft crown | " | " | " | " | " | " | " |
| 156 | $K_{13}+H_{1.0}$/Baseline with $K_{13}$,i.e., stiff pitch arms | " | " | " | " | " | " | " |
| 158 | $K_{13}-M+H_{1.0}$/Wake studies with blades off, hub not rotating | " | 0/0 | " | " | " | " | " |
| 159 | $K_{13}-M-H_{1.0}$/Wake studies with hub off | " | " | " | " | " | " | " |
| 160 | $K_{13}-M+H_{1.0}$/Same as 158 except hub is rotating | " | 1433/0 | " | " | " | " | " |
| 161 | $K_{13}-M+H_{1.5.2}$/Repeat of 154 without blades | " | 0/0 | " | " | " | " | " |
| 162 | $K_{13}-M+H_{1.5.3}$/Same as 161 except 4" gap | " | " | " | " | " | " | " |
| 163 | $K_{13}-M+H_{1.5.4}$/Same as 161 except 2" gap | " | " | " | " | " | " | " |
| 164 | $K_{13}-M+H_{1.5.1}$/Same as 161 except 0.5" gap | " | " | " | " | " | " | " |
| 165 | $K_{13}-M+H_{1.0.1}$/ 10" open hub cap,no underbody,same cap vert.position as Run 154 | " | " | " | " | " | " | " |
| 166 | $K_{13}-M+H_{1.0.2}$/Same as 165 with cap lowered by 0.5" | " | " | " | " | " | " | " |

TABLE 2 (CONTINUED)

**LIST OF TEST RUNS**

EVALUATION OF WAKE-ALTERING DEVICES

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | α° | ψ° | h/d | |
| 167 | $K_{13}$-M+$H_{1.7.1}$/16" open cap, no underbody, 2" gap | 80 | 0/0 | 8 | 6 | -3.8 | ∞ | Off |
| 168 | $K_{13}$+$H_{1.7.1}$/Blades on, same cap config. as 167 | " | 1433/0 | " | " | " | " | " |
| 169 | $K_{13}$+$H_{1.7.2}$/16" open cap, no underbody, 4" gap | " | " | " | " | " | " | " |
| 170 | $K_{13}$+$H_{1.0}$+$D_{4.0}$/Extended flat top fairing on aft crown | " | " | " | " | " | " | " |
| 171 | $K_{13}$+$H_{1.7.2}$+$D_{4.0}$/Same fairing as 170, same cap as 169 | " | " | " | " | " | " | " |
| 172 | $K_{13}$+$H_{1.0}$+$E_{1.0}$(0psi)/Basic air ejector zero blowing baseline | " | " | " | " | " | " | " |
| 173 | $K_{13}$+$H_{1.0}$+$E_{1.0}$(40 psi)/Same as 172 with 40 psi supply | " | " | " | " | " | " | " |
| 174 | $K_{13}$+$H_{1.0}$+$E_{1.0}$(150 psi)/Same as 172 with 150 psi supply | " | " | " | " | " | " | " |
| 175 | $K_{13}$+$H_{1.0}$+$E_{2.5.1}$(40 psi)/Ejector with wide chord shroud at 40 psi | " | " | " | " | " | " | " |
| 176 | $K_{13}$+$H_{1.0}$+$E_{2.5.1}$(150 psi)/Same as 174 with 150 psi supply | " | " | " | " | " | " | " |
| 177 | $K_{13}$+$H_{1.5.4}$+$E_{2.5.1}$(150 psi)/Same as 176 with 10" cap like 163 | " | " | " | " | " | " | " |
| 178 | $K_{13}$+$H_{1.0}$+$W_{1.0}$+$E_{1.1}$(0 psi)/Nacelle mounted wing | " | " | " | " | " | " | " |

TABLE 2 (CONTINUED)

**LIST OF TEST RUNS**

EVALUATION OF WAKE-ALTERING DEVICES

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | α° | ψ° | h/d | |
| 179 | $K_{13}+H_{1.0}+W_{2.0}+E_{1.0}$ (0 psi)/Double slotted flapped wing | 80 | 1433/0 | 8 | 6 | -3.8 | ∞ | Off |
| 180 | $K_{13}+H_{1.0}+W_{3.0}+E_{1.0}$ (0 psi)/Single slotted flapped wing | " | " | " | " | " | " | " |
| 181 | $K_{13}+H_{1.0}+E_{1.2}$ (0 psi)/Baseline with ejector tube moved aft | " | " | " | " | " | " | " |
| 182 | $K_{13}+H_{1.9.0}+E_{1.2}$ (0 psi)/Standard 10" frisbee | " | " | " | " | " | " | " |
| 183 | $K_{13}+H_{1.9.1}+E_{1.2}$ (0 psi)/16" fabricated frisbee | " | " | " | " | " | " | " |
| 184 | $K_{13}+H_{1.0}+E_{3.5.2}$ (40 psi)/Wide chord with lip at 40 psi | " | " | " | " | " | " | " |
| 185 | $K_{13}+H_{1.0}+E_{3.5.2}$ (150 psi)/Same as 184 with 150 psi air | " | " | " | " | " | " | " |
| 186 | $K_{13}+H_{1.0}+W_{4.0}$/Boom mounted stub wing | " | " | " | " | " | " | " |
| 187 | $K_{13}+H_{1.0}+E_{3.5.4}$ (150 psi)/Like 185 with modified shroud | " | " | " | " | " | " | " |
| 188 | $K_{13}+H_{1.0}+I_1+E_{1.0}$ (0 psi)/Baseline with $I_1$ instr. ring | " | " | " | " | " | " | " |
| 189 | $K_{13}+H_{1.8.1}+I_1+E_{1.0}$ (0 psi)/Solid cap, 10" diam. 3.25" height | " | " | " | " | " | " | " |
| 190 | $K_{13}+H_{1.8.2}+I_1+E_{1.0}$ (0 psi)/Same as 190 except + 4.12" height | " | " | " | " | " | " | " |

TABLE 2 (CONTINUED)

**LIST OF TEST RUNS**

EVALUATION OF WAKE-ALTERING DEVICES

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | $\alpha°$ | $\psi°$ | h/d | |
| 191 | $K_{13}+H_{1.0.2}+I_1+E_{1.0}$ (0 psi)/10" cap, no underbody, 1.87" gap | 80 | 1433/0 | 8 | 6 | -3.8 | ∞ | Off |
| 193 | $K_{13}+H_{1.0.2}+I_1+E_{1.0}$ (0 psi)/10" cap, no underbody, 1.25" gap | " | " | " | " | " | " | " |
| 194 | $K_{13}+H_{1.11.1}+I_2+E_{1.0}$(0 psi)/7.6" cap, underbody, 1.25" gap | " | " | " | " | " | " | " |
| 195 | $K_{13}+H_{1.11.1}+I_2+E_{1.0}$(20 psi)/Same as 194 with 20 psi air | " | " | " | " | " | " | " |
| 196 | $K_{13}+H_{1.11.1}+I_2+E_{1.0}$(40 psi)/Same as 194 with 40 psi air | " | " | " | " | " | " | " |
| 197 | $K_{13}+H_{1.11.1}+I_2+E_{1.0}$(150 psi)/Same as 194 with 150 psi air | " | " | " | " | " | " | " |
| 198 | $K_{13}+H_{1.11.1}+I_2+E_{4.0}$ (0 psi)/Same as 194 except blowing tube 2" aft | " | " | " | " | " | " | " |
| 199 | $K_{13}+H_{1.11.1}+I_2+E_{4.0}$ (40 psi)/Same as 198 with 40 psi air | " | " | " | " | " | " | " |
| 200 | $K_{13}+H_{1.11.1}+I_2+E_{4.0}$ (150 psi)/Same as 198 with 150 psi air | " | " | " | " | " | " | " |
| 201 | $K_{13}+H_{1.11.2}+I_2+E_{4.0}$ (150 psi)/Same as 200 except center support cap | " | " | " | " | " | " | " |
| 202 | $K_{13}+H_{1.11.2}+I_2$/Baseline with $I_2$ and no blowing tube | " | " | " | " | " | " | " |
| 203 | $K_{13}+H_{1.0}+E_{5.0}$(0 psi)/Bifurcated air duct baseline | " | " | " | " | " | " | " |

TABLE 2 (CONTINUED)

**LIST OF TEST RUNS**

**EVALUATION OF WAKE-ALTERING DEVICES**

| RUN NO. | CONFIGURATION/CONDITION | $V_{TUN}$ KNOTS | RPM MR/TR | DISK LDG. psf | MODEL ANGLES | | MR HT. | TAIL ROTOR |
|---|---|---|---|---|---|---|---|---|
| | | | | | α° | ψ° | h/d | |
| 204 | $K_{13}+H_{1.0}+E_{5.0}$ (150 psi)/Bifurcated duct with 150 psi air | 80 | 1433/0 | 8 | 6 | -3.8 | ∞ | Off |
| 205 | $K_{13}+H_{1.0}+E_{5.0}$ (40 psi)/Same as 204 with 40 psi air | " | " | " | " | " | " | " |
| 207 | $K_{13}+H_{1.2.1}+I_1+E_{1.0}$ (0 psi)/7.6" solid cap, no gap | " | " | " | " | " | " | " |
| 208 | $K_{13}+H_{1.2.2}+I_1+E_{1.0}$ (0 psi)/Same as 207 except 0.55" gap | " | " | " | " | " | " | " |
| 210 | $K_{13}+H_{1.15.1}+I_1+E_{1.0}$ (0 psi)/Repeat of 189 | " | " | " | " | " | " | " |
| 211 | $K_{13}+H_{1.14.1}+I_1+E_{1.0}$ (0 psi)/Like 189 and 210 except cap is open | " | " | " | " | " | " | " |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

TABLE 3

INDEX TO RAKE POSITIONS

| RUN NUMBER | TEST POINT | WATER LINE | MODEL STATION | BUTT LINE | LOCATION FIGURE |
|---|---|---|---|---|---|
| 111 | 20 | 53.5 | 103.1 | -7.25 | 1 |
| | 21 | " | " | " | |
| | 22 | " | 105.0 | " | |
| | 24 | " | 107.0 | " | |
| | 26 | " | 109.0 | " | |
| | 28 | " | 111.0 | " | |
| | 30 | " | 112.9 | " | |
| | 32 | " | 114.9 | " | |
| | 34 | " | 116.9 | " | |
| | 36 | " | 118.9 | " | |
| 112 | 2 | 48.9 | 107.3 | -7.25 | 1 |
| | 4 | 50.8 | " | " | |
| | 6 | 52.7 | 103.3 | " | |
| | 8 | 54.5 | " | " | |
| | 10 | 56.2 | " | " | |
| | 12 | 57.2 | " | " | |
| 113 | 2 | 51.7 | 103.3 | -3.25 | 1 |
| | 4 | 52.3 | " | " | |
| | 6 | 52.8 | " | " | |
| | 8 | 53.3 | " | " | |
| | 10 | 53.9 | " | " | |
| | 11 | 53.3 | " | " | |
| 114 | 2 | 44.5 | 103.0 | -3.25 | 1 |
| | 4 | 46.4 | " | " | |
| | 6 | 48.2 | " | " | |
| | 8 | 50.0 | " | " | |
| | 10 | 51.9 | " | " | |
| 115 | 3 | 52.9 | 124.7 | -3.25 | 1 |
| | 4 | 52.0 | " | " | |
| | 6 | 50.0 | " | " | |
| | 9 | 48.0 | " | " | |
| | 10 | 46.0 | " | " | |
| | 12 | 44.1 | " | " | |
| | 14 | 42.1 | " | " | |
| | 16 | 53.0 | " | " | |
| | 18 | 54.0 | " | " | |
| | 20 | 55.0 | " | " | |

TABLE 3 (CONTINUED)

INDEX TO RAKE POSITIONS

| RUN NUMBER | TEST POINT | WATER LINE | MODEL STATION | BUTT LINE | LOCATION FIGURE |
|---|---|---|---|---|---|
| 116 | 7 | 36.9 | 100.5 | -17.5 | 1 |
| 117 | 2 | 37.6 | 100.5 | -16.0 | 1 |
| | 4 | " | " | -14.0 | |
| | 6 | 37.3 | 99.6 | -12.0 | |
| | 8 | " | " | -10.0 | |
| | 10 | " | " | - 8.0 | |
| 118 | 2 | 37.6 | 100.5 | - 6.0 | 1 |
| 119 | 2 | 37.3 | 99.6 | + 6.0 | 1 |
| | 5 | " | " | 8 | |
| | 8 | " | " | 10 | |
| | 9 | " | " | " | |
| | 14 | " | " | 14 | |
| | 16 | " | " | 16 | |
| | 20 | 51.5 | 102.5 | 17.5 | |
| | 25 | 52.3 | 101.7 | -17.5 | |
| 121 | 3 | 62.9 | 129.0 | + 5.7 | 2 |
| | 4 | 53.5 | " | " | |
| | 6 | 50.1 | " | " | |
| | 8 | 46.0 | " | " | |
| | 10 | 42.1 | " | " | |
| 135 | 2 | 56.9 | 106.3 | - 5.7 | 3 |
| | 4 | 54.5 | " | " | |
| | 6 | 52.5 | " | " | |
| | 8 | 50.5 | " | " | |
| | 10 | 48.5 | " | " | |
| | 12 | 46.5 | " | " | |
| | 14 | 44.5 | " | " | |
| 136 | 2 | 56.5 | 104.0 | - 8.0 | 4 |
| | 4 | 54.5 | " | " | |
| | 6 | 52.5 | " | " | |
| | 8 | 50.6 | " | " | |
| | 10 | 48.5 | " | " | |
| | 12 | 46.5 | " | " | |
| | 14 | 44.5 | " | " | |
| | 17 | 37.1 | " | " | |
| | 18 | 39.0 | " | " | |
| | 19 | 41.0 | " | " | |

TABLE 3 (CONTINUED)

INDEX TO RAKE POSITIONS

| RUN NUMBER | TEST POINT | WATER LINE | MODEL STATION | BUTT LINE | LOCATION FIGURE |
|---|---|---|---|---|---|
| 137 | 3 | 38.7 | 98.4 | - 8.0 | 5 |
| | 5 | 39.9 | " | " | |
| | 7 | 42.0 | 100.5 | " | |
| | 9 | 44.0 | " | " | |
| | 11 | 46.0 | 103.6 | " | |
| | 13 | 48.0 | " | " | |
| | 15 | 50.0 | " | " | |
| | 17 | 52.0 | " | " | |
| | 19 | 54.0 | " | " | |
| 138-41, 143 | 2 | 38.8 | 98.4 | - 8.0 | 5 |
| | 3 | 40.0 | " | " | |
| | 4 | 42.0 | 100.5 | " | |
| | 5 | 44.0 | " | " | |
| | 6 | 46.0 | 103.6 | " | |
| | 7 | 48.0 | " | " | |
| | 8 | 50.0 | " | " | |
| | 9 | 52.0 | " | " | |
| | 10 | 54.0 | " | " | |
| 142 | 7 | 37.8 | 98.4 | - 8.0 | 5 |
| | 8 | " | " | " | |
| | 9 | 40.2 | " | " | |
| | 10 | 42.0 | 100.5 | " | |
| | 11 | 44.0 | " | " | |
| | 12 | 46.0 | 103.6 | " | |
| | 13 | 48.0 | " | " | |
| | 14 | 50.0 | " | " | |
| | 15 | 52.0 | " | " | |
| | 16 | 54.0 | " | " | |
| | 17 | 56.8 | " | " | |

TABLE 3 (CONTINUED)

INDEX TO RAKE POSITIONS

| RUN NUMBER | TEST POINT | WATER LINE | MODEL STATION | BUTT LINE | LOCATION FIGURE |
|---|---|---|---|---|---|
| 149-151 | 2 | 38.8 | 98.5 | - 8.0 | 5 |
| | 3 | 40.0 | " | " | |
| | 4 | 42.0 | 100.6 | " | |
| | 5 | 44.0 | " | " | |
| | 6 | 46.0 | 103.5 | " | |
| | 7 | 48.0 | " | " | |
| | 8 | 50.0 | " | " | |
| | 9 | 52.0 | " | " | |
| | 10 | 54.0 | " | " | |
| 152-6, 158<br>161-4, 166<br>167, 169-71<br>175, 177-9<br>180,182,184<br>186-8, 190<br>191,193,194<br>196,198,201<br>204,207,208<br>211 | 2 | 42.9 | 97.9 | 0.0 | 6 |
| | 3 | 44.9 | " | " | |
| | 4 | 46.9 | 100.6 | " | |
| | 5 | 48.9 | " | " | |
| | 6 | 50.9 | 104.6 | " | |
| | 7 | 52.9 | " | " | |
| | 8 | 54.9 | " | " | |
| | 9 | 56.9 | " | " | |
| 159 | 1 | 54.9 | 104.6 | 0.0 | 6 |
| | 2 | 52.9 | " | " | |
| | 3 | 50.7 | " | " | |
| | 4 | 48.6 | 100.6 | " | |
| | 5 | 46.7 | " | " | |
| 160,203 | 5 | 42.9 | 97.9 | 0.0 | 6 |
| | 6 | 44.9 | " | " | |
| | 7 | 46.9 | 100.6 | " | |
| | 8 | 48.9 | " | " | |
| | 9 | 50.9 | 104.6 | " | |
| | 10 | 52.9 | " | " | |
| | 11 | 54.9 | " | " | |
| 165 | 3 | 44.9 | 97.9 | 0.0 | 6 |
| | 4 | 42.9 | " | " | |
| | 5 | 46.9 | 100.6 | " | |
| | 6 | 48.9 | " | " | |
| | 7 | 50.9 | 104.6 | " | |
| | 8 | 52.9 | " | " | |

TABLE 3 (CONTINUED)

INDEX TO RAKE POSITIONS

| RUN NUMBER | TEST POINT | WATER LINE | MODEL STATION | BUTT LINE | LOCATION FIGURE |
|---|---|---|---|---|---|
| 168, 183 | 4 | 42.9 | 97.9 | 0.0 | 6 |
| | 5 | 44.9 | " | " | |
| | 6 | 46.9 | 100.6 | " | |
| | 7 | 48.9 | " | " | |
| | 8 | 50.9 | 104.6 | " | |
| | 9 | 52.9 | " | " | |
| | 10 | 54.9 | " | " | |
| 172 | 3 | 42.9 | 97.9 | 0.0 | 6 |
| | 4 | 44.9 | " | " | |
| | 6 | 44.9 | " | " | |
| | 7 | 46.9 | 100.6 | " | |
| | 8 | 48.9 | " | " | |
| | 9 | 50.9 | 104.6 | " | |
| | 10 | 52.9 | " | " | |
| | 11 | 54.9 | " | " | |
| 173,174,176 185,195,197 199,200,205 210 | 1 | 42.9 | 97.9 | 0.0 | 6 |
| | 2 | 44.9 | " | " | |
| | 3 | 46.9 | 100.6 | " | |
| | 4 | 48.9 | " | " | |
| | 5 | 50.9 | 104.6 | " | |
| | 6 | 52.9 | " | " | |
| | 7 | 54.9 | " | " | |
| 181 | 2 | 42.9 | 97.9 | 0.0 | 6 |
| | 3 | 44.9 | " | " | |
| | 4 | 46.9 | 100.6 | " | |
| | 5 | 48.9 | " | " | |
| | 6 | 50.9 | 104.6 | " | |
| | 7 | 52.9 | " | " | |
| | 9 | 54.9 | " | " | |
| | 10 | " | " | " | |
| | 11 | " | " | " | |
| | 12 | " | " | " | |
| | 13 | 42.9 | 97.9 | " | |

TABLE 3 (CONTINUED)

INDEX TO RAKE POSITIONS

| RUN NUMBER | TEST POINT | WATER LINE | MODEL STATION | BUTT LINE | LOCATION FIGURE |
|---|---|---|---|---|---|
| 189 | 29 | 42.9 | 97.9 | 0.0 | 6 |
| | 30 | 44.9 | " | " | |
| | 31 | 46.9 | 100.6 | " | |
| | 32 | 48.9 | " | " | |
| | 33 | " | " | " | |
| | 34 | 50.9 | 104.6 | " | |
| | 35 | " | " | " | |
| | 36 | 48.9 | 100.6 | " | |
| | 37 | 50.9 | 104.6 | " | |
| | 38 | 52.9 | " | " | |
| | 39 | 54.9 | " | " | |
| 202 | 3 | 43.4 | 97.9 | 0.0 | 6 |
| | 4 | 44.9 | " | " | |
| | 5 | 46.9 | 100.6 | " | |
| | 6 | 48.9 | " | " | |
| | 7 | 50.9 | 104.6 | " | |

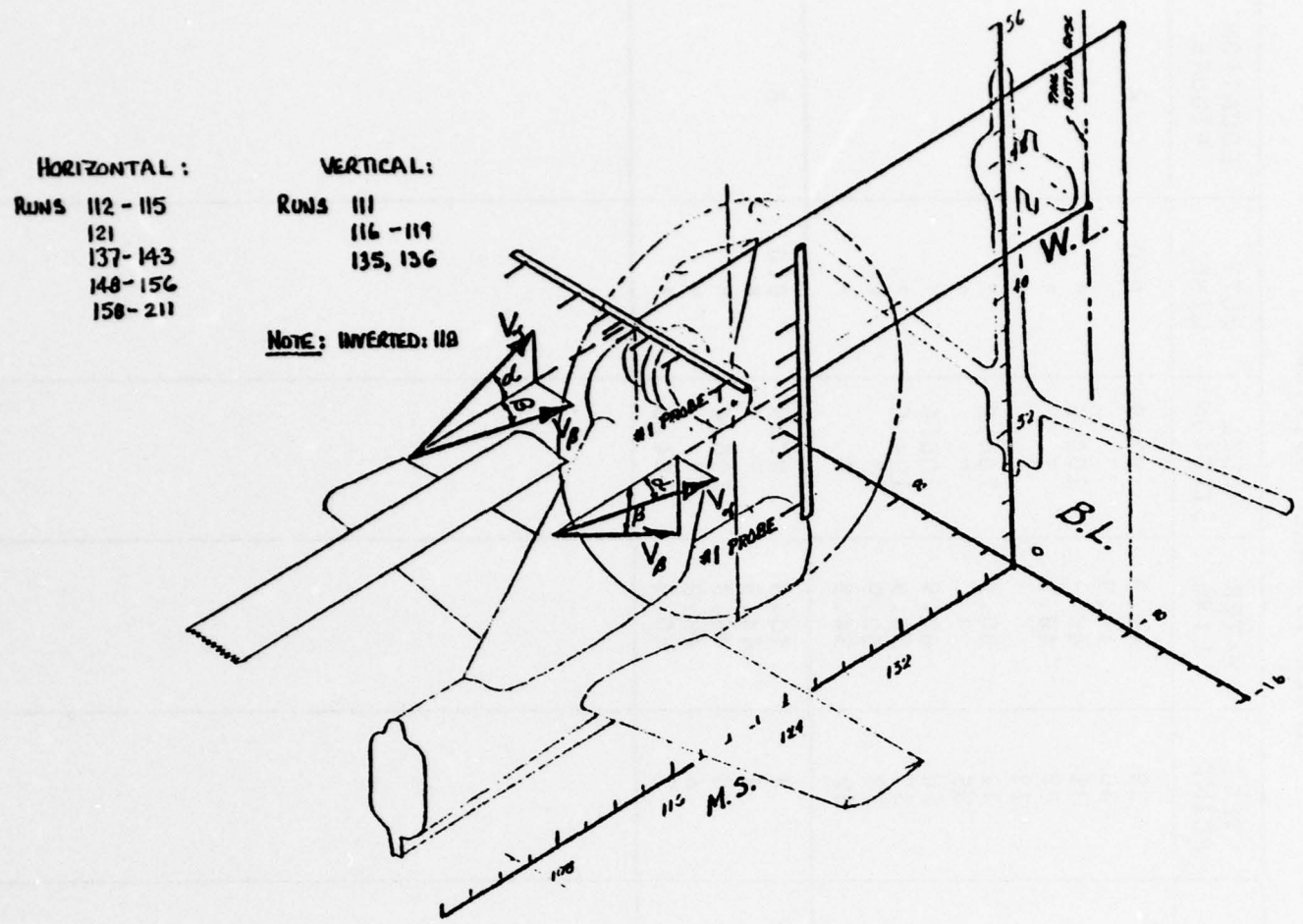



FIGURE 1 - RAKE ORIENTATION DIAGRAM

RUN 121

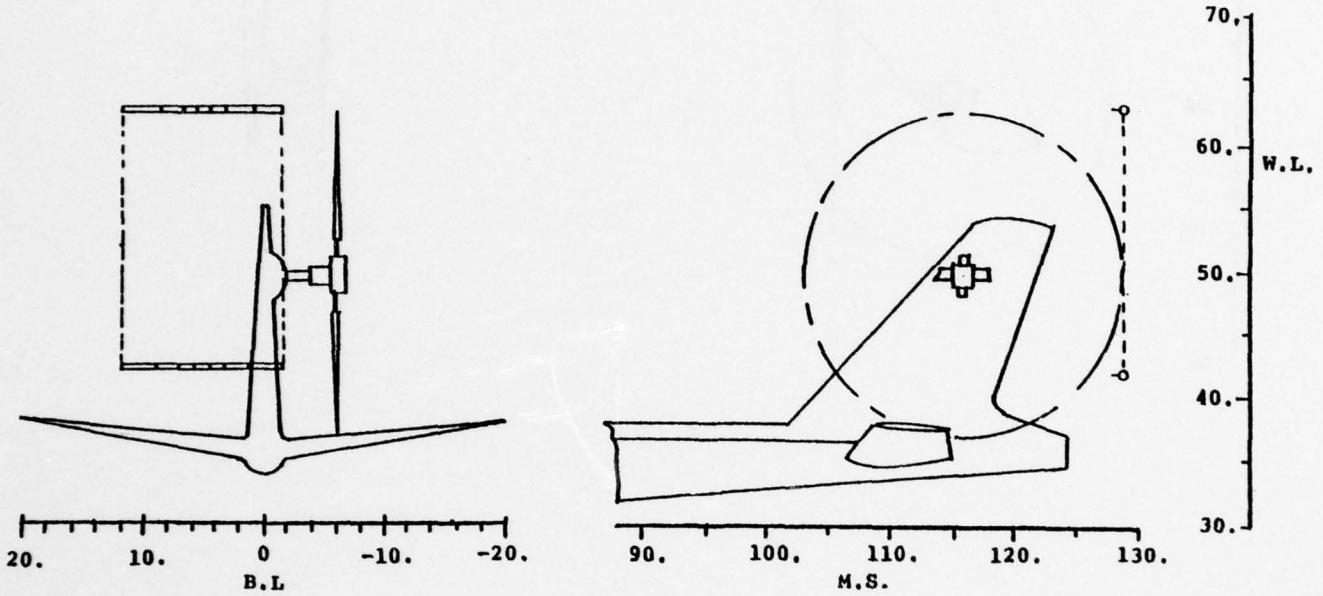



FIGURE 2 -HOT FILM RAKE LOCATIONS

RUN 135

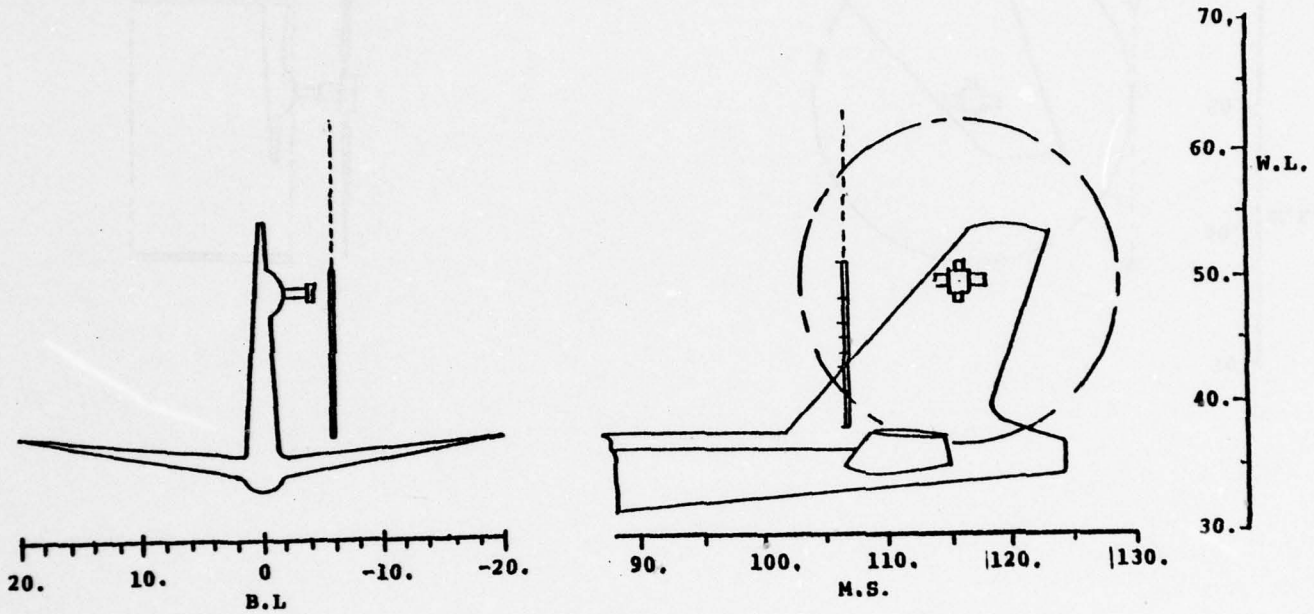



FIGURE 3 -HOT FILM RAKE LOCATIONS

RUN 136

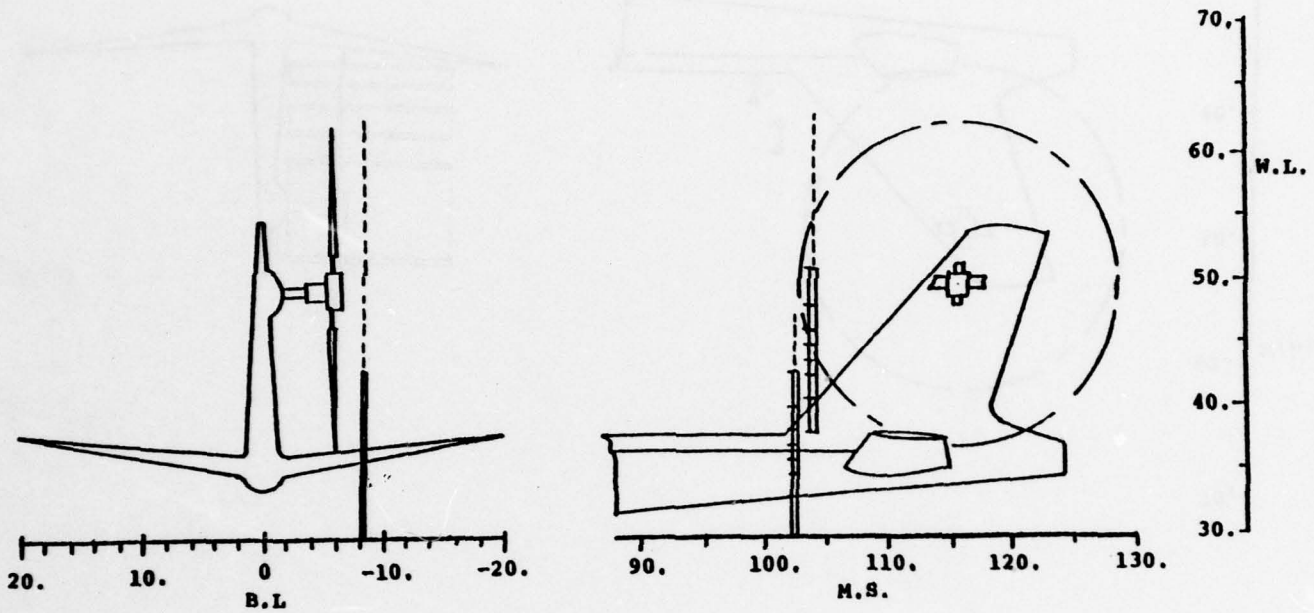



FIGURE 4 -HOT FILM RAKE LOCATIONS

RUN 137, 138, 139, 140, 141, 142,
143, 148, 149, 150, 151

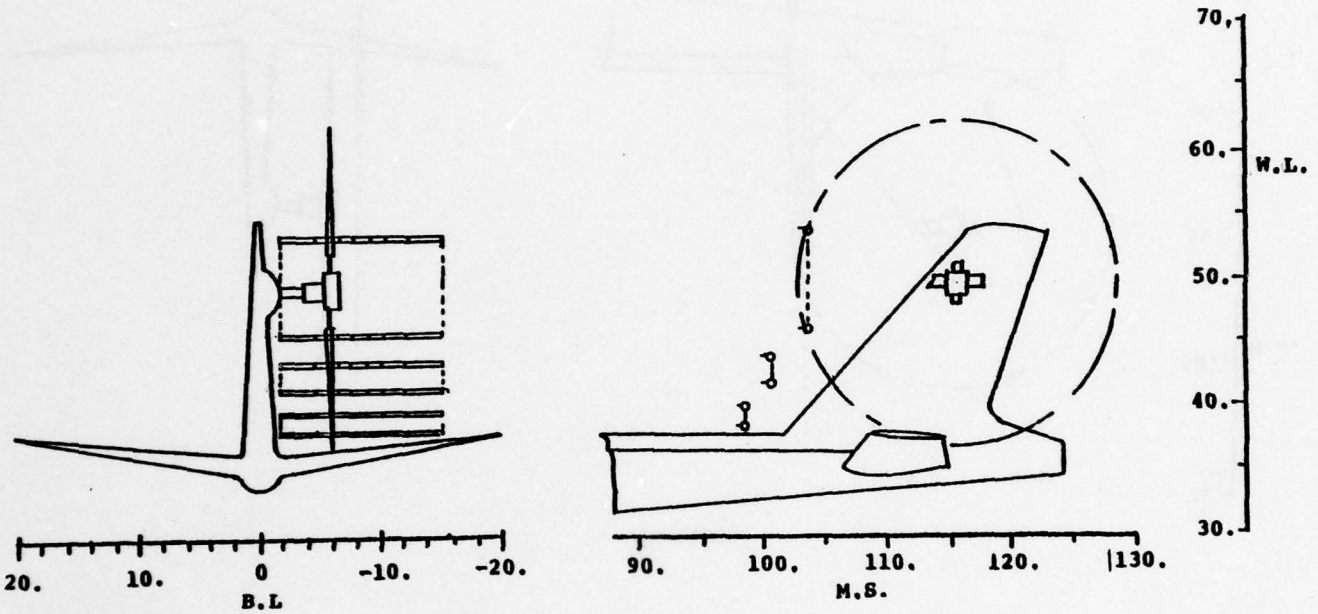



FIGURE 5 -HOT FILM RAKE LOCATIONS

RUN 152-156, 158-211

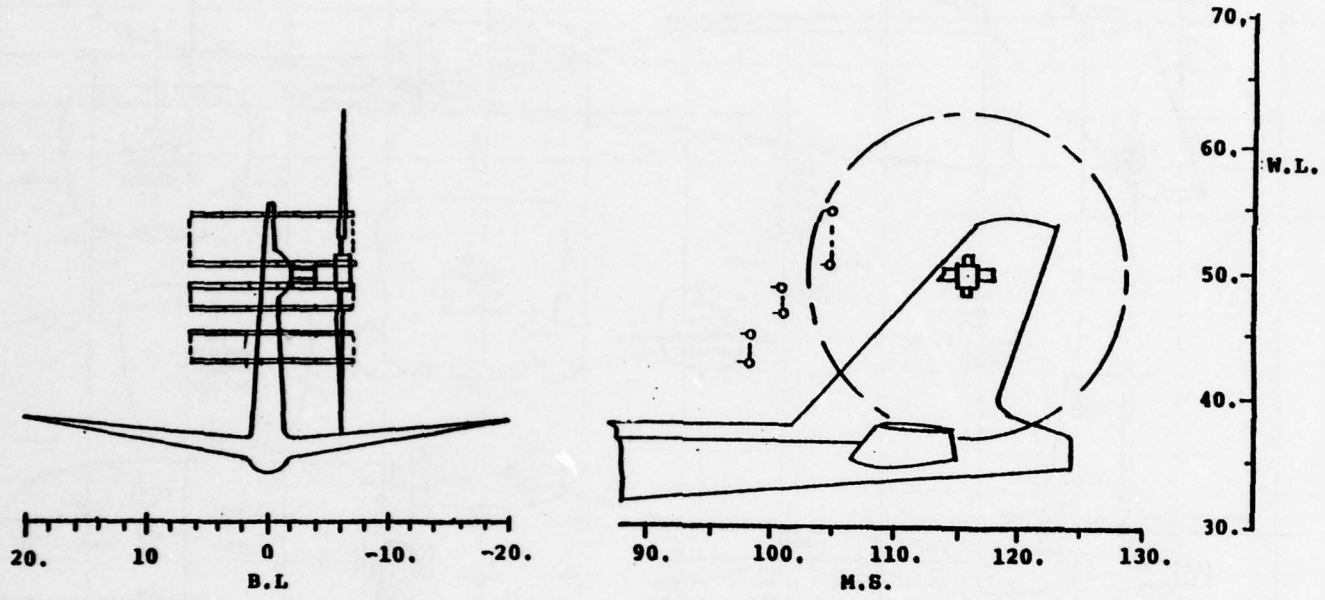



FIGURE 6 -HOT FILM RAKE LOCATIONS

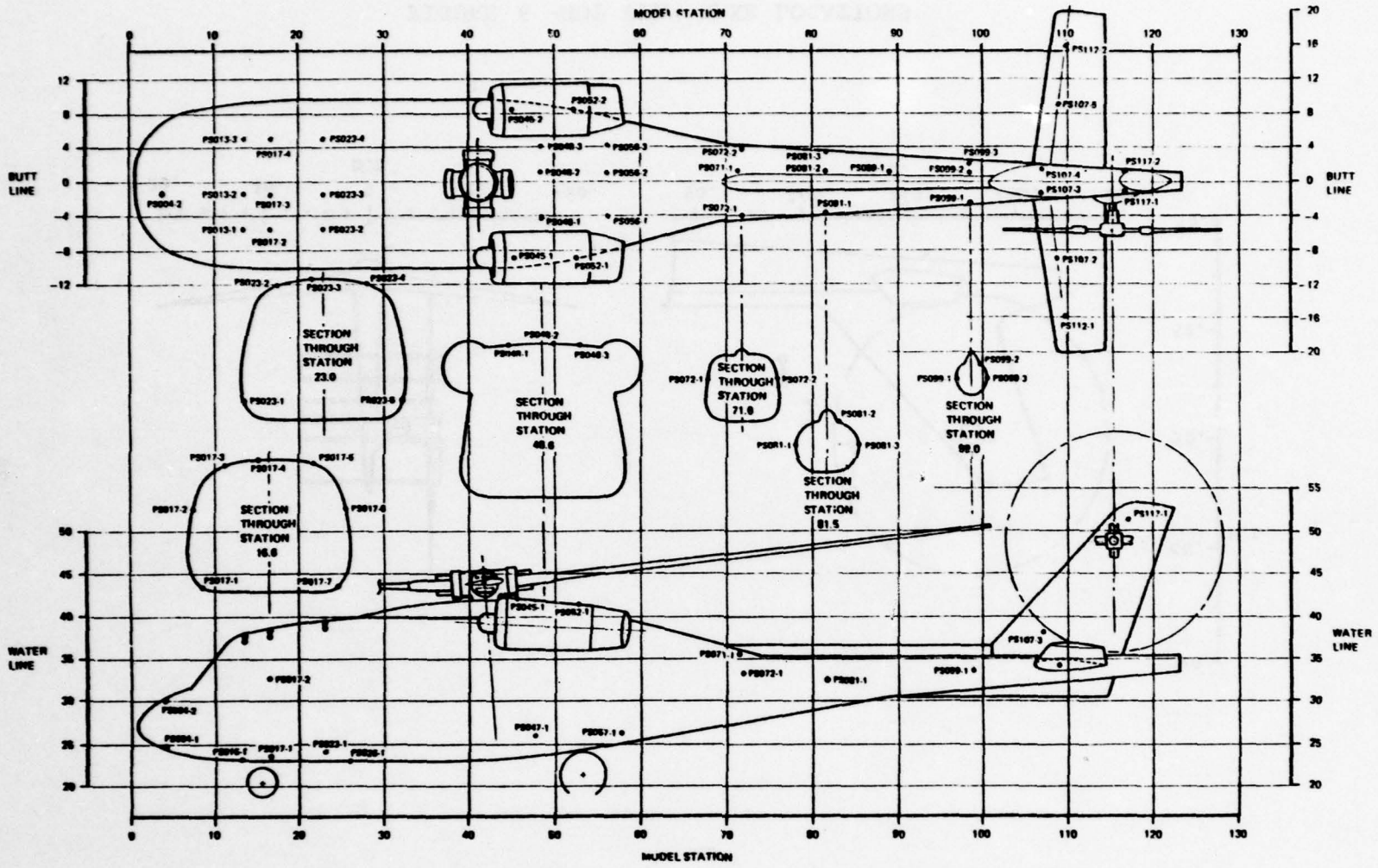
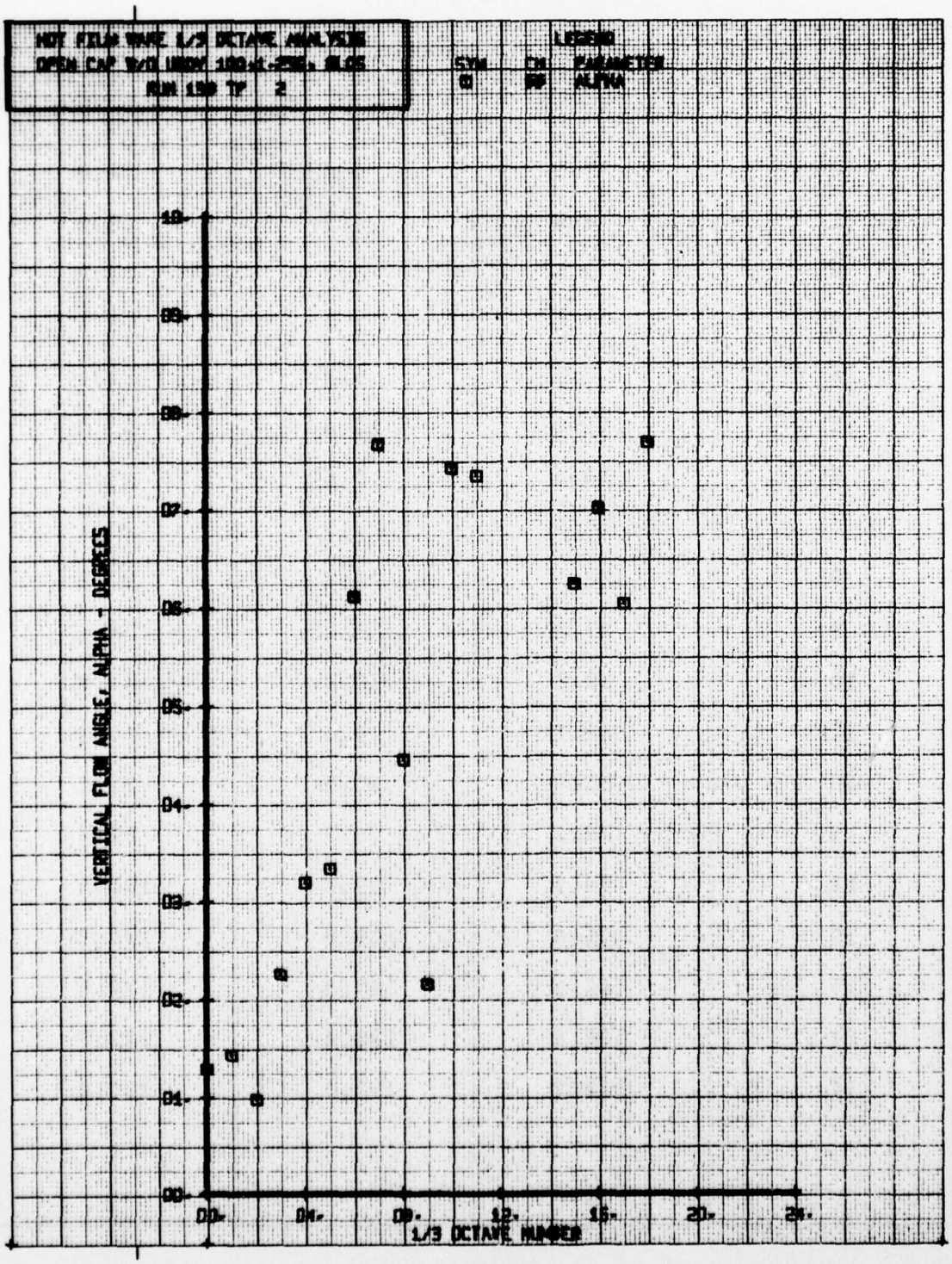
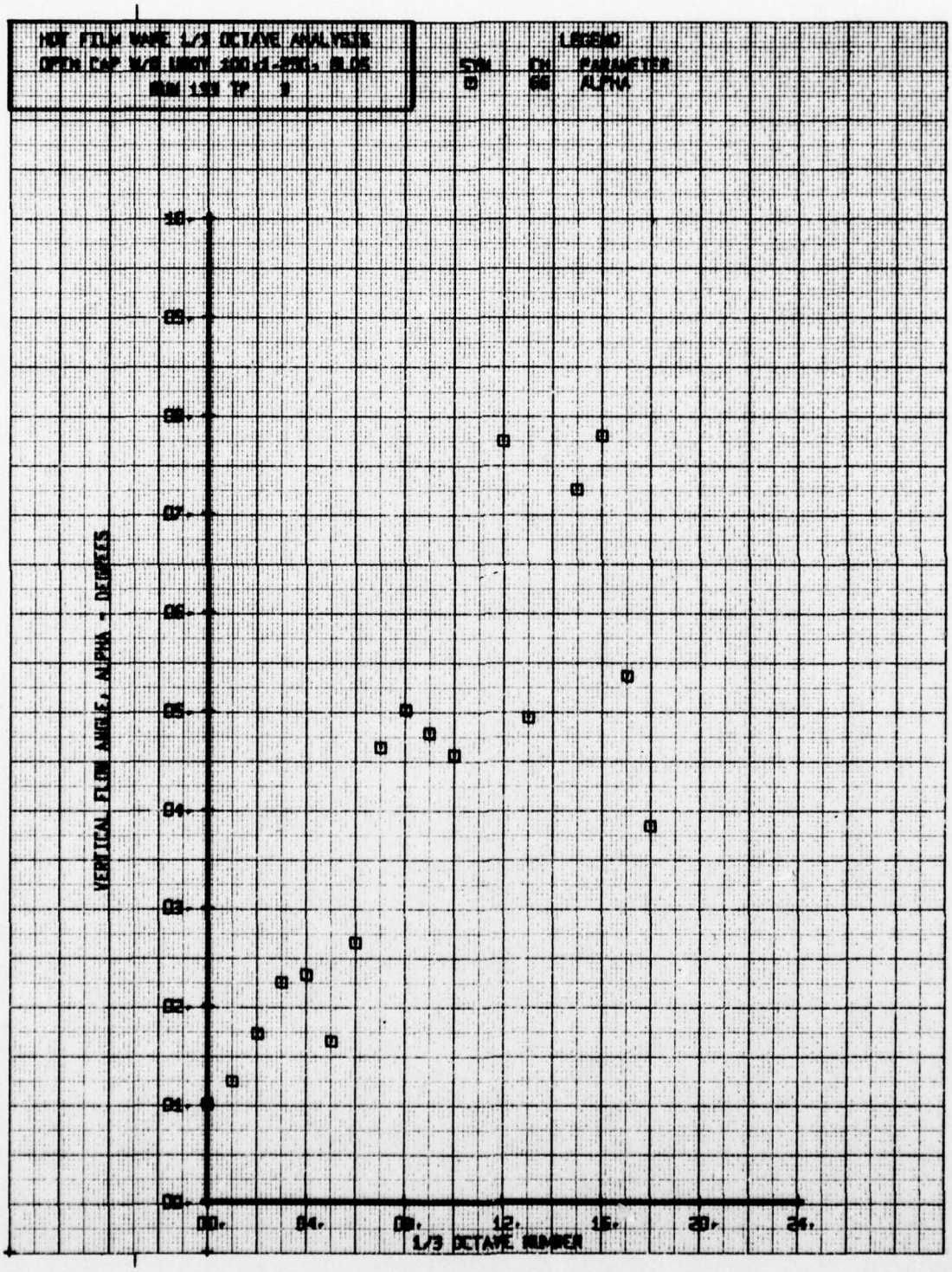


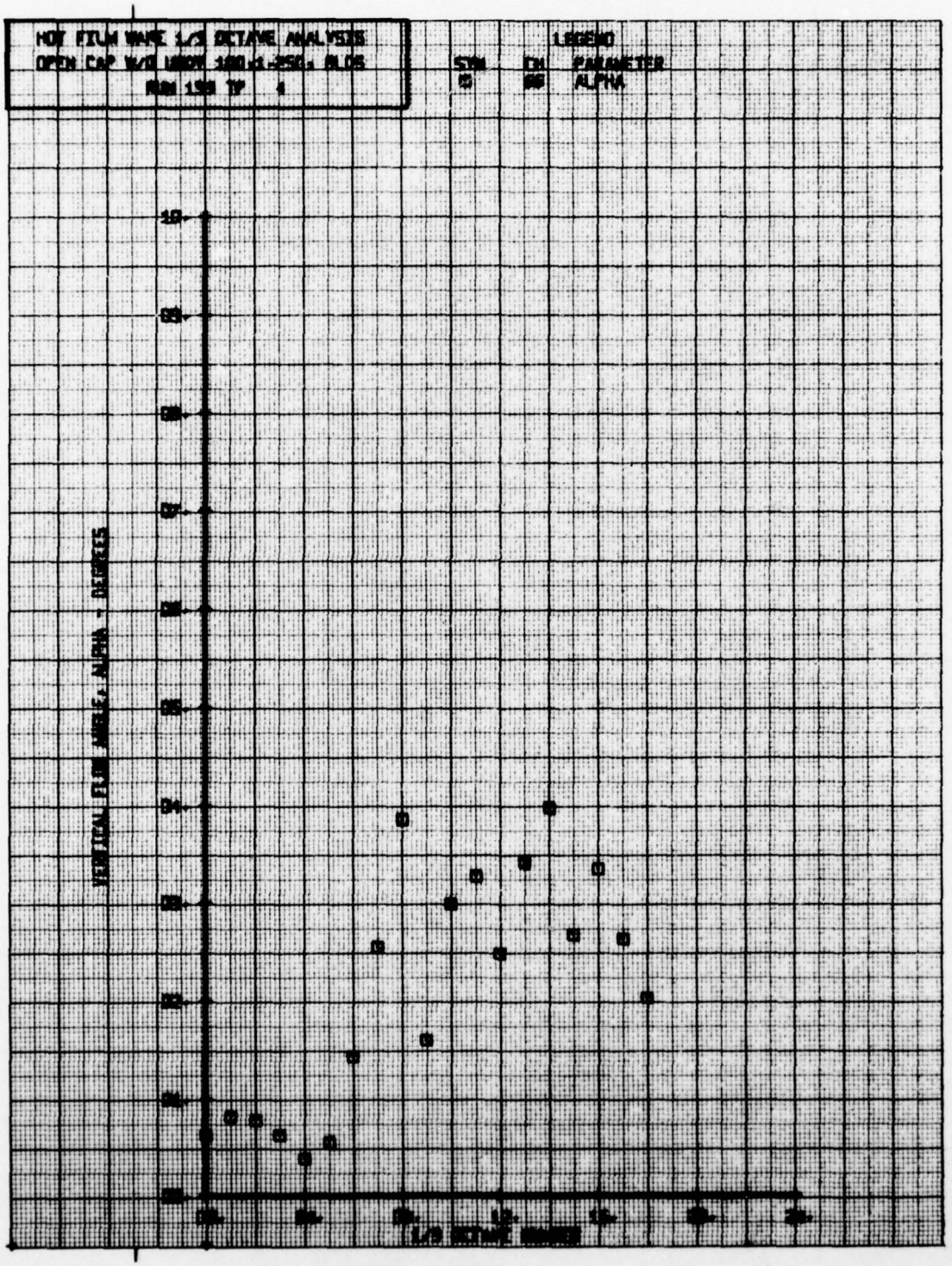

FIGURE 7 -1/4.85 SCALE MODEL GEOMETRY AND SURFACE PRESSURE TRANSDUCER LOCATIONS

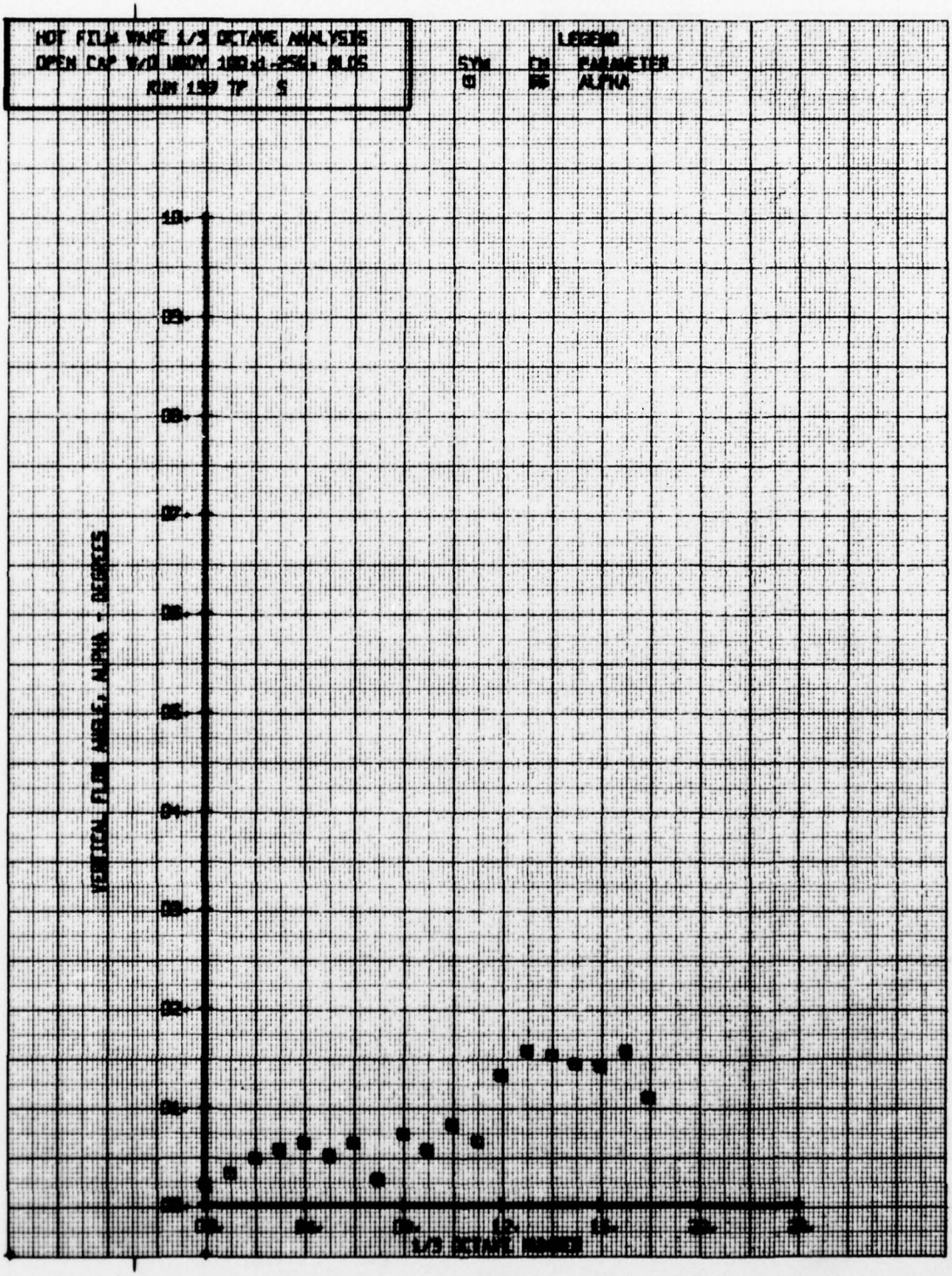
TABLE 4
1/3 OCTAVE BAND IDENTIFICATION

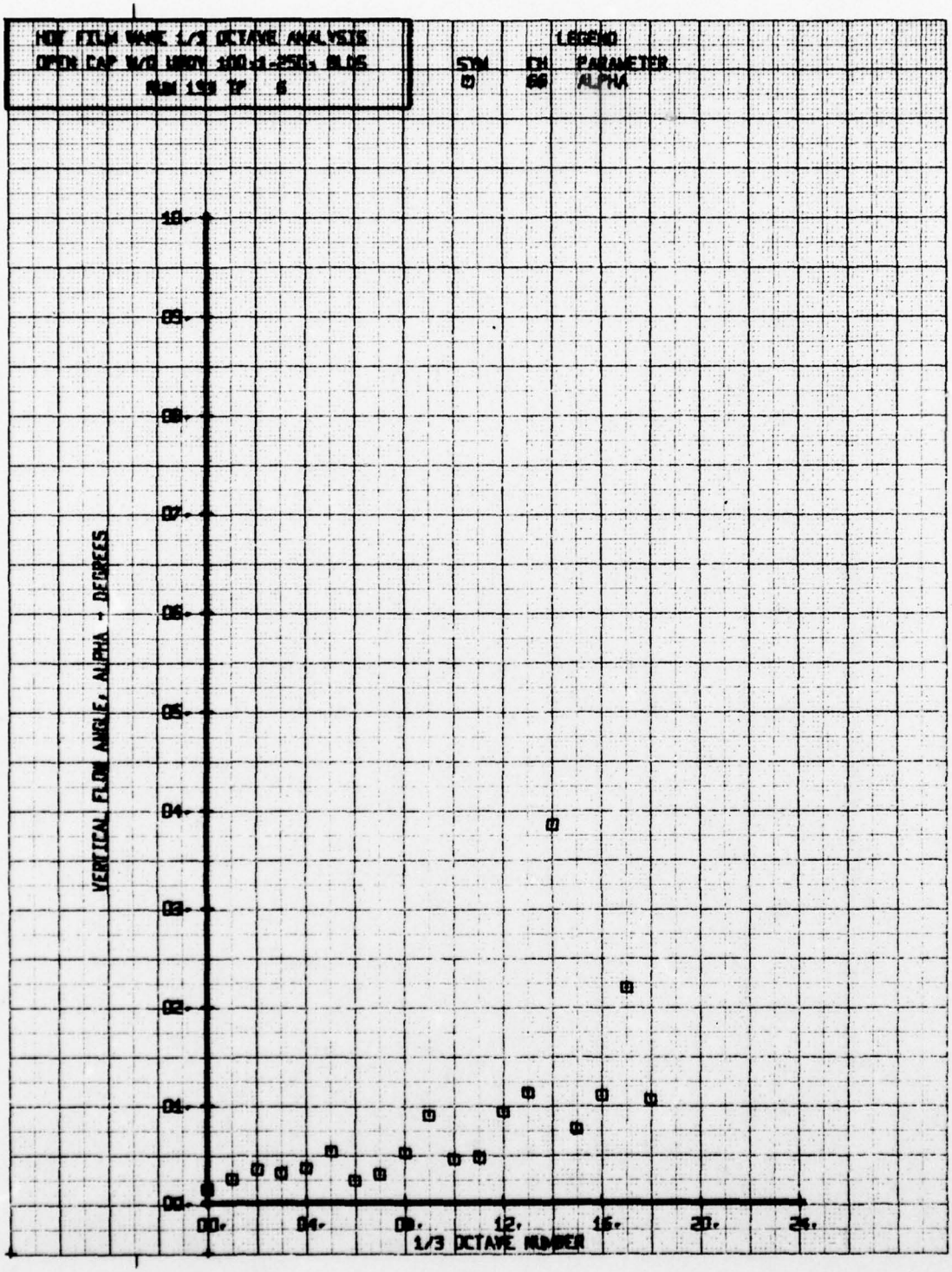
| BAND NUMBER | BAND WIDTH - Hz | | |
|---|---|---|---|
| | MINIMUM | CENTER | MAXIMUM |
| 0 | 3.5 | 3.4 | 4.4 |
| 1 | 4.4 | 4.9 | 5.5 |
| 2 | 5.5 | 6.2 | 7.0 |
| 3 | 7.0 | 7.8 | 8.7 |
| 4 | 8.7 | 9.8 | 11.0 |
| 5 | 11.0 | 12.4 | 13.9 |
| 6 | 13.4 | 15.6 | 17.5 |
| 7 | 17.5 | 19.7 | 22.1 |
| 8 | 22.1 | 24.8 | 27.8 |
| 9 | 27.8 | 31.25 | 35.1 |
| 10 | 35.1 | 39.4 | 44.2 |
| 11 | 44.2 | 49.6 | 55.7 |
| 12 | 55.7 | 62.5 | 70.2 |
| 13 | 70.2 | 78.7 | 88.9 |
| 14 | 88.9 | 99.2 | 111.4 |
| 15 | 111.4 | 125.0 | 140.3 |
| 16 | 140.3 | 157.5 | 176.8 |
| 17 | 176.8 | 198.4 | 222.7 |
| 18 | 222.7 | 250.0 | 280.6 |

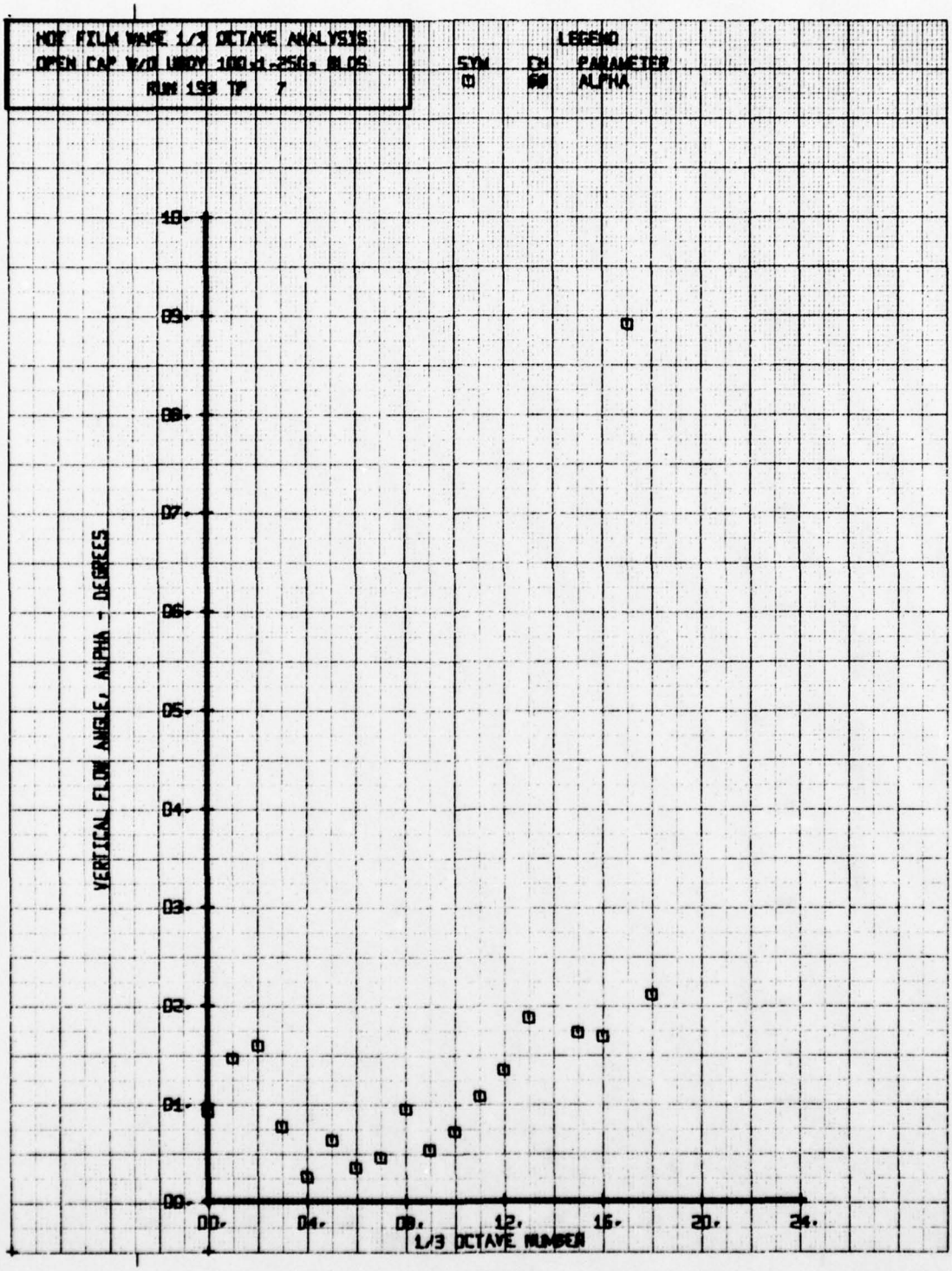

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100x1-256, BLOS
RUN 150 TP 2
LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

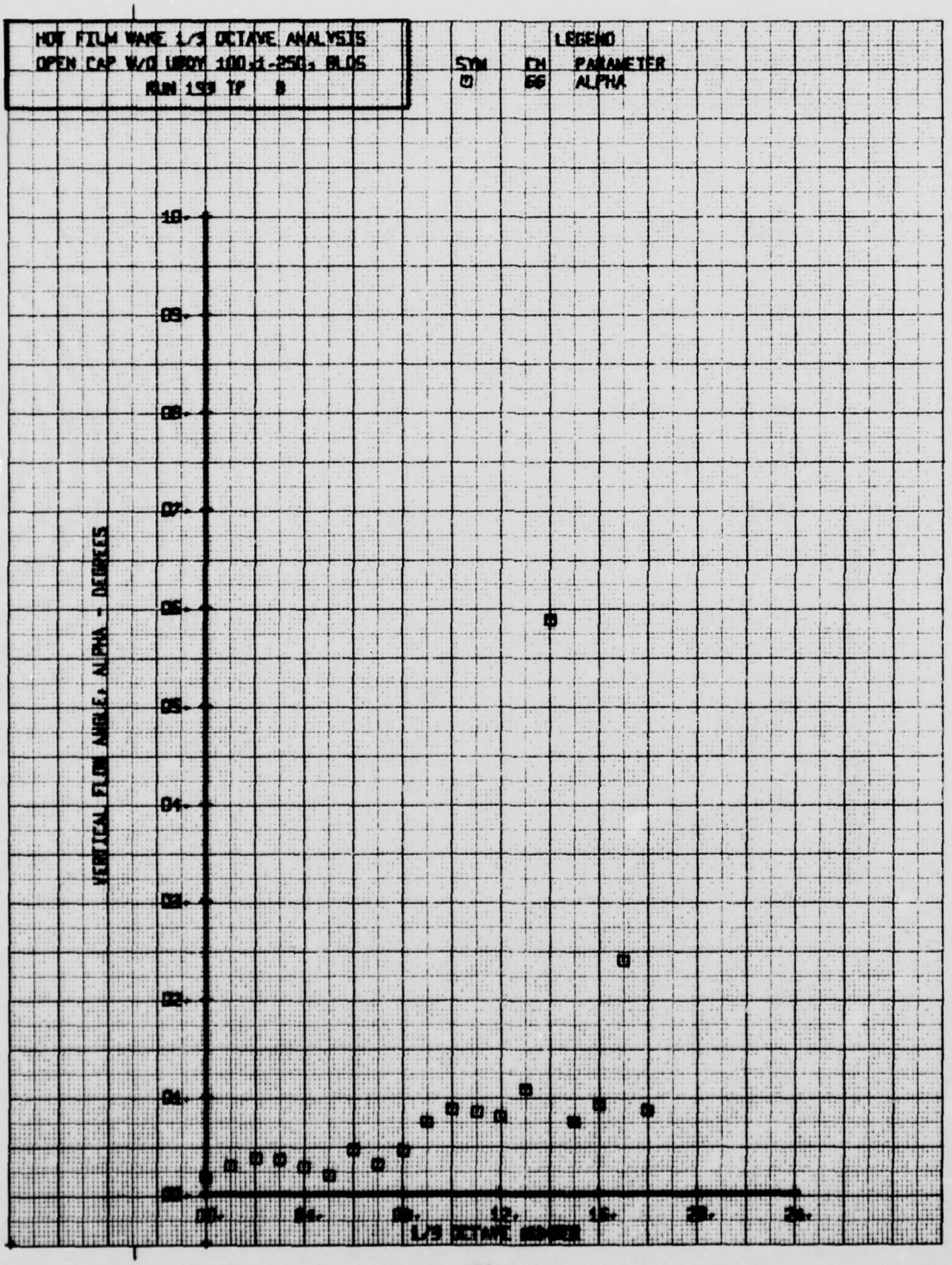

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

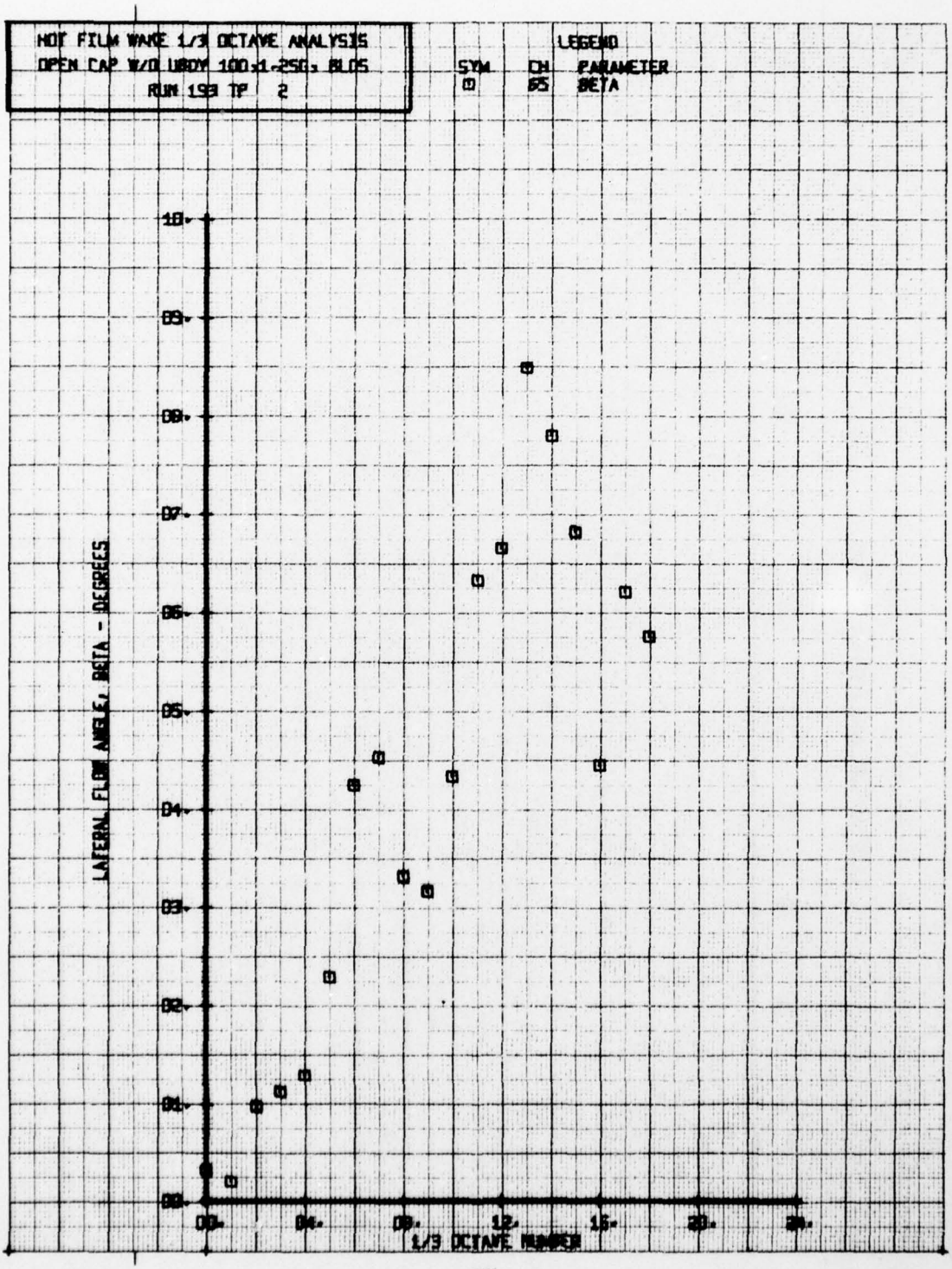

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDV 100x1-250x BLDS
RUN 139 TP 4
LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

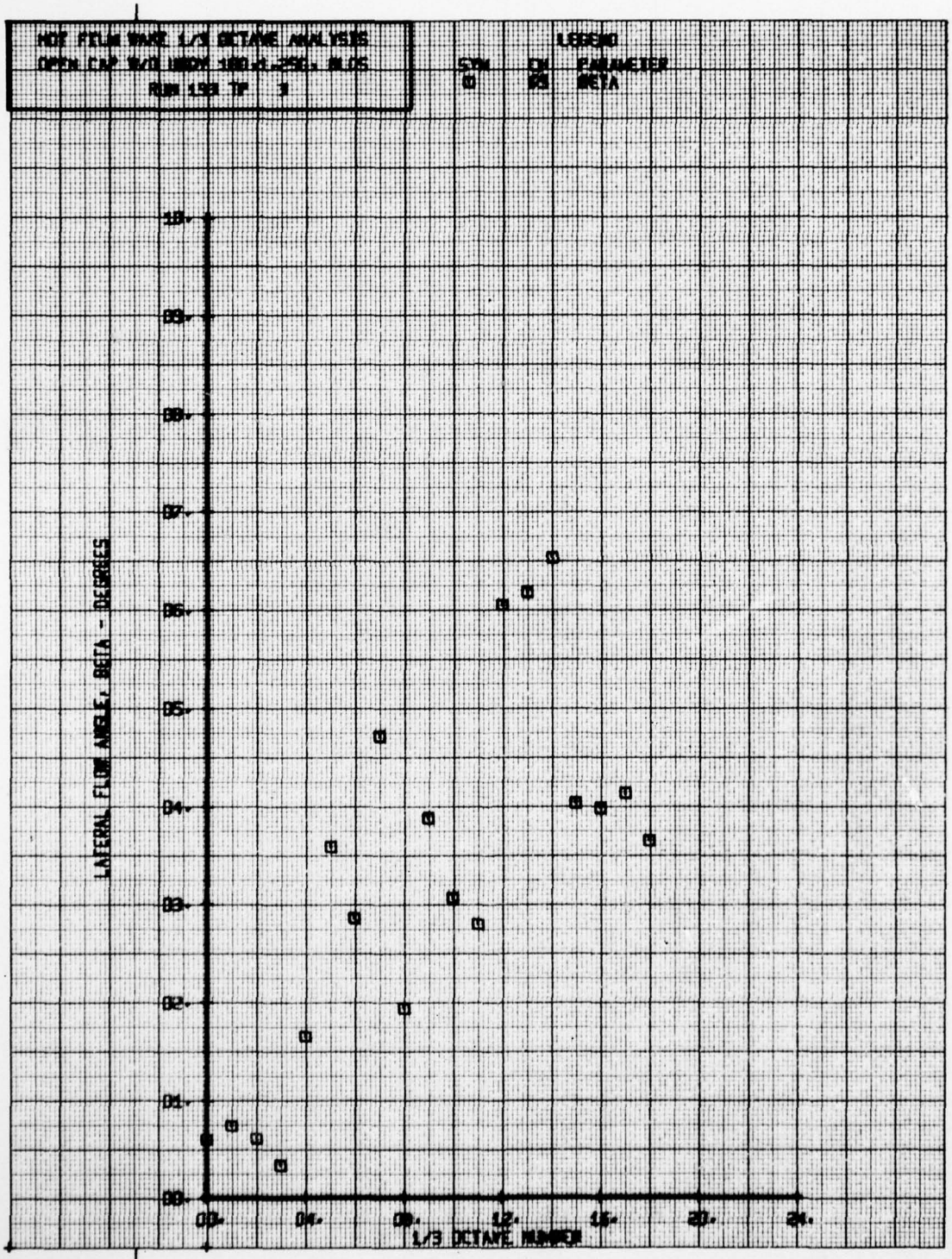

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 100x1.25G, BLDS
RUN 159 TP 5
LEGEND
SYM CM PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

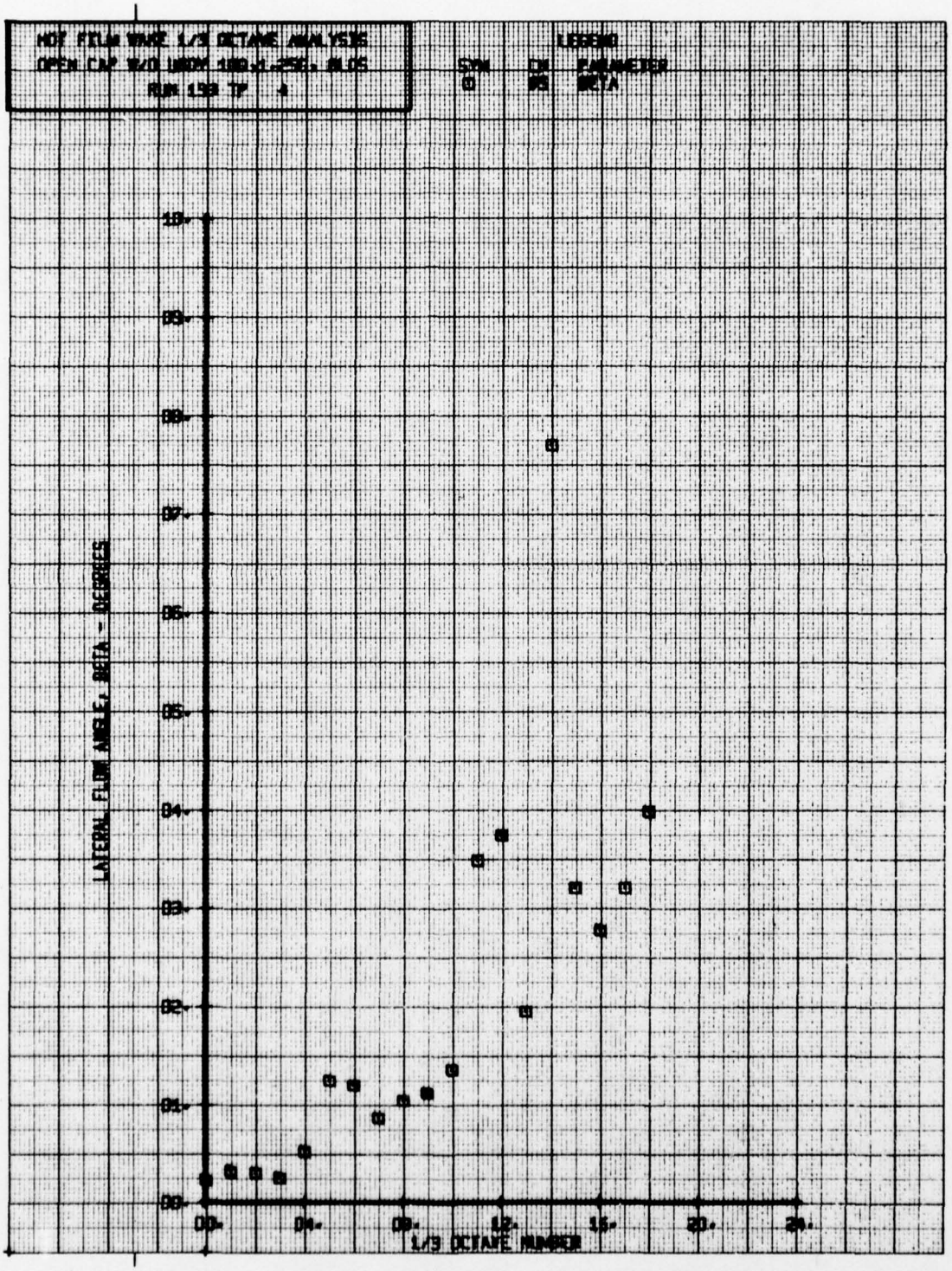

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDV 100:1-250: BLDS
RUN 193 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

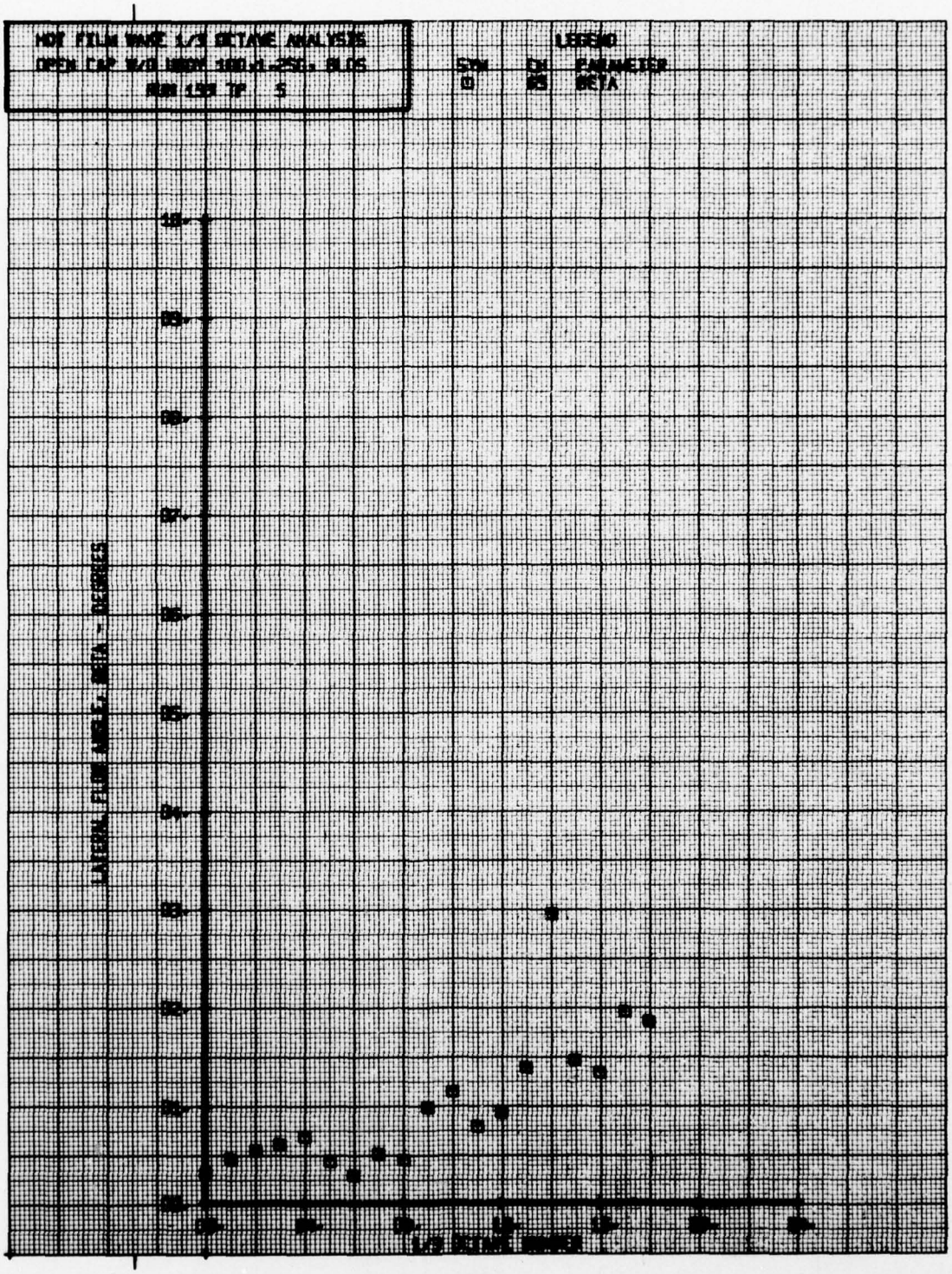

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,1-250, BLDS
RUN 193 TP 7
LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

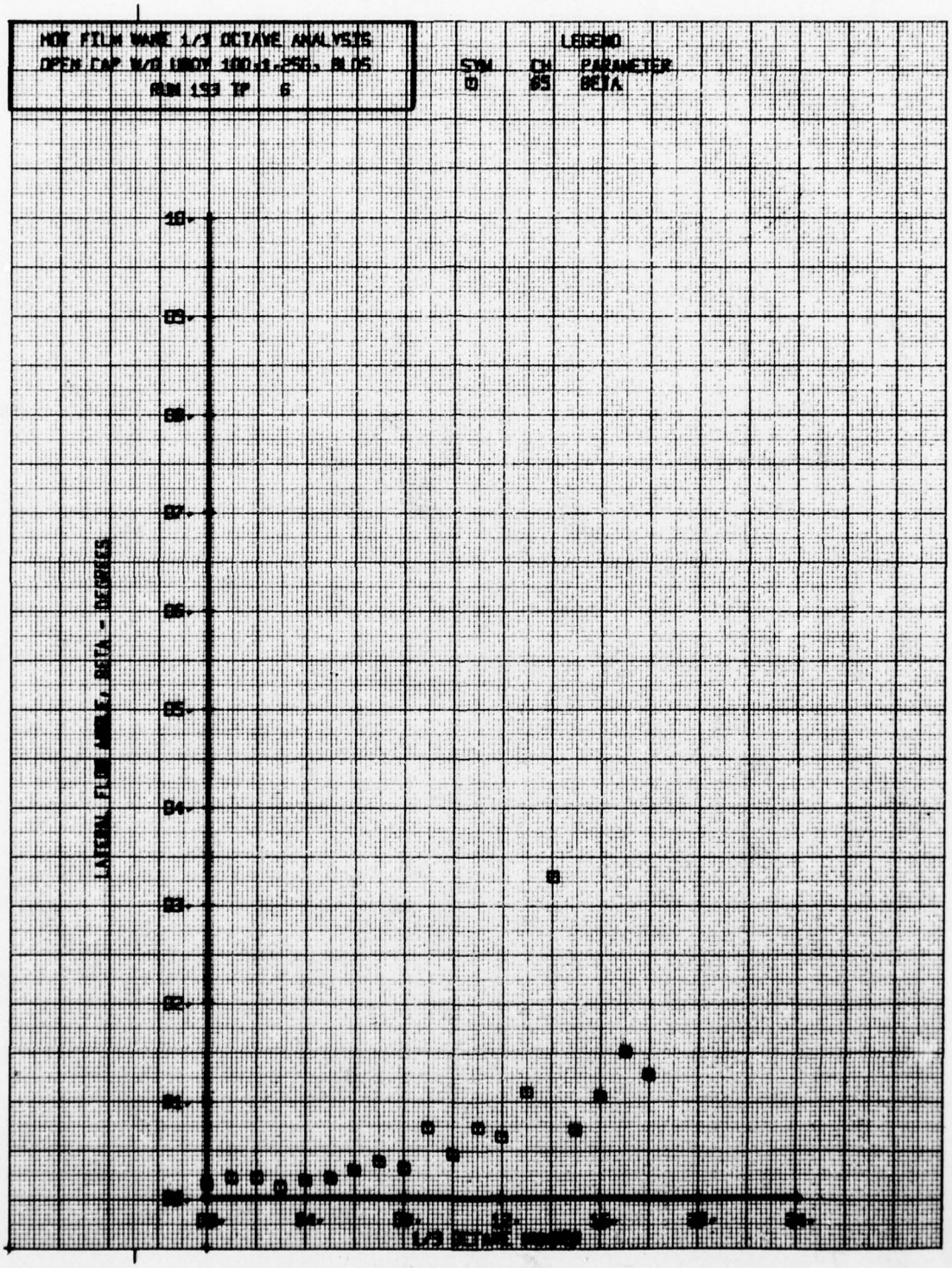

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UROM 100,1-250, BLDS
RUN 153 TP 8
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE

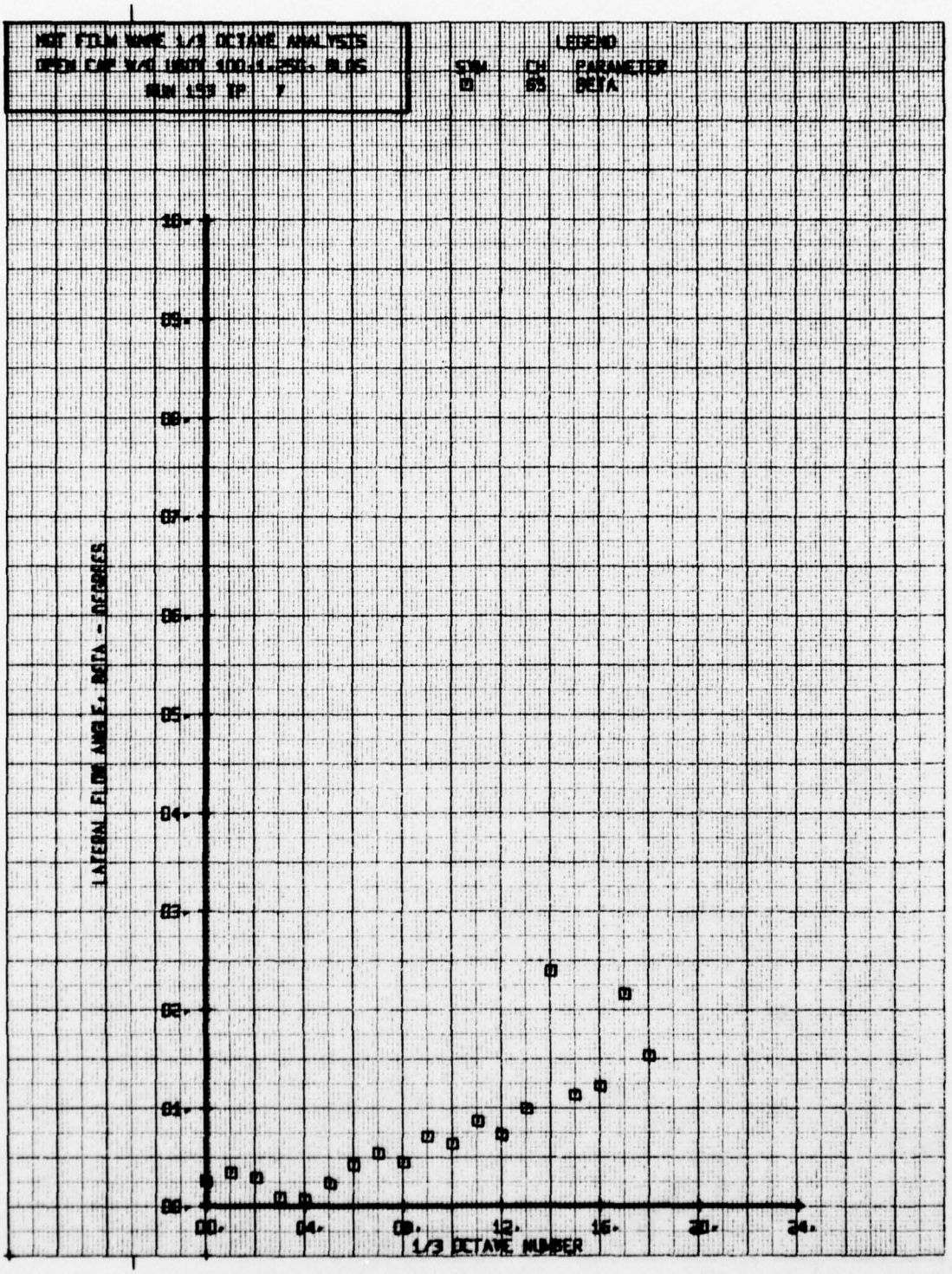

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 100,1.25G, BLDS
RUN 193 TP 2
LEGEND
SYM CH PARAMETER
0 65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

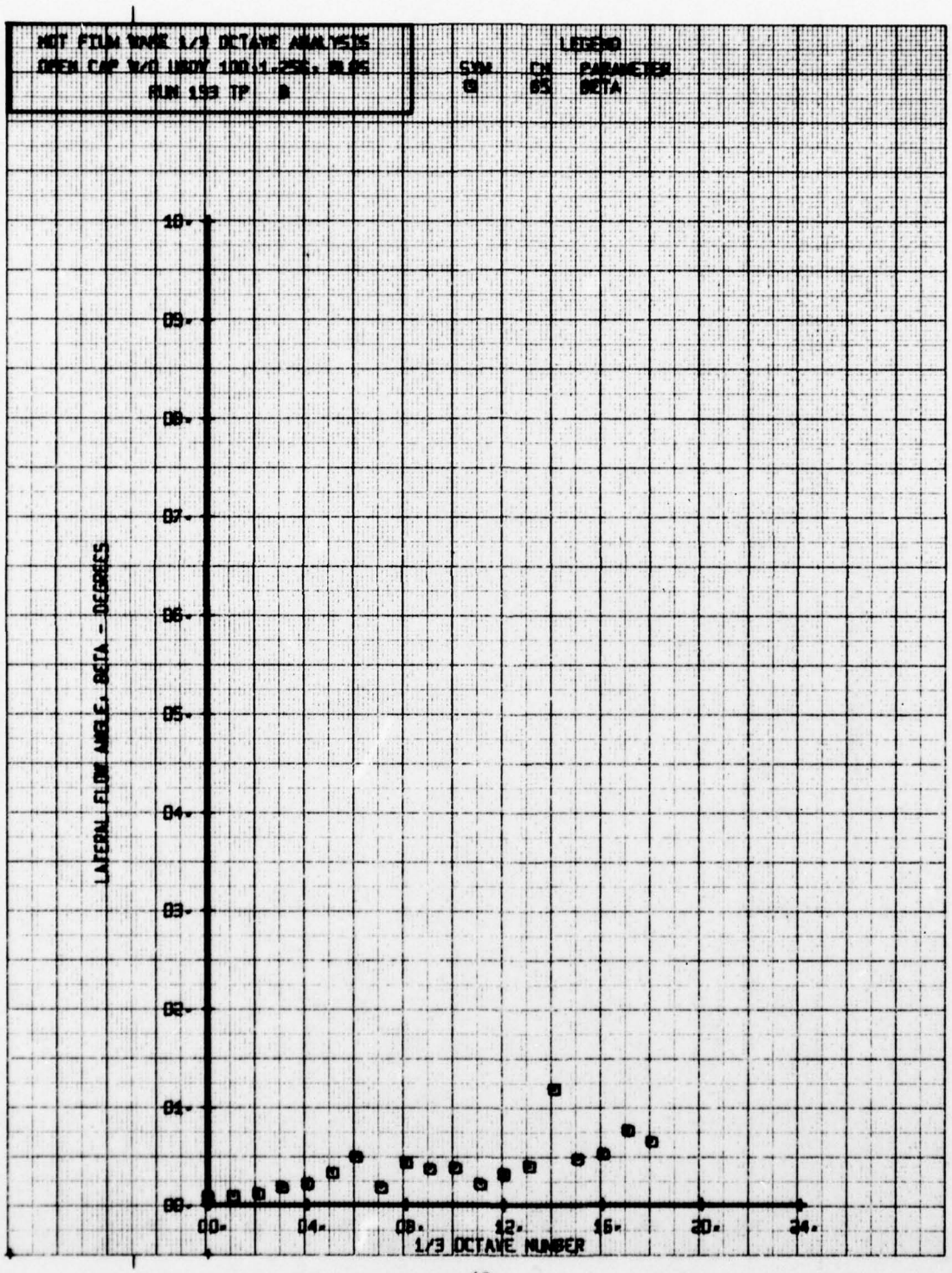

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
LEGEND
SYM CH PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

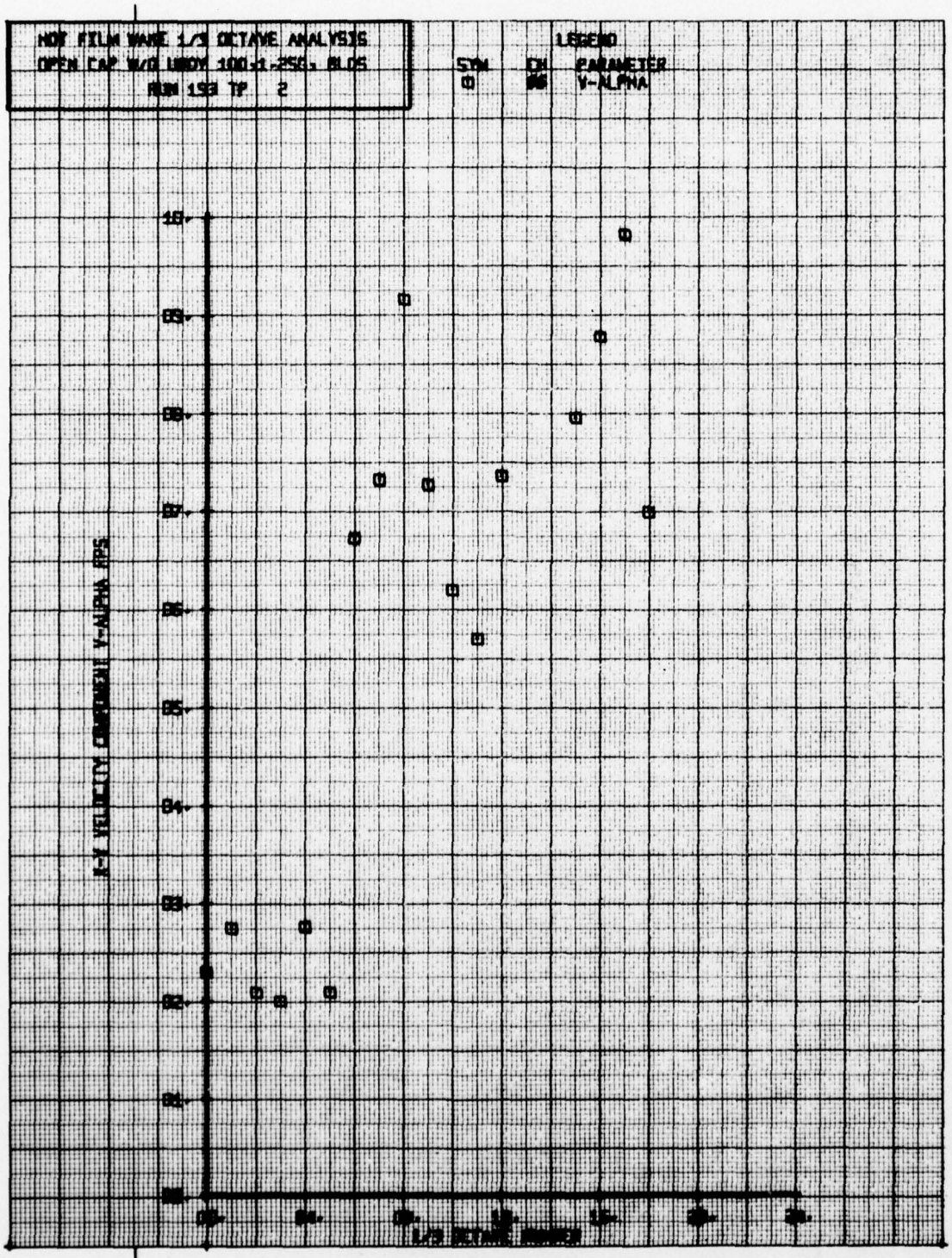

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,1.25G, BLDS
RUN 138 TP 4
LEGEND
SYM CH PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

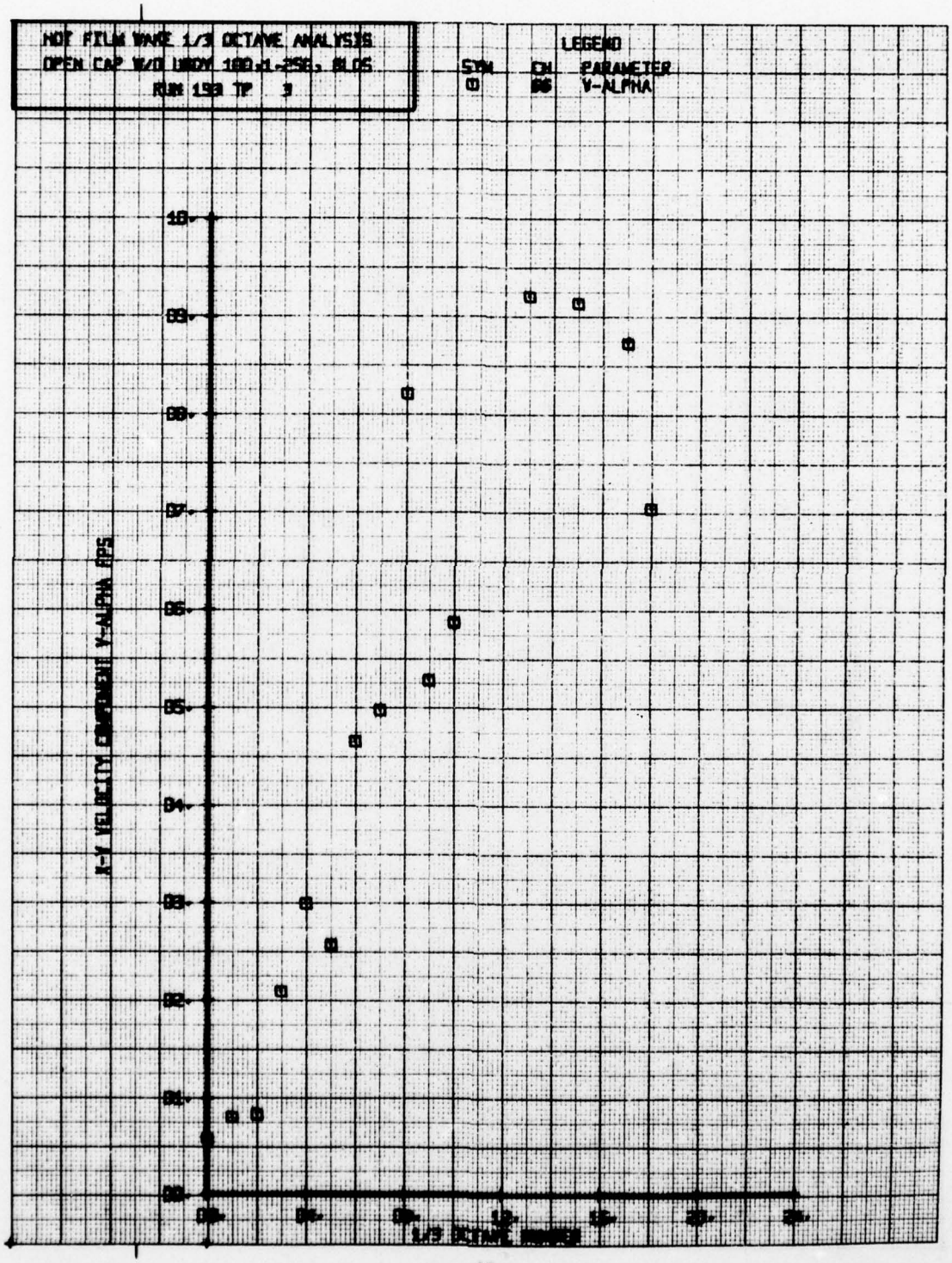

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
LEGEND
SYM CH PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES

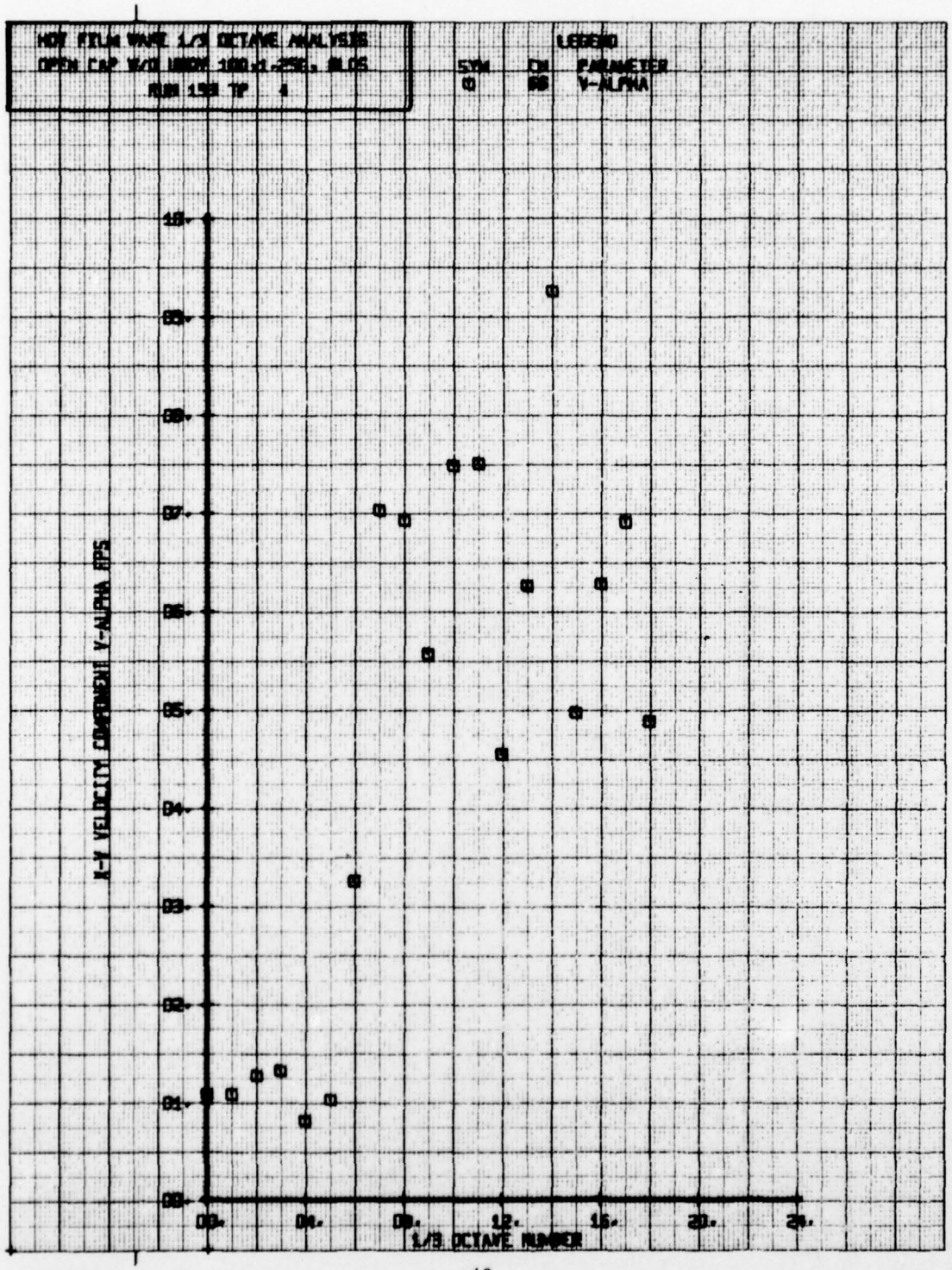

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,1-250, BLDS
RUN 193 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

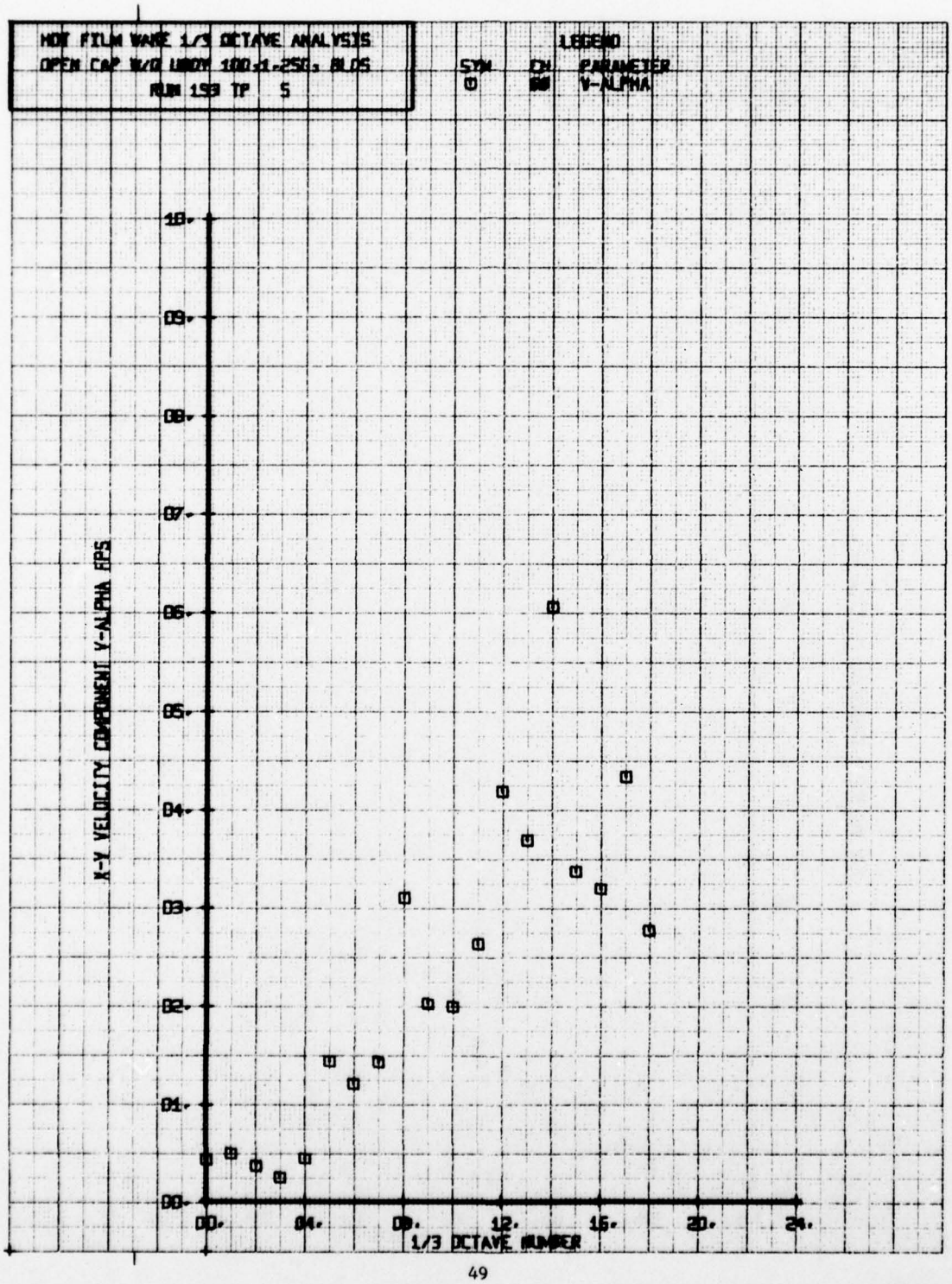

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100:1-250: BLDS
RUN 153 TP 7
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

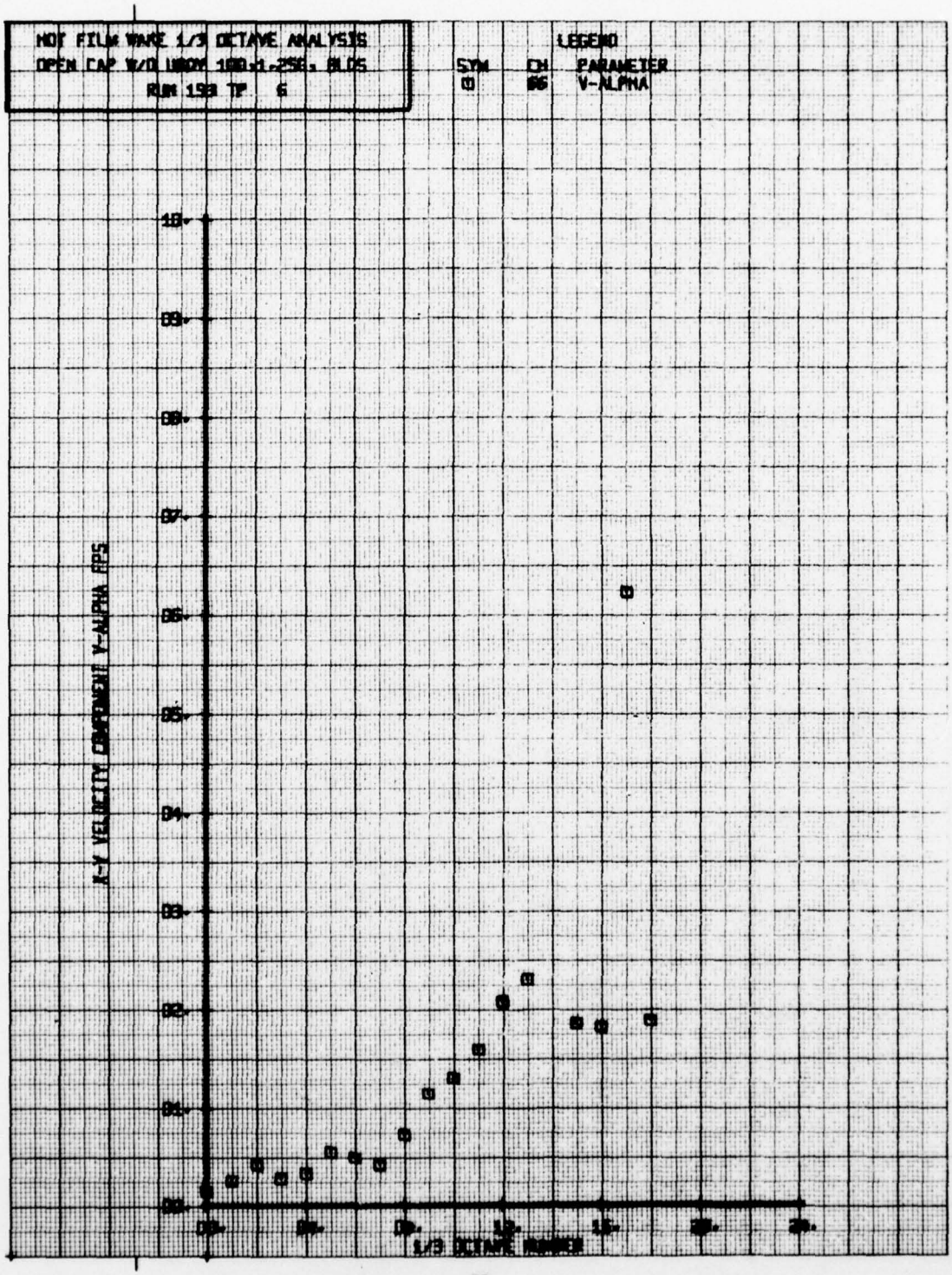

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100,1.25G, BLDS
RUN 193 TP B
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

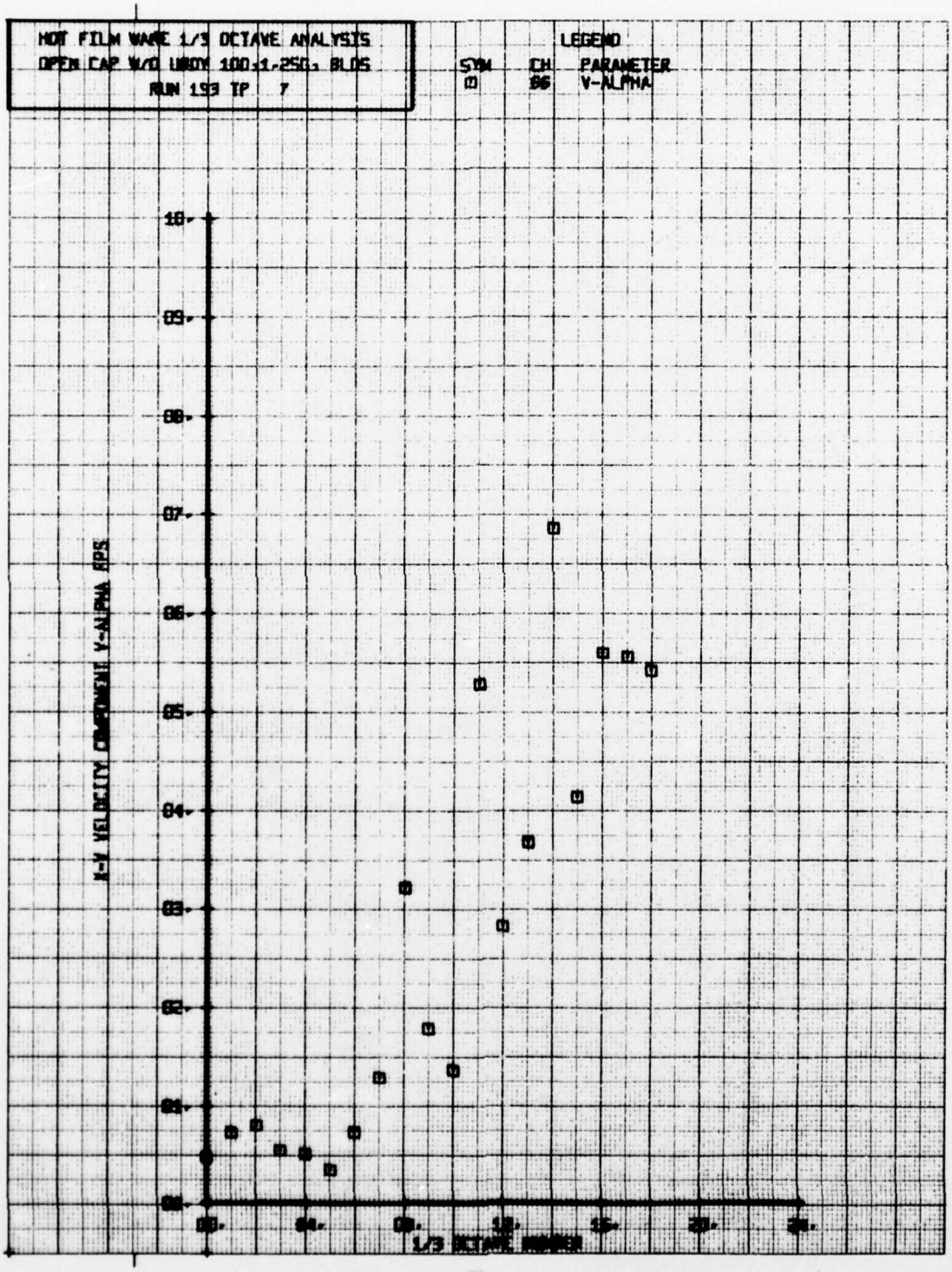

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,1-250, BLDS
RUN 153 TP 2
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA RPS
1/3 OCTAVE NUMBER

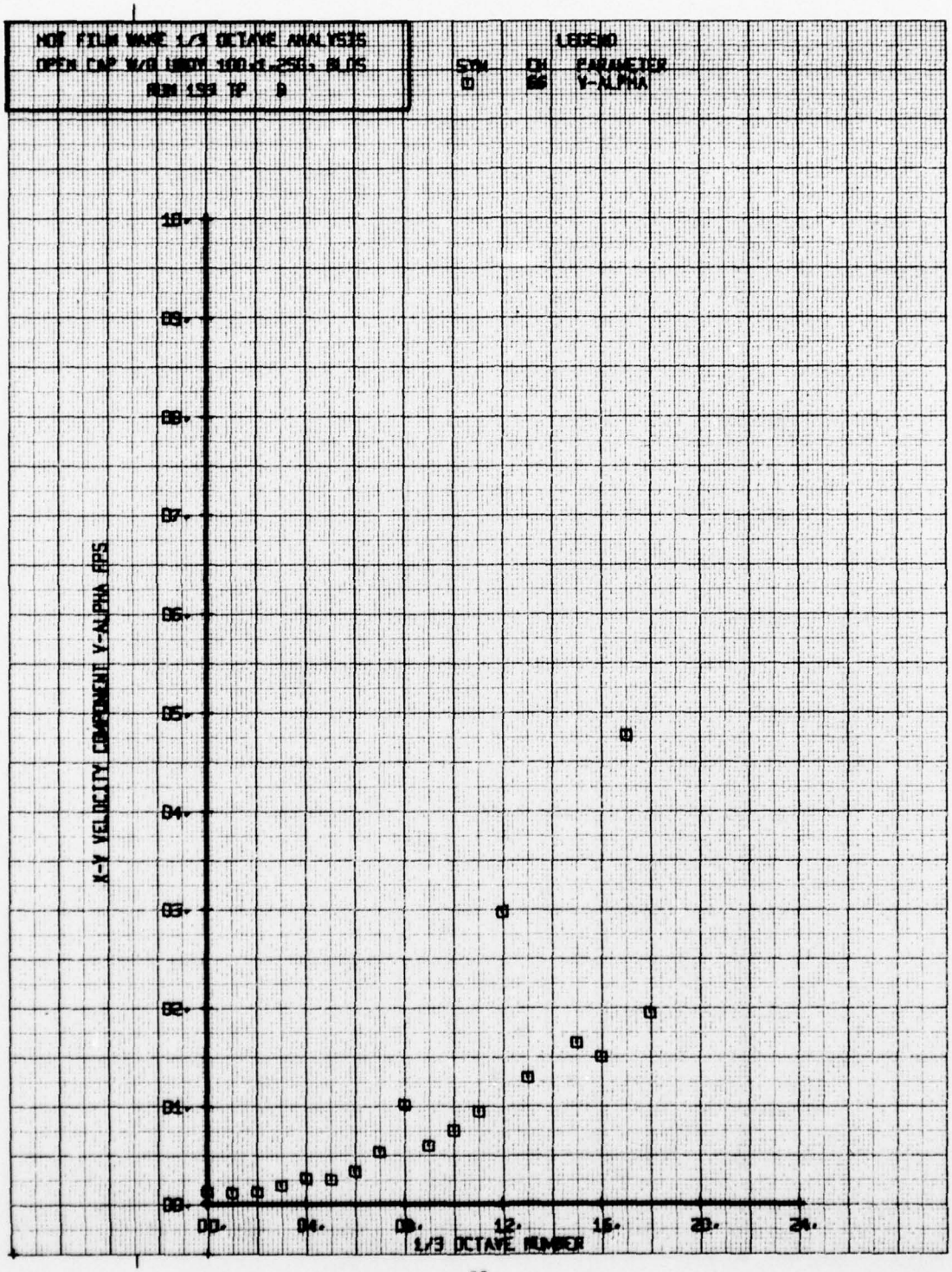

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,1-25G, BLDS
RUN 193 TP 3
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

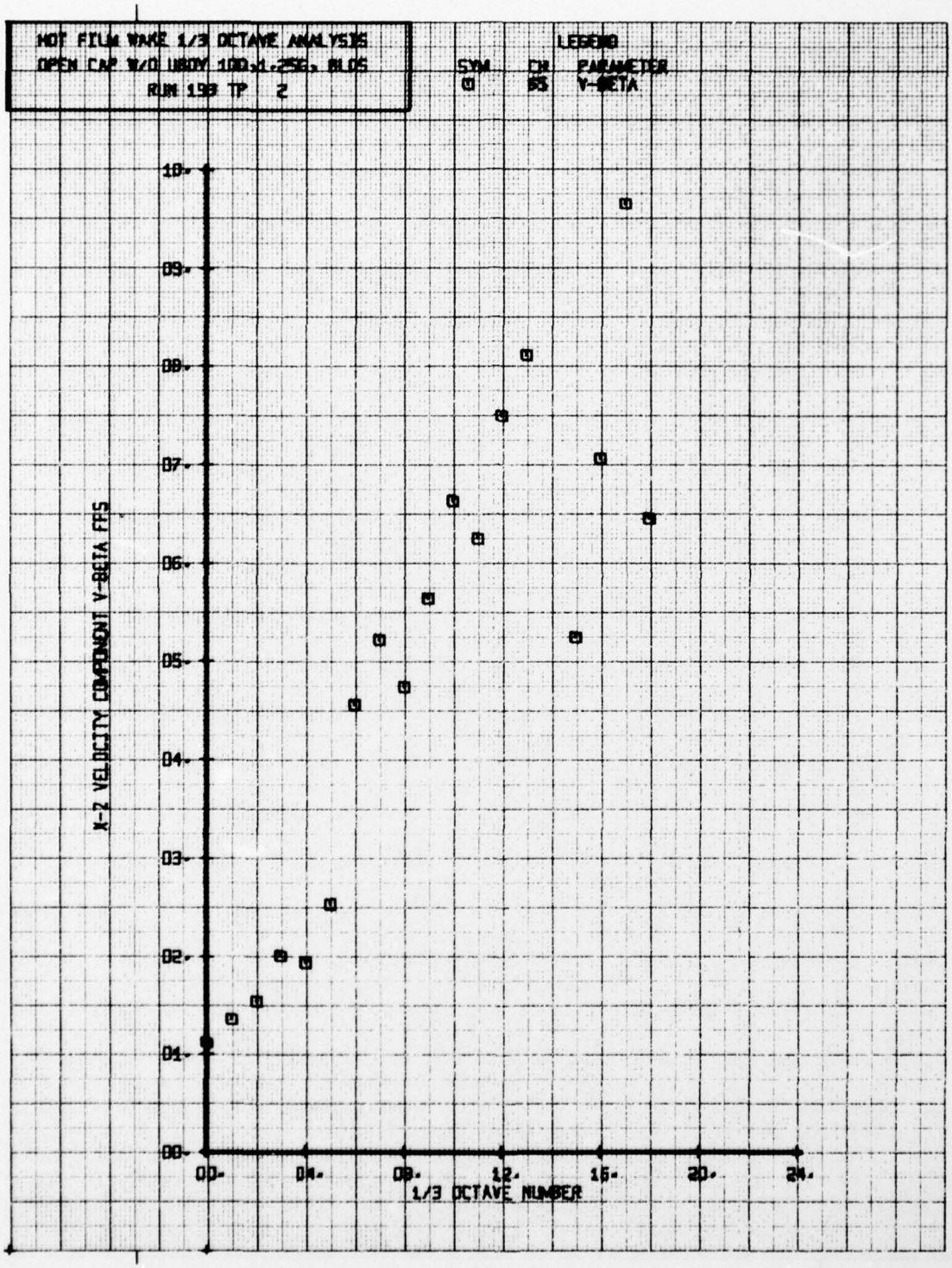

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

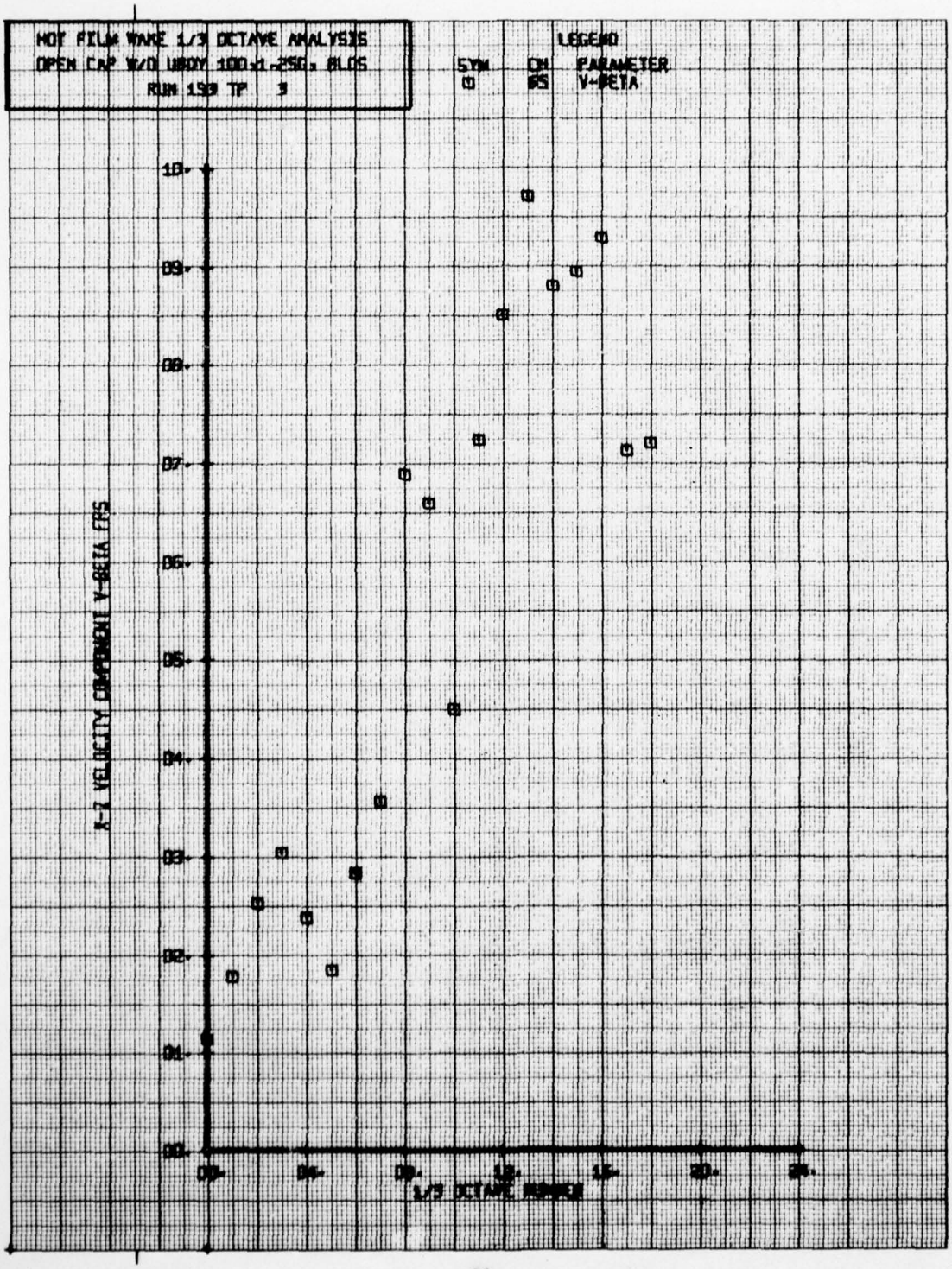

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDM 100x1.25G, BLDS
RUN 153 TP 5
LEGEND
SYM CH PARAMETER
0 00 V-ALPHA
X-V VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

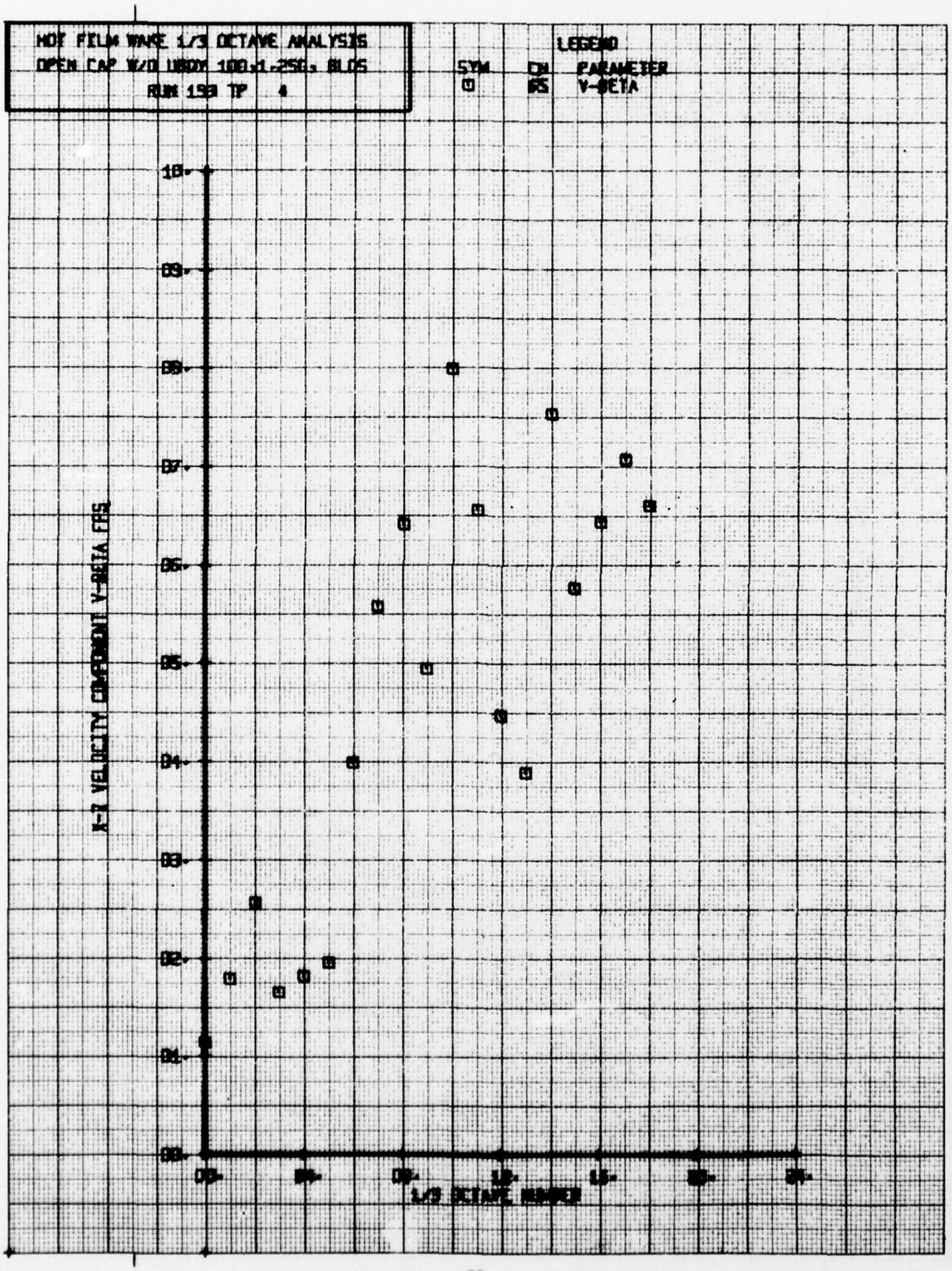

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,1.25G, BLDS
RUN 193 TP 6
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

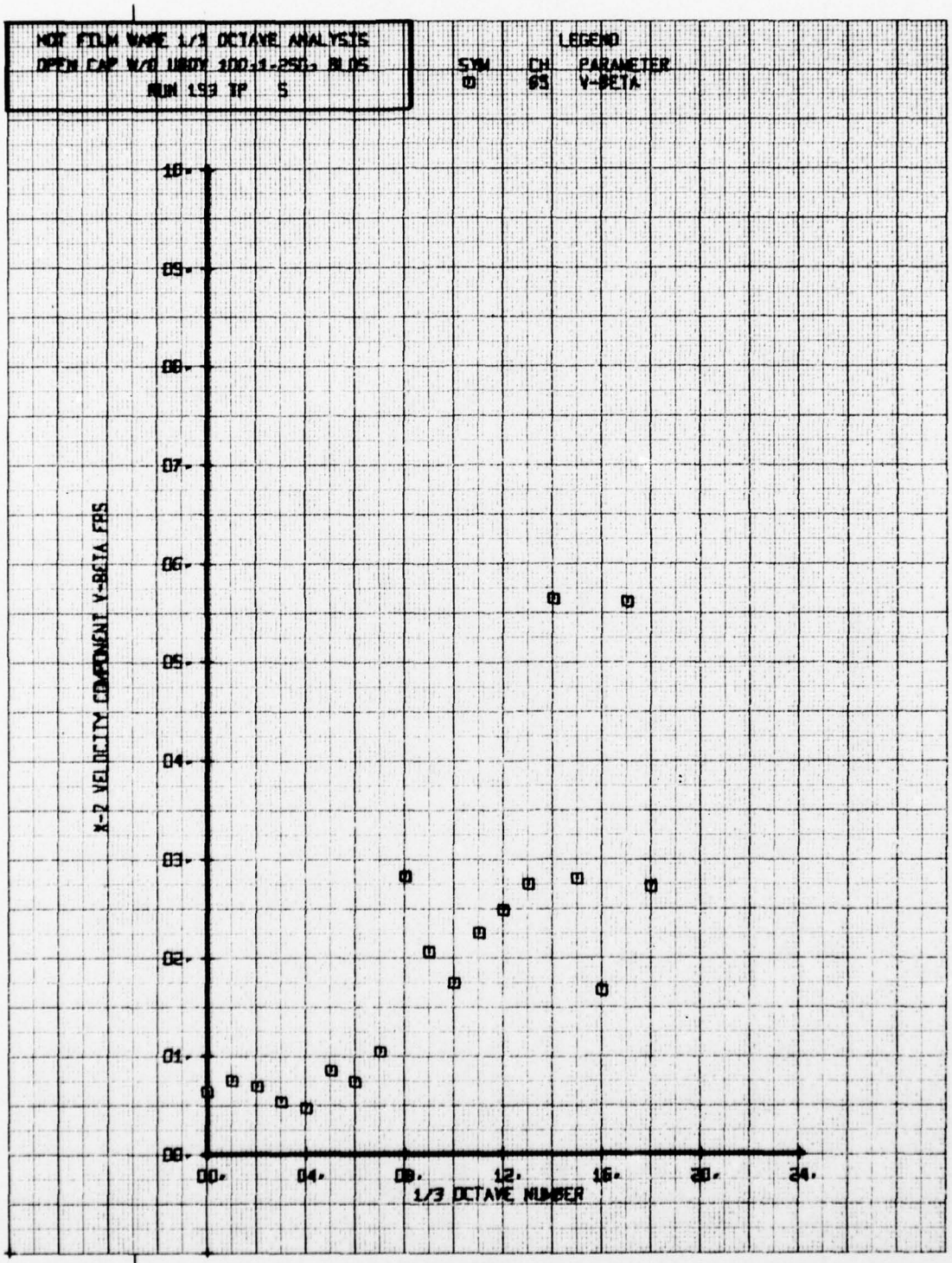

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 100:1,250, BLDS
RUN 193 TP 7
LEGEND
SYM CH PARAMETER
86 V-ALPHA
18
09
08
07
06
05
04
03
02
01
00
04
08
12
16
20
24
U-V VELOCITY COMPONENT V-ALPHA RMS
1/3 OCTAVE NUMBER

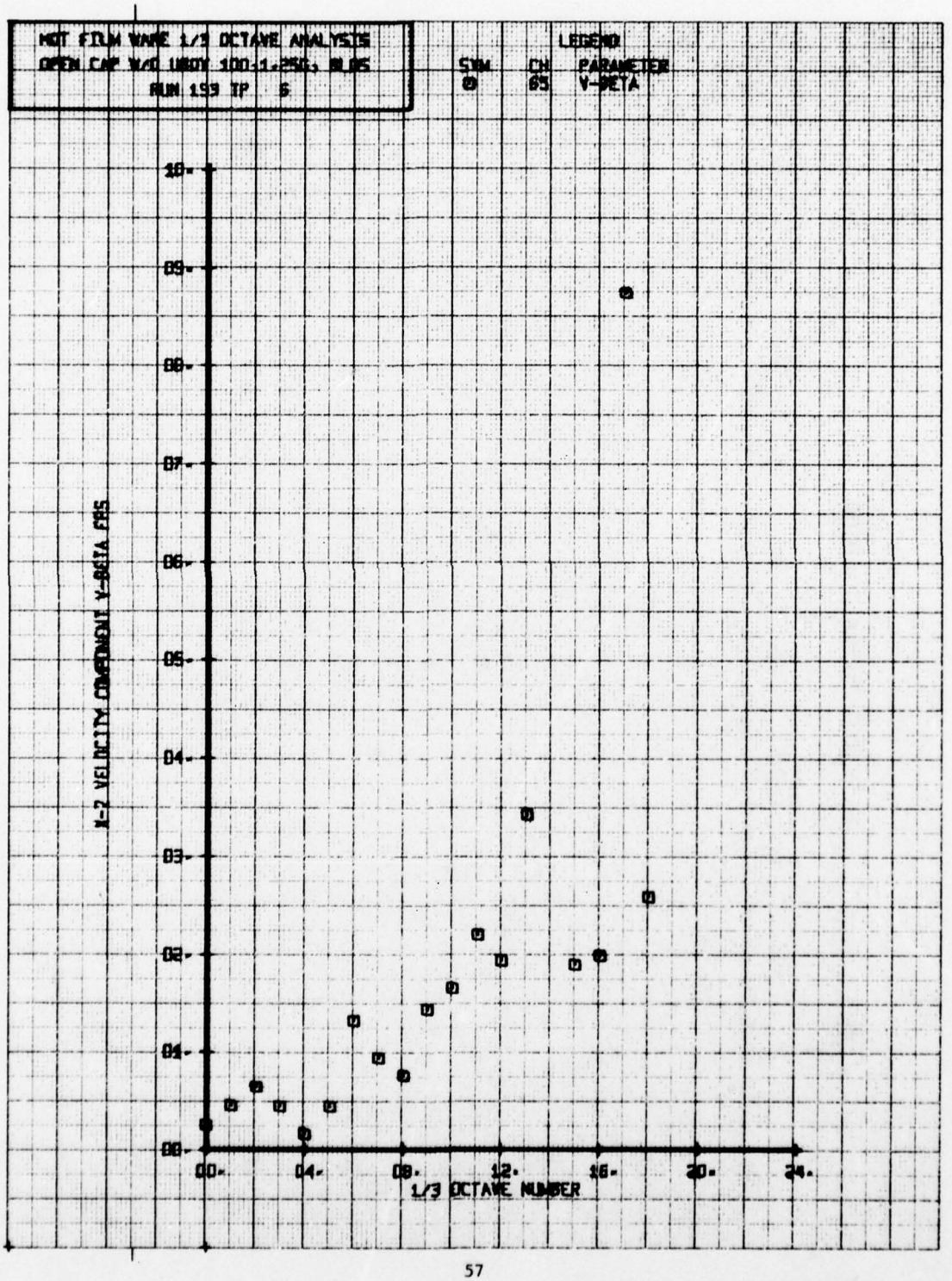

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDV 100:1.25G: BLDS
RUN 153 TP 9
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA RPS
1/3 OCTAVE NUMBER

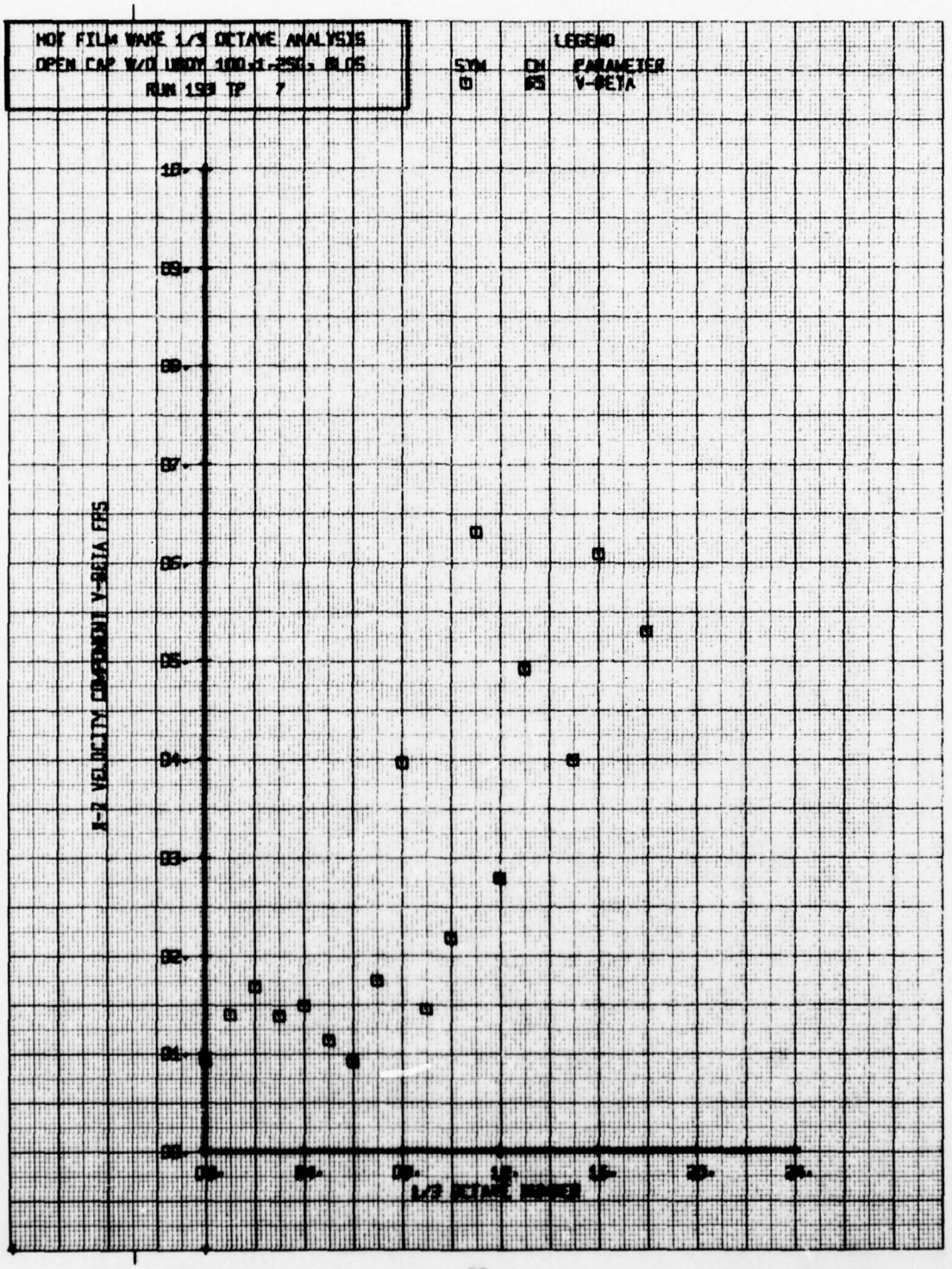

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100-1.25G, BLOS
RUN 193 TP 2
LEGEND
SYM CH PARAMETER
93 V-BETA
X-2 VELOCITY COMPONENT V-BETA FPS
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

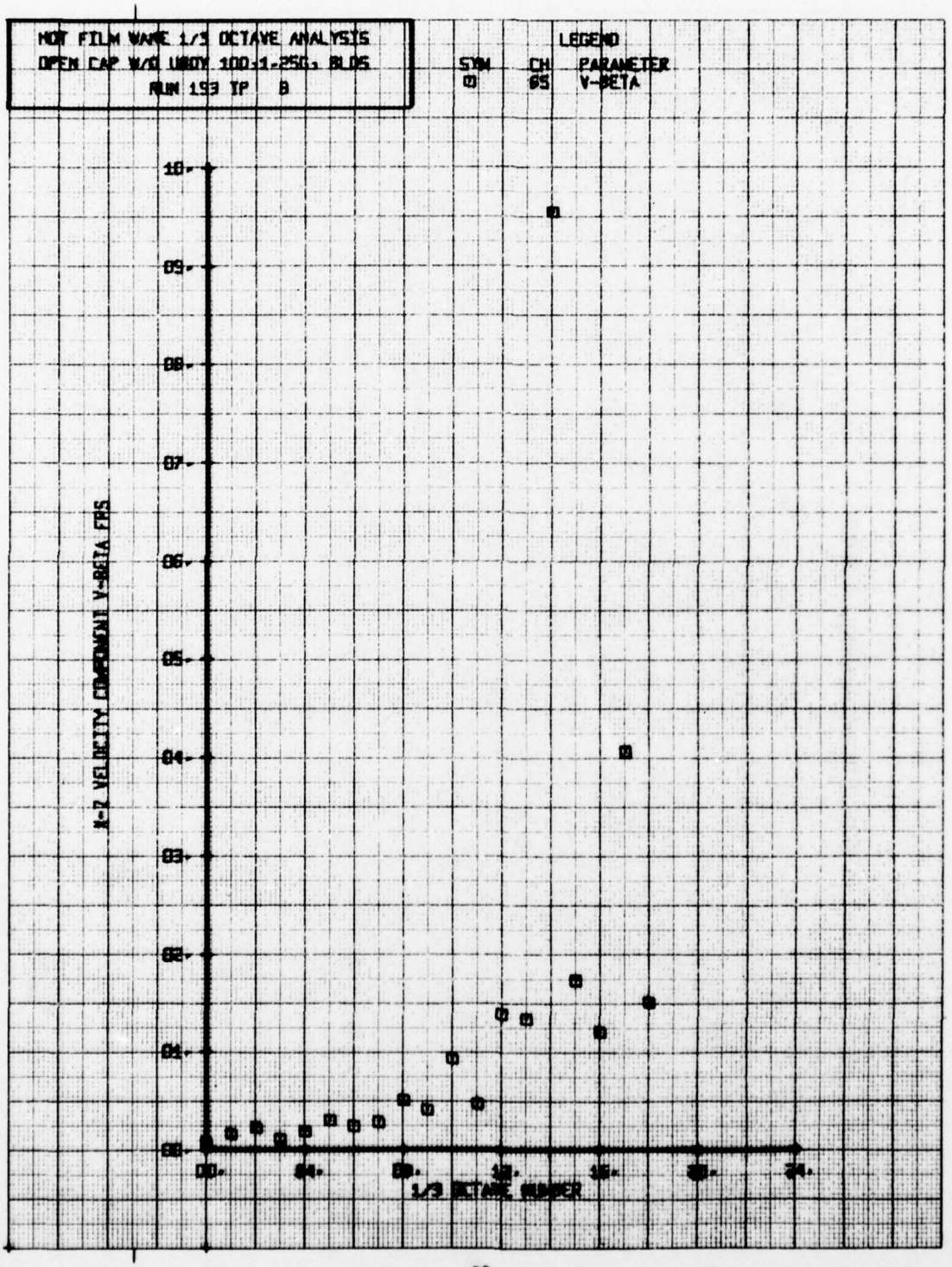

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 100-1.25G, 8LOS
RUN 159 TP 3
LEGEND
SYM CH PARAMETER
85 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
05.
10.
15.
20.
25.
1/3 OCTAVE NUMBER

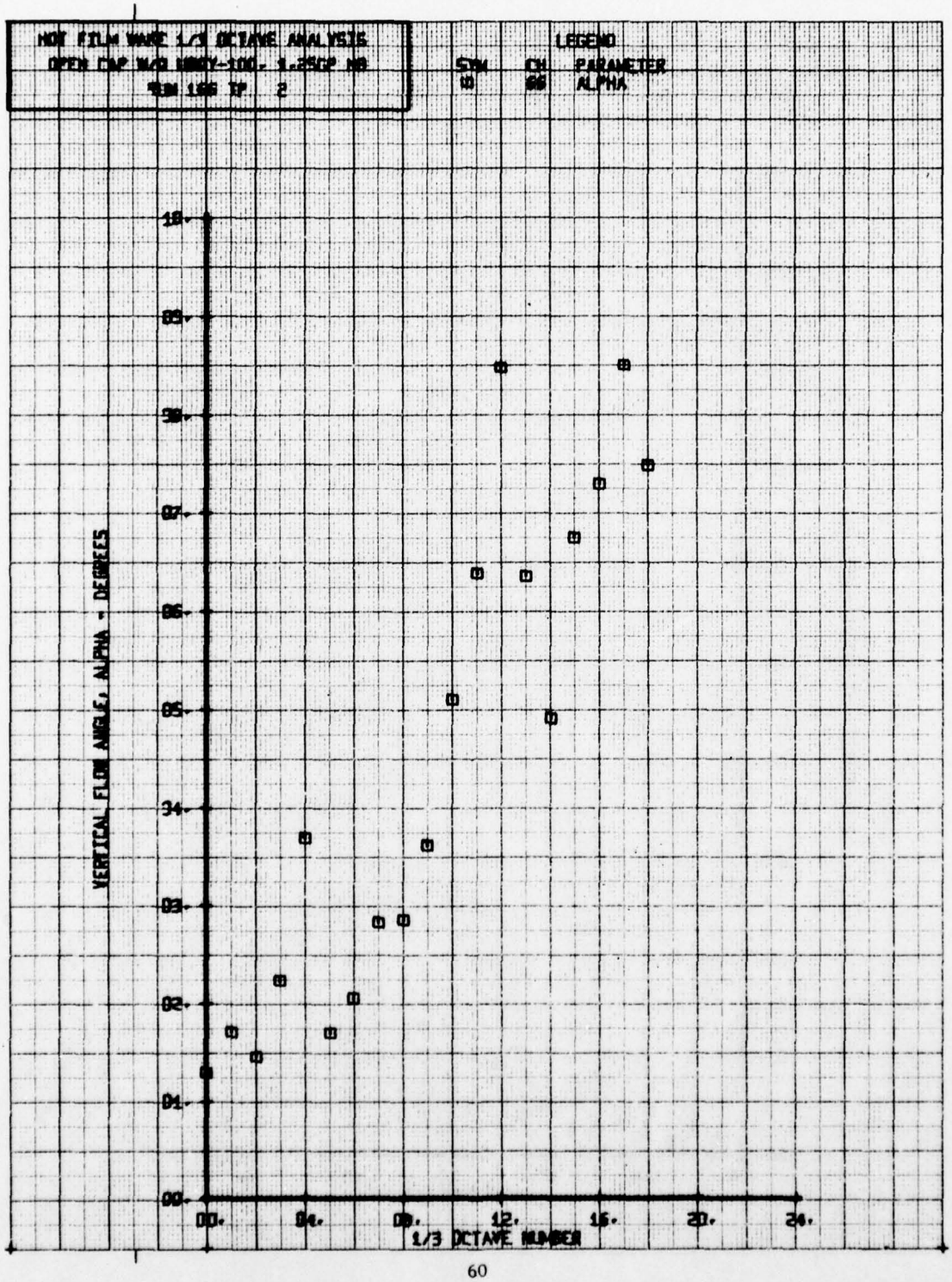

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 100,1.25D, BLDS
RUN 193 TP 4
LEGEND
SYM CH PARAMETER
0 05 V-BETA
X-I VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

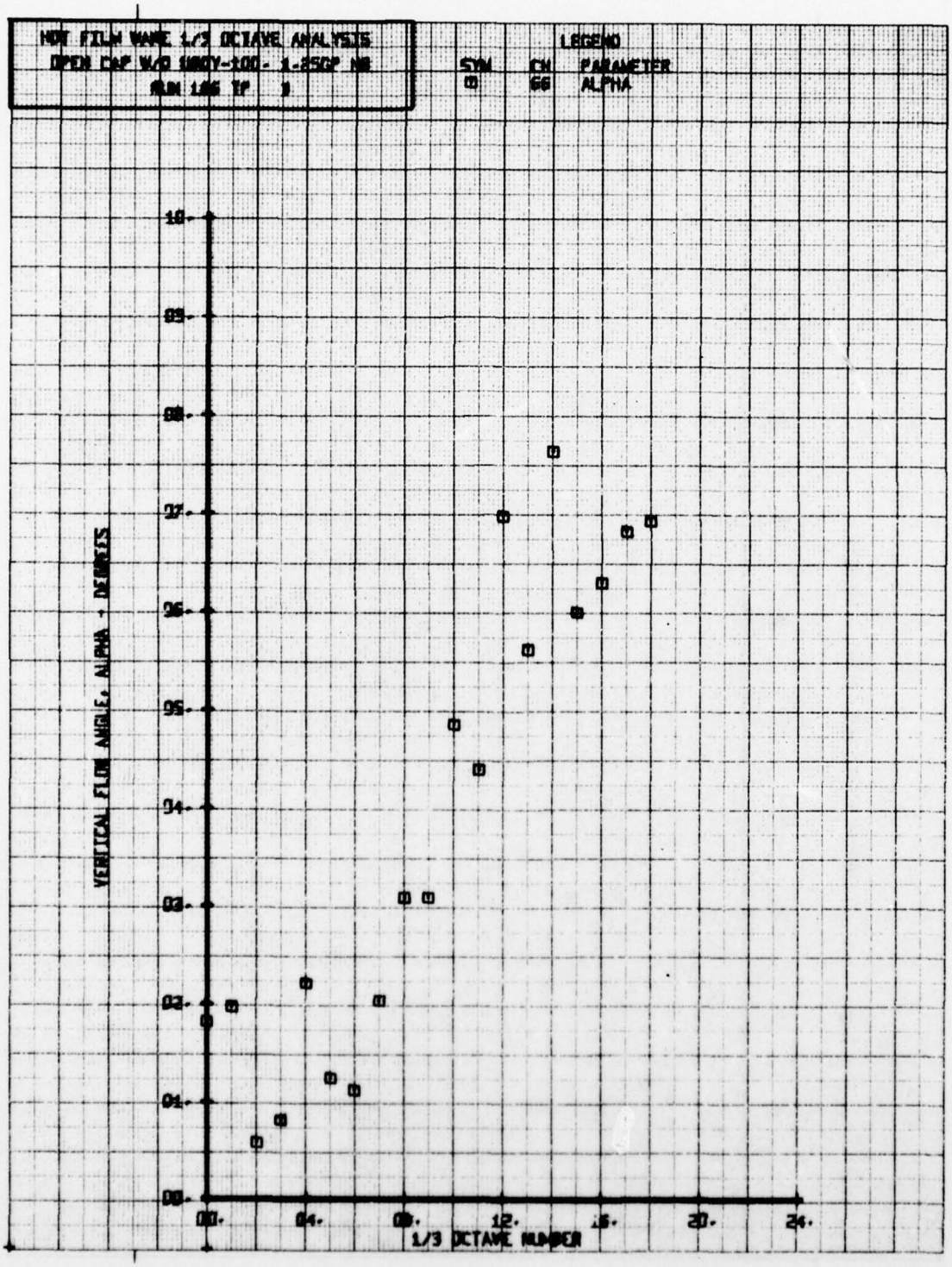

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 100-1-250-3 BLDS
RUN 193 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
X-2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.

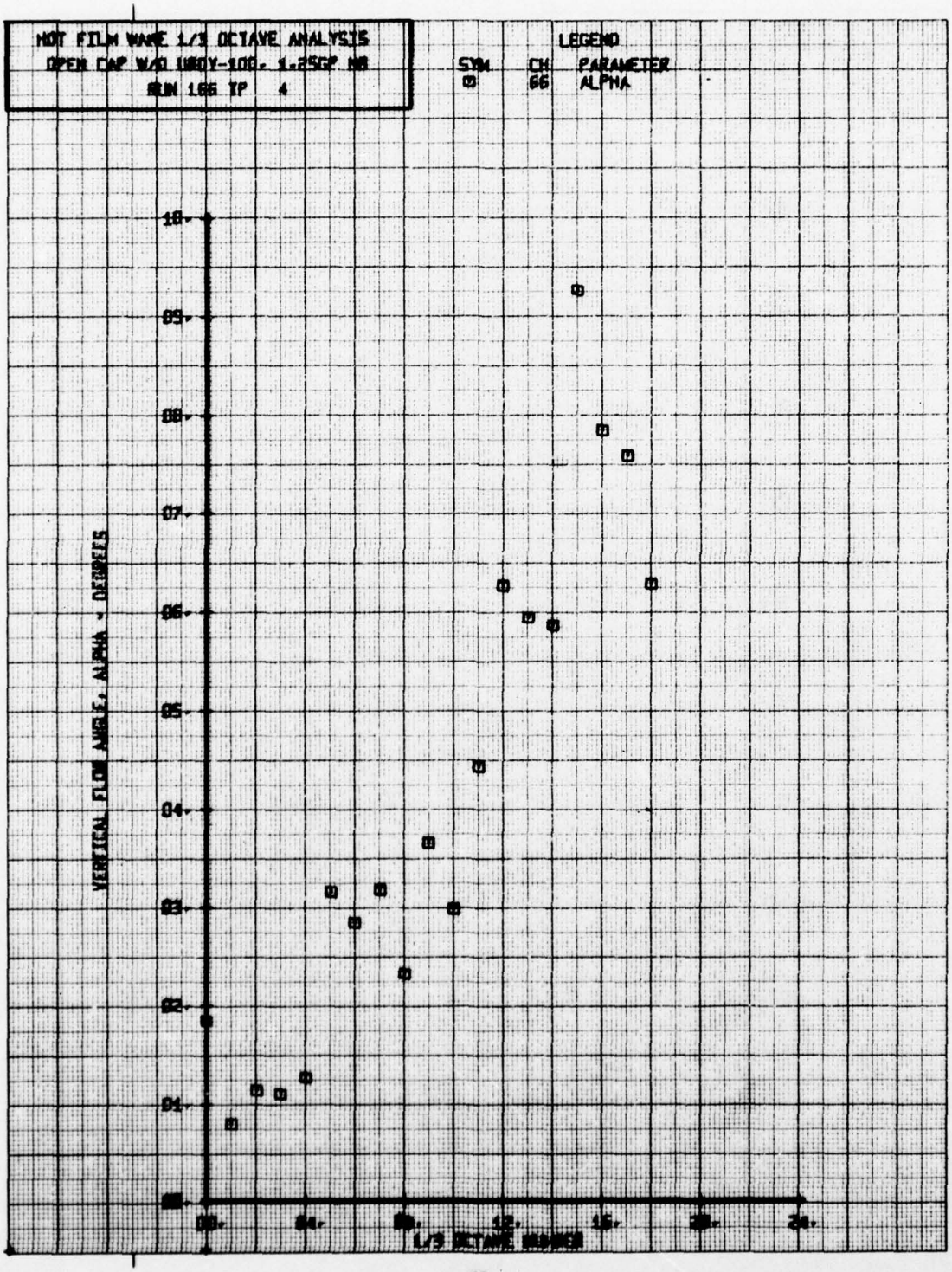

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 100-1.25G, BLDS
RUN 193 TP 6
LEGEND
SYM CH PARAMETER
0 65 V-BETA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
00- 04- 08- 12- 16- 20- 24.
1/3 OCTAVE NUMBER

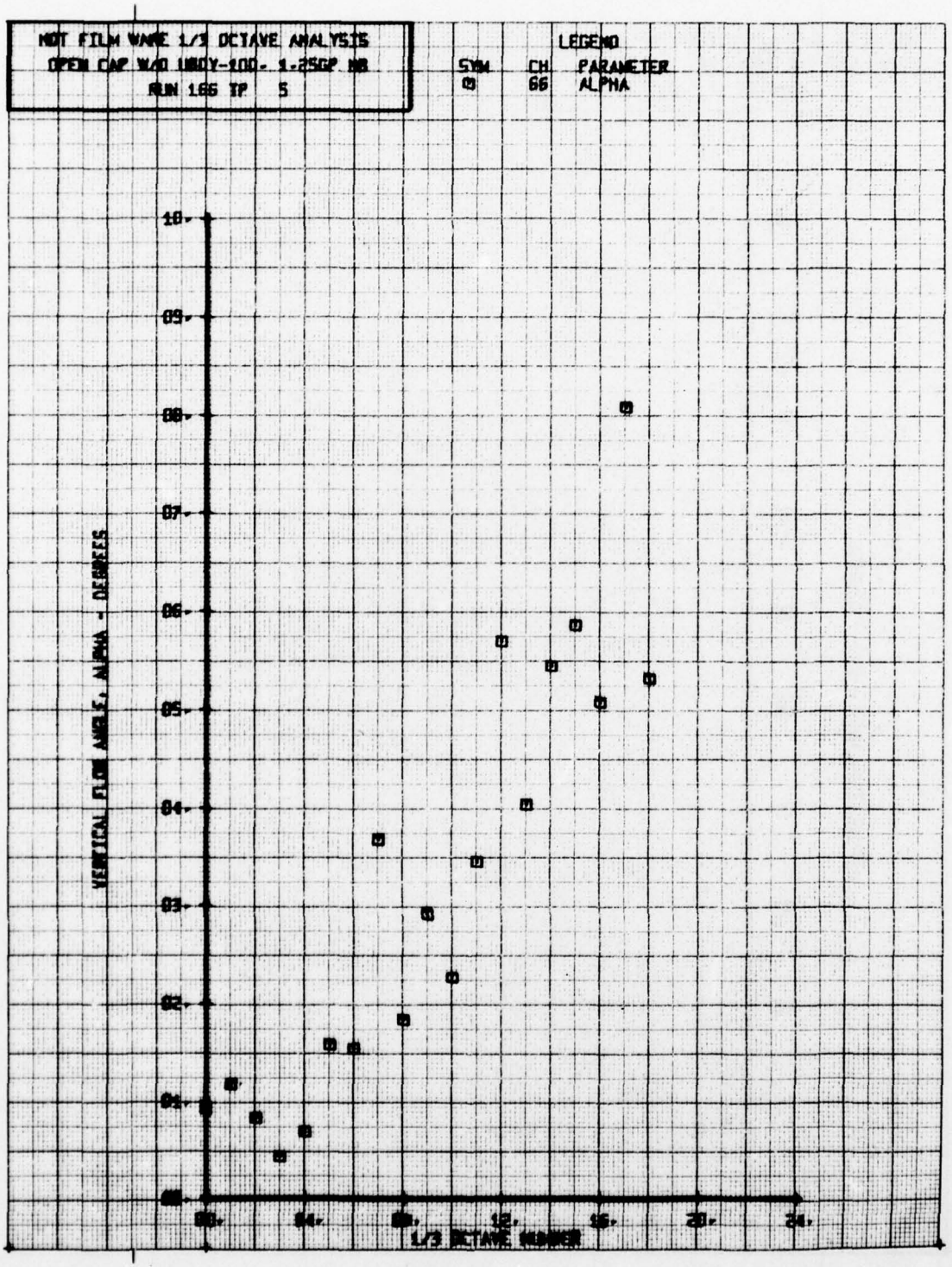

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100,1,250, BLDS
RUN 193 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

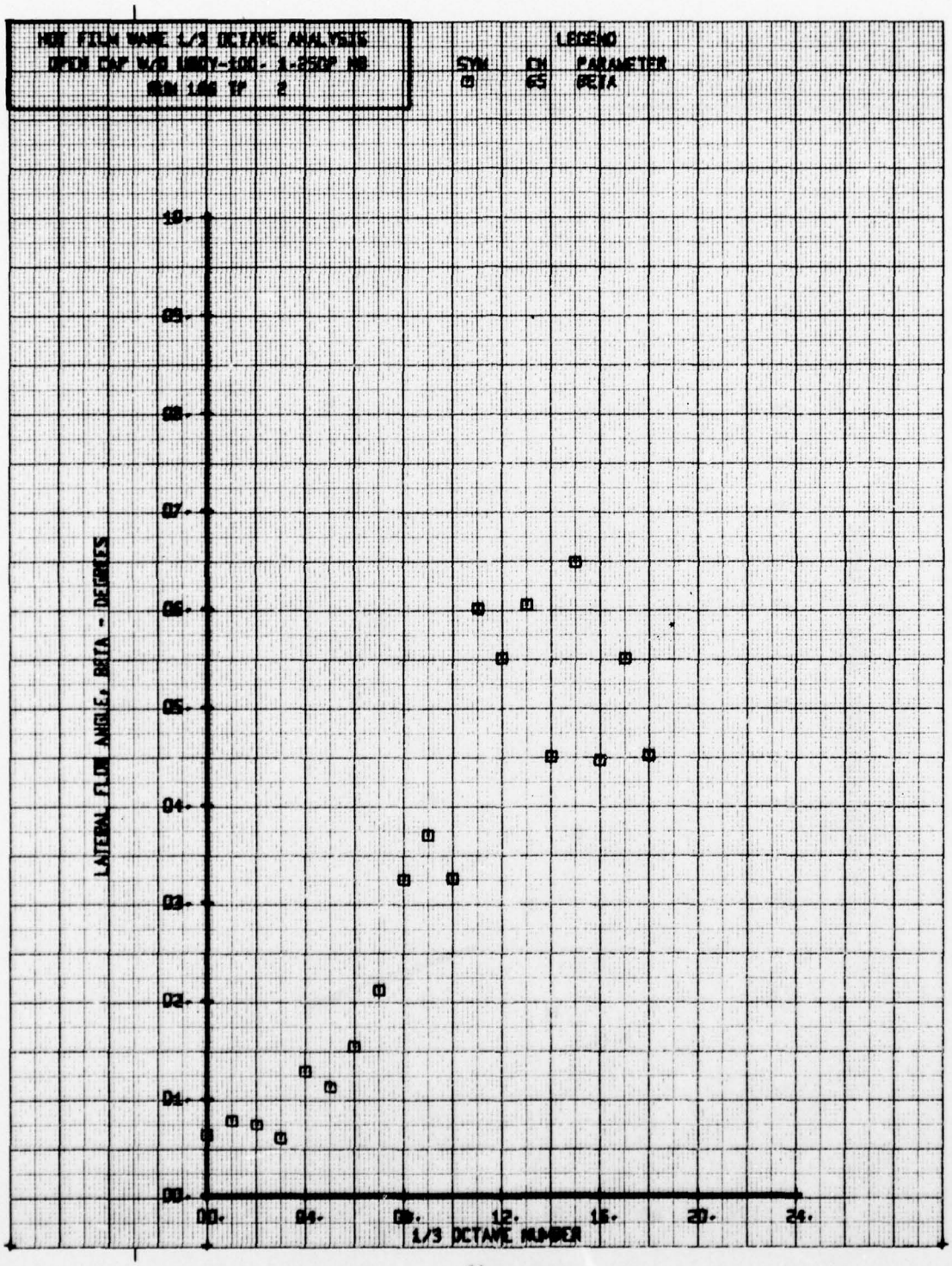

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 100-1-250, BLDS
RUN 193 TP 8
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

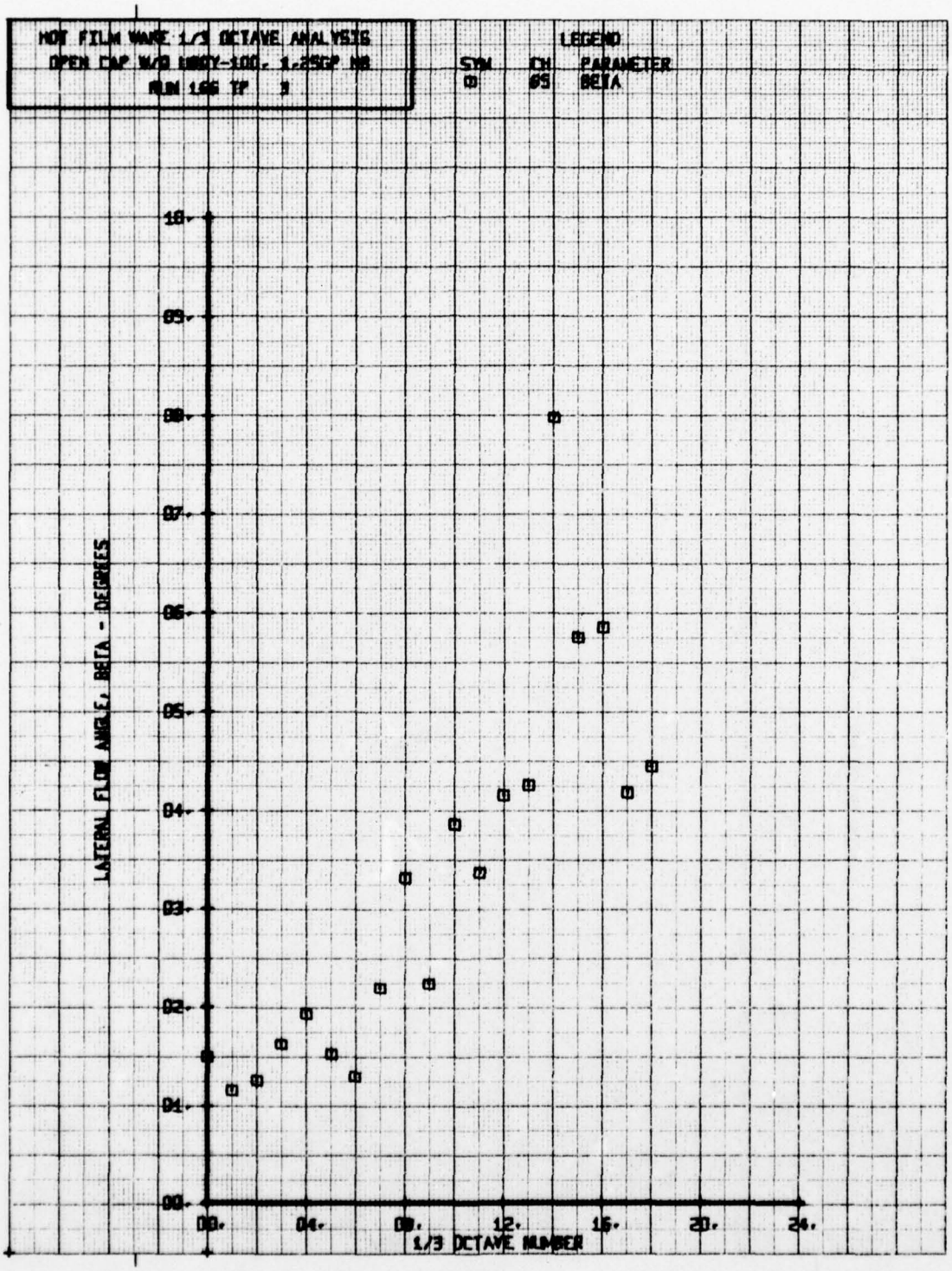

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBOY-100, 1.25GP NB
RUN 166 TP 2
LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

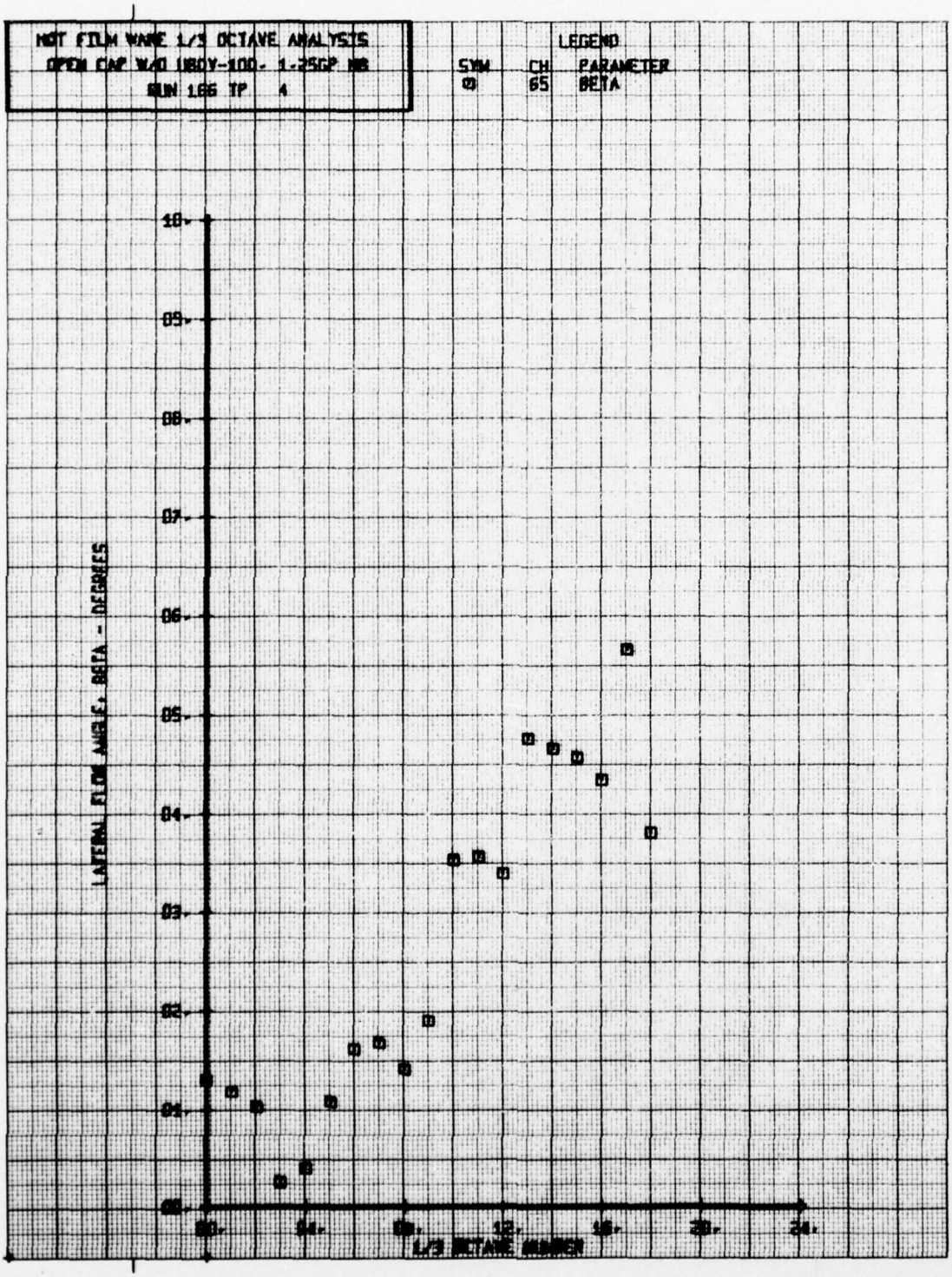

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O SWEEP-100- 1.25GP NB
RUN 186 TP 3
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

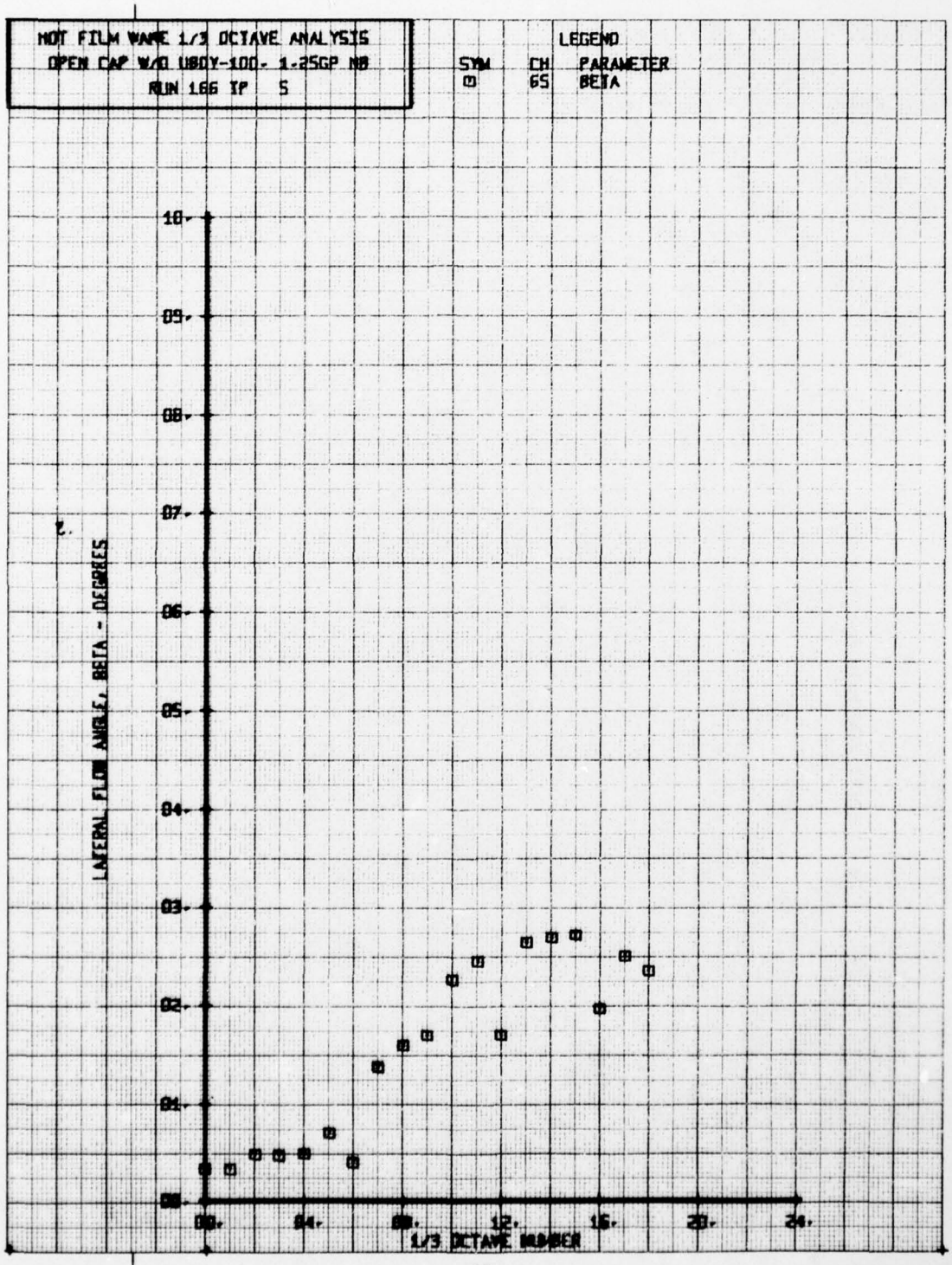

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-100. 1.25GP NB
RUN 166 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE

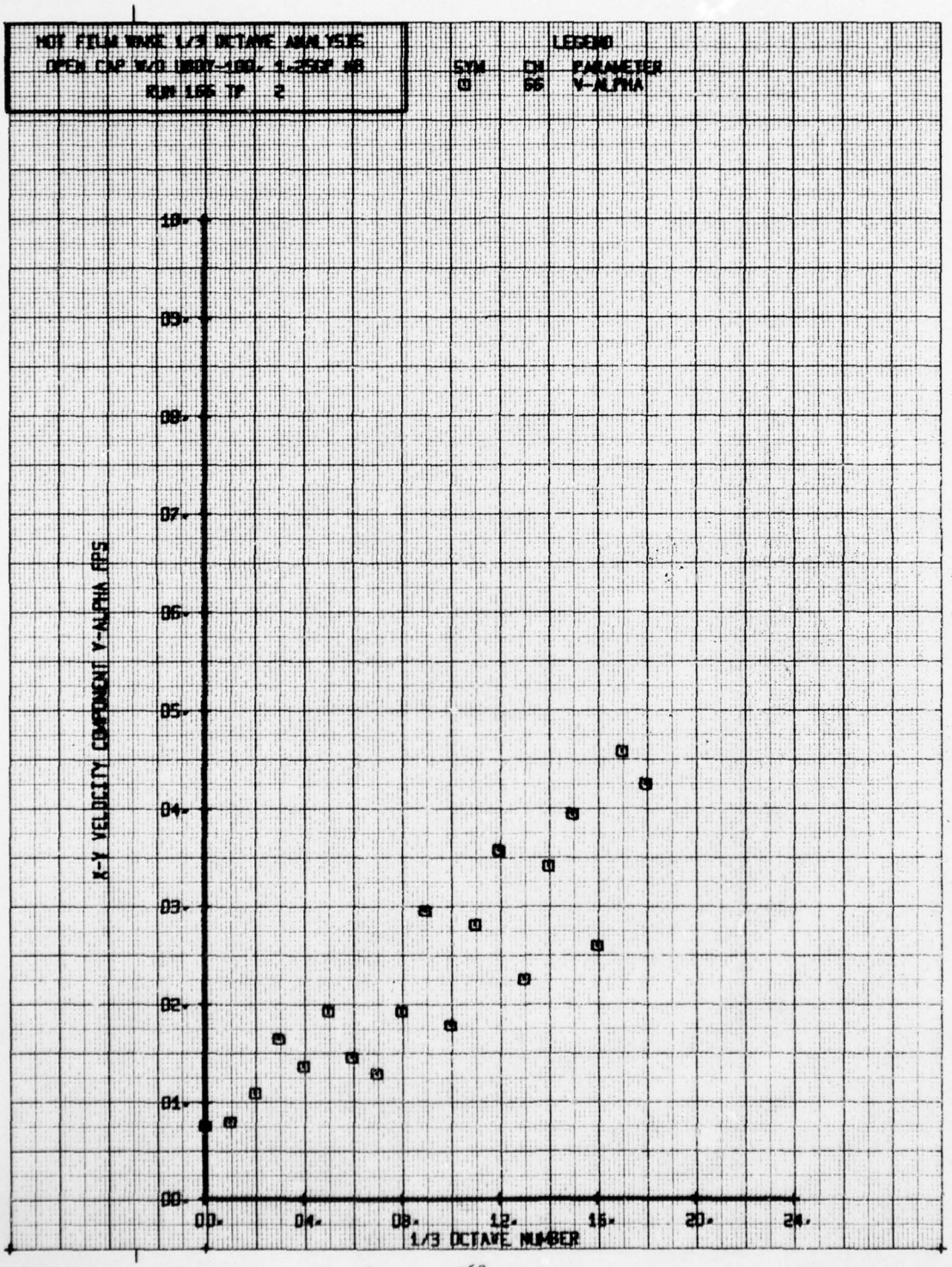

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY-100- 1.25GP NB
RUN 186 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

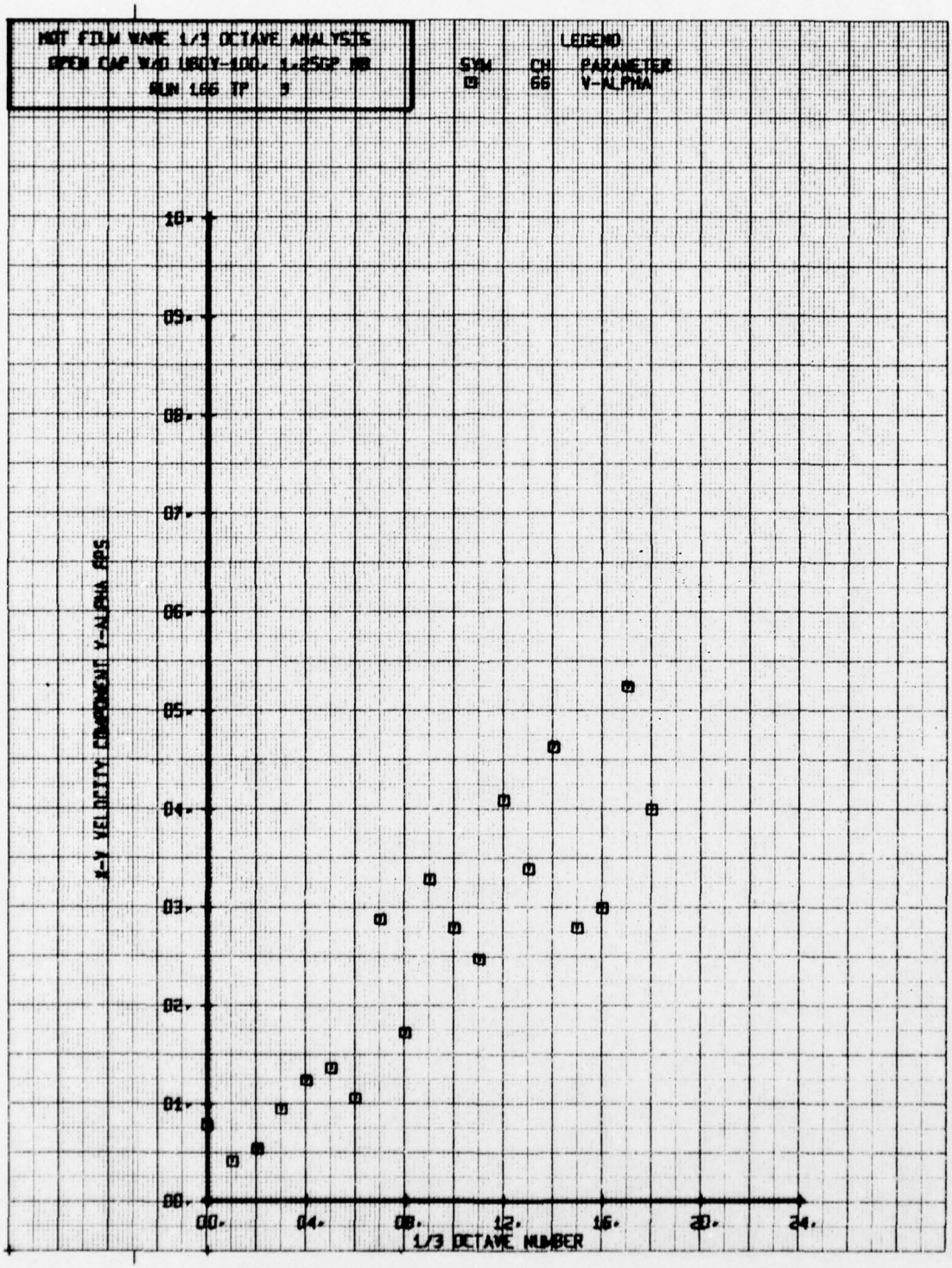

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY-100- 1-250P NB
RUN 166 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

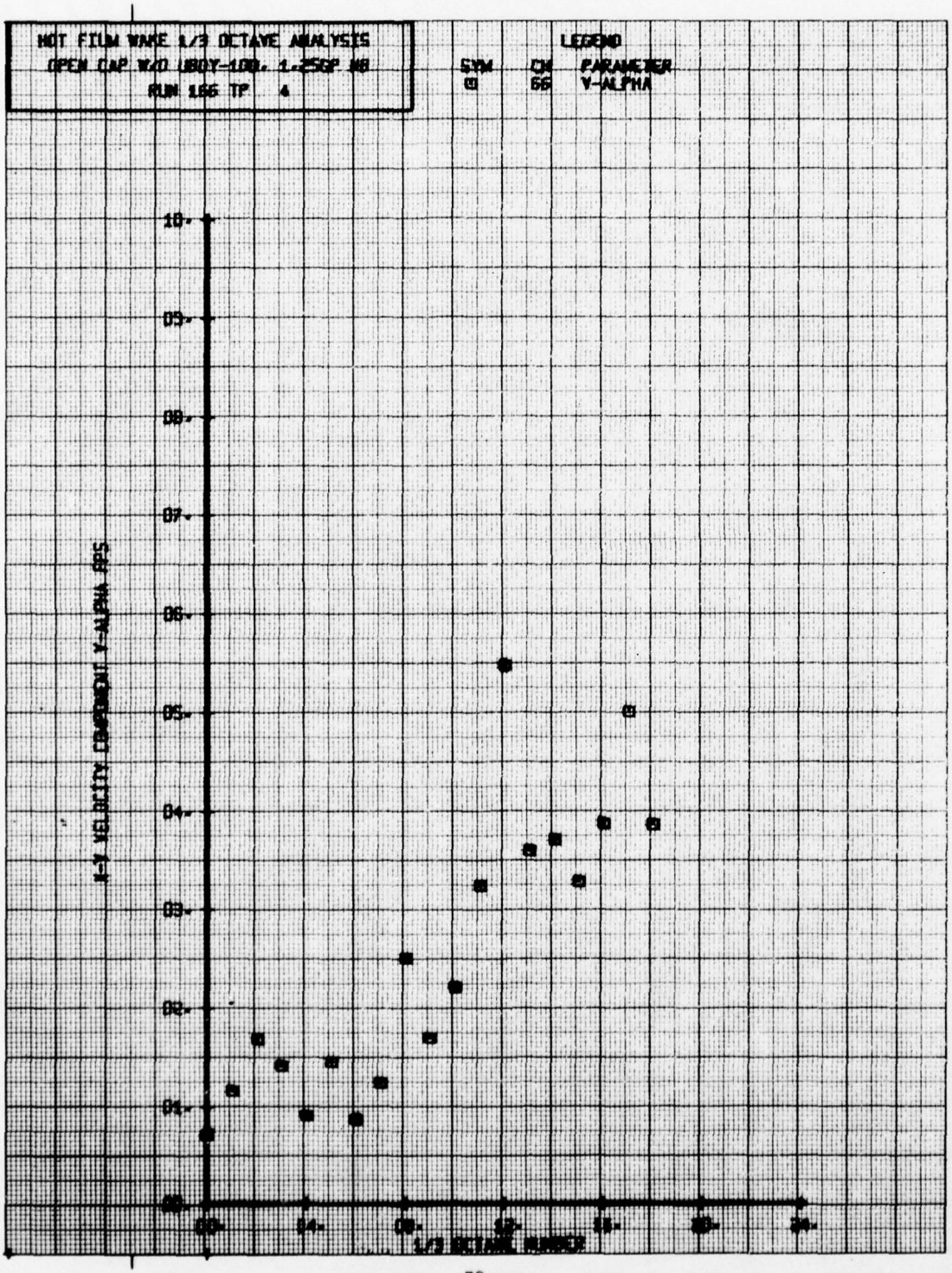

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HMDY-100. 1.25GP NB
RUN 166 TP 3
LEGEND
SYM CH PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

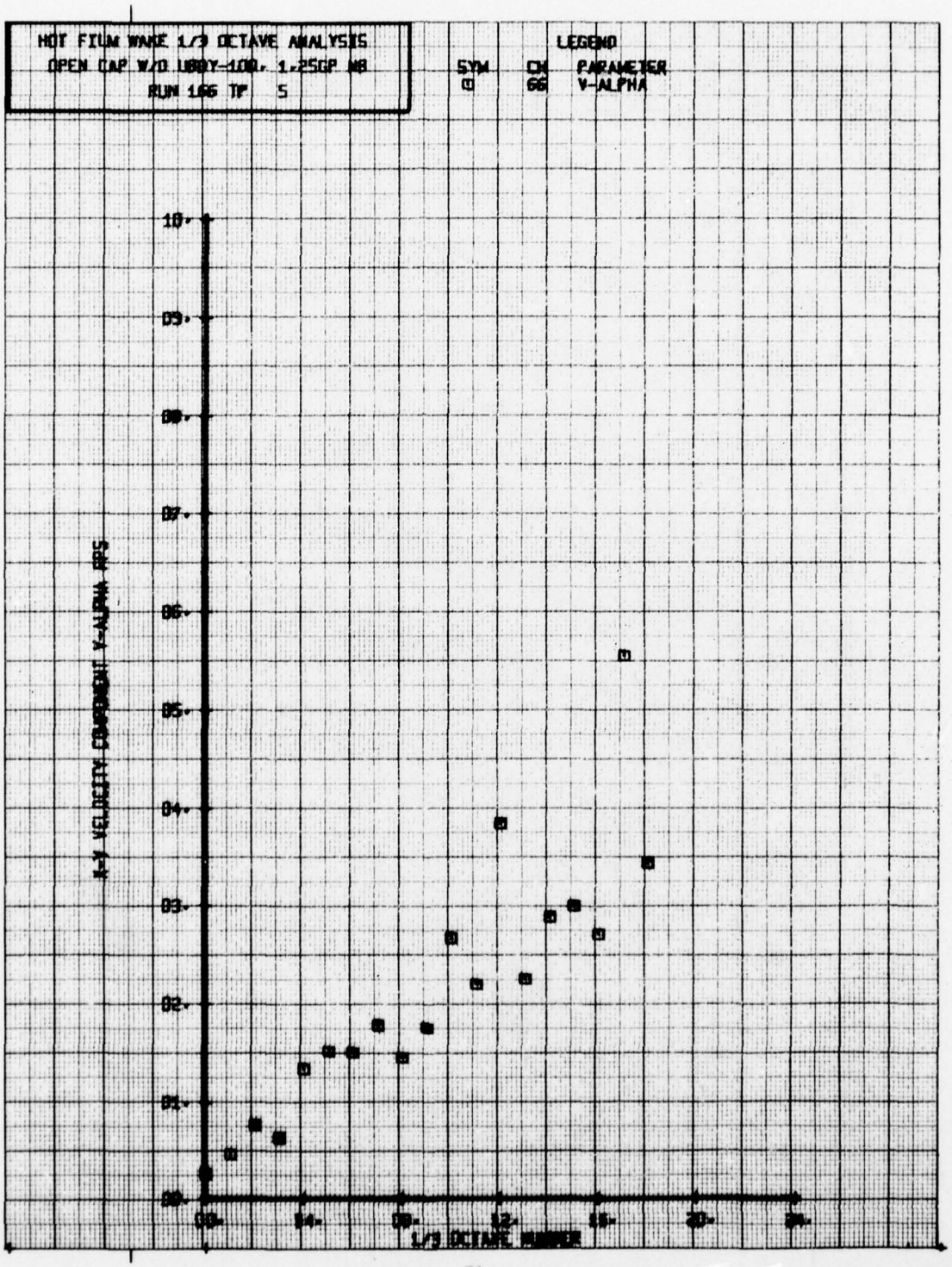

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-100- 1-25GP NB
RUN 186 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10
09
08
07
06
05
04
03
02
01
00
1/3 OCTAVE NUMBER

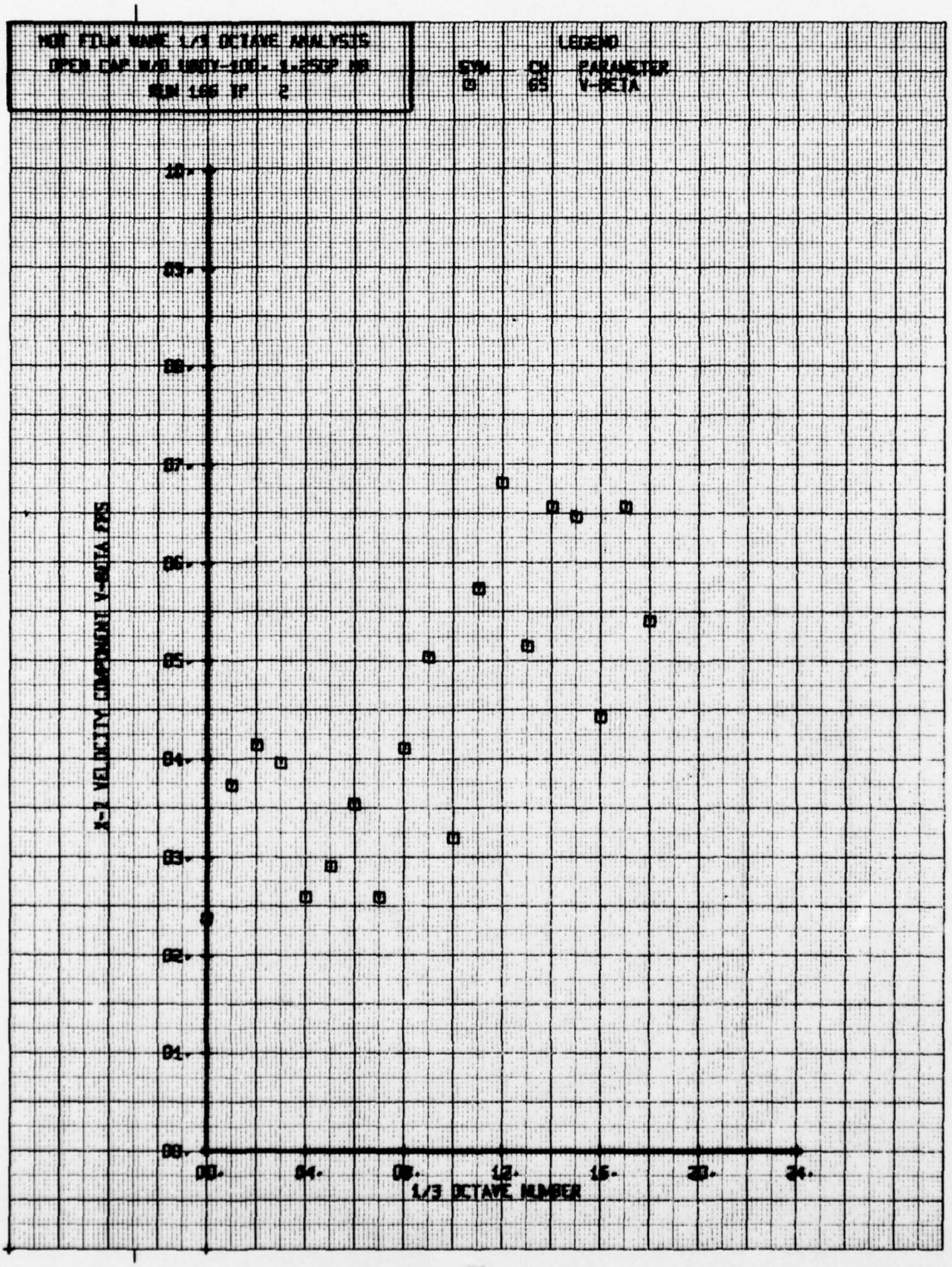

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY-100- 1.25GP NB
RUN 166 IP 5
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

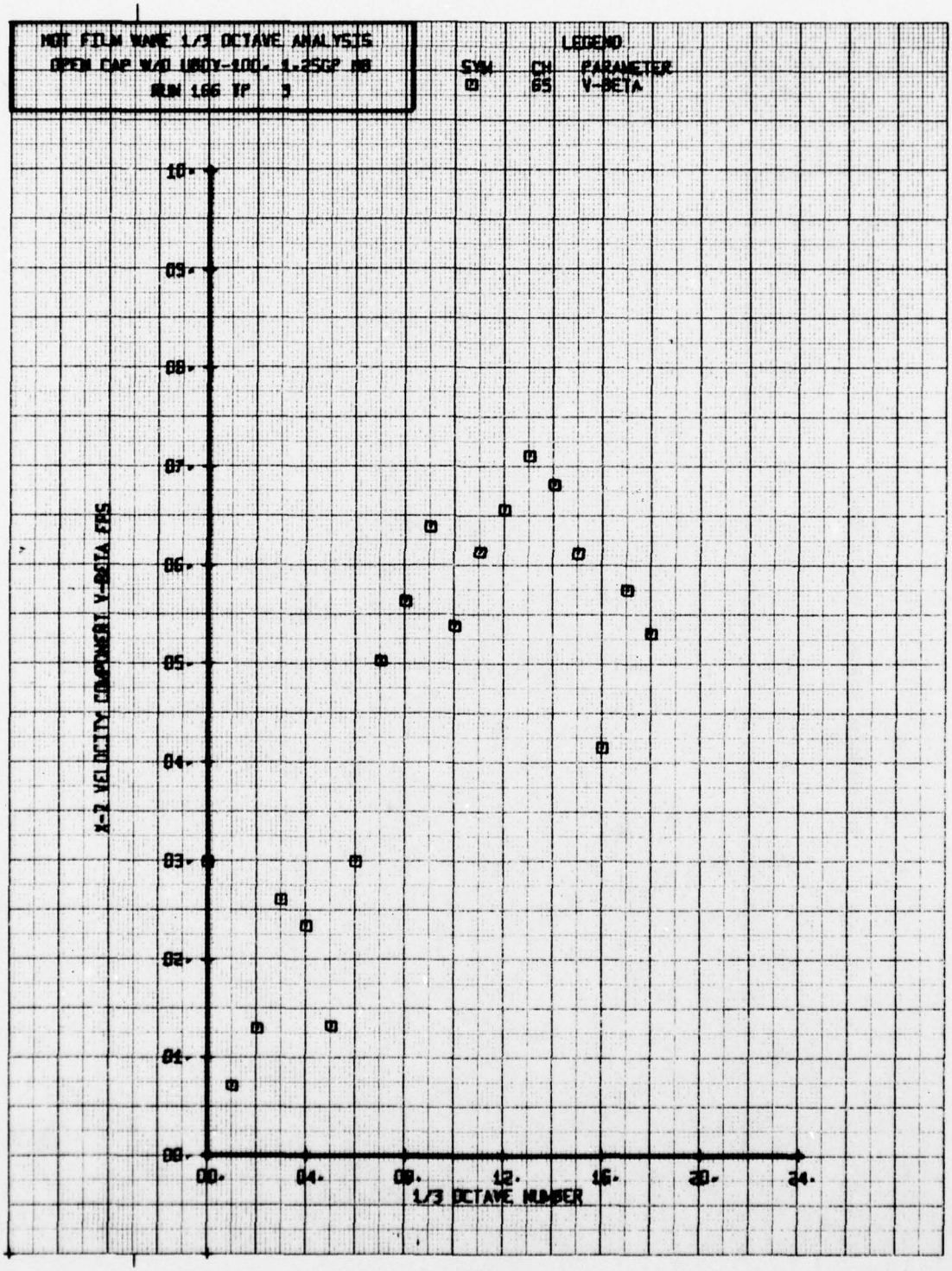

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-100, 1.25GP NB
RUN 166 TP 2
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

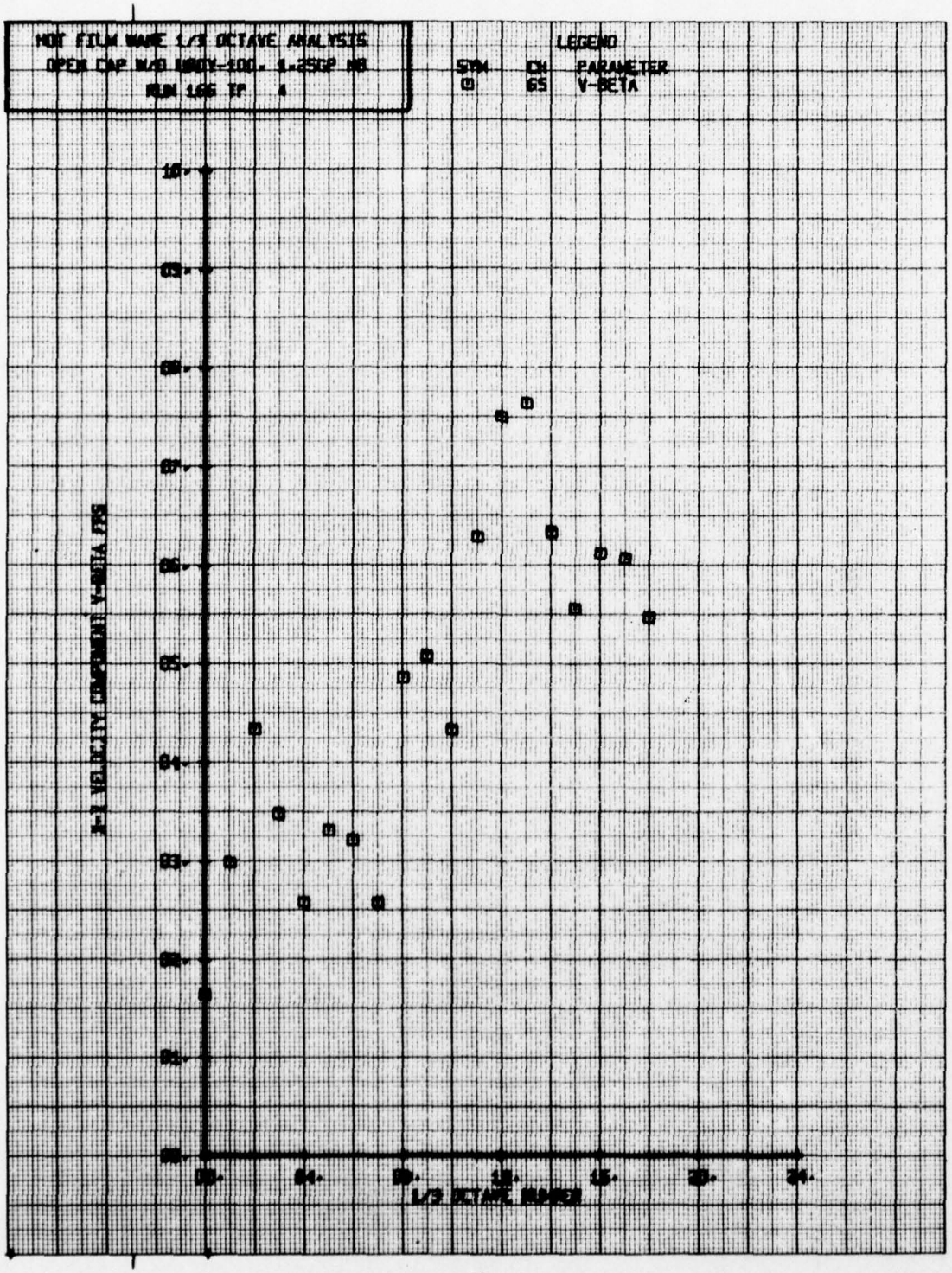

HOT FILM WAVE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-100. 1.25GP NR
RUN 166 TP 3
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-V VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

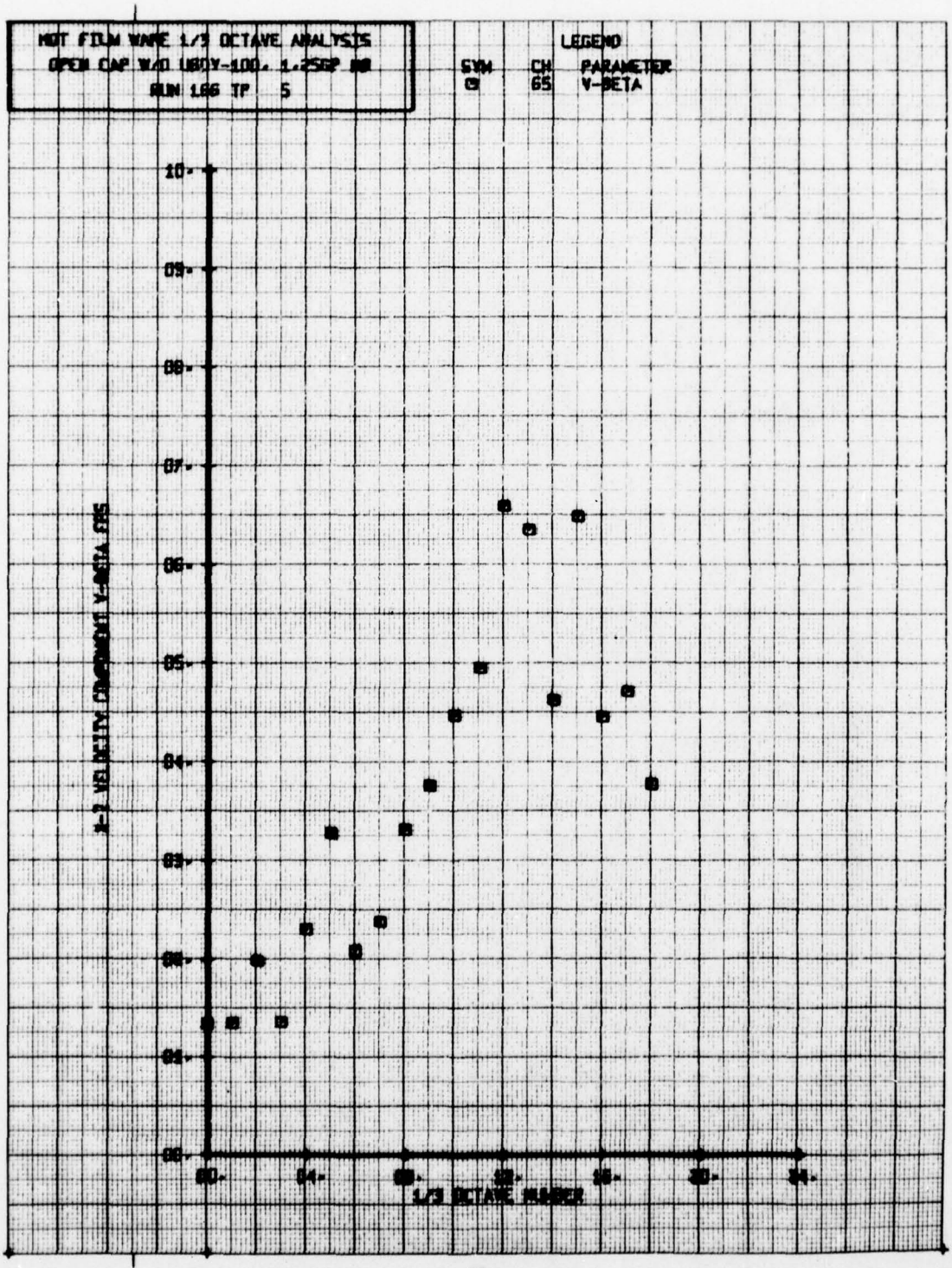

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY-100. 1.25GP 00
RUN 166 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

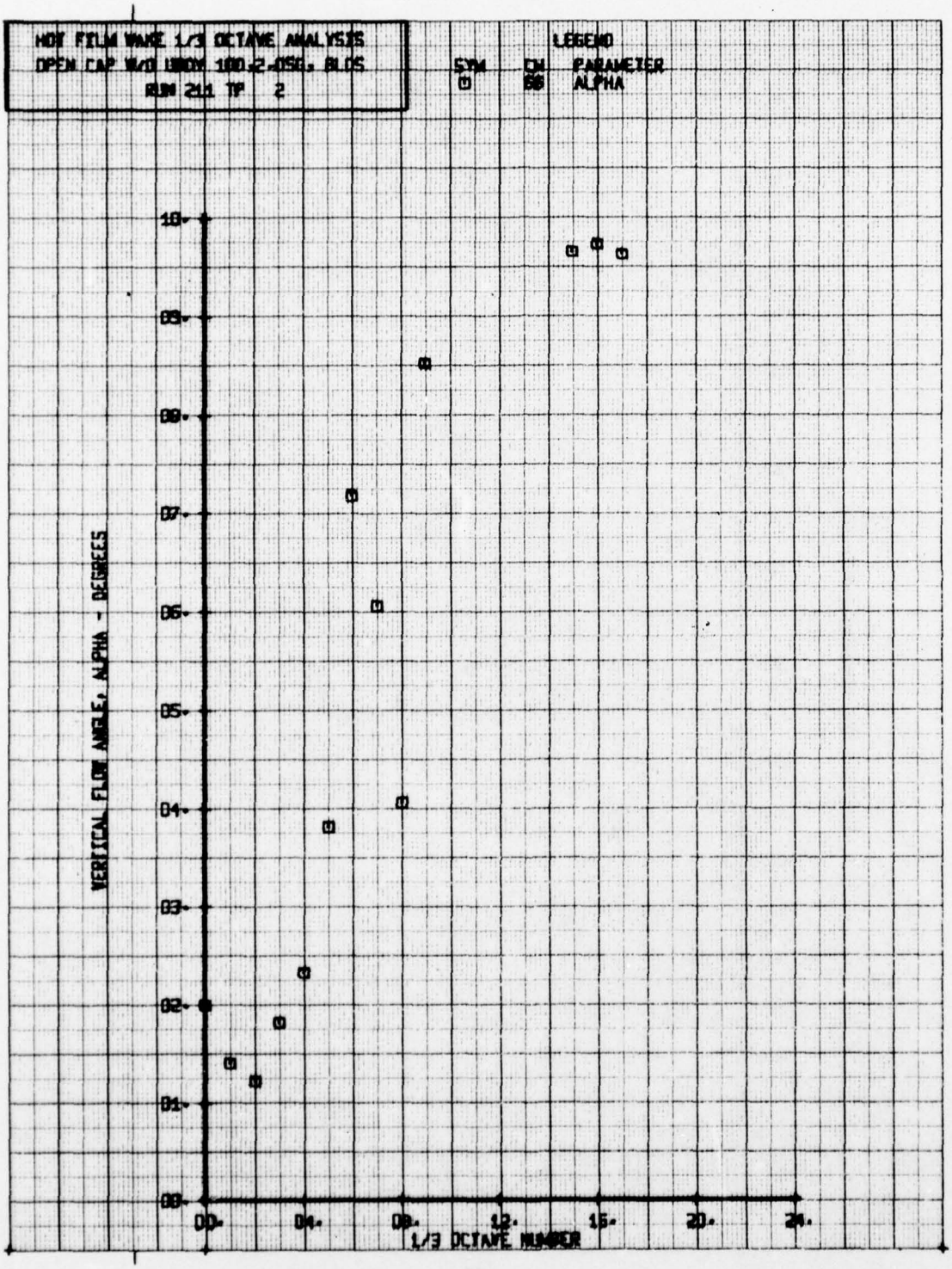

HOT FIUM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBRY-100, 1.25GP N8
RUN 166 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
14.
16.
18.
20.
24.
1/3 OCTAVE

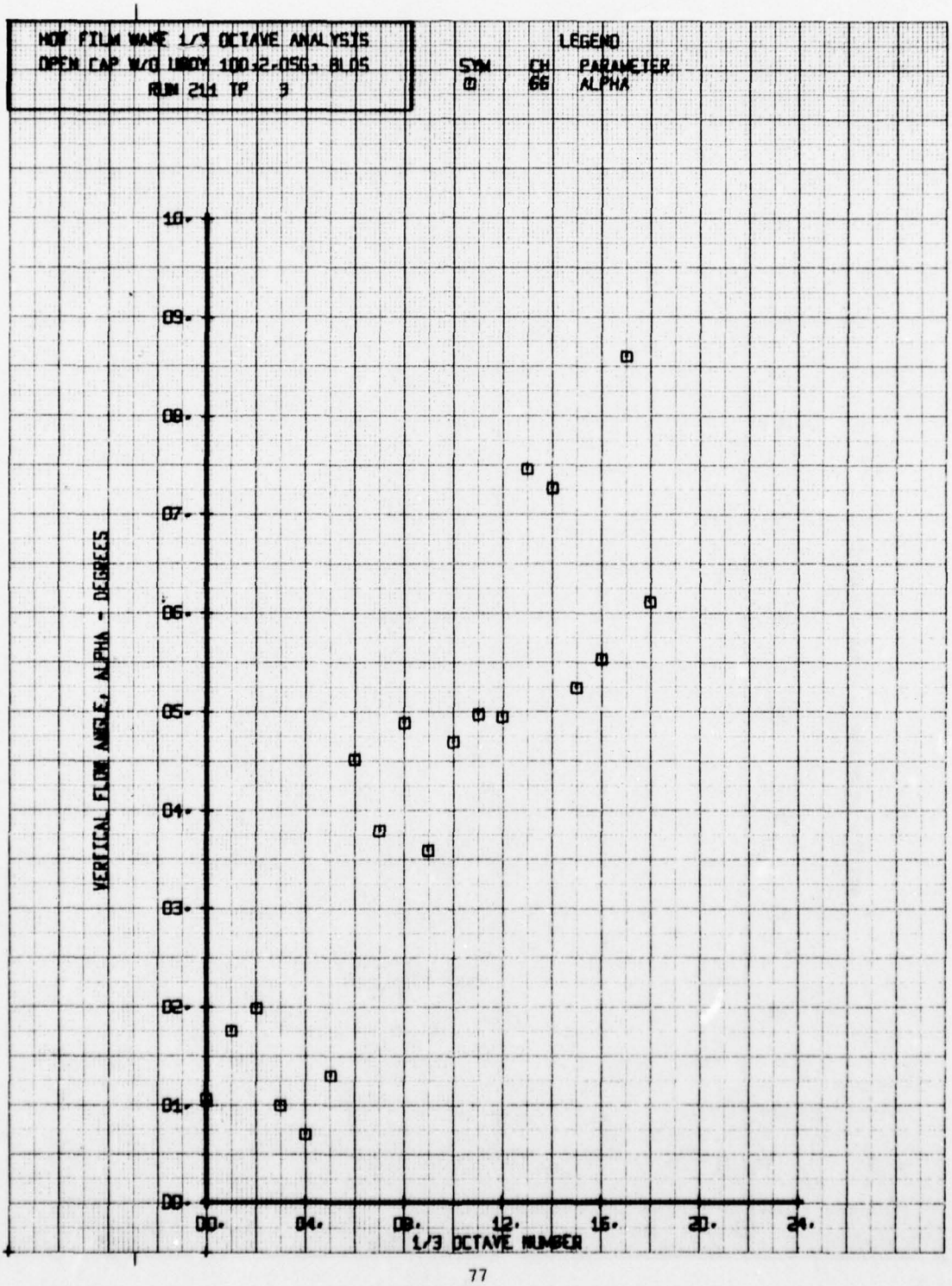

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O VARY-100. 1.25DP NR
RUN 166 IP 2
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA SQS
1/3 OCTAVE NUMBER

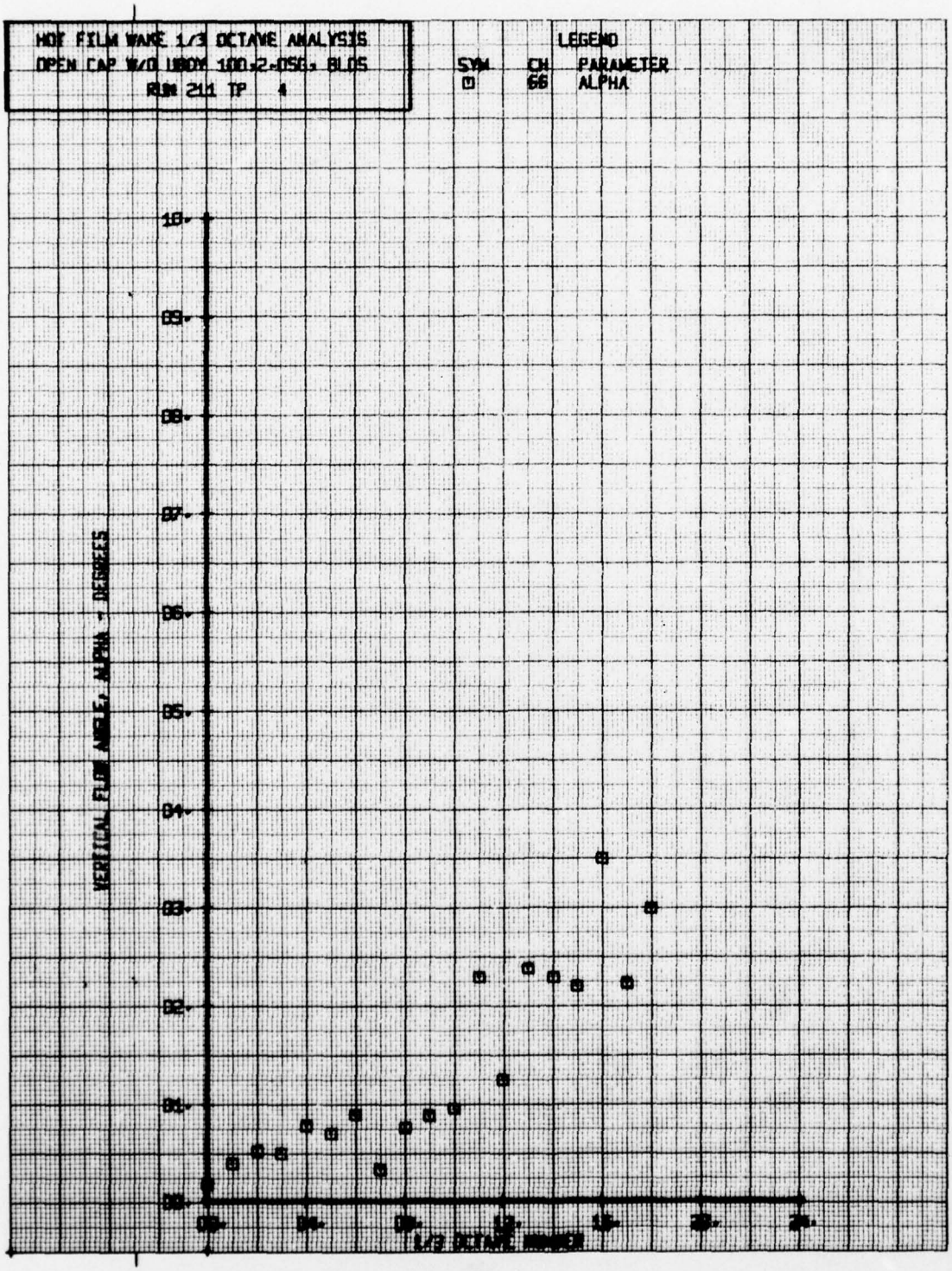

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-100. 1.25GP RB
RUN 166 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.

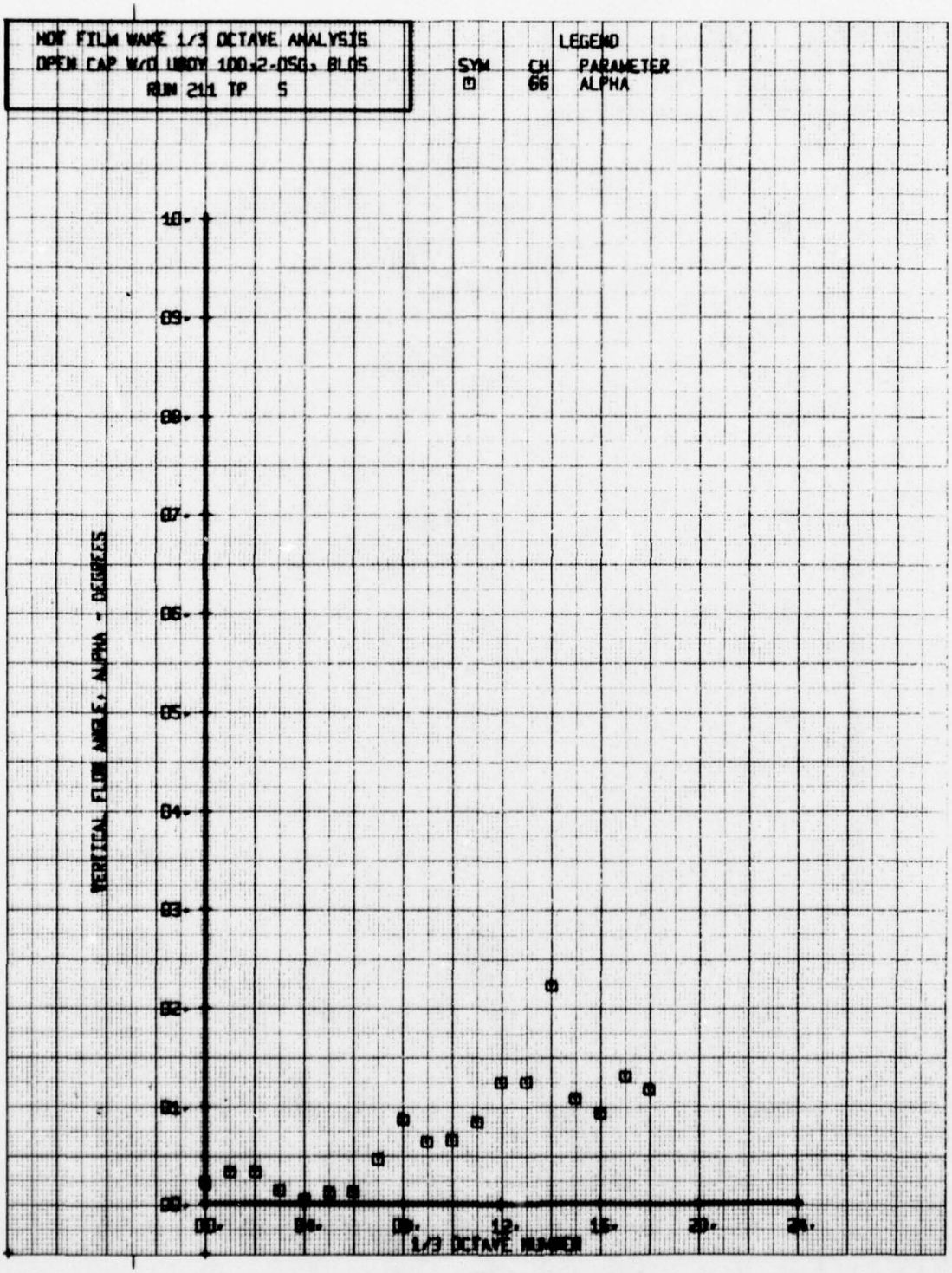

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY-100, 1.25GP NB
RUN 166 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Y VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

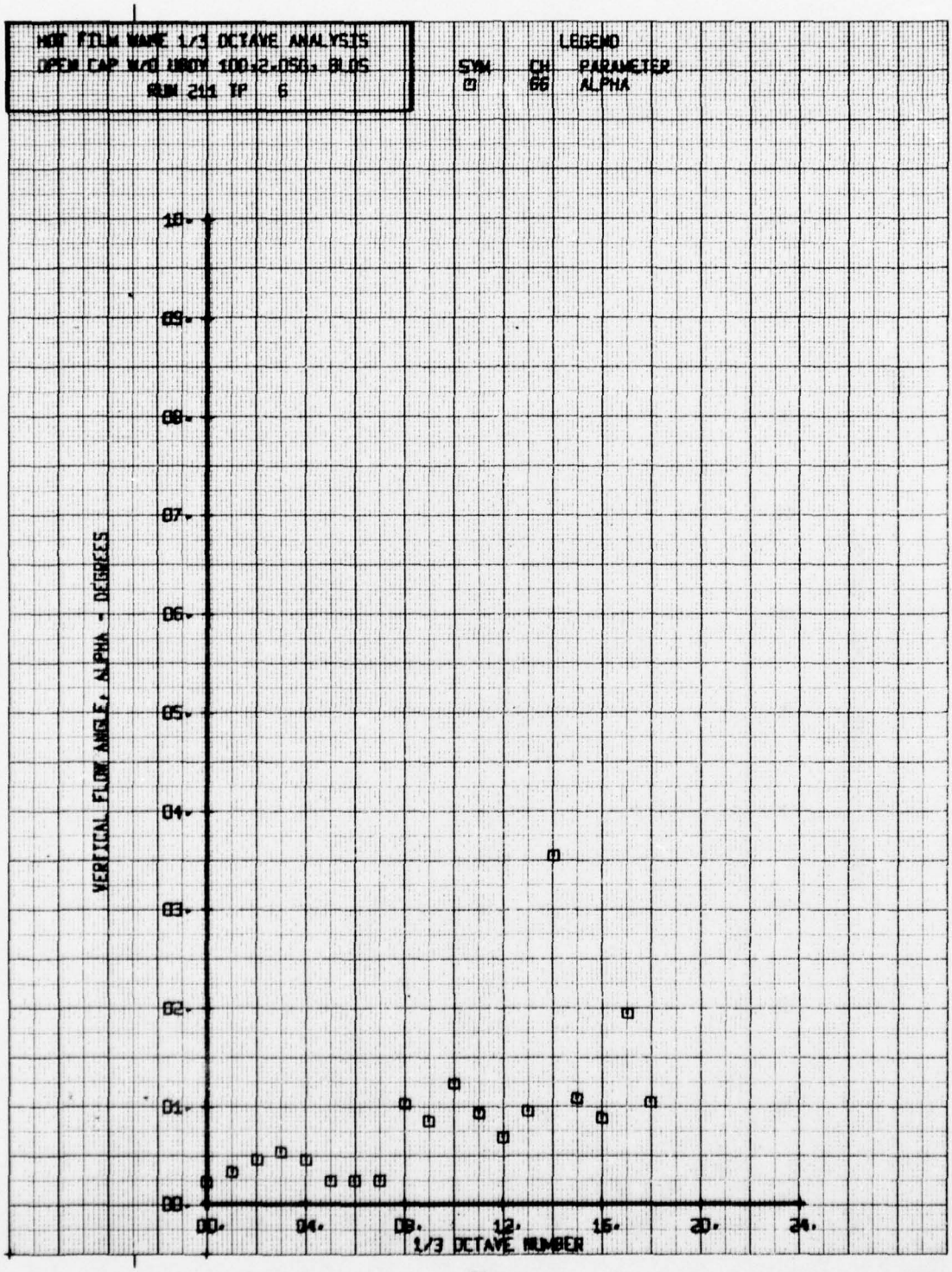

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-100. 1.25KP RR
RUN 186 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

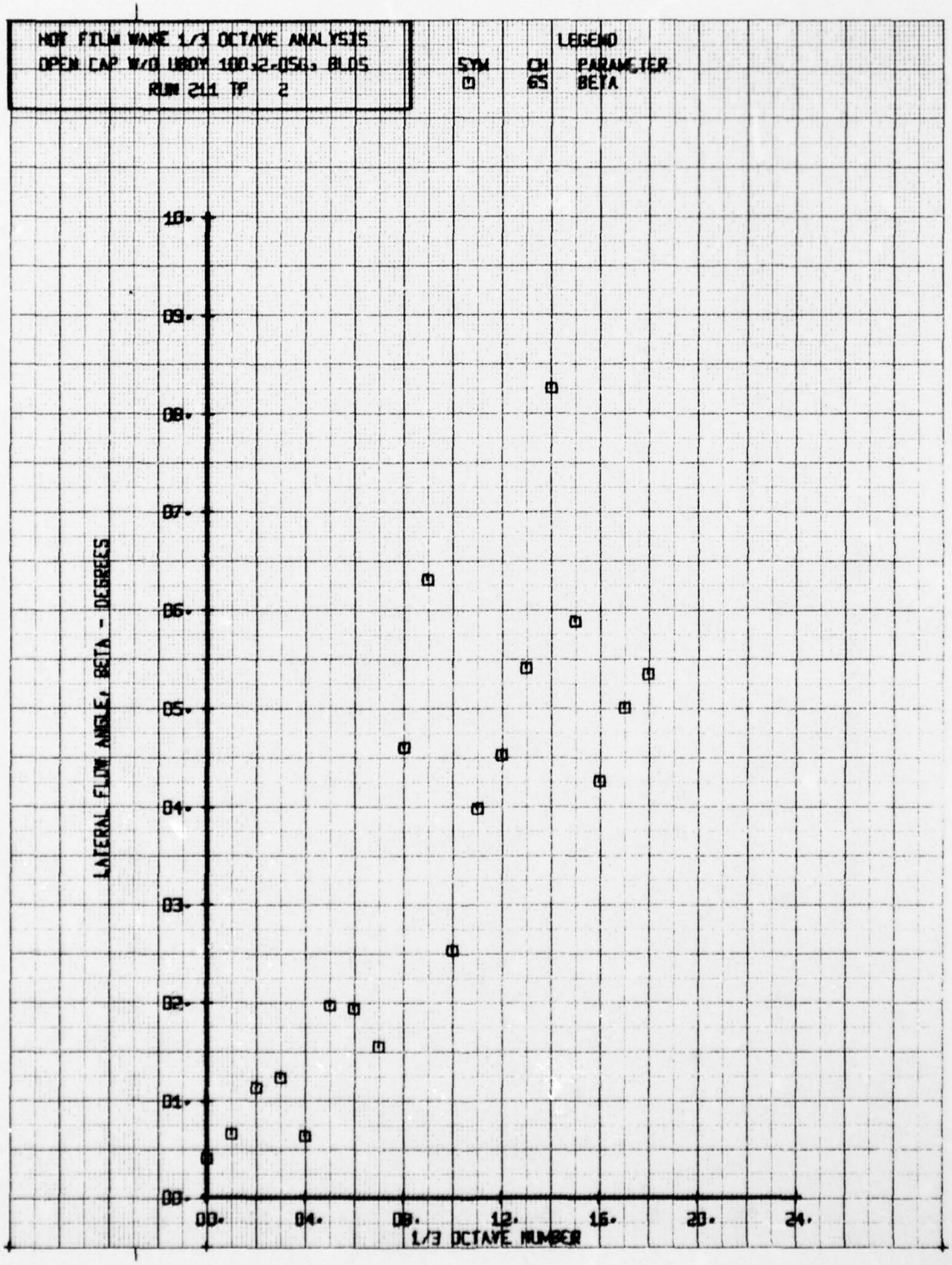

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O LNOM 100.2-DEG. BLOS
RUN 211 TP 2
LEGEND
SYM CH PARAMETER
CH 88 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

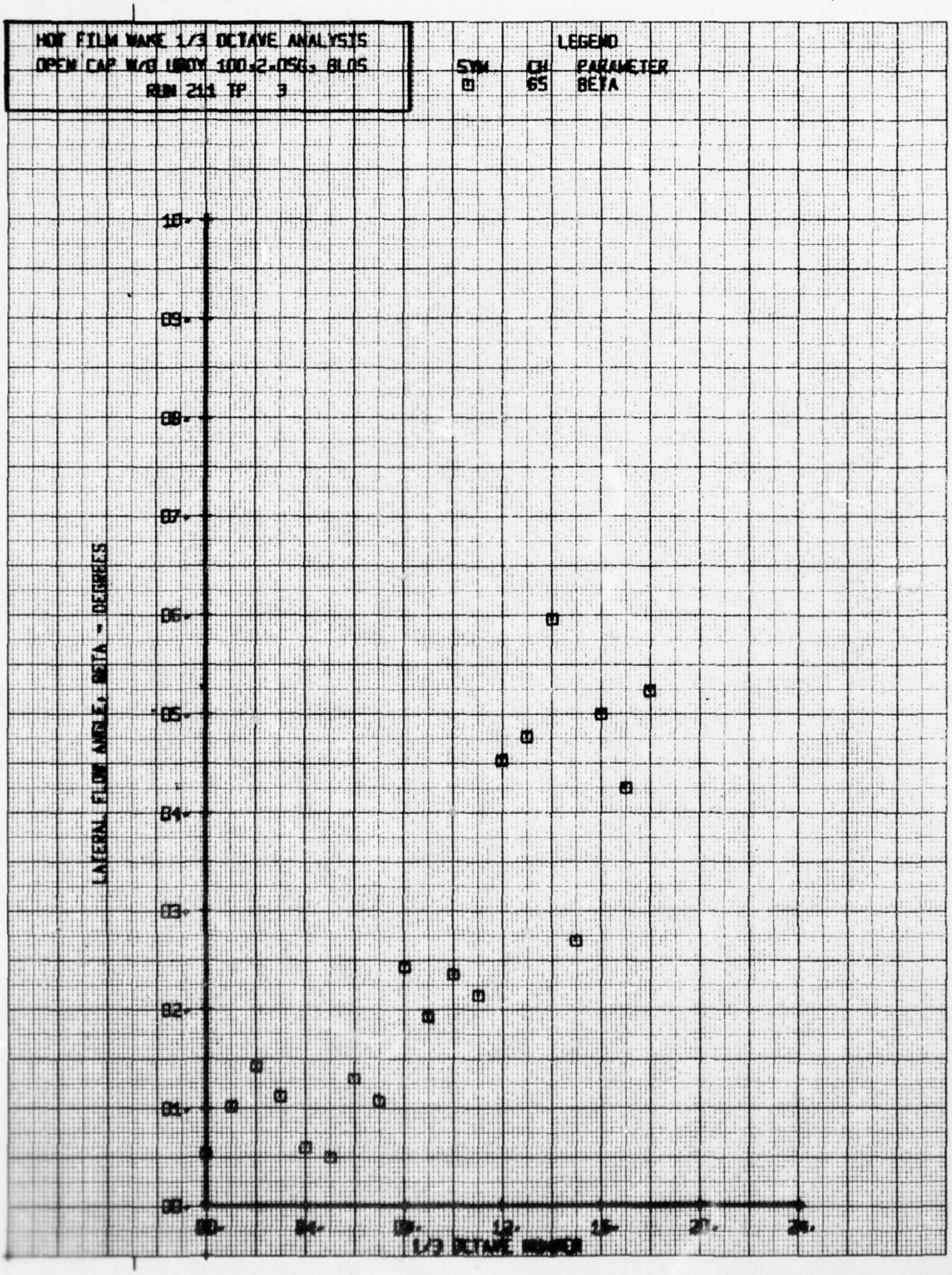

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 100:2.05G, BLOS
RUN 211 TP 3
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

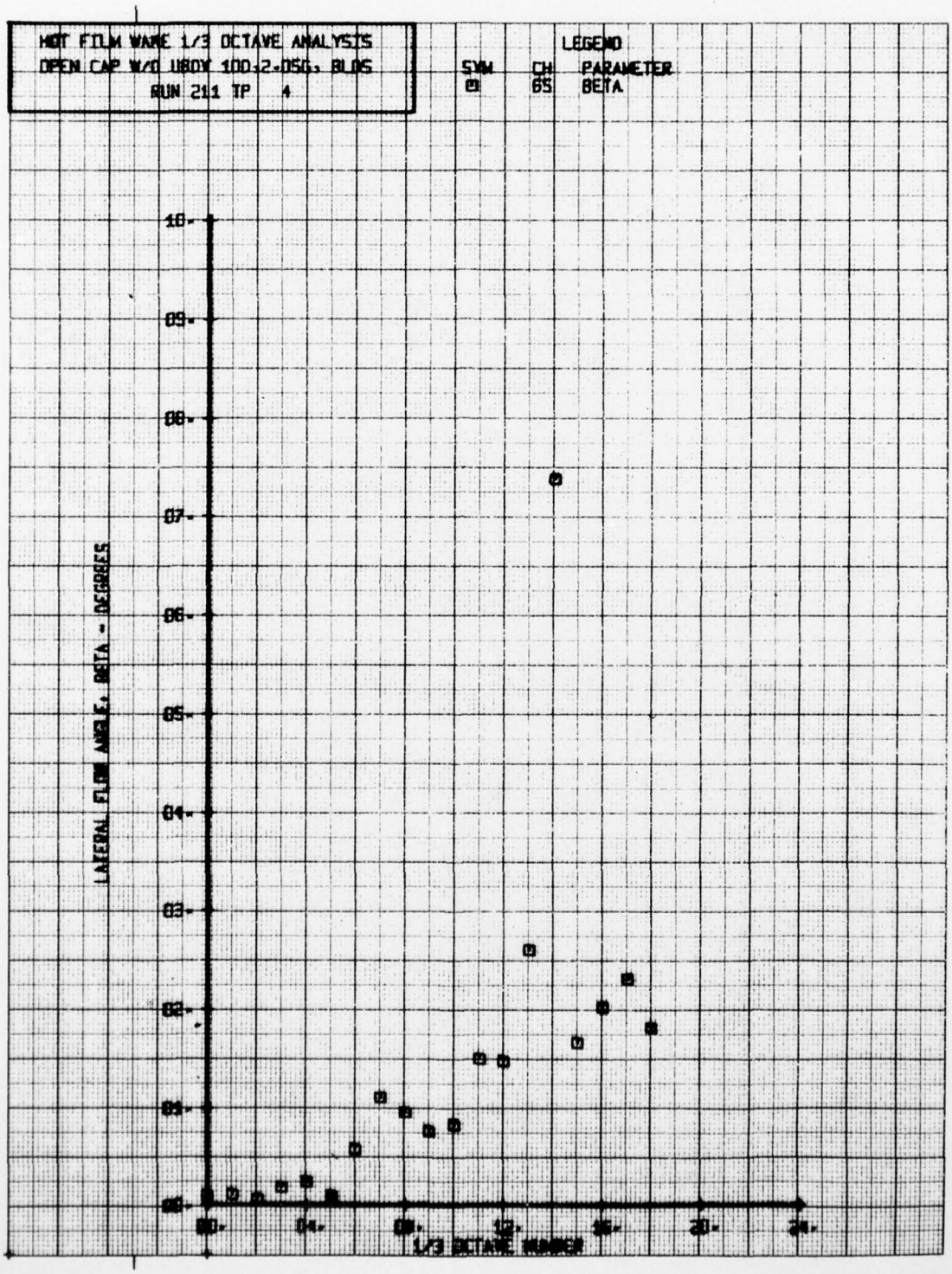

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBOM 100.2-DSG. BLDS
RUN 211 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE

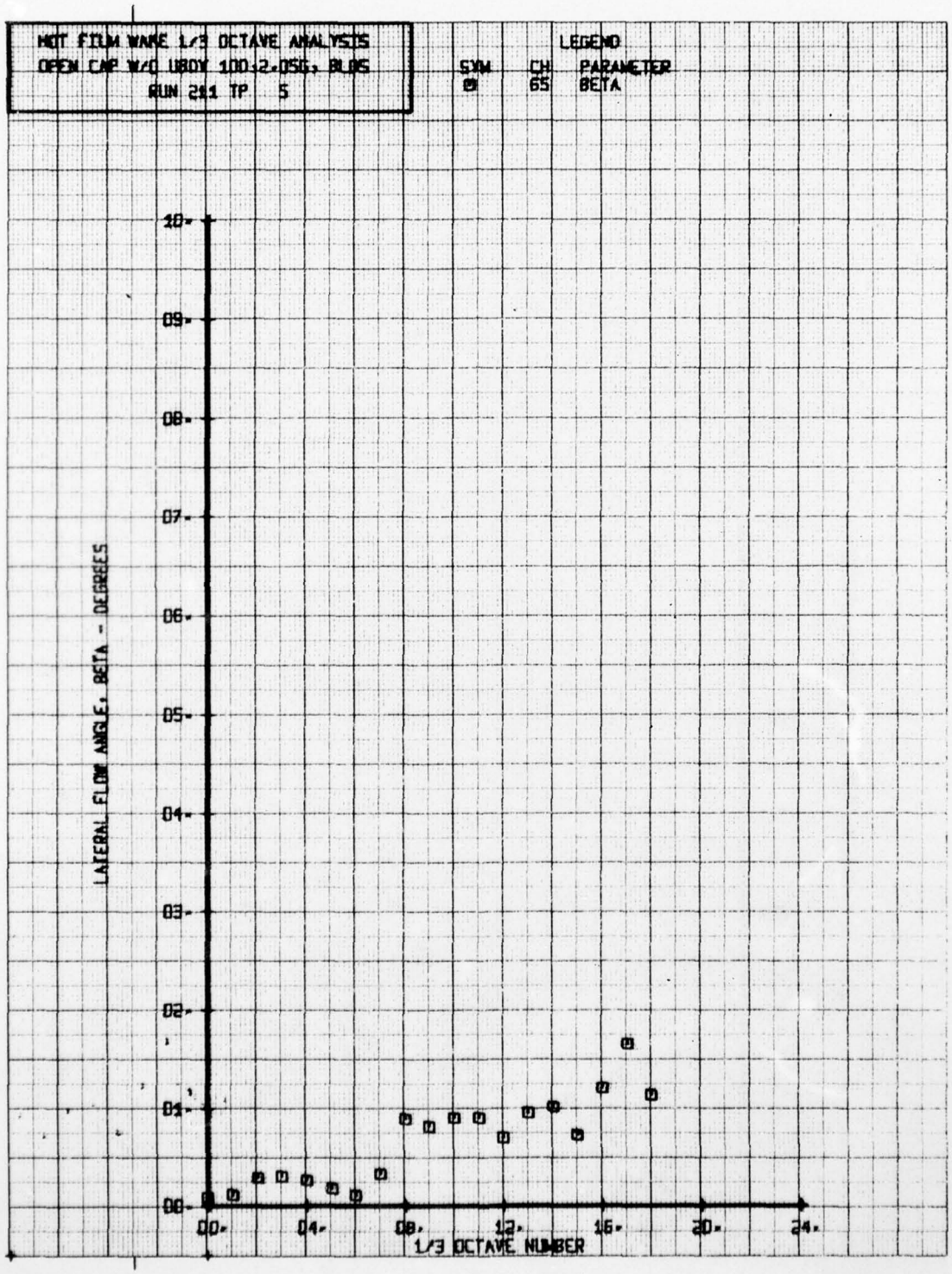

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UMBOY 100-2-DSG, BLDS
RUN 211 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

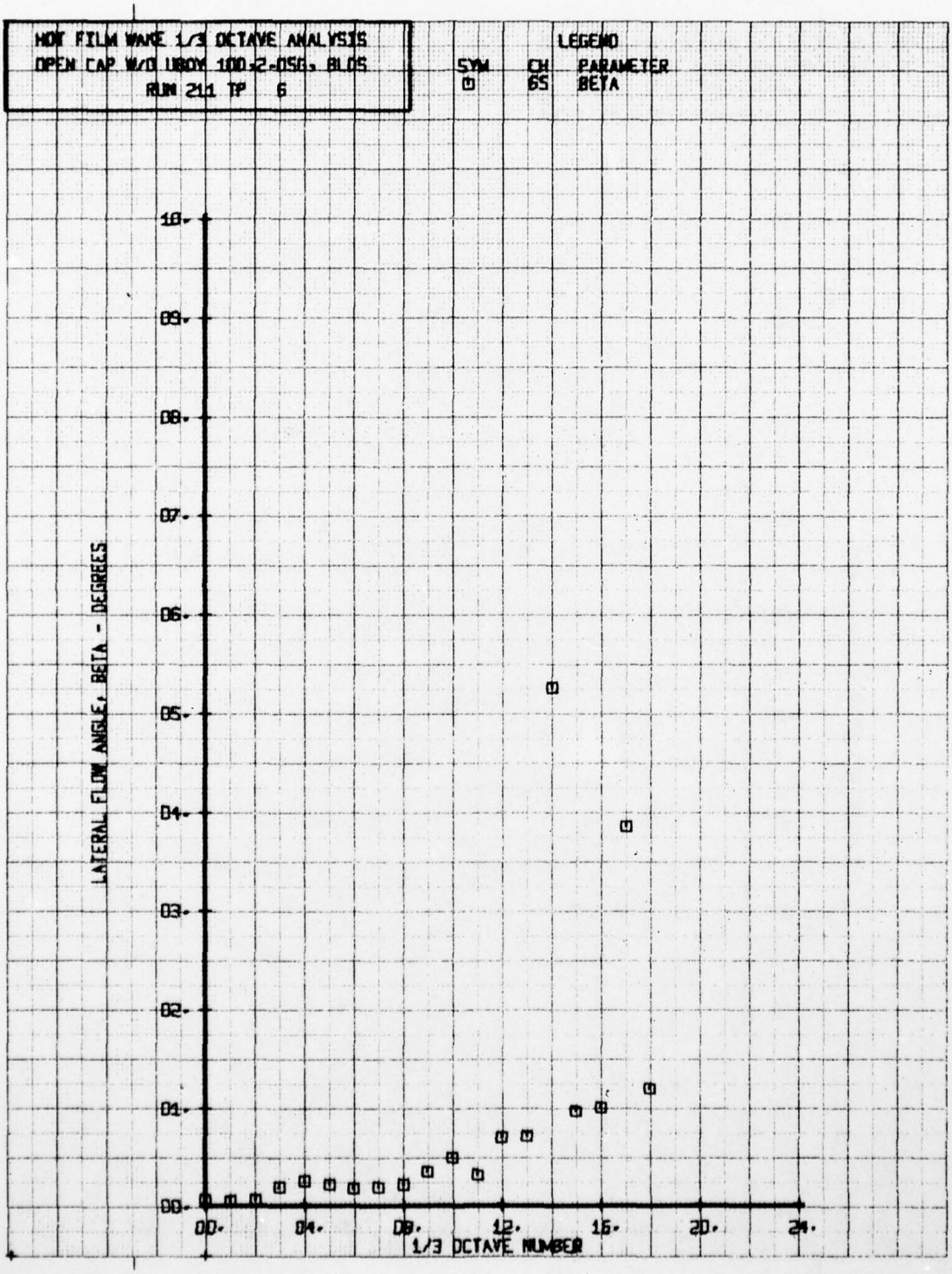

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100,2,OSG, BLDS
RUN 211 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

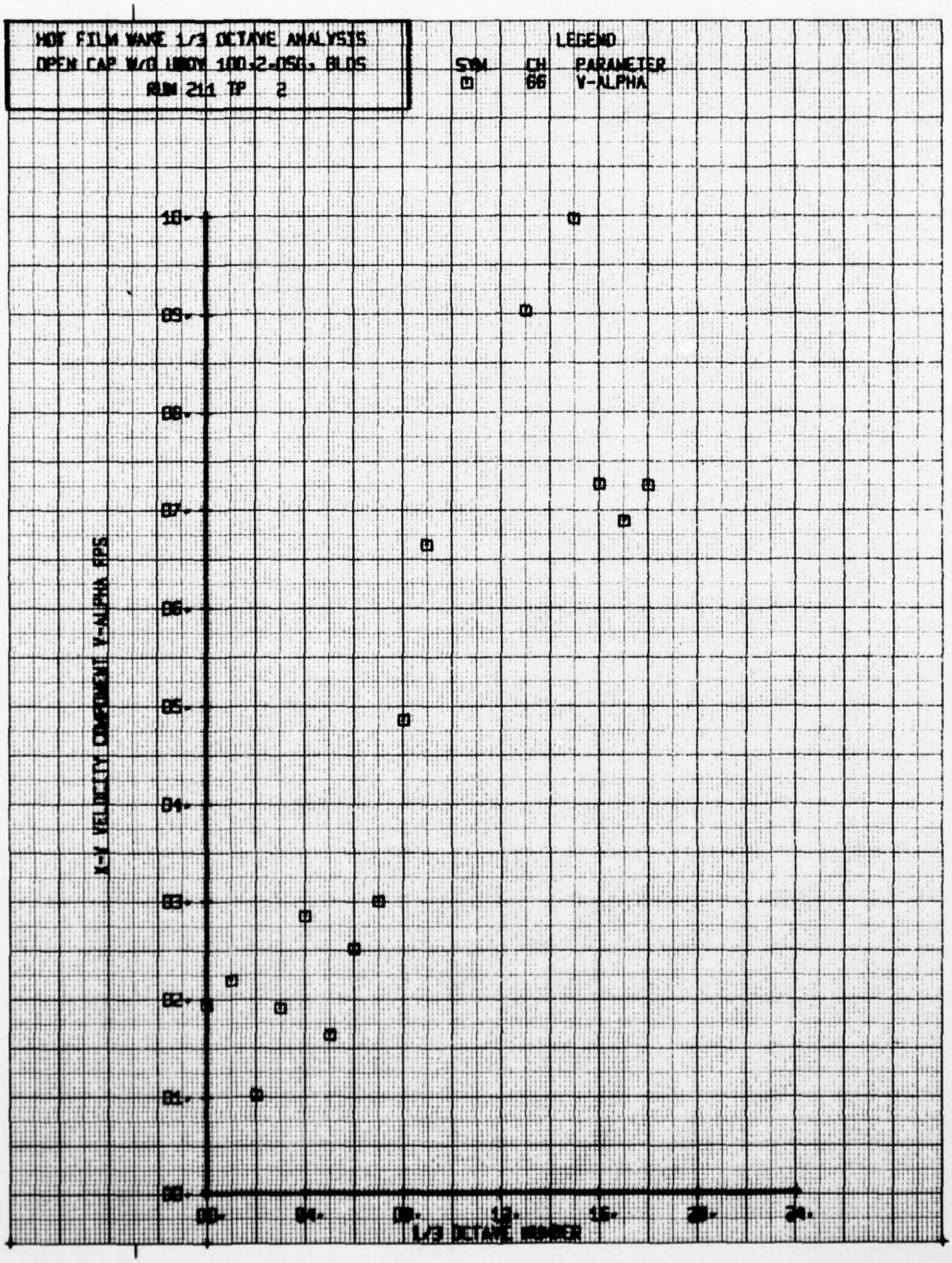

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100-2-05G, BL05
RUN 211 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

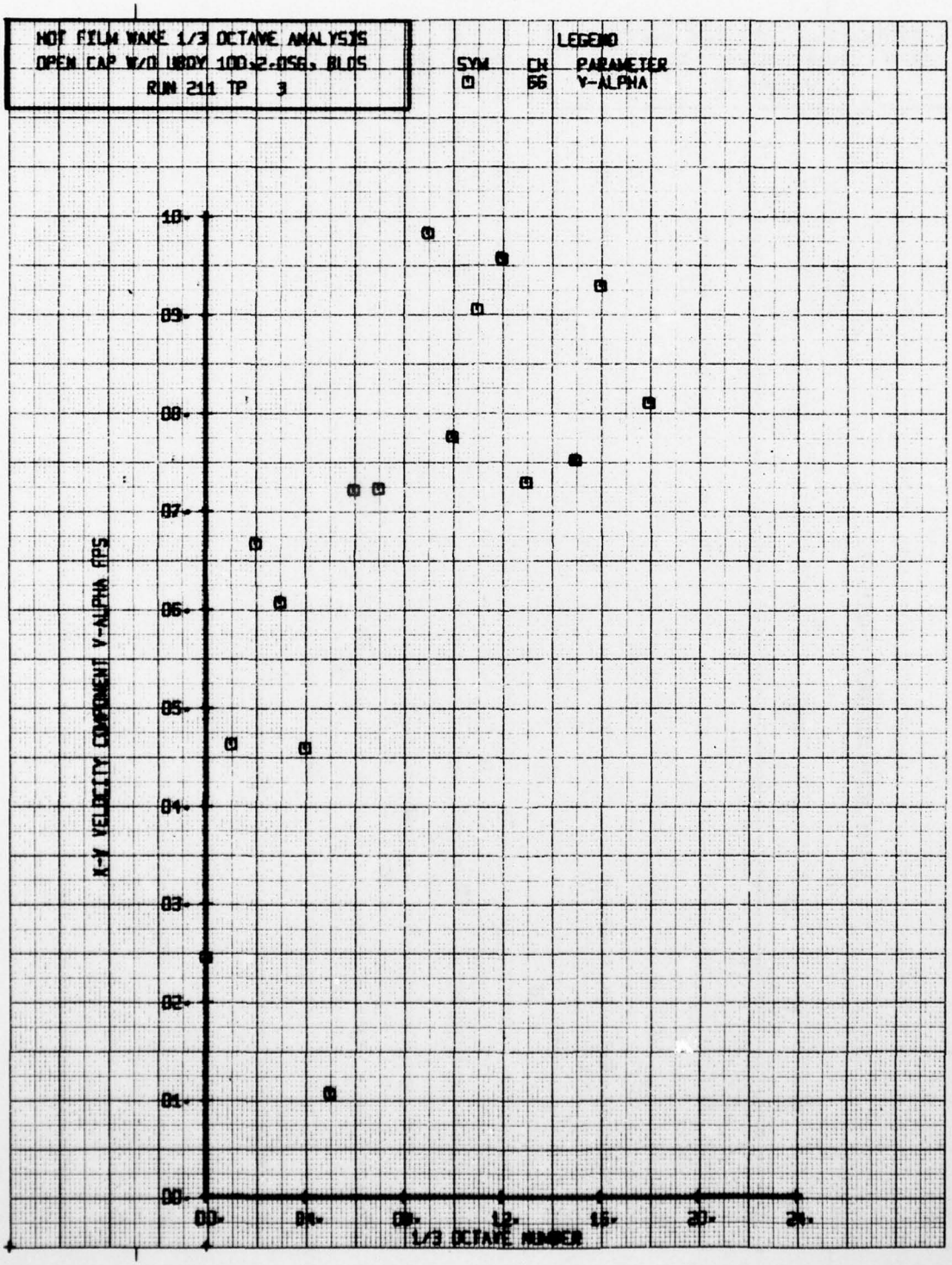

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UROY 100,2.05G, BLOS
RUN 211 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

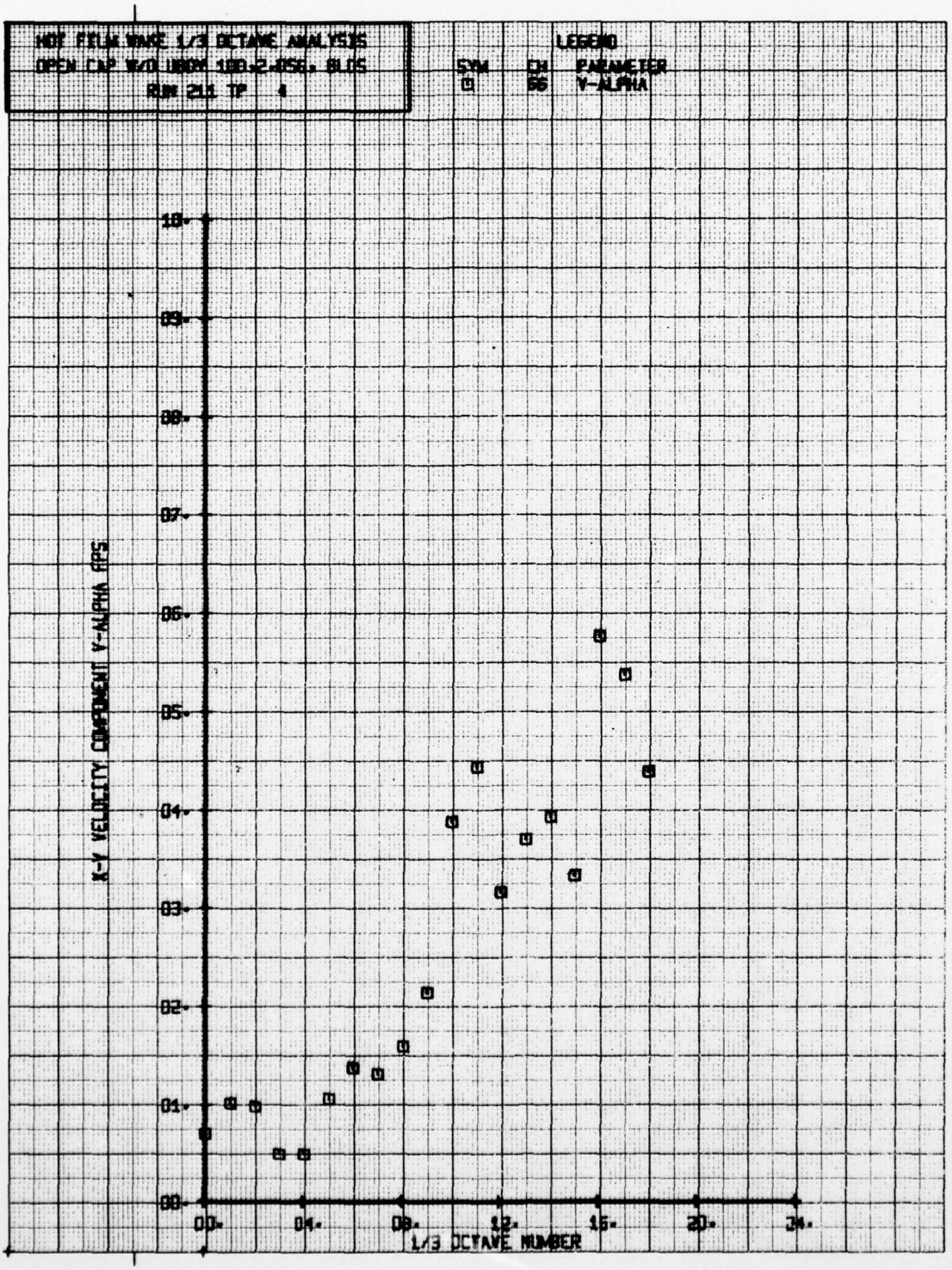

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100.2.DSG. BLDS
RUN 211 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

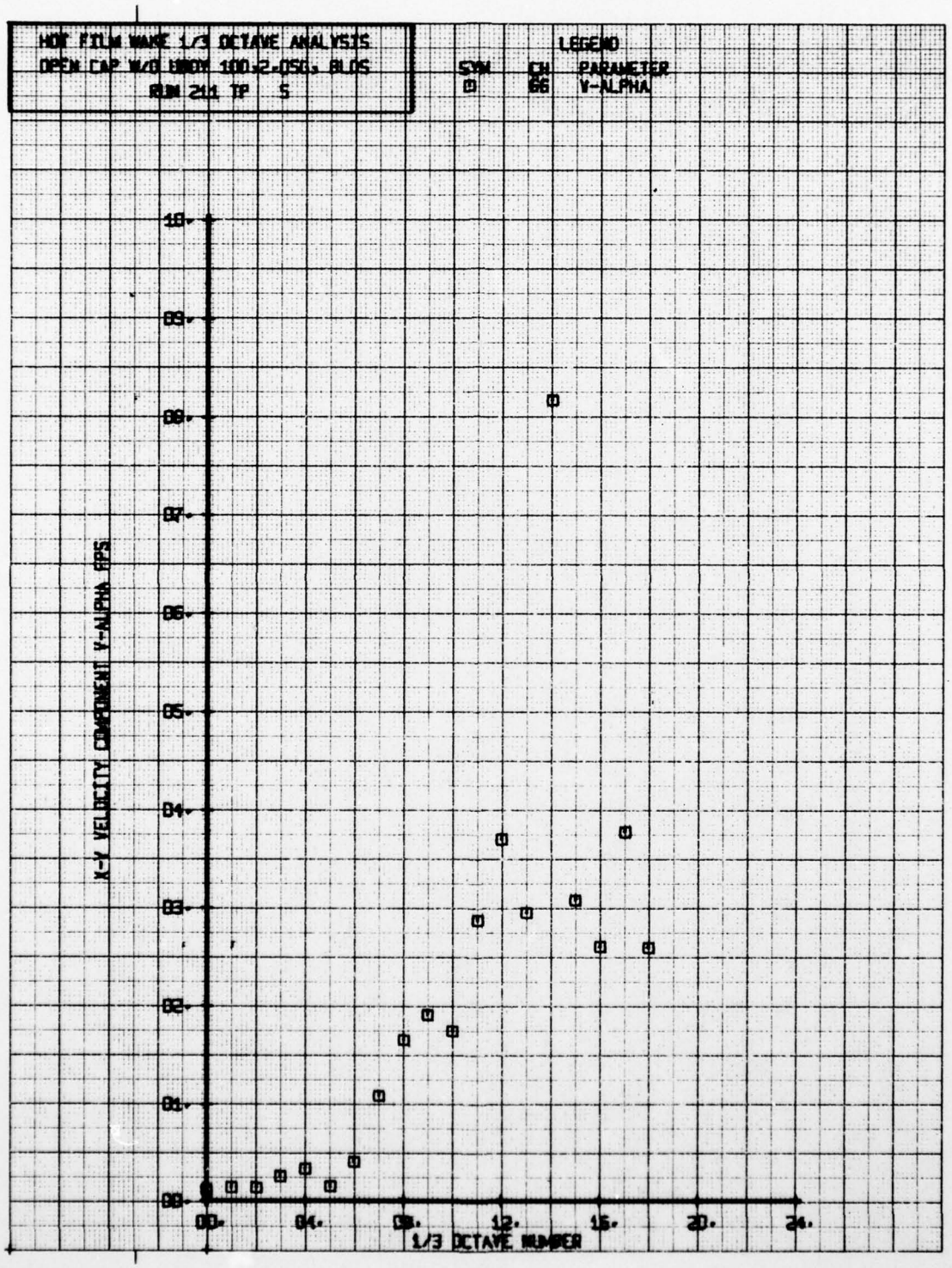

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 100:2.056, BLDS
RUN 211 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

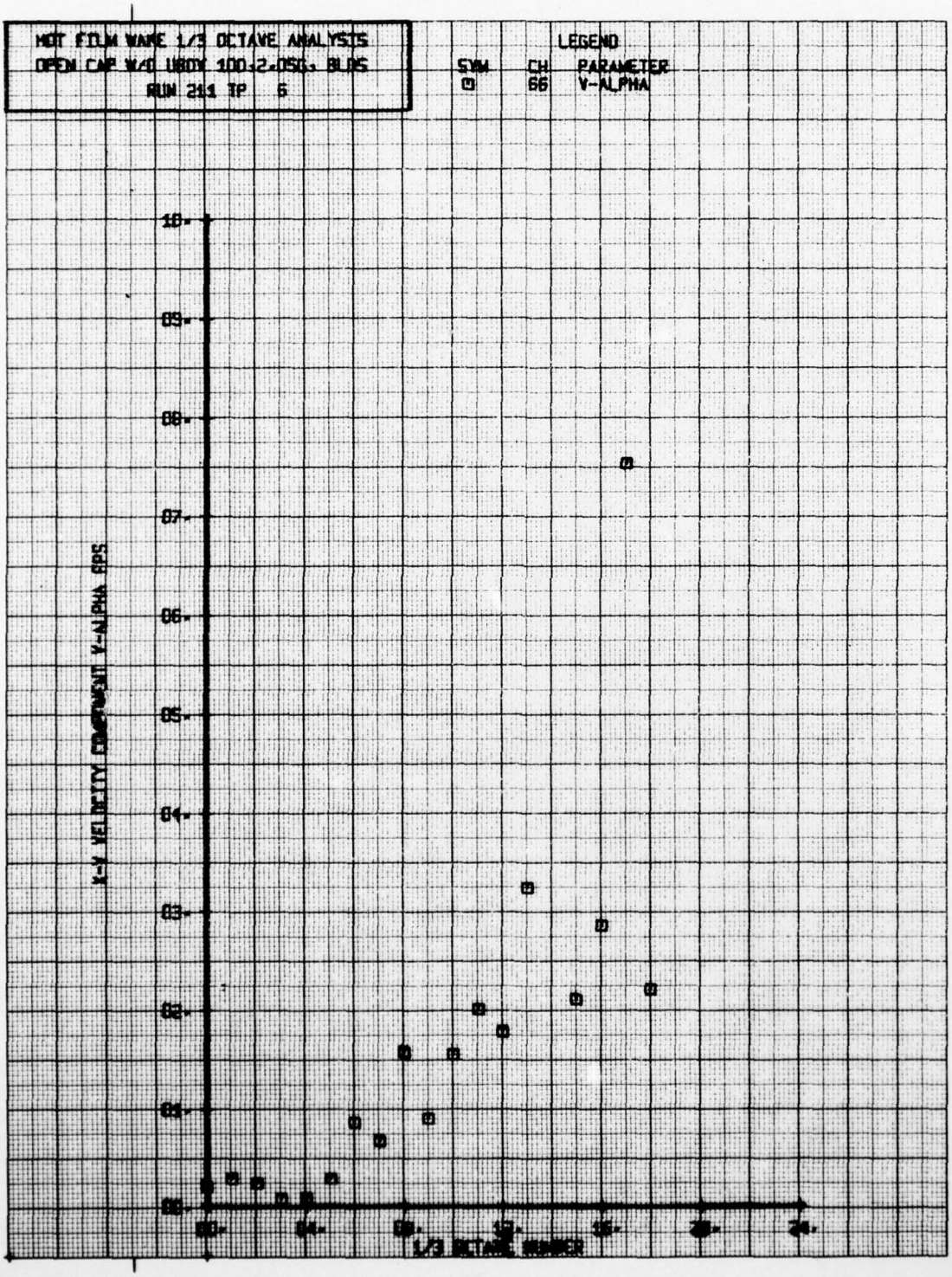

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UROV 100-2-056, BL05
RUN 211 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

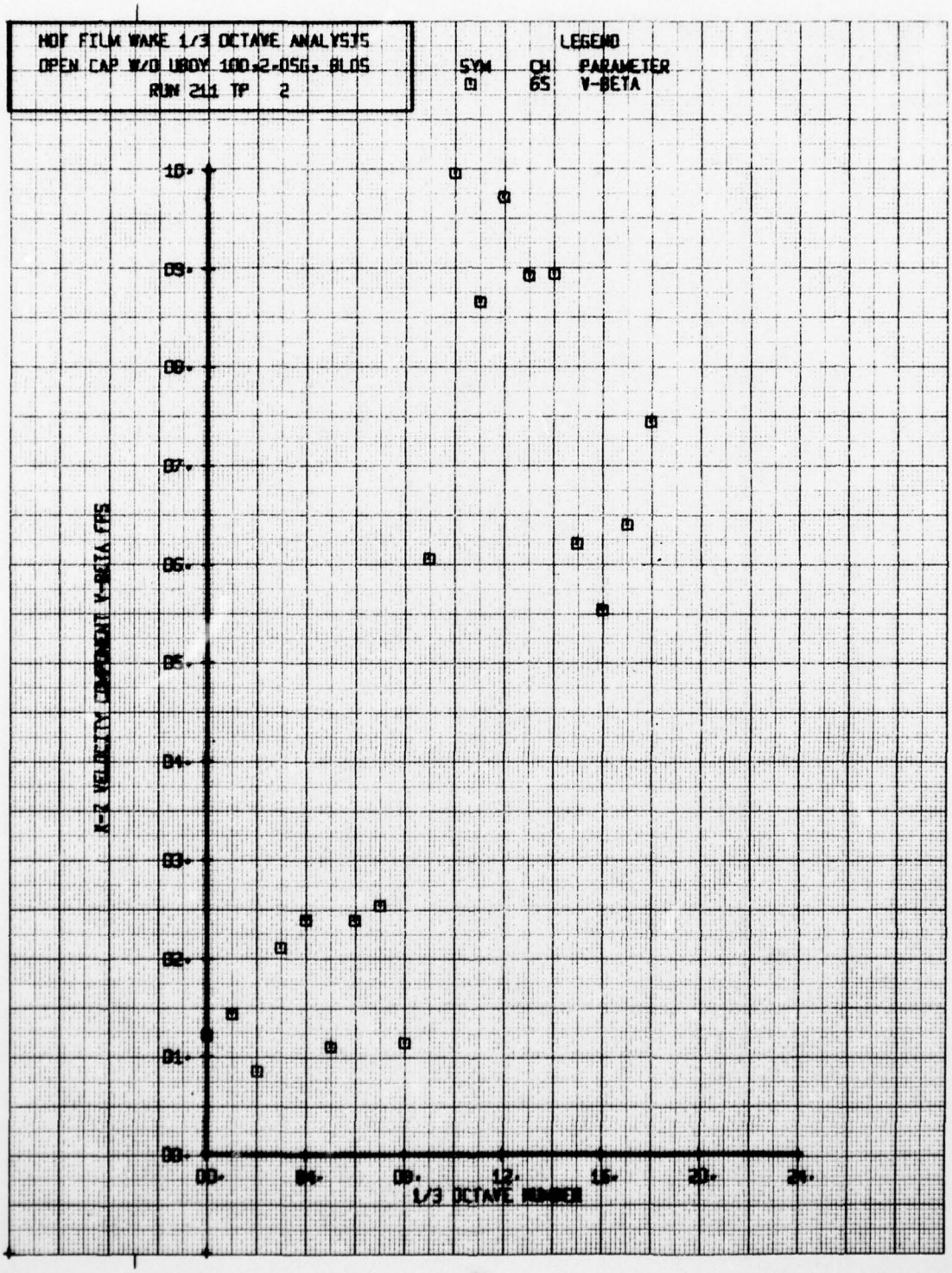

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100-2-056, BLDS
RUN 211 TP 2
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10
09
08
07
06
05
04
03
02
01
00
X-Y VELOCITY COMPONENT V-ALPHA FPS
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER

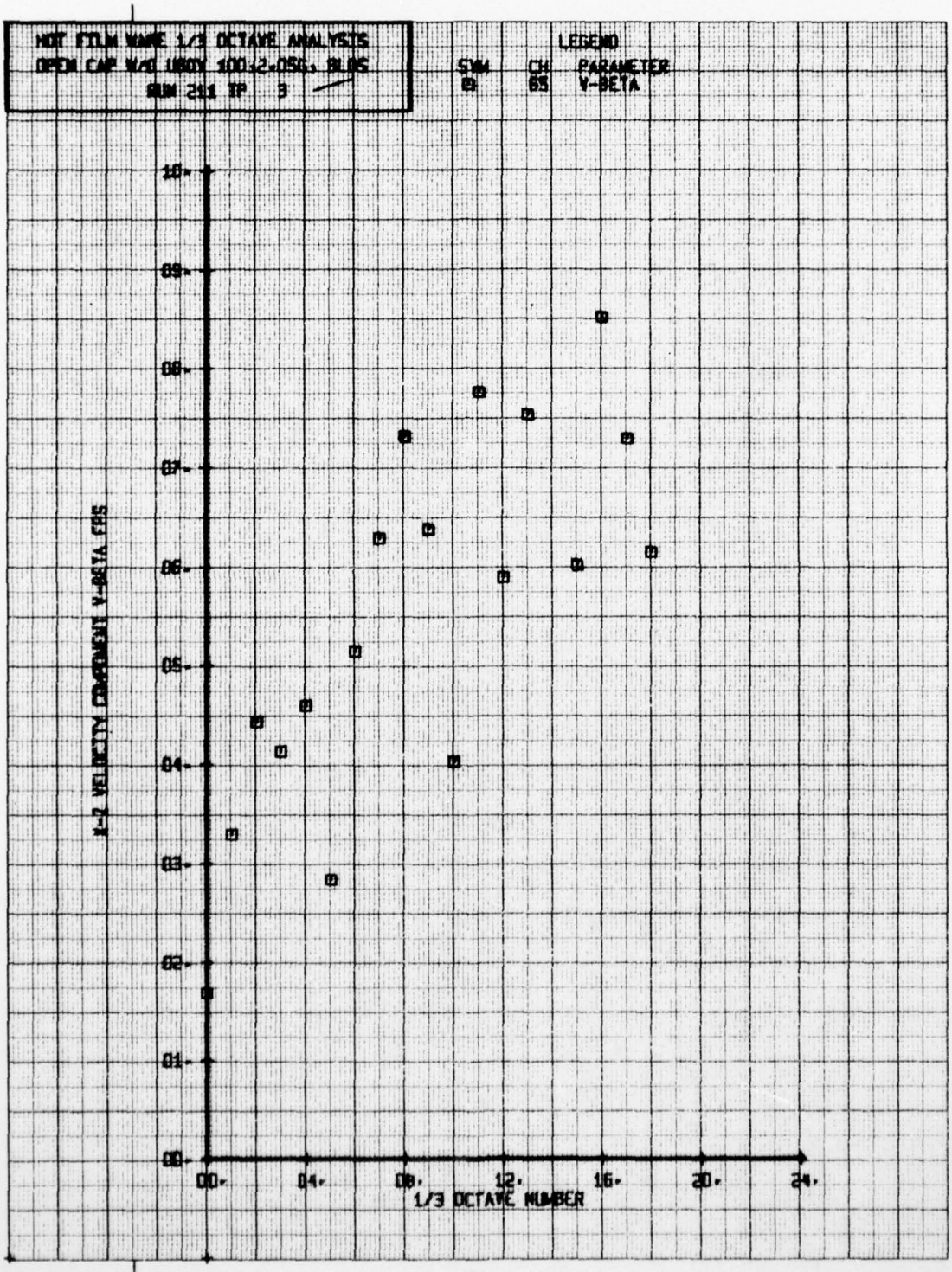

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBDY 100,2.05E, BLDS
RUN 211 TP 3
LEGEND
SYM CH PARAMETER
56 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-V VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

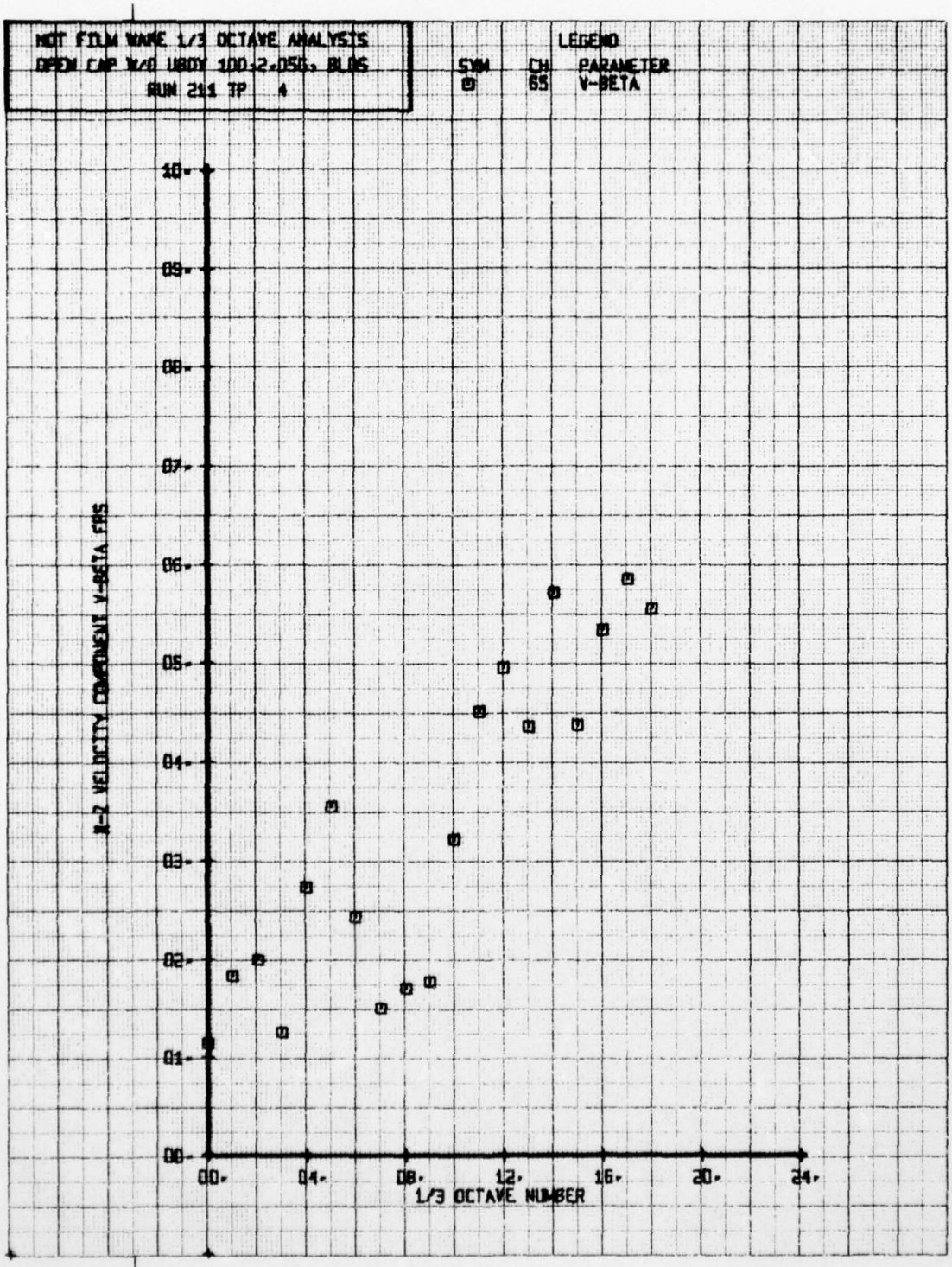

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O INSRT 180.2.856. BLDS
RUN 211 TP 4
LEGEND
SYM CH PARAMETER
56 V-ALPHA
X-V VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

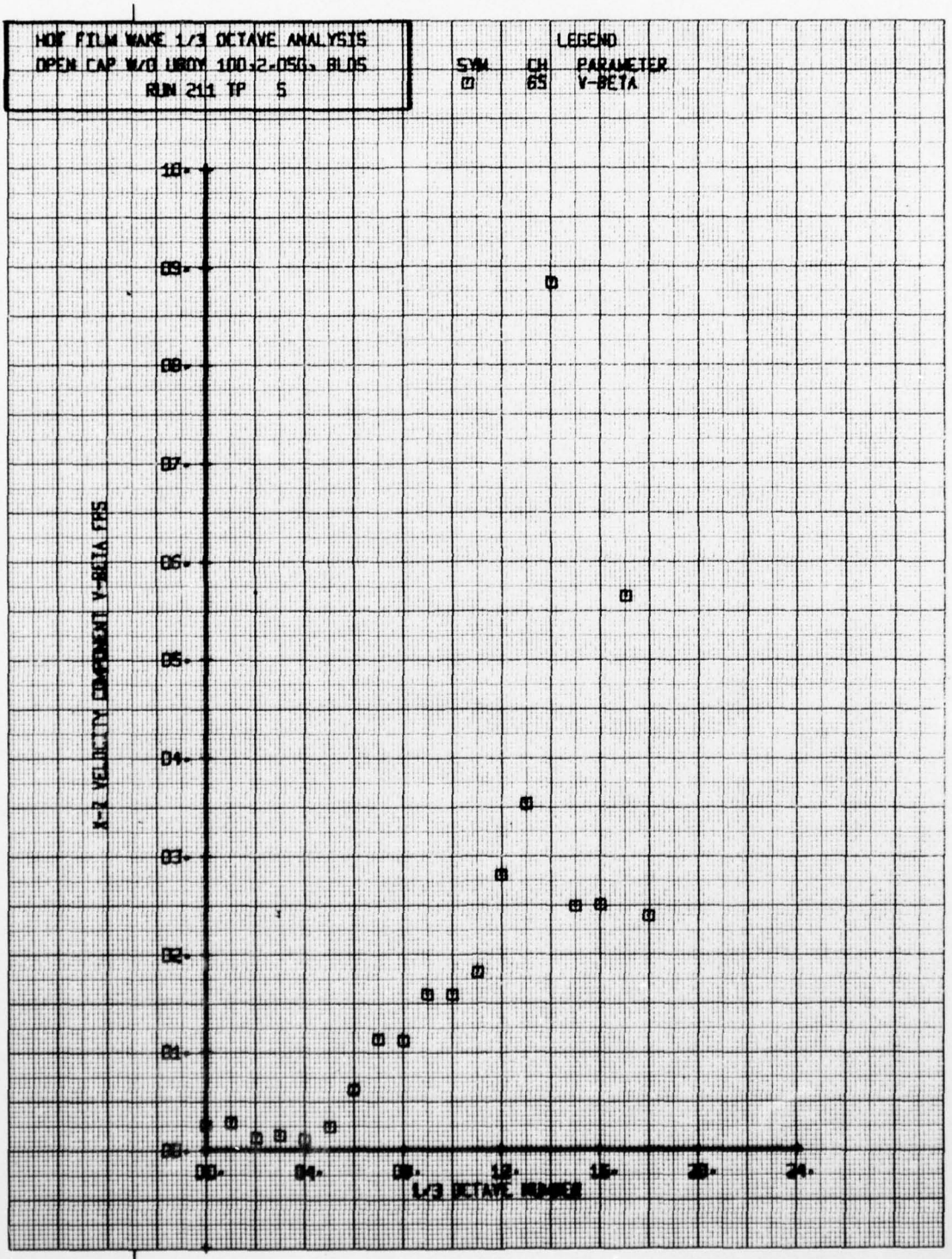

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 100,2.05G, BLOS
RUN 211 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
.10
.09
.08
.07
.06
.05
.04
.03
.02
.01
.00
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

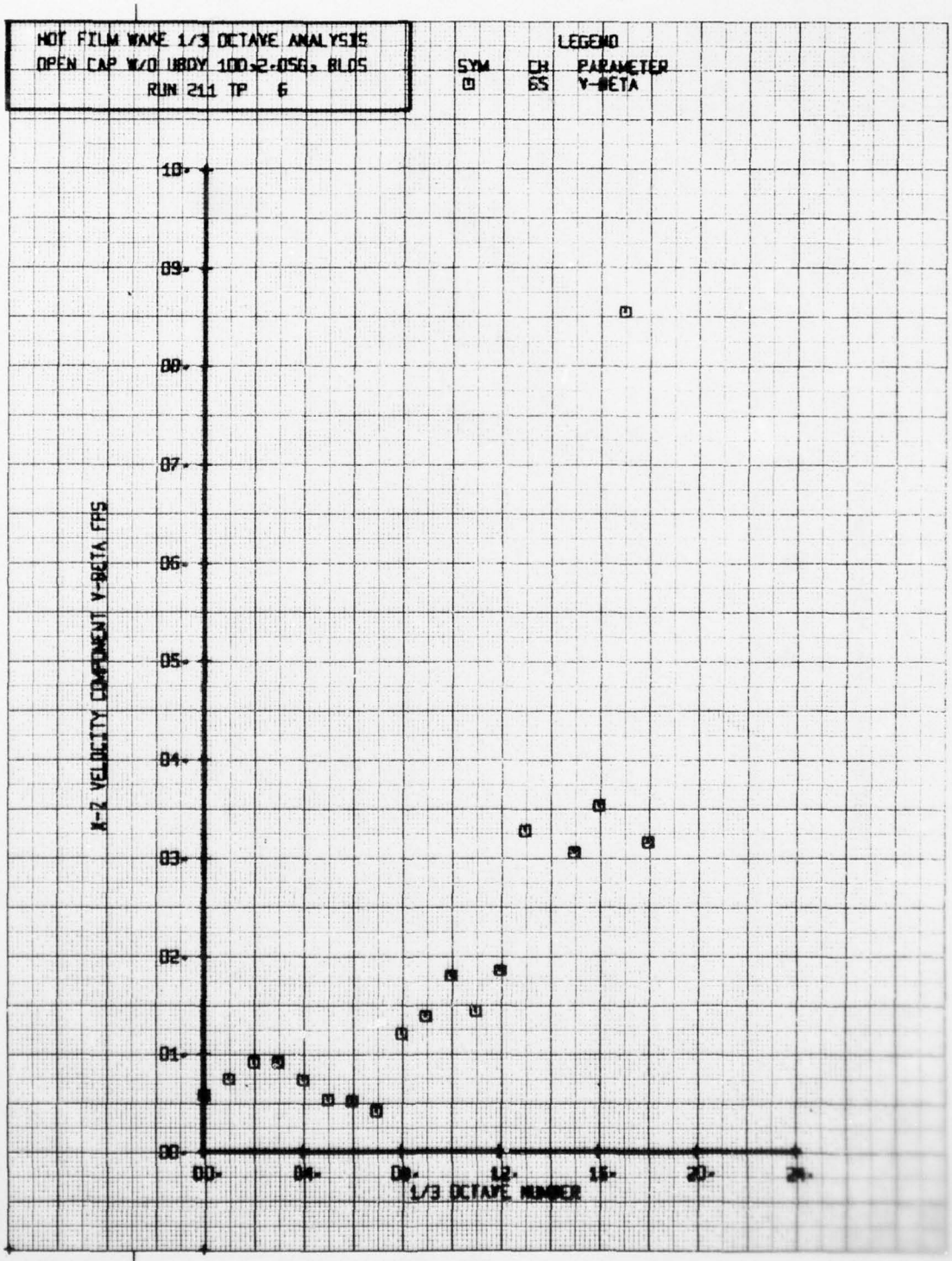

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100-2-050, BLDS
RUN 211 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10
09
08
07
06
05
04
03
02
01
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100.2-05G. BLOS
RUN 211 TP 2
LEGEND
SYM CH PARAMETER
65 V-BETA
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.0
X-Z VELOCITY COMPONENT V-BETA FPS
00
06
09
12
15
20
24
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 100.2-DEG. BLDS
RUN 211 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

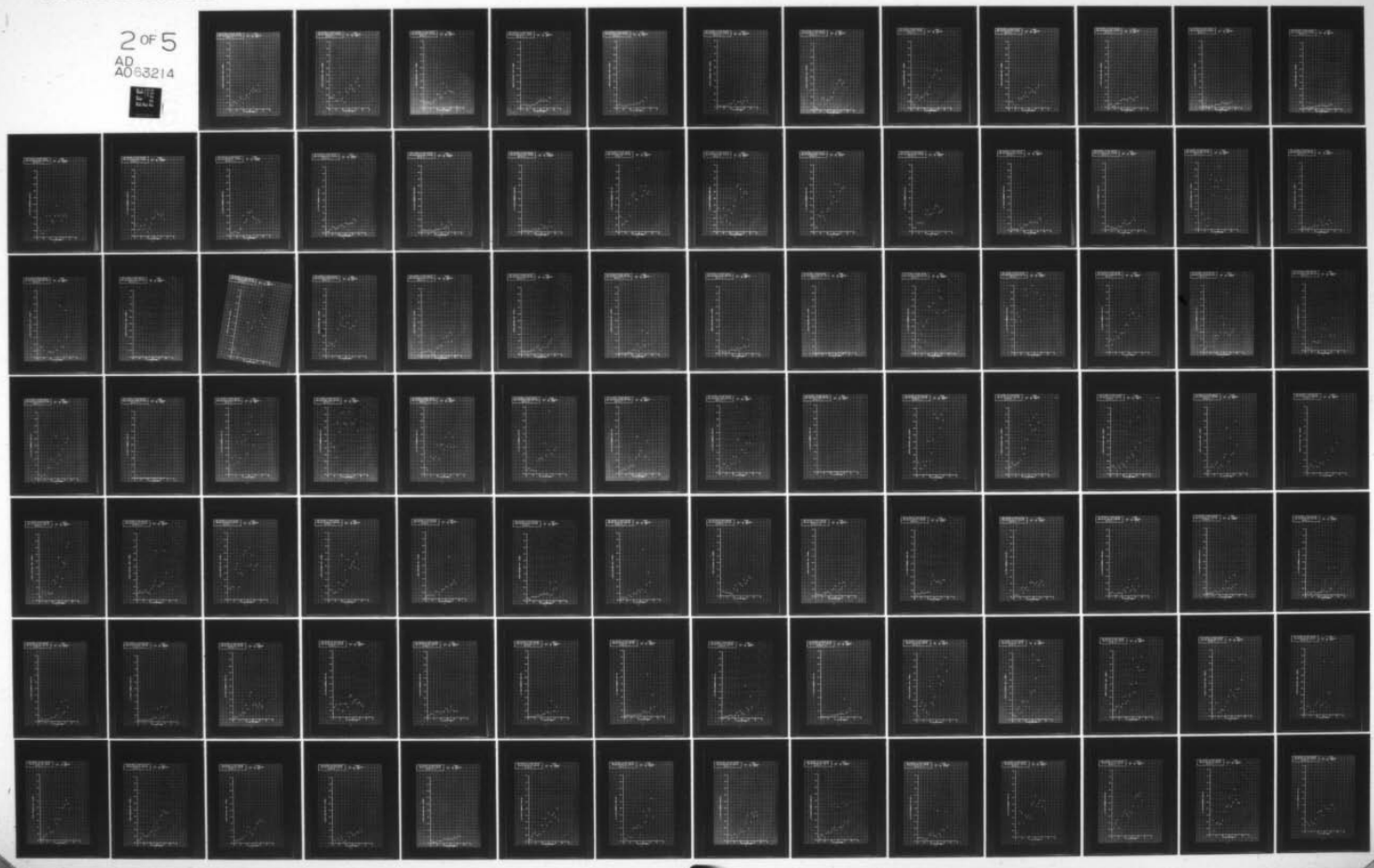

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 100.2.05G, BL05
RUN 211 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

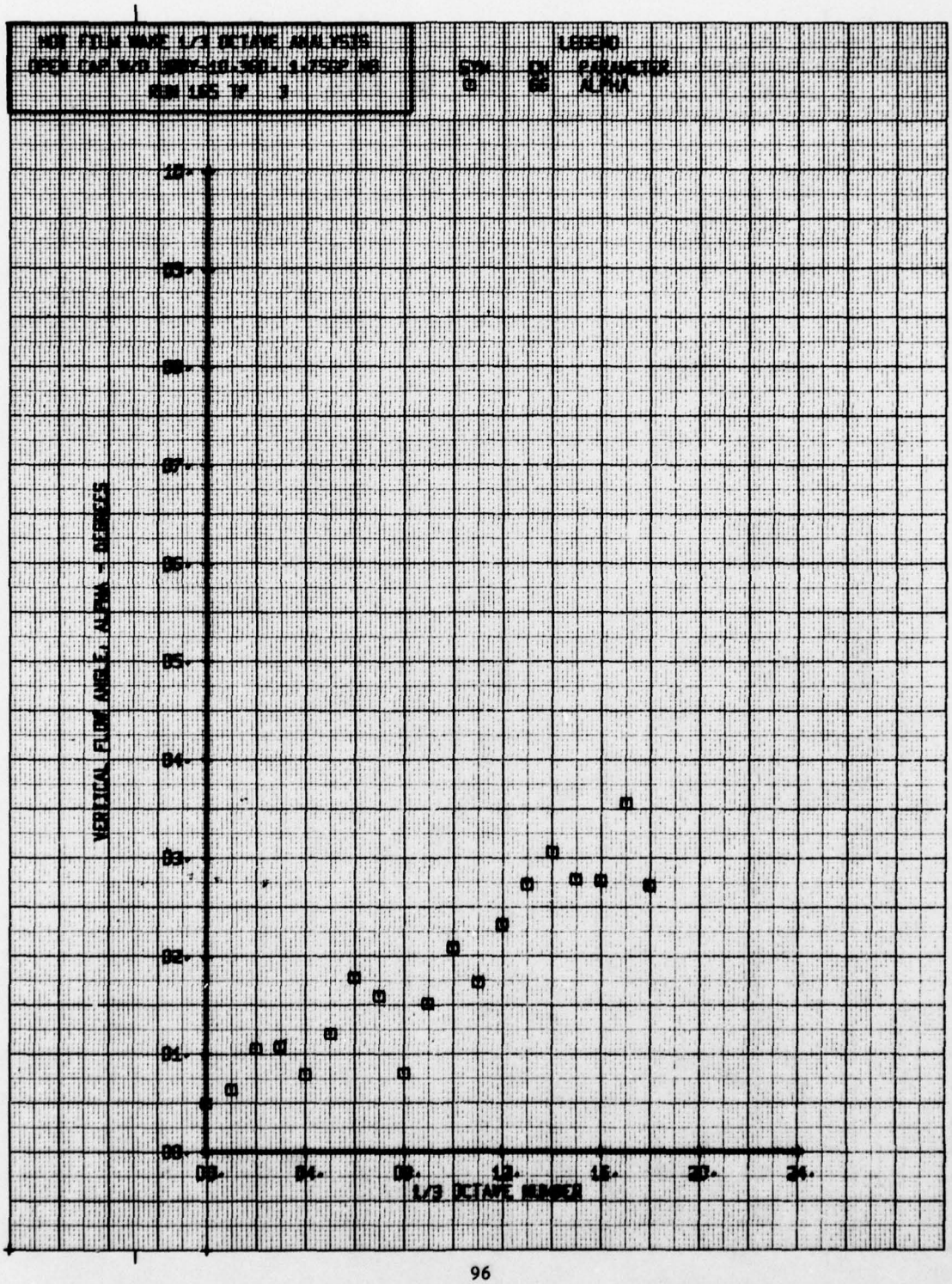

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 100-2-050, BLDS
RUN 211 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.

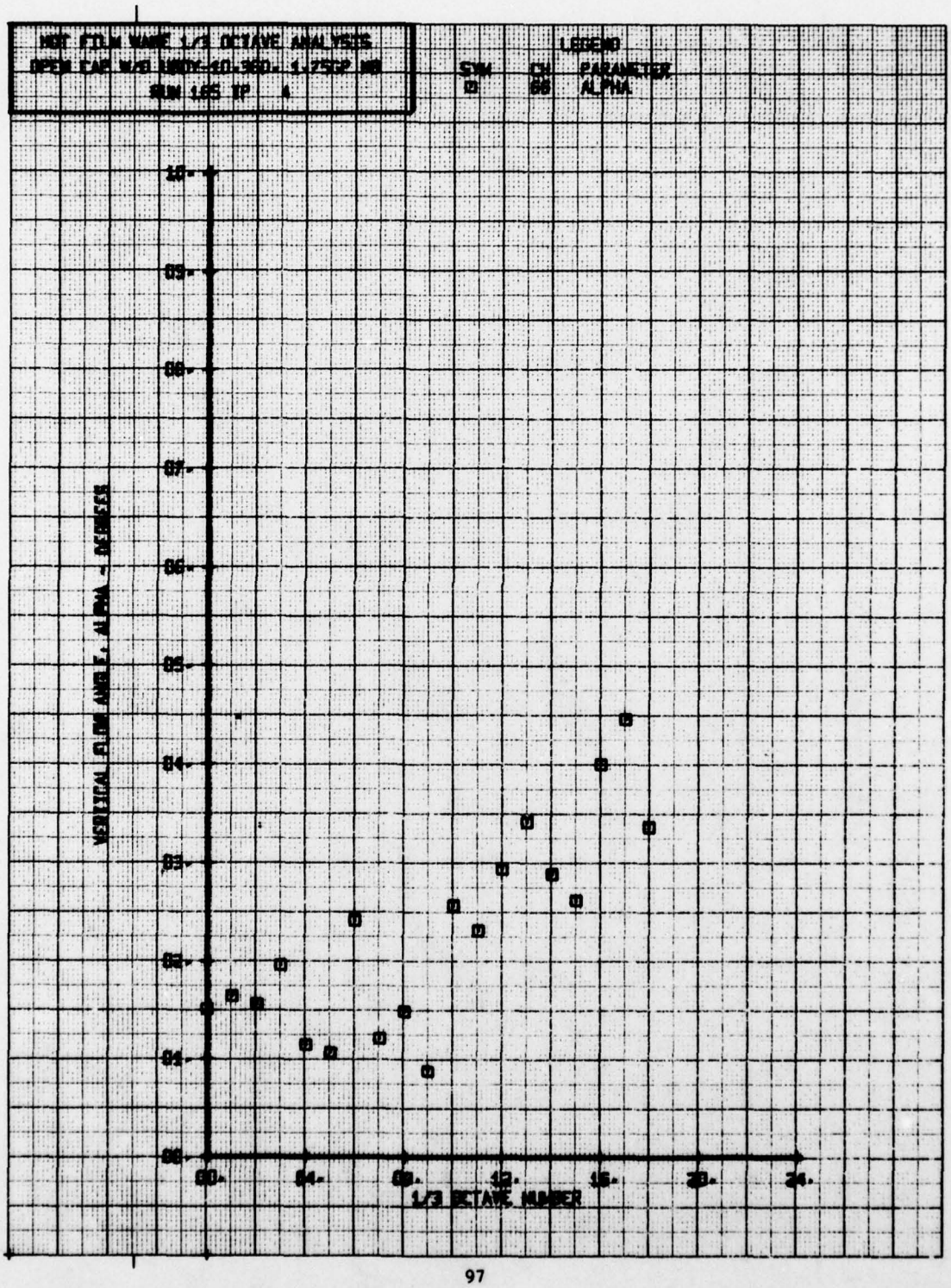

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBDY 100-2-056, BLDS
RUN 211 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER
X-Z VELOCITY COMPONENT V-BETA FPS

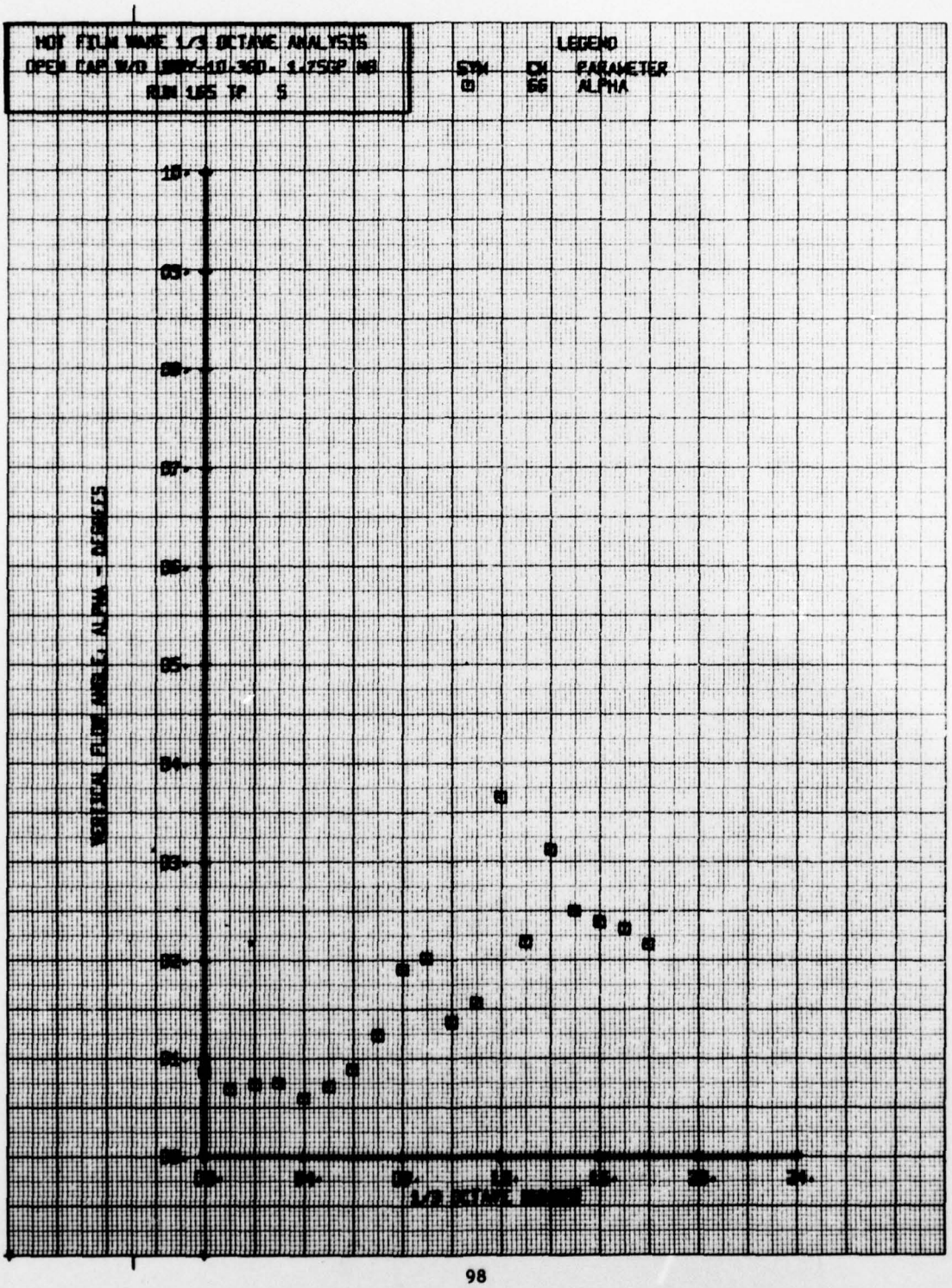
AD-A063 214 BOEING VERTOL CO PHILADELPHIA PA F/G 1/3
INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFI--ETC(U)
SEP 78 P F SHERIDAN DAAJ02-77-C-0020
UNCLASSIFIED USARTL-TR-78-23D NL

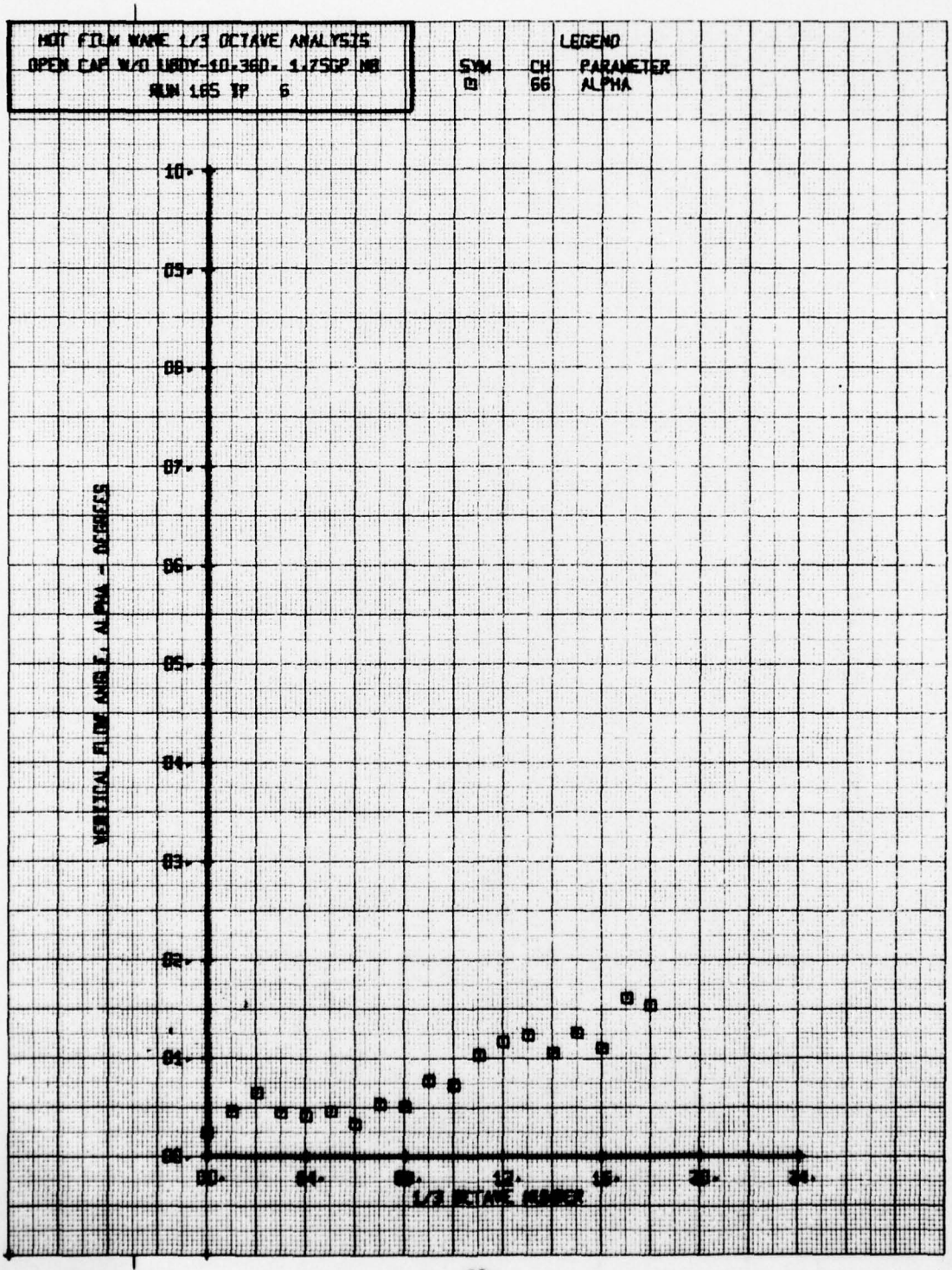
2 OF 5
AD
A063214

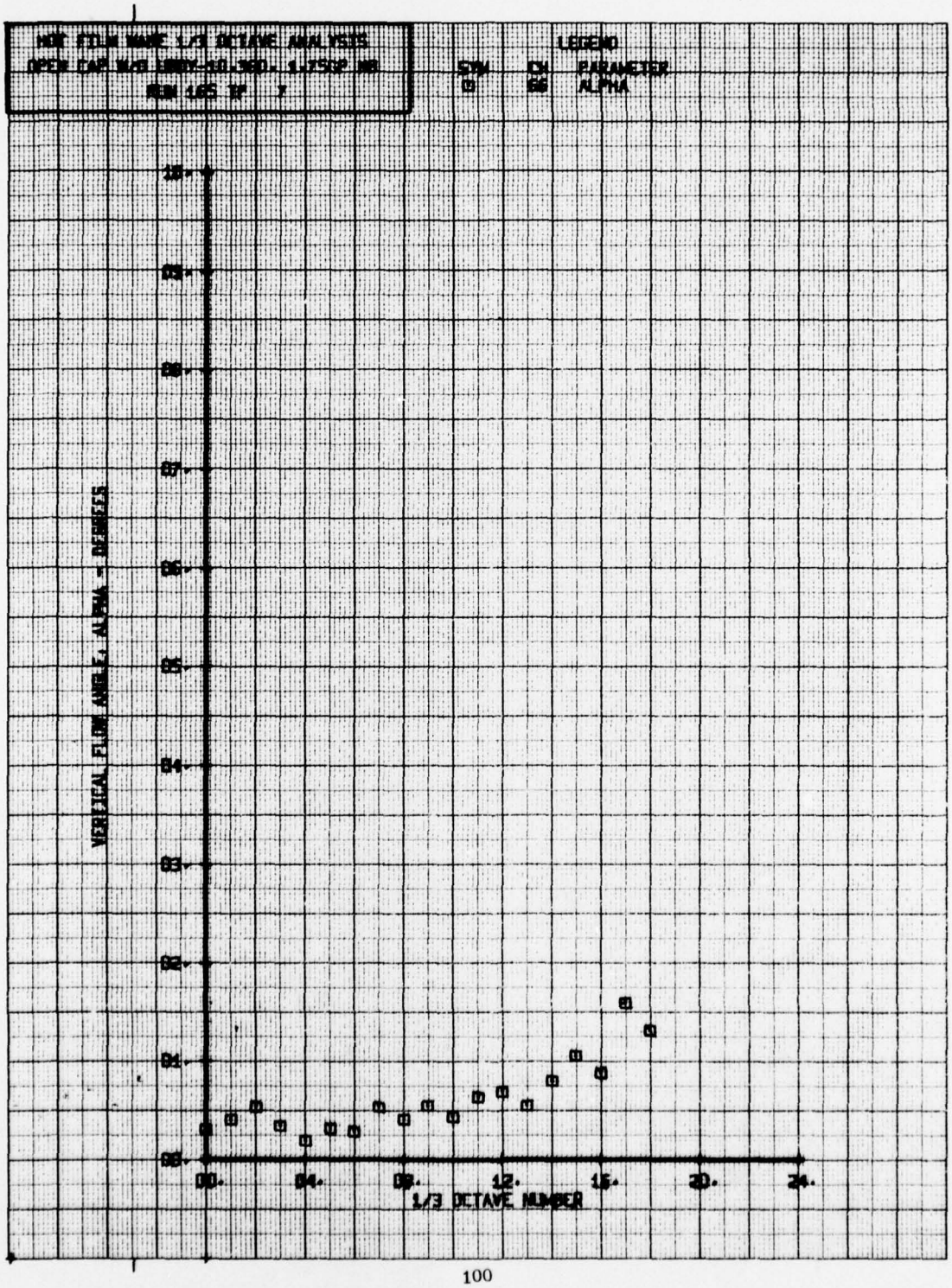


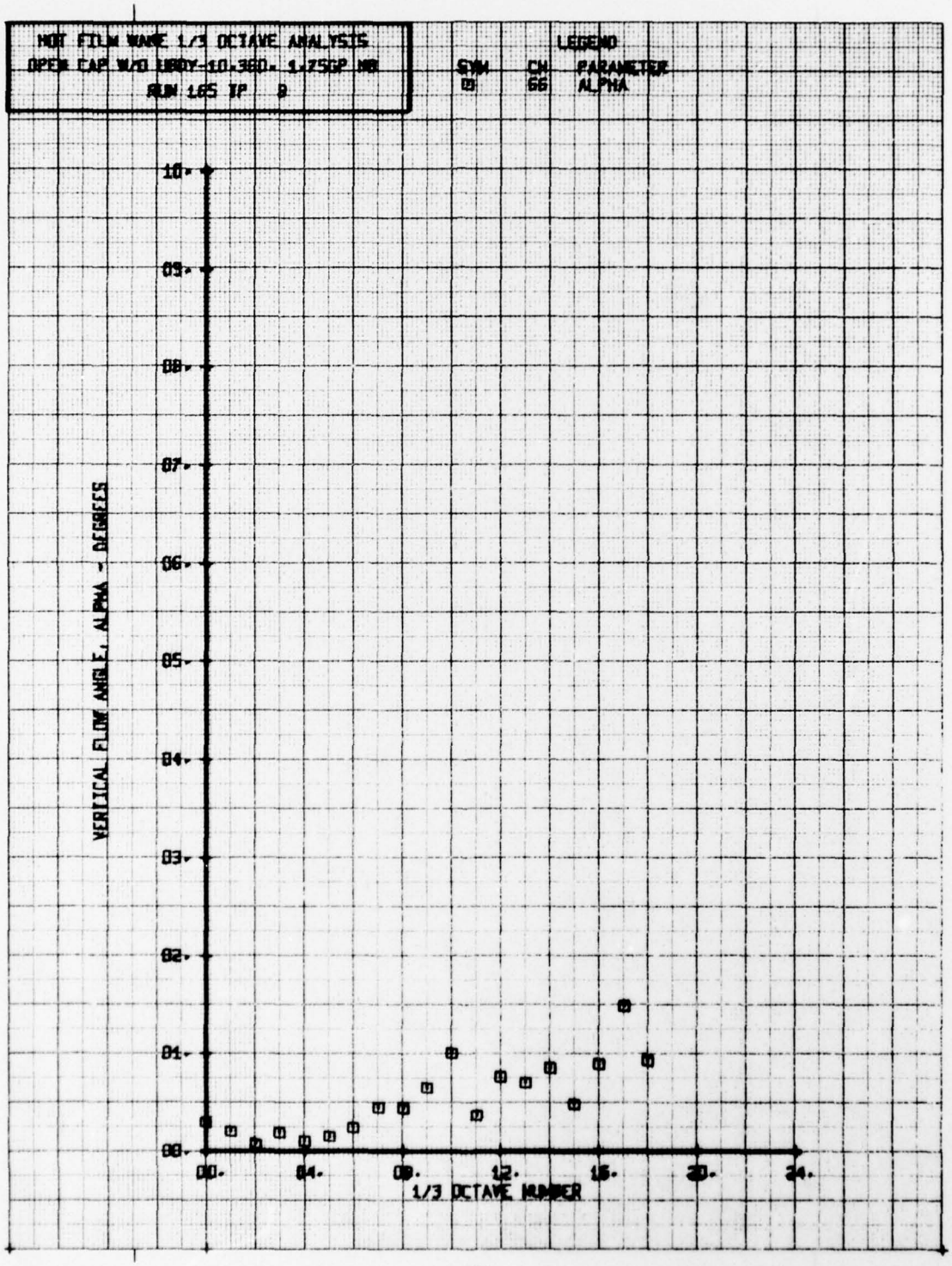

LEGEND
SYM DK PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA, = DEGREES
1/3 OCTAVE NUMBER

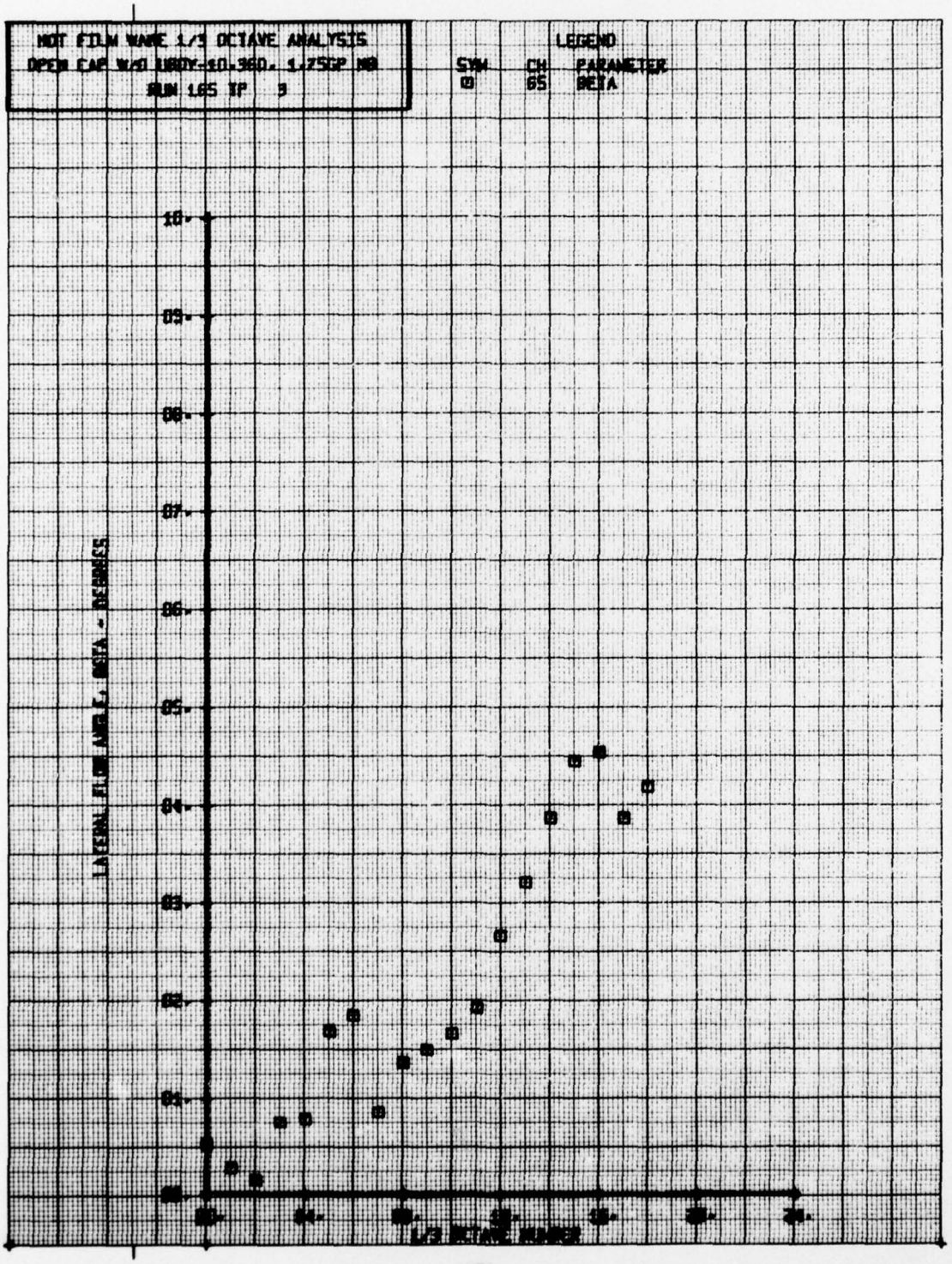

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY-10.360. 1.75GP MB
RUN 165 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

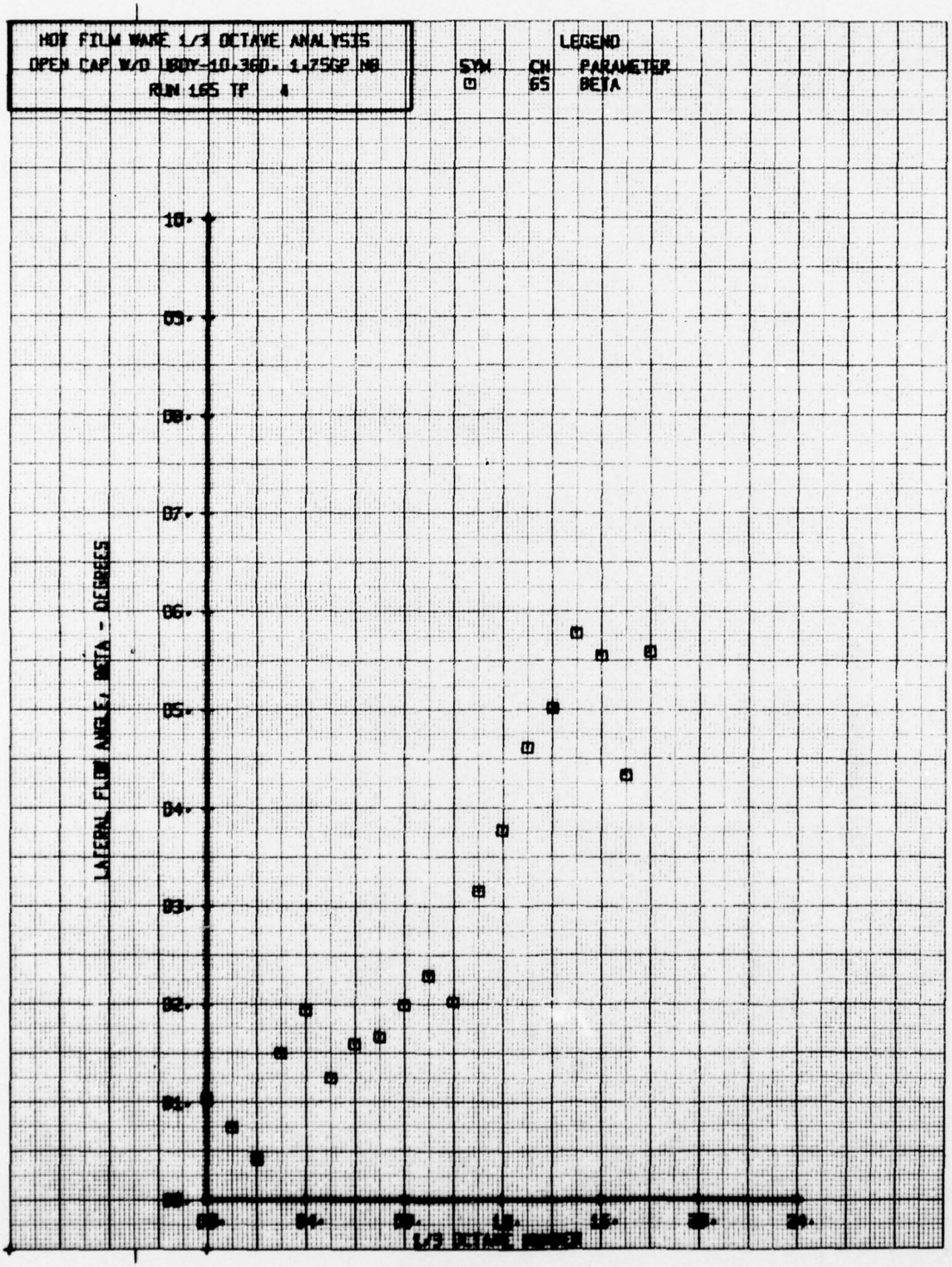

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O
RUN 165 TP 5
LEGEND
SYM CH PARAMETER
0 66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE

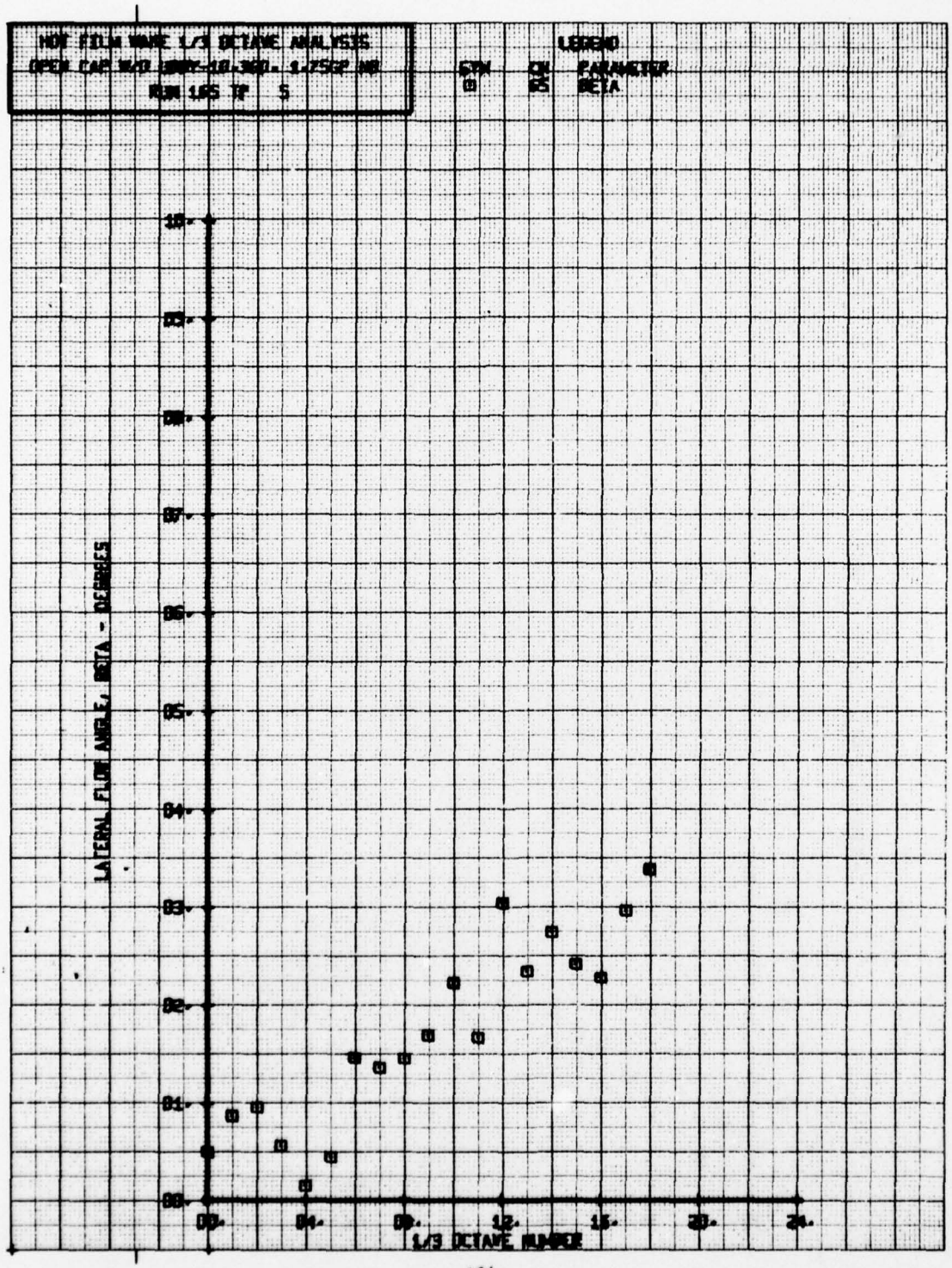

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY-10.360- 1.75GP NB
RUN 185 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

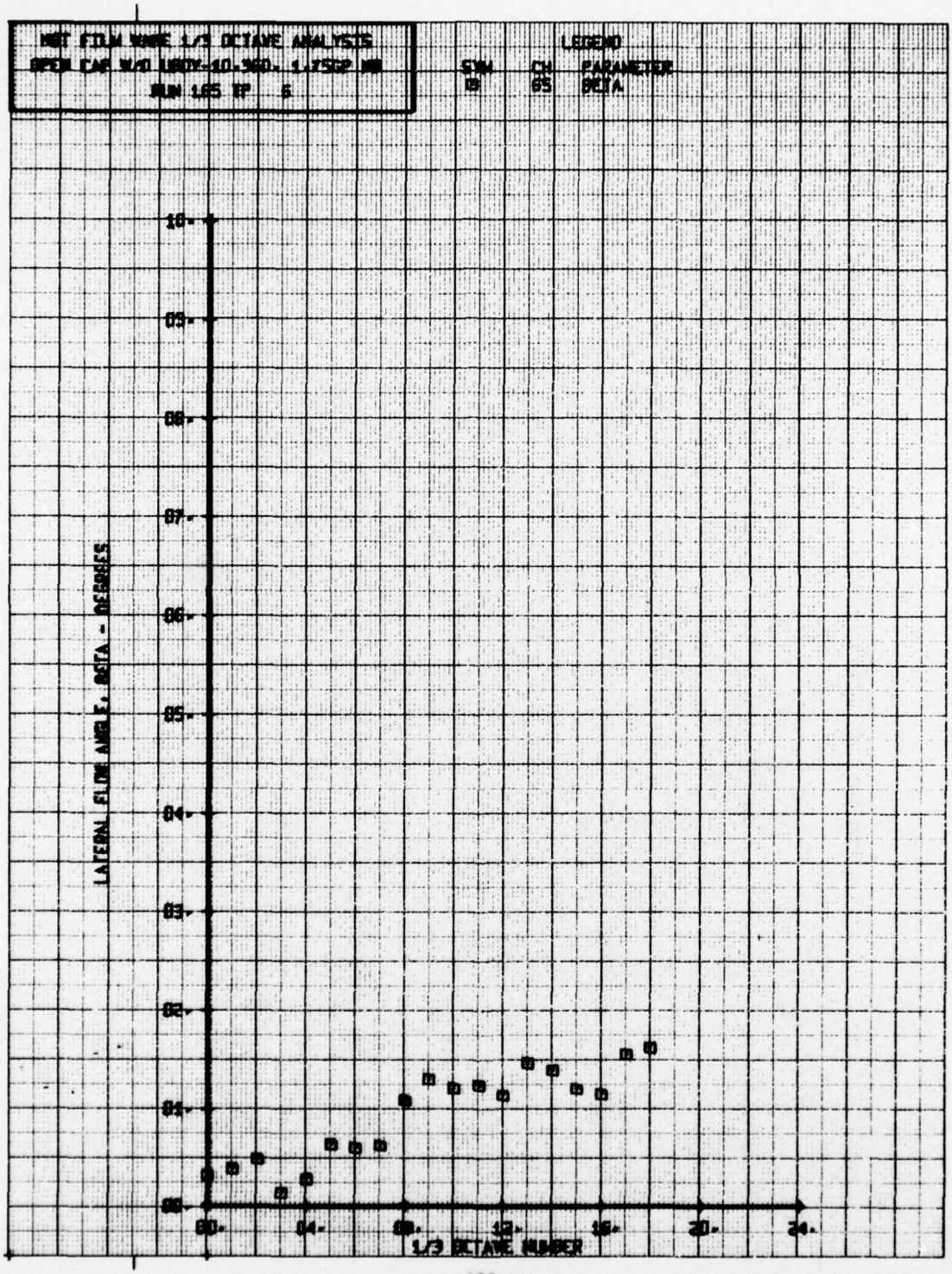

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

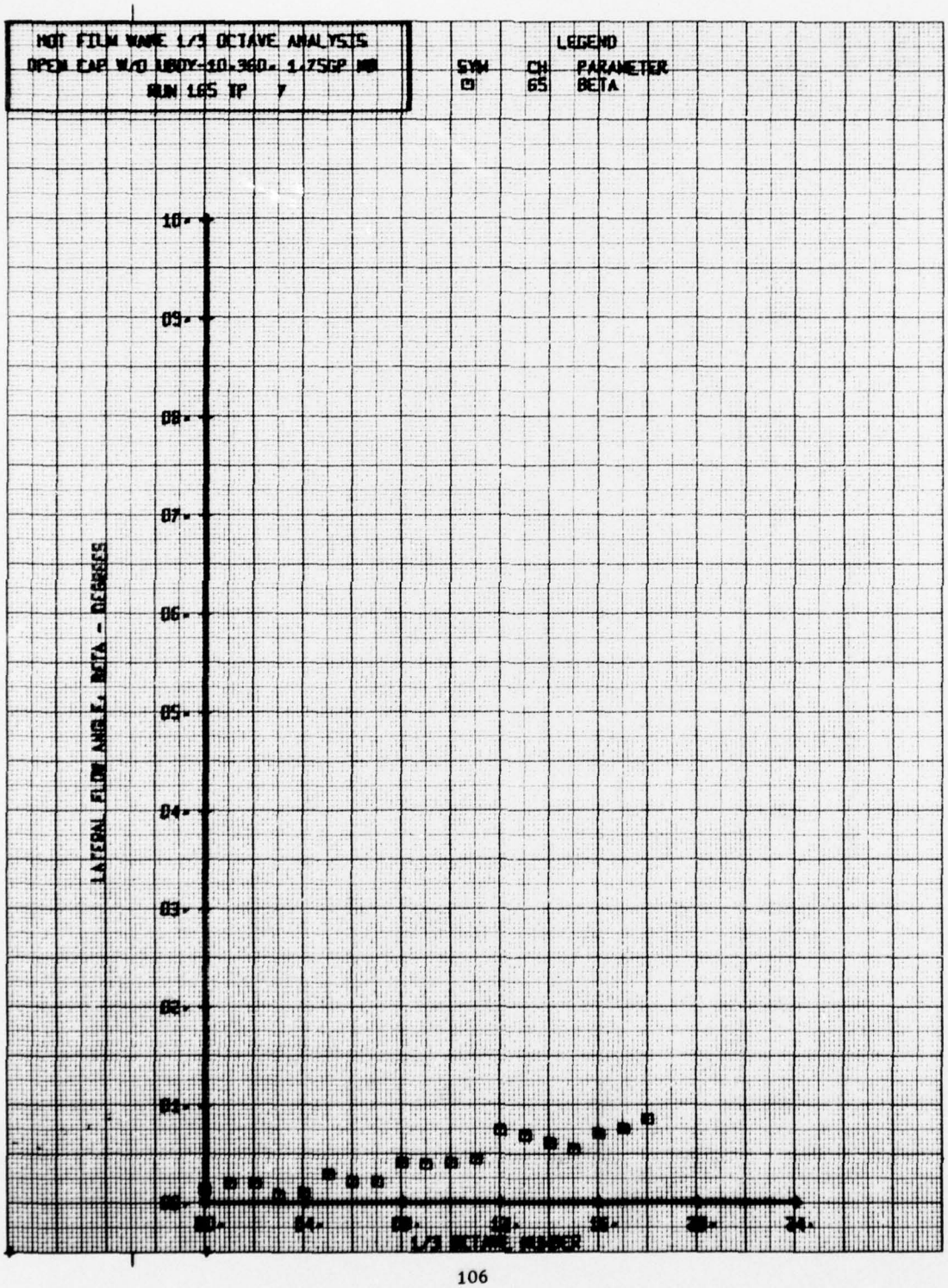

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBDY-10.360. 1.75GP MR
RUN 165 IP 9
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

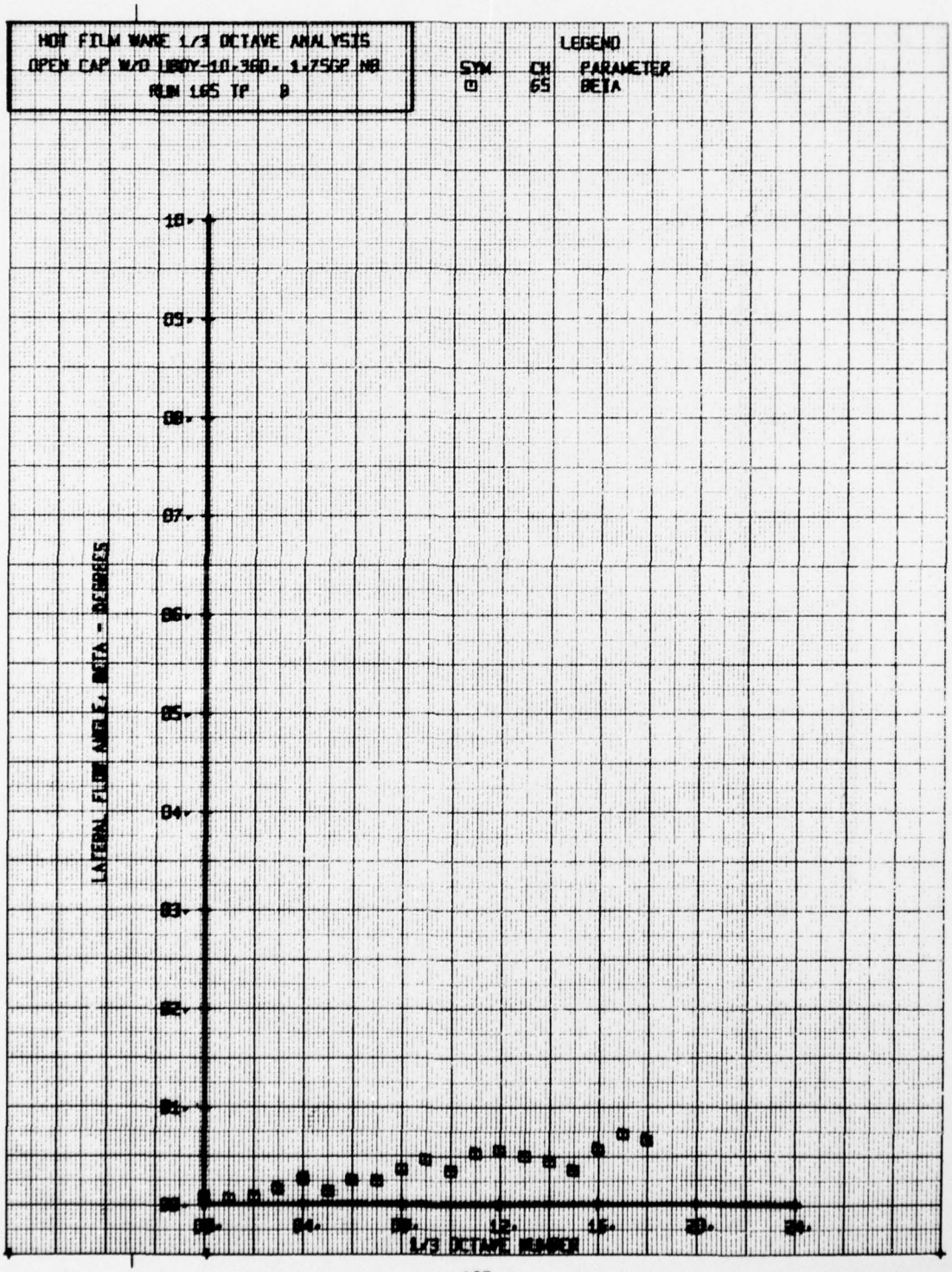

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY-10.360. 1.25GP MB
RUN 165 YP 3
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

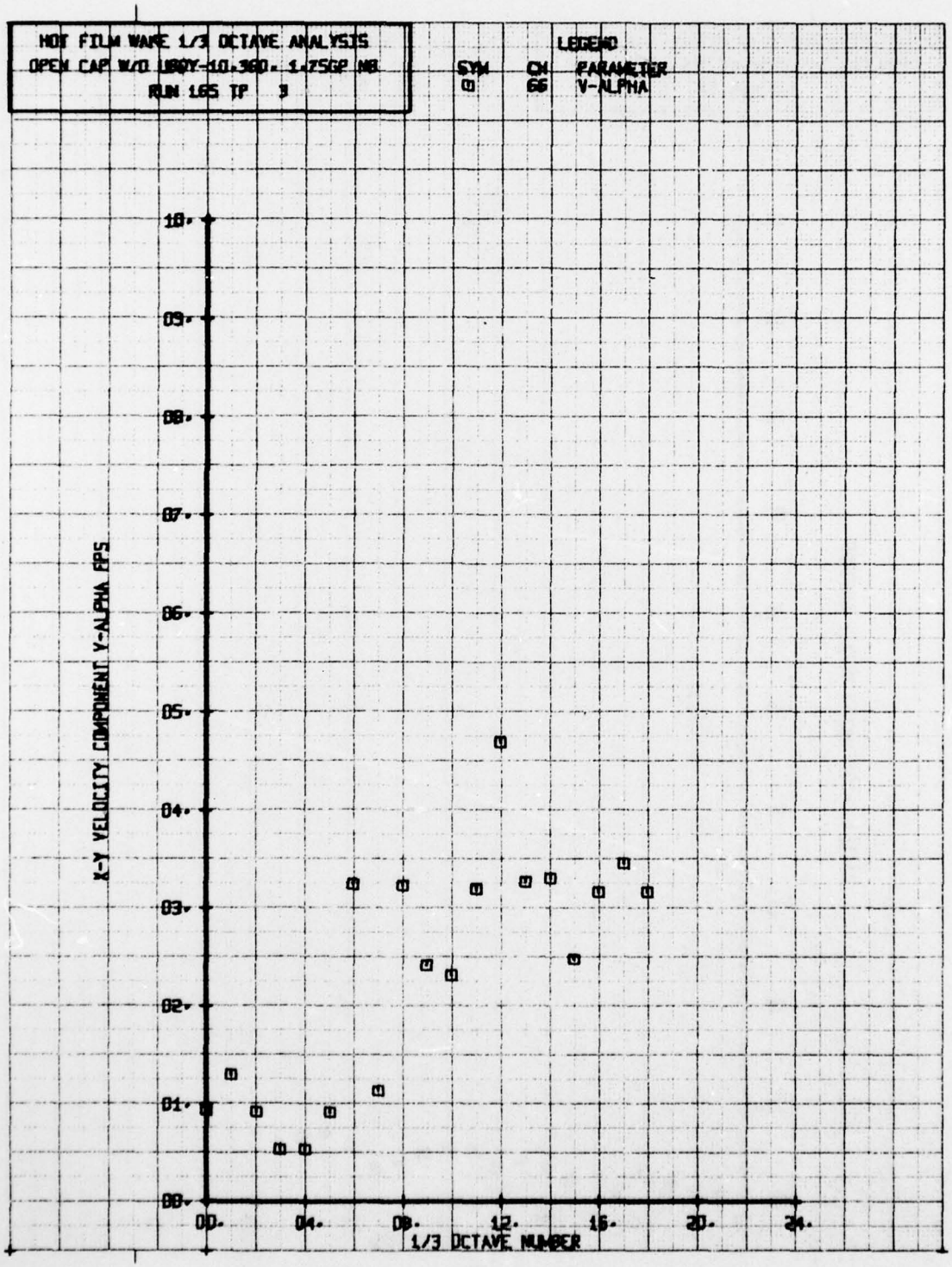

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY-10.360. 1.75GP NB
RUN 165 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

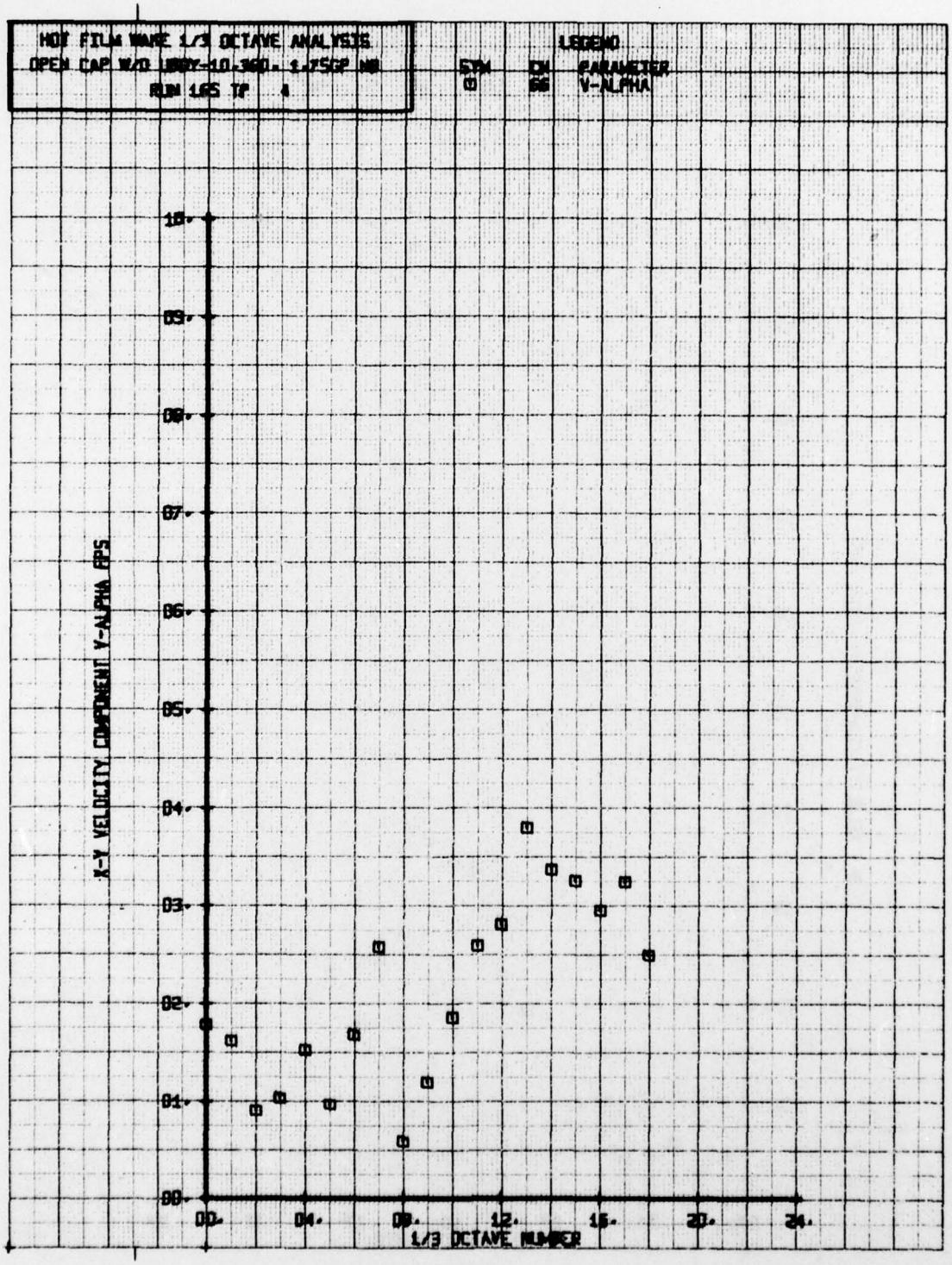

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O
RUN 165 TF 5
LEGEND
CPM
CH PARAMETER
05 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

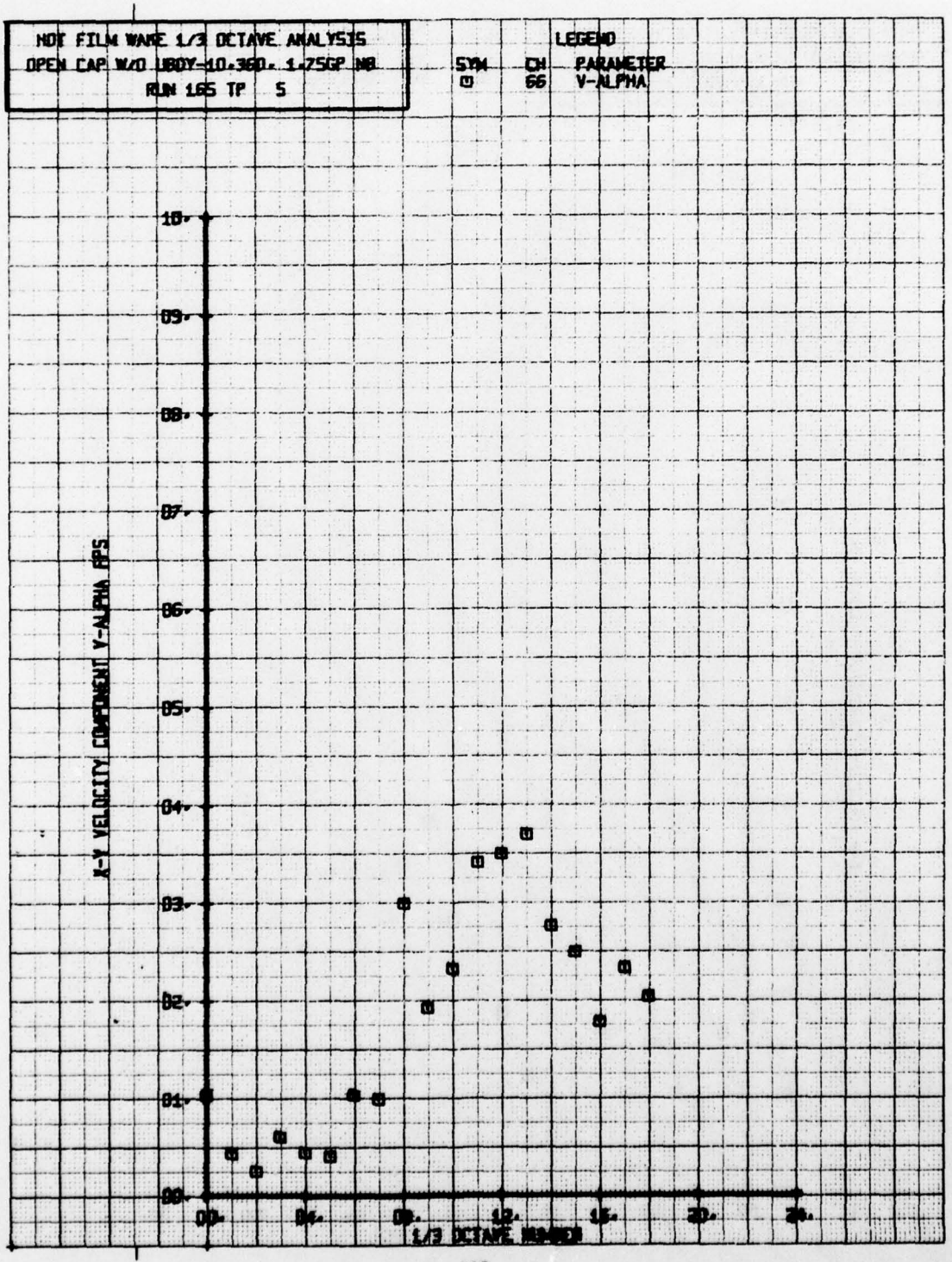

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAS W/O LBODY-10.360. 1.7502 MB
RUN 165 TP 6
LEGEND
SYM CH PARAMETER
0 65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

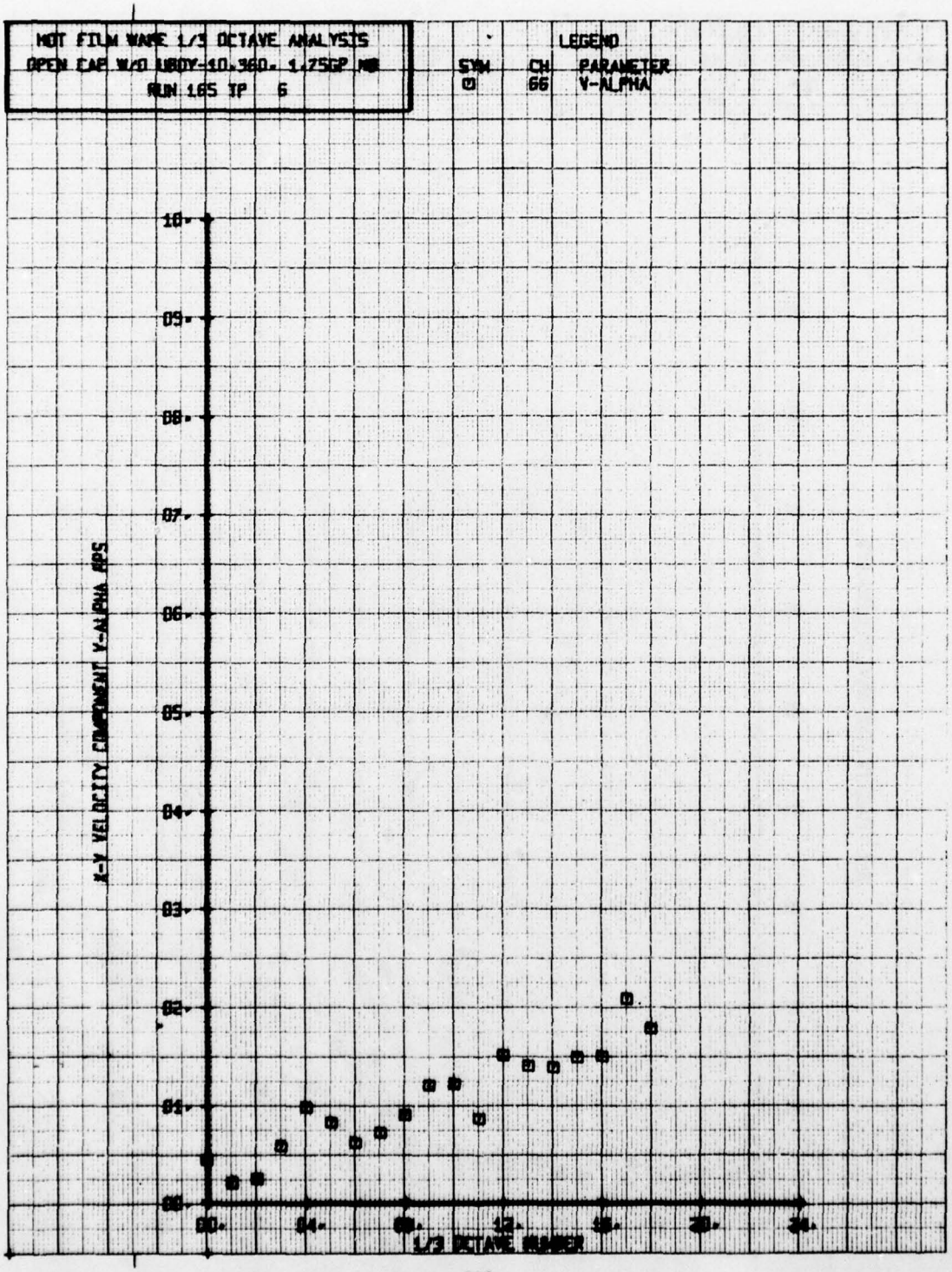

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-10.360. 1.75GP MR
RUN 165 TP 7
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.

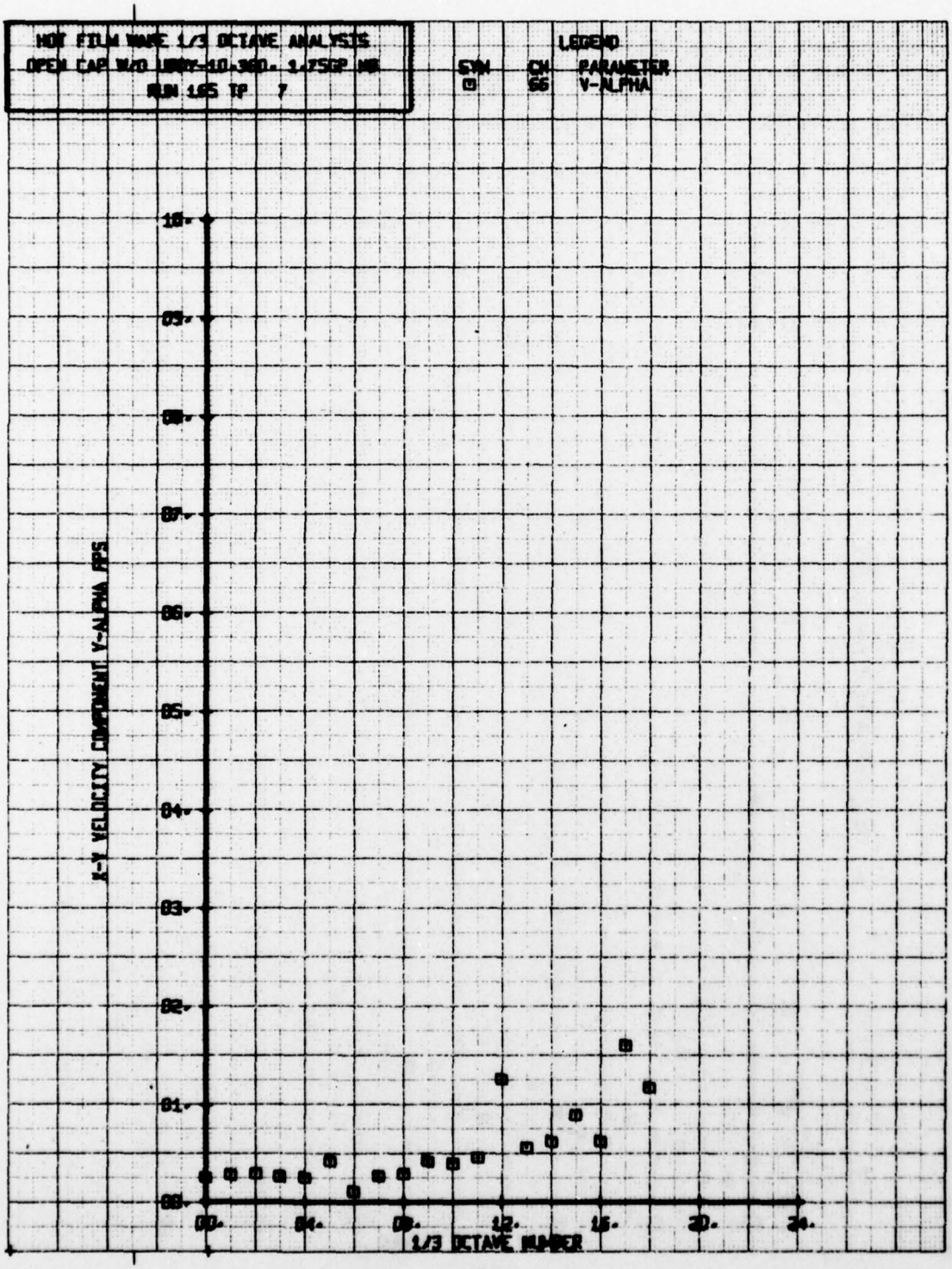

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY-10.360. 1.75GP NB
RUN 165 TP 8
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

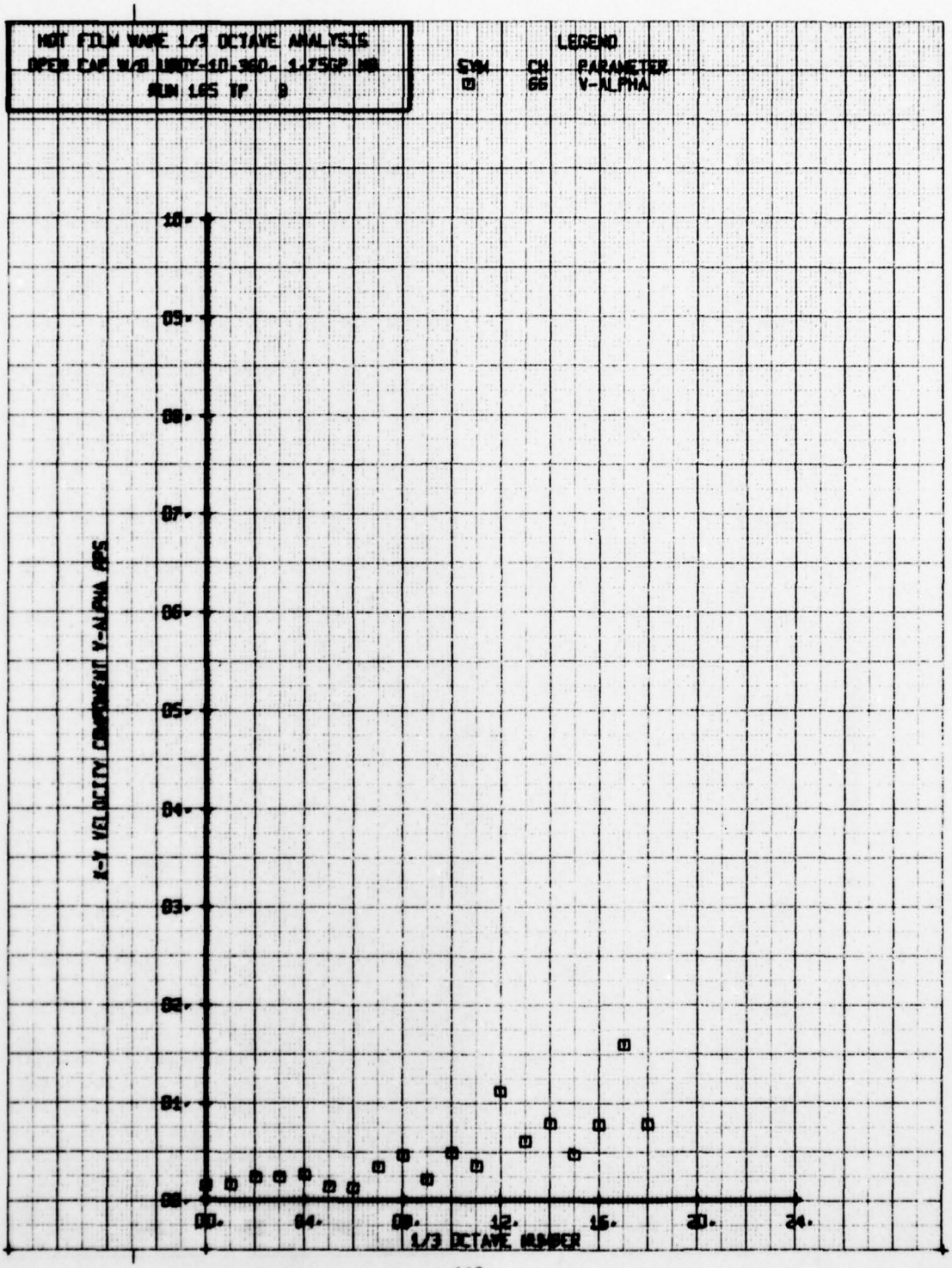

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-10.360. 1.25GP NB
RUN 165 TP 3
LEGEND
SYM CH PARAMETER
0 66 V-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

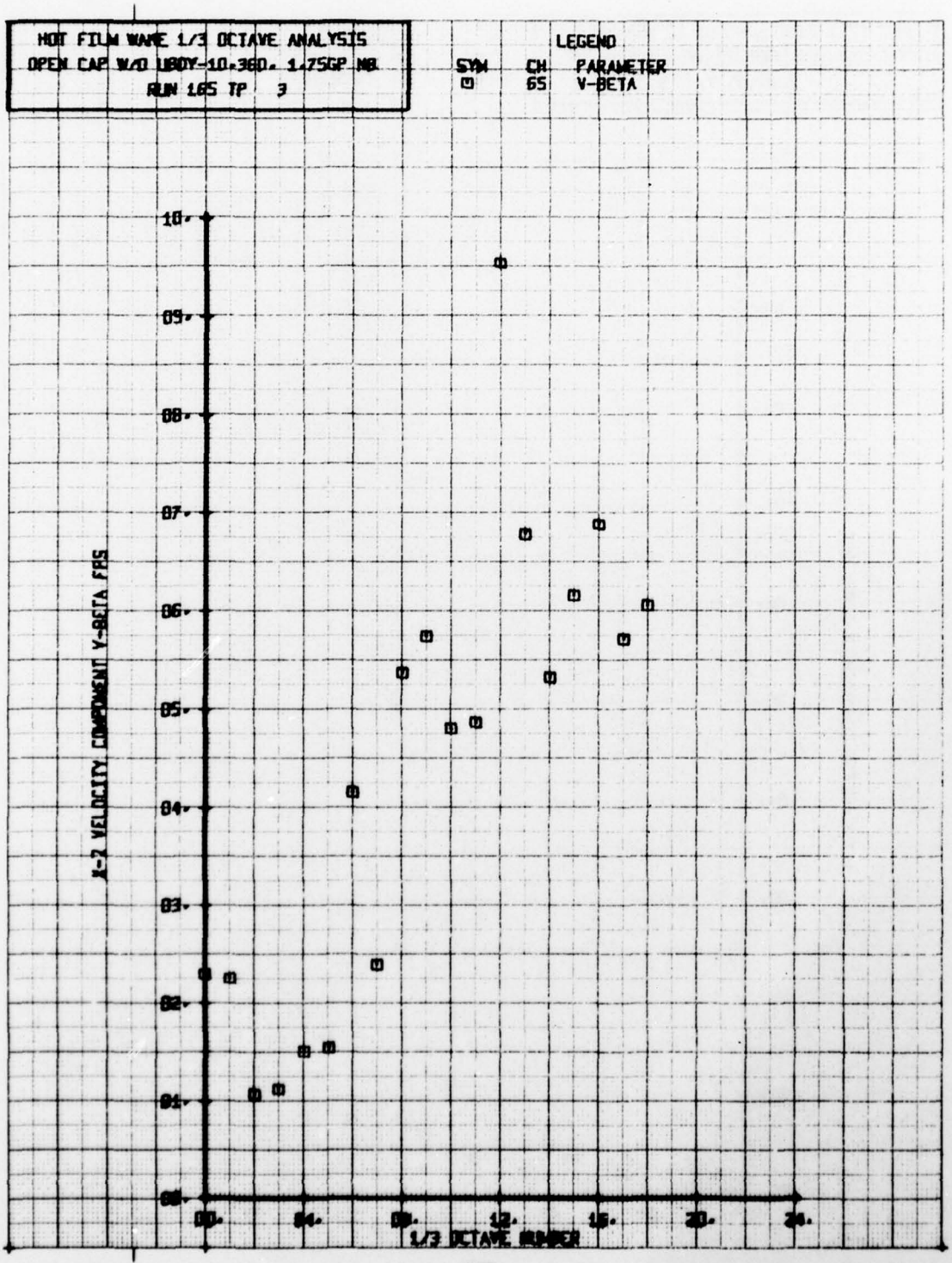

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O
RUN 165 TP 4
LEGEND
SYM DM PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

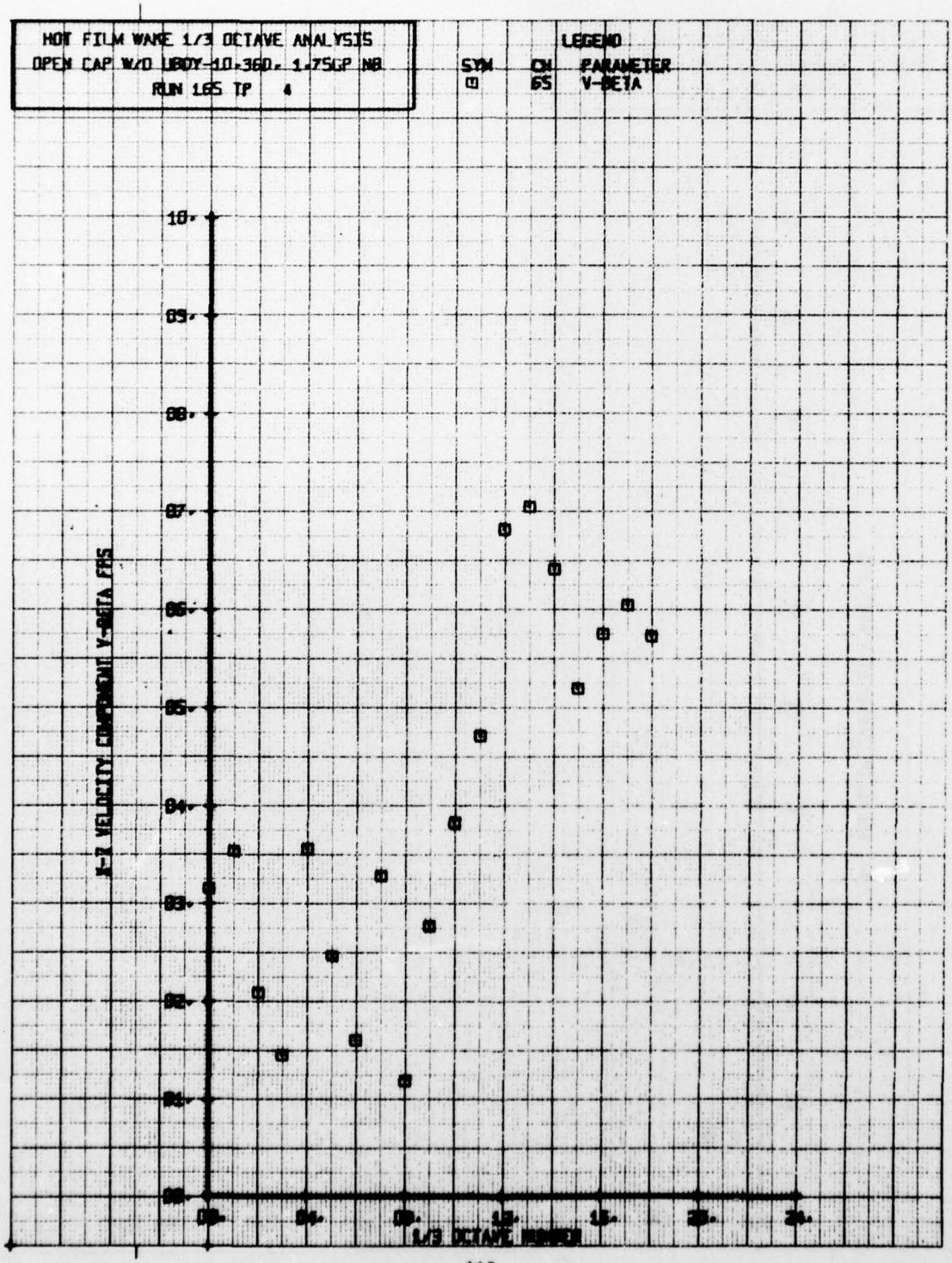

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-10.360. 1.75GP NB
RUN 165 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

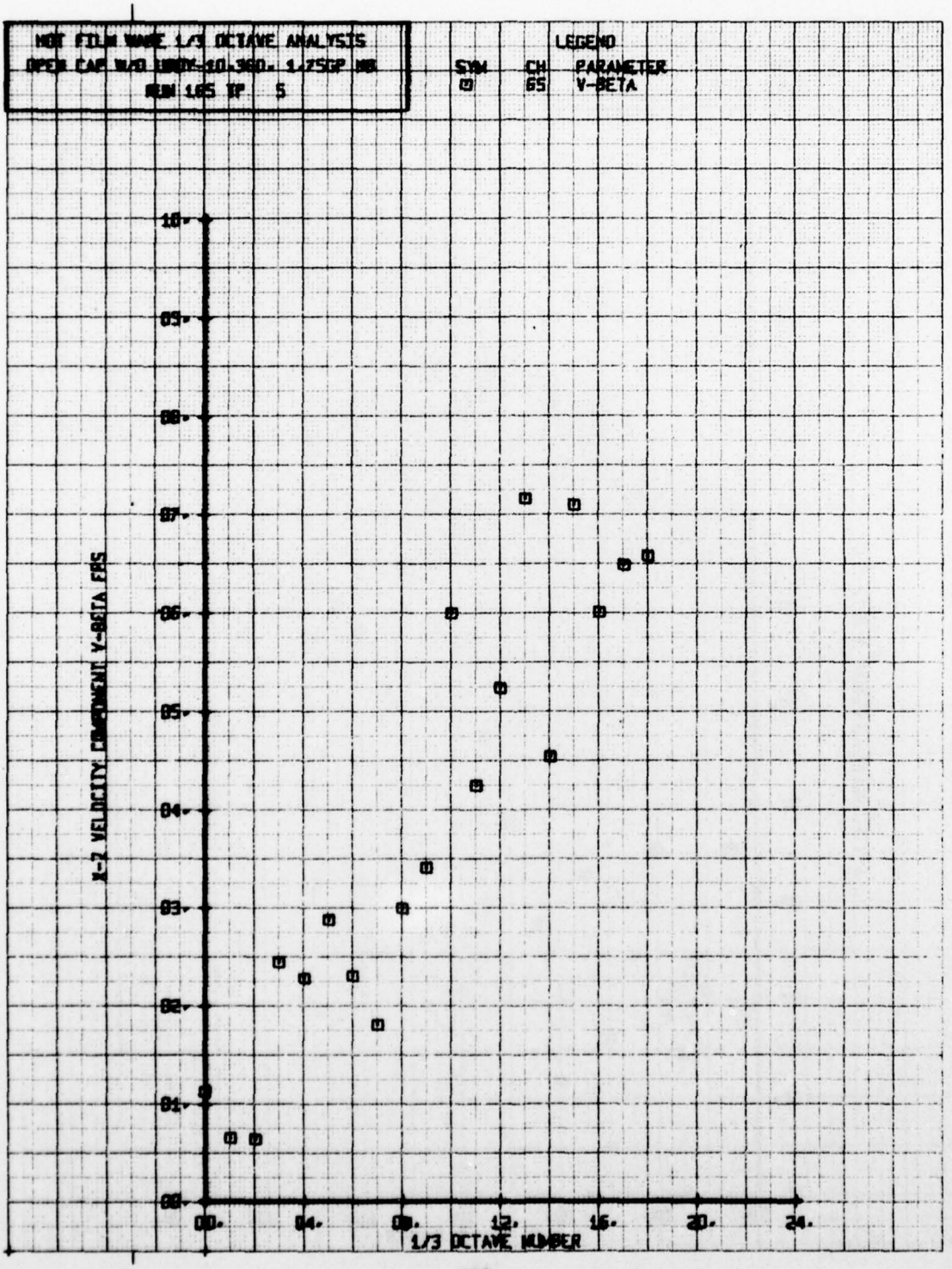

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAB W/O UBODY-10.360. 1.75GP MB
RUN 165 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

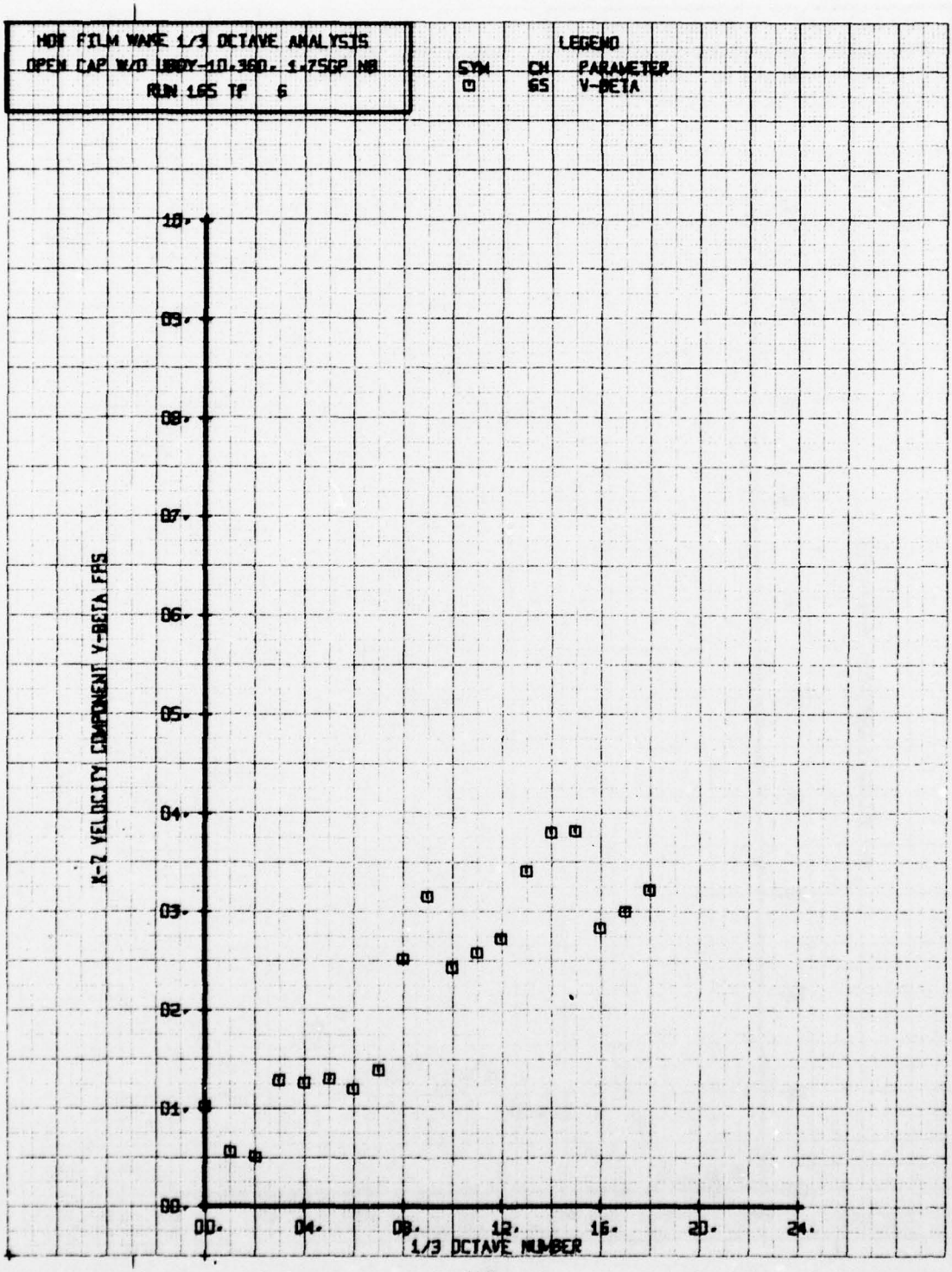

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBRY-10-360. 1.75GP MB
RUN 165 TP 7
LEGEND
SYM CH PARAMETER
□ 66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

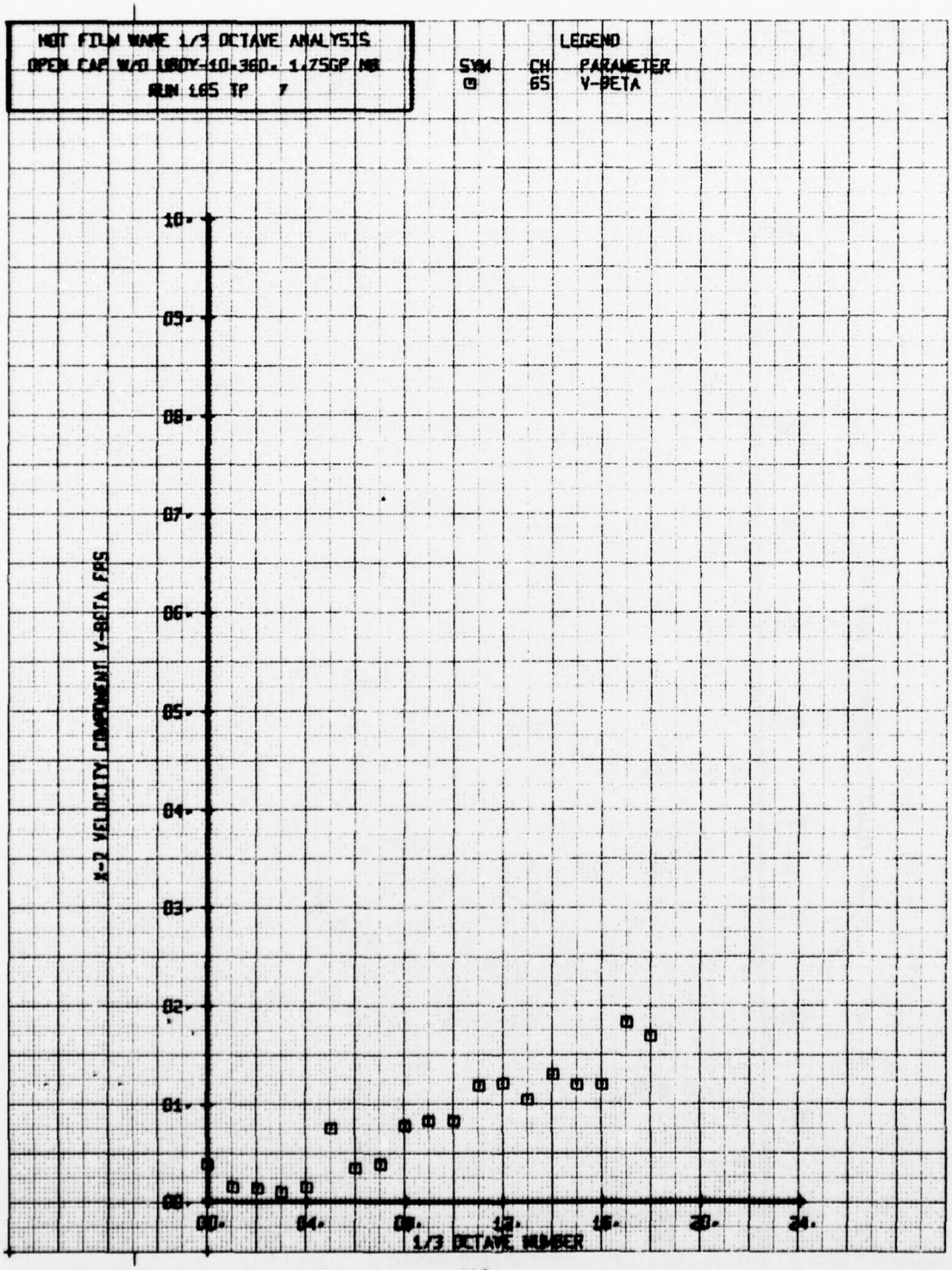

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY-10.360, 1.75GP MB
RUN 165 TP 9
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

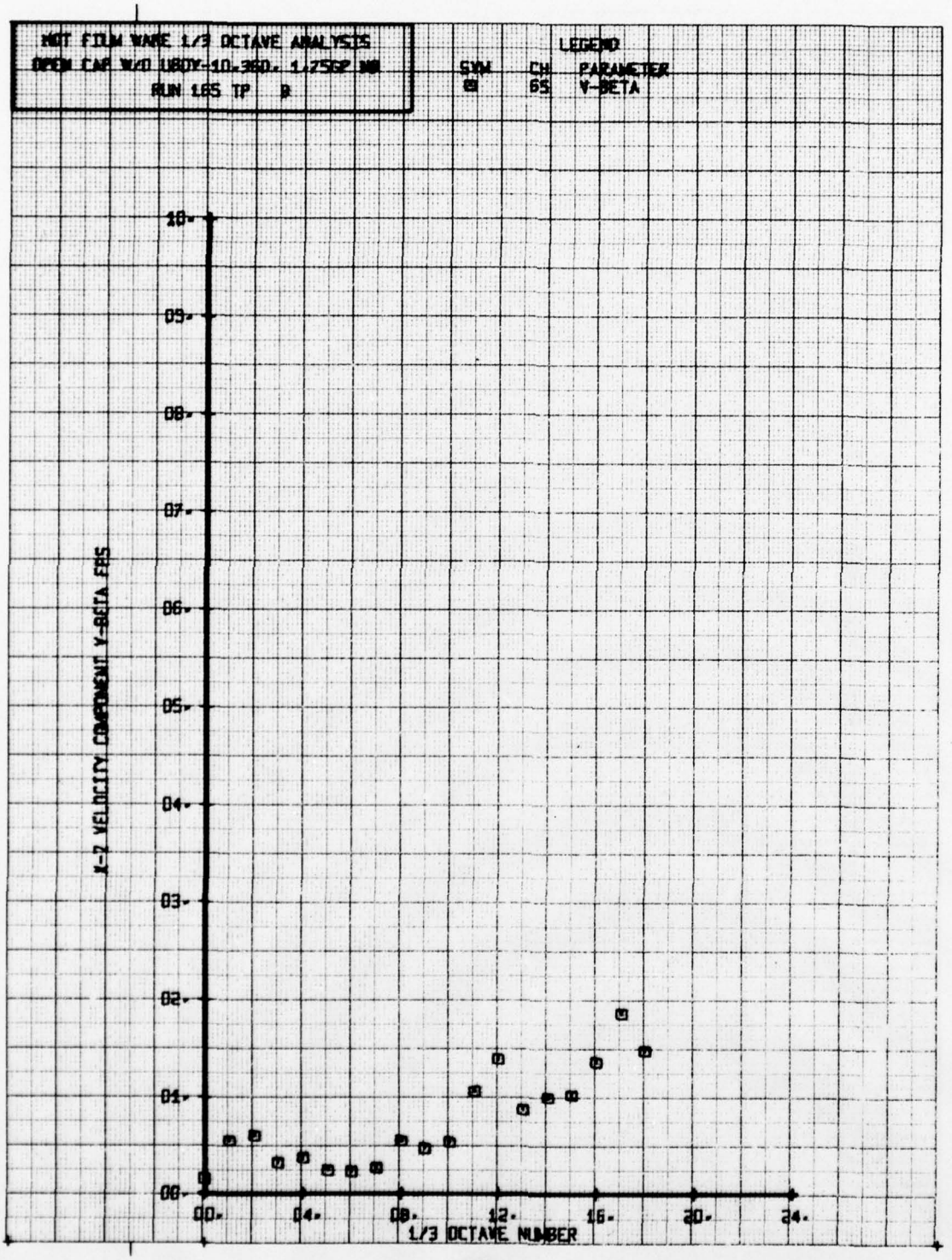

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-10.360. 1.75GP NB
RUN 185 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

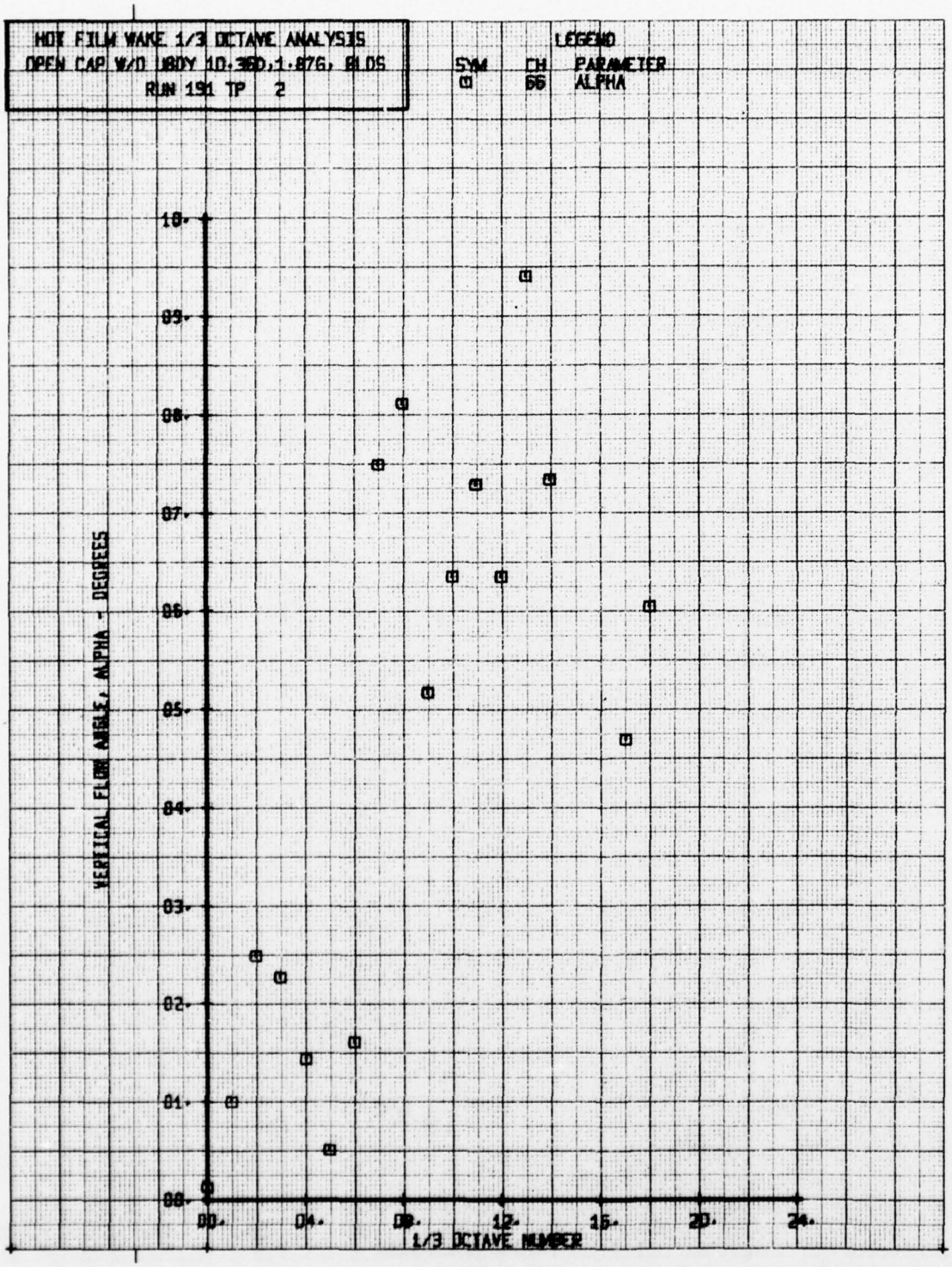

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-10.360. 1.75GP NB
RUN 165 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

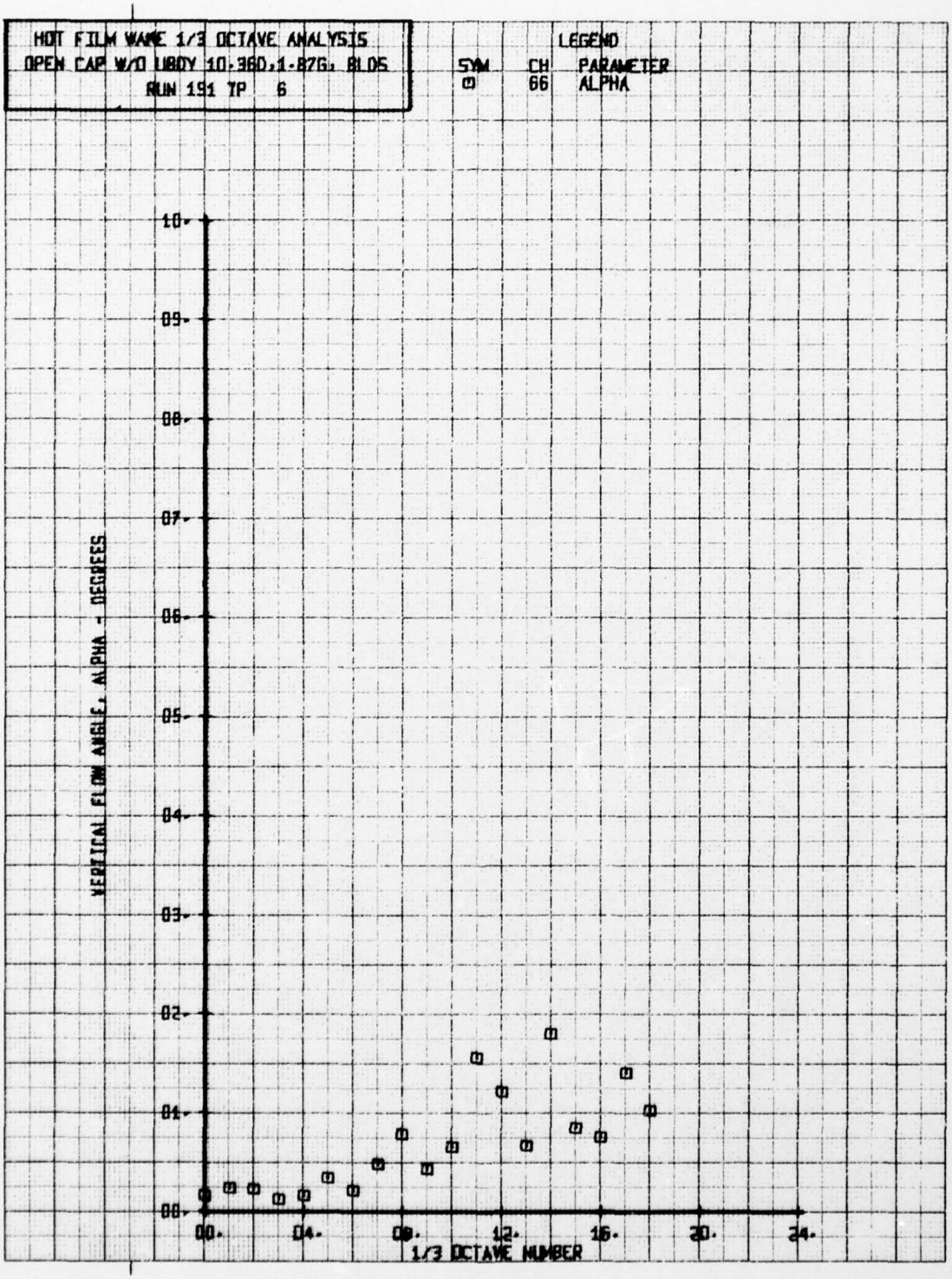

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY-10.360- 1.75GP MB
RUN 165 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
X-2 VELOCITY COMPONENT V-BETA FBS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

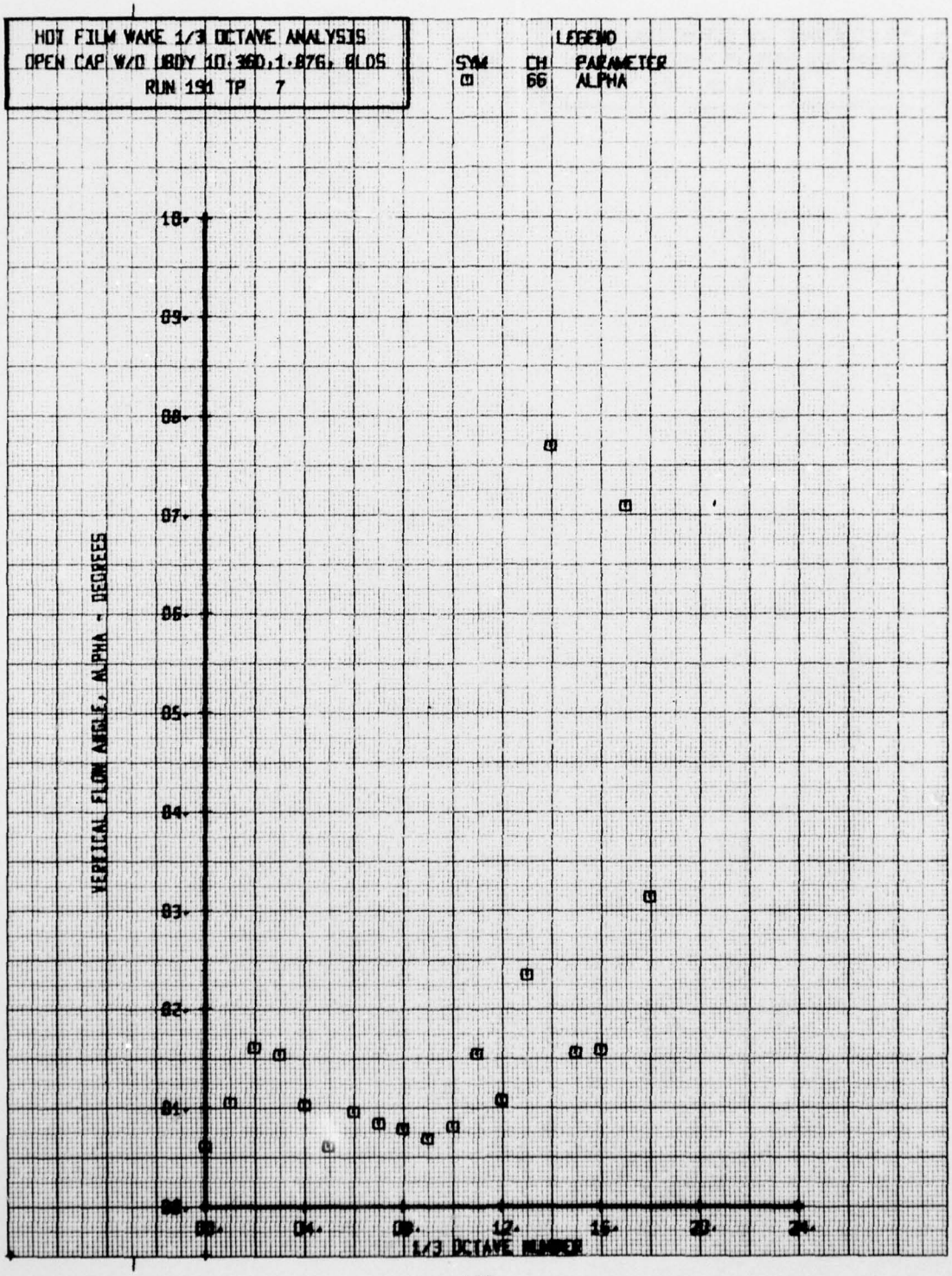

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY-10.360. 1.75GP NB
RUN 165 TP 6
LEGEND
SYM CH PARAMETER
GS V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
K-Z VELOCITY COMPONENT V-BETA FRS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

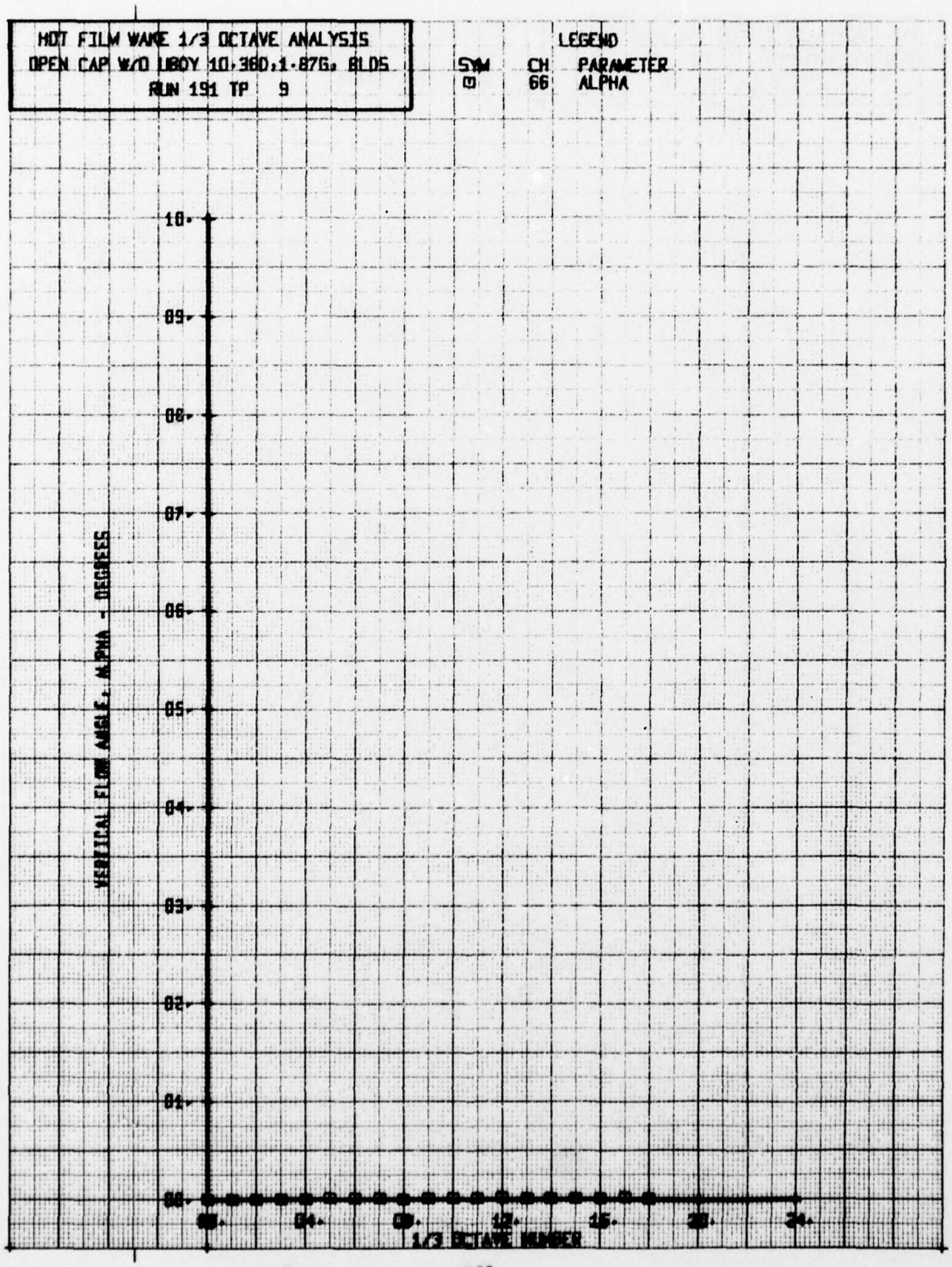

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAF W/O BUOY-10.360. 1.75GP MB
RUN 185 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

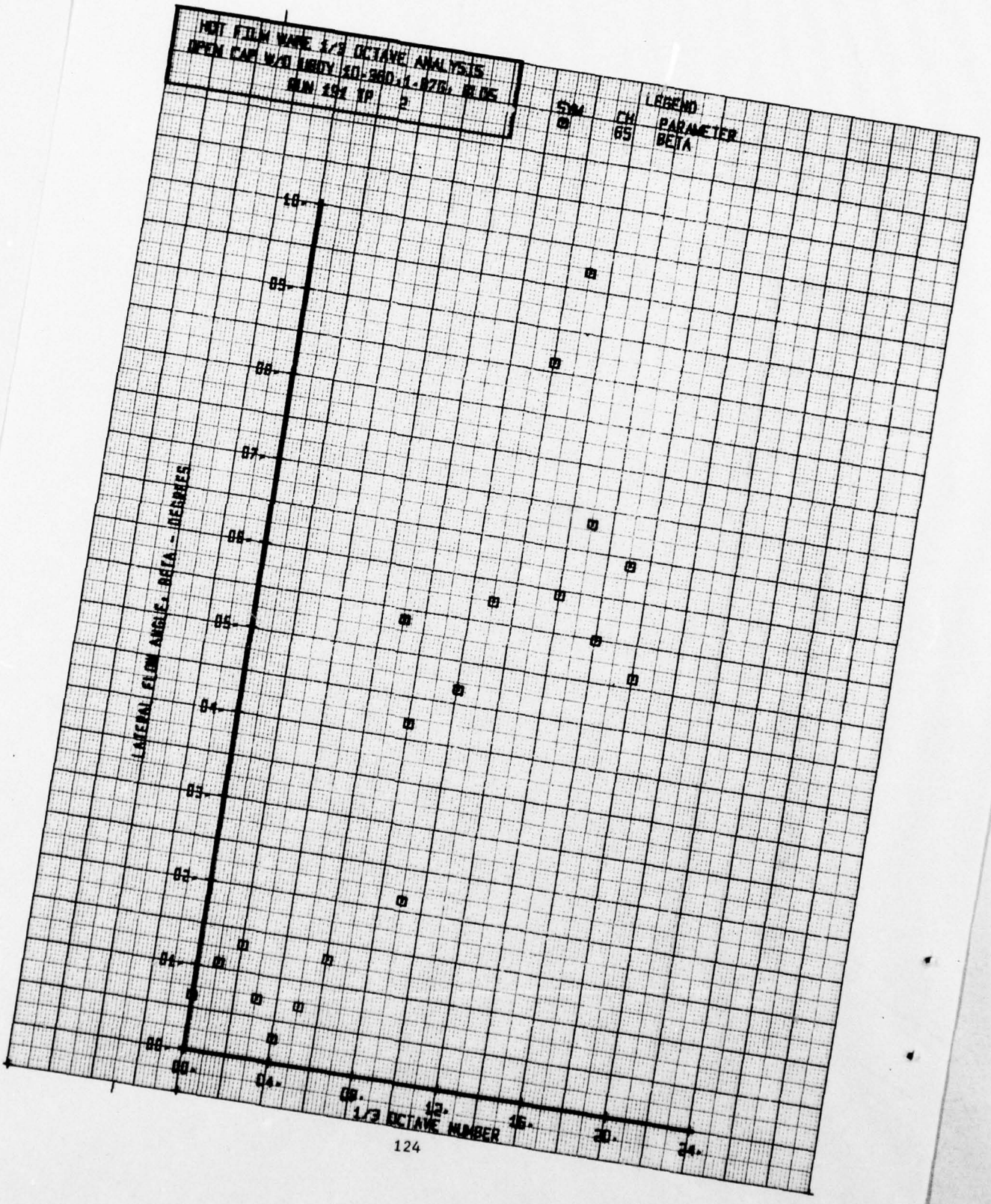

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY-10.36D. 1.75GP MB
RUN 185 TP 8
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
X-Z VELOCITY COMPONENT V-BETA FBS

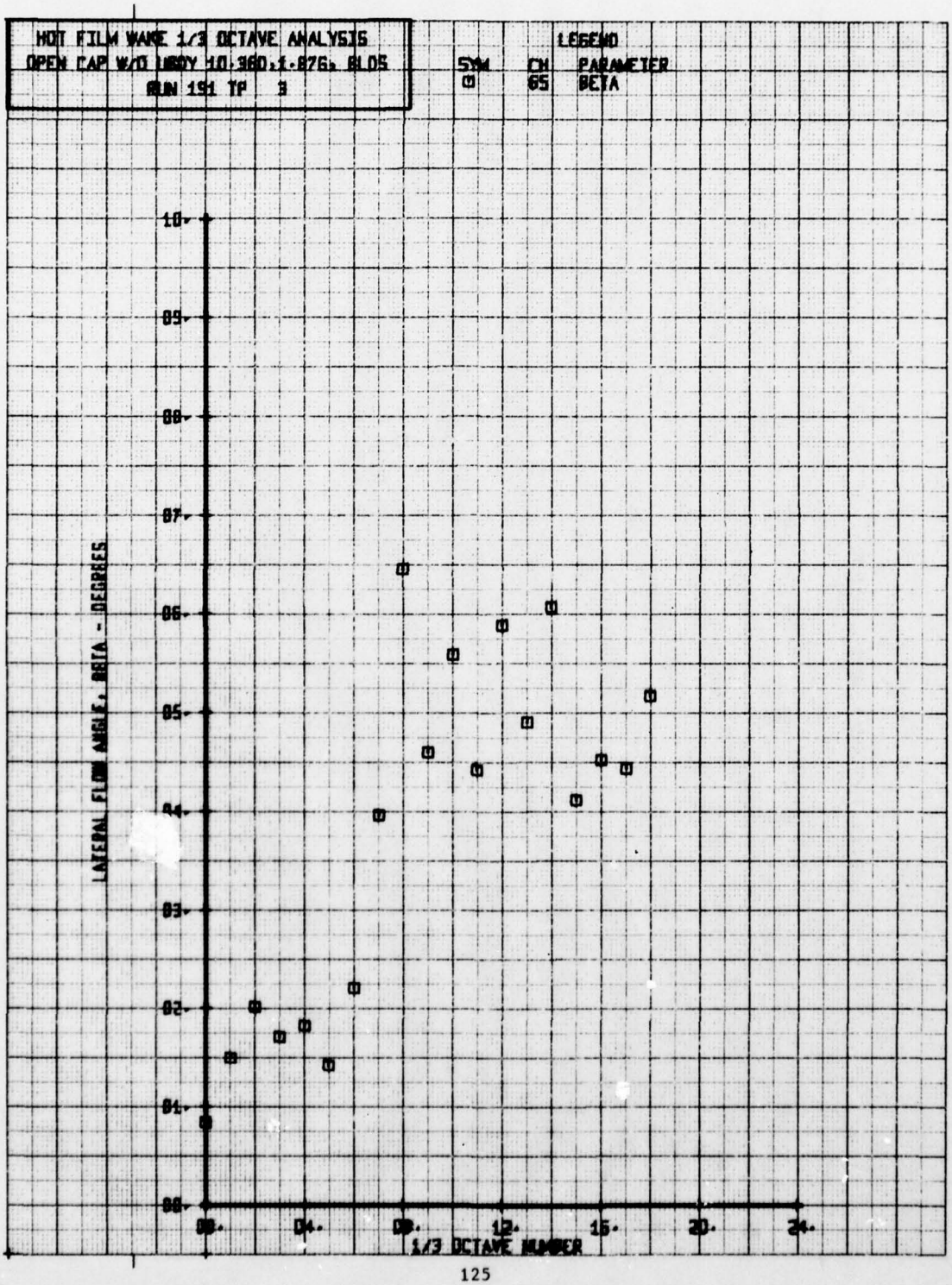

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/D BODY 10.36D,1.87G, BLDS
RUN 191 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
18.
03.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

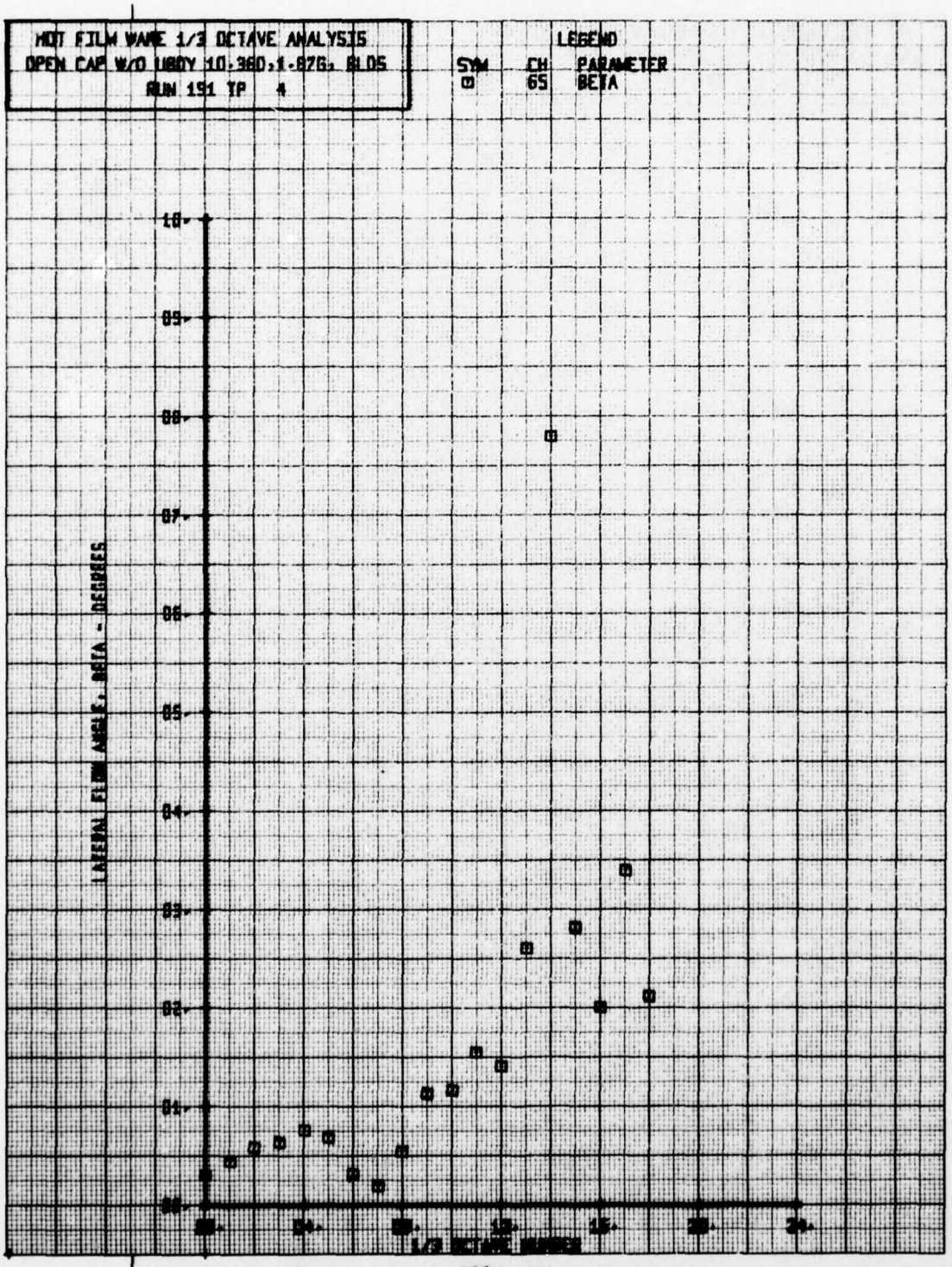

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 10.360,1.876, BLDS
RUN 191 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

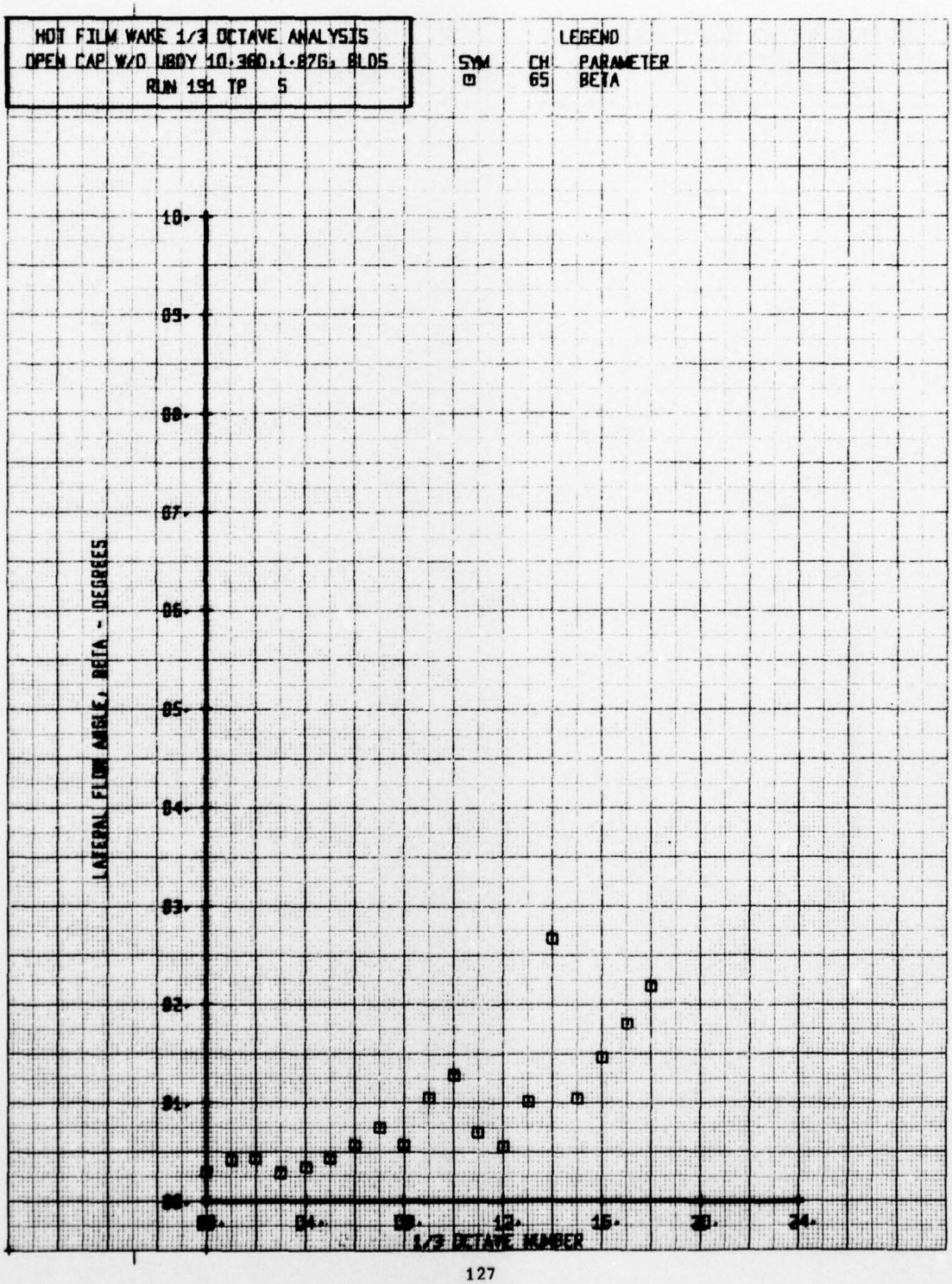

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 10.360,1.876, BLOS
RUN 191 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

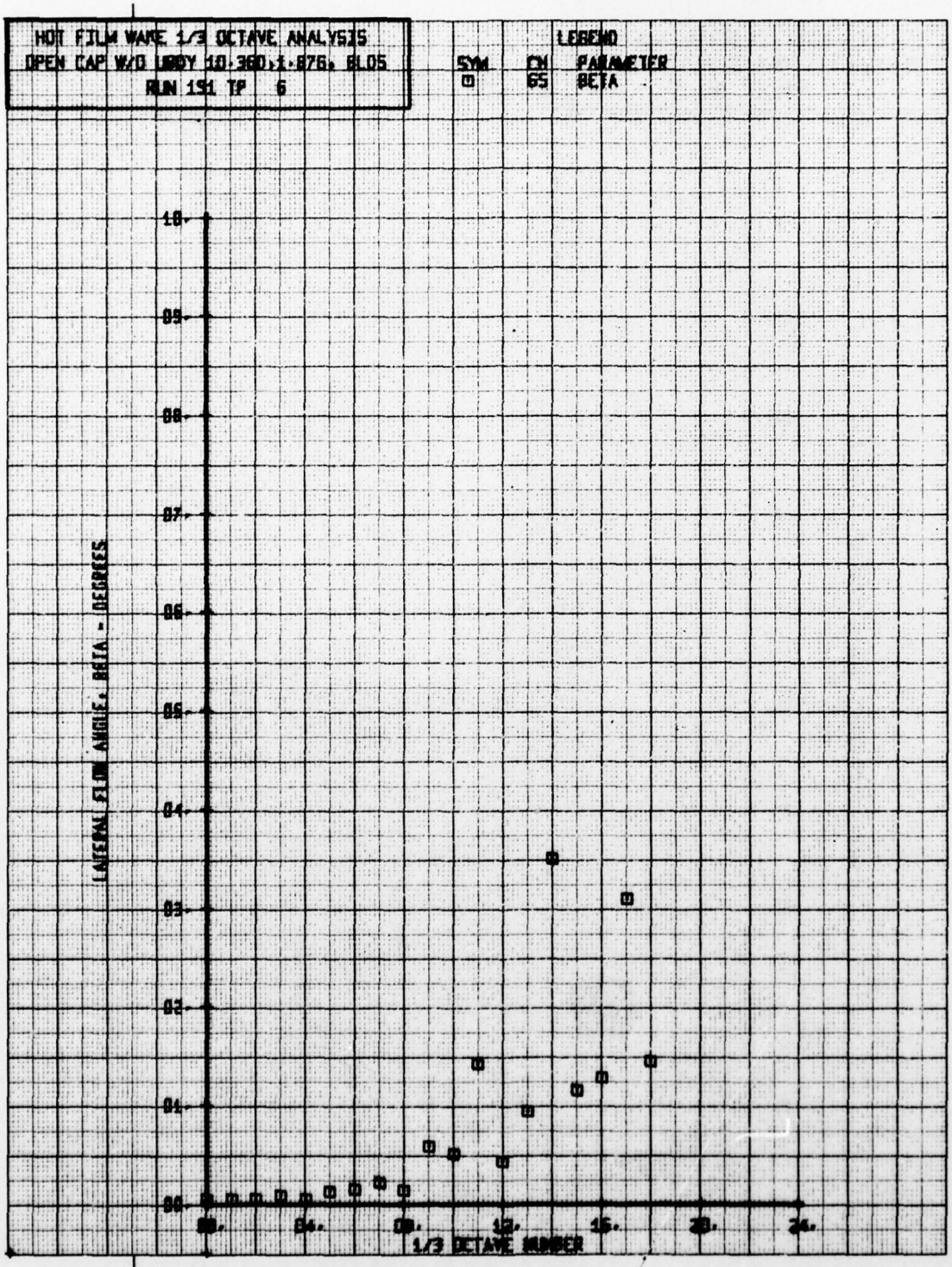

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 10,360,1.87G, BLDS
RUN 191 TP 9
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
04.
09.
12.
15.
20.
24.
1/3 OCTAVE NUMBER

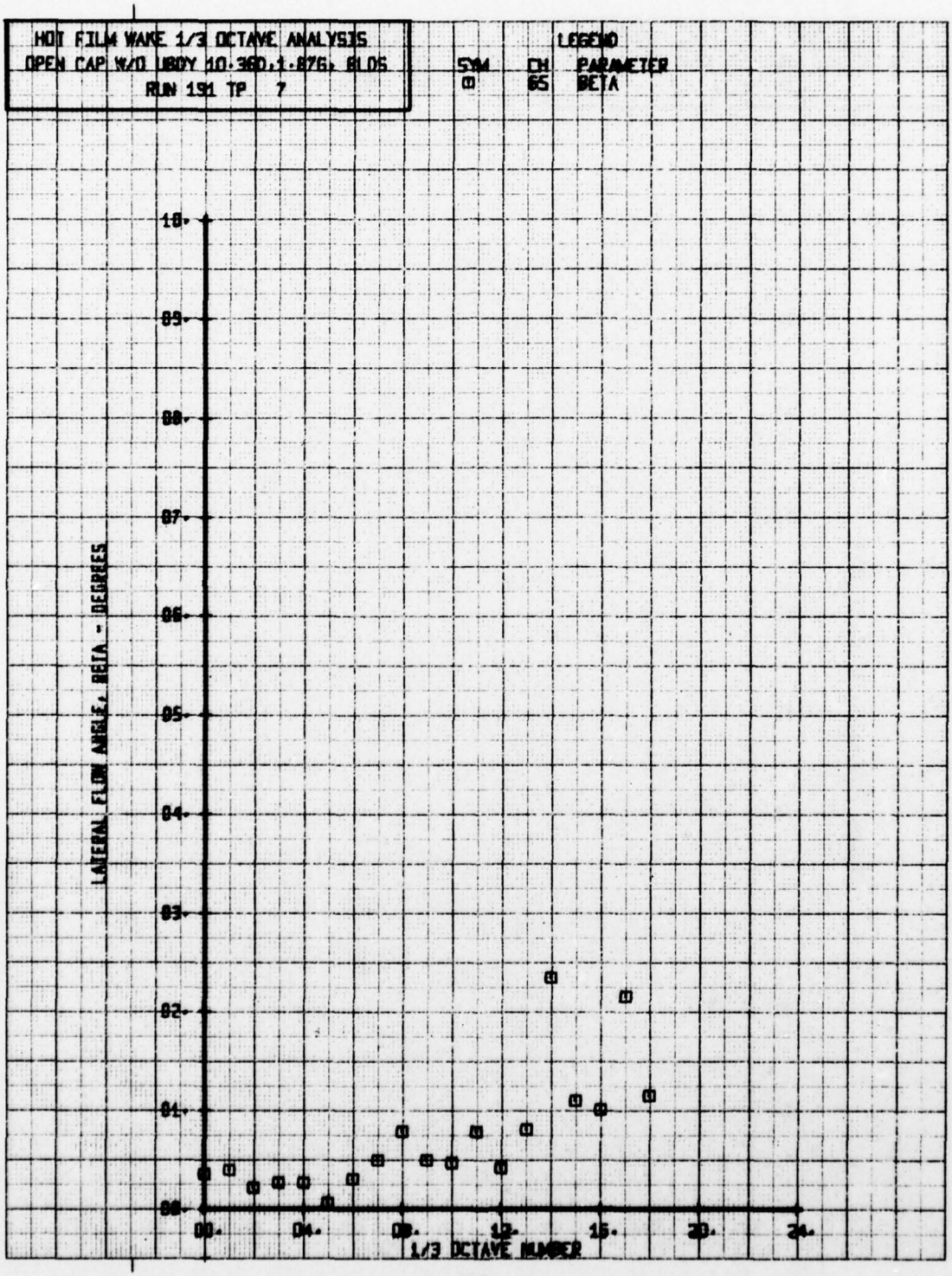

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 10-360,1-87G, BLDS
RUN 191 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

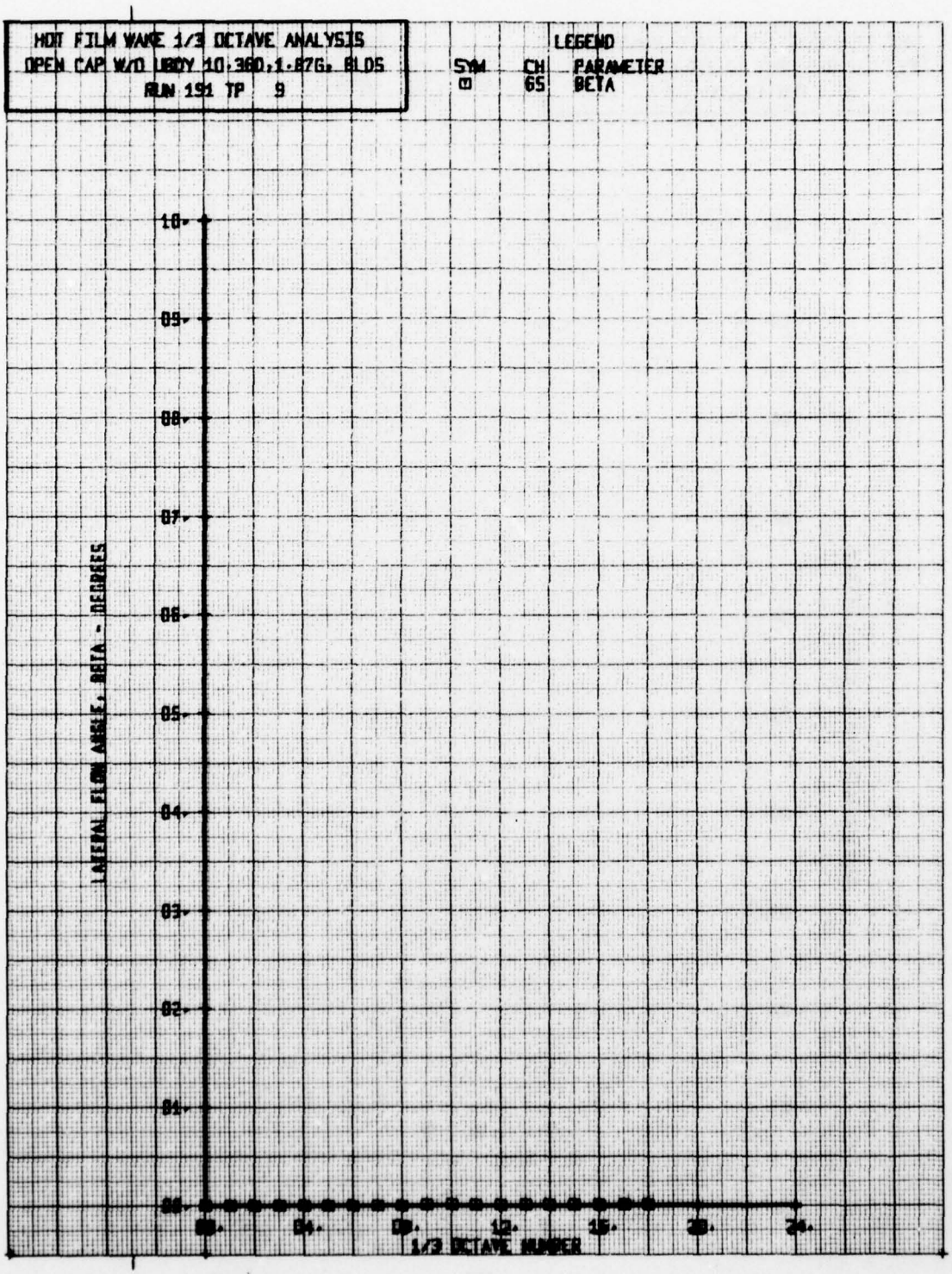

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O LIBBY 10.960,1.876, BLDS
RUN 191 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

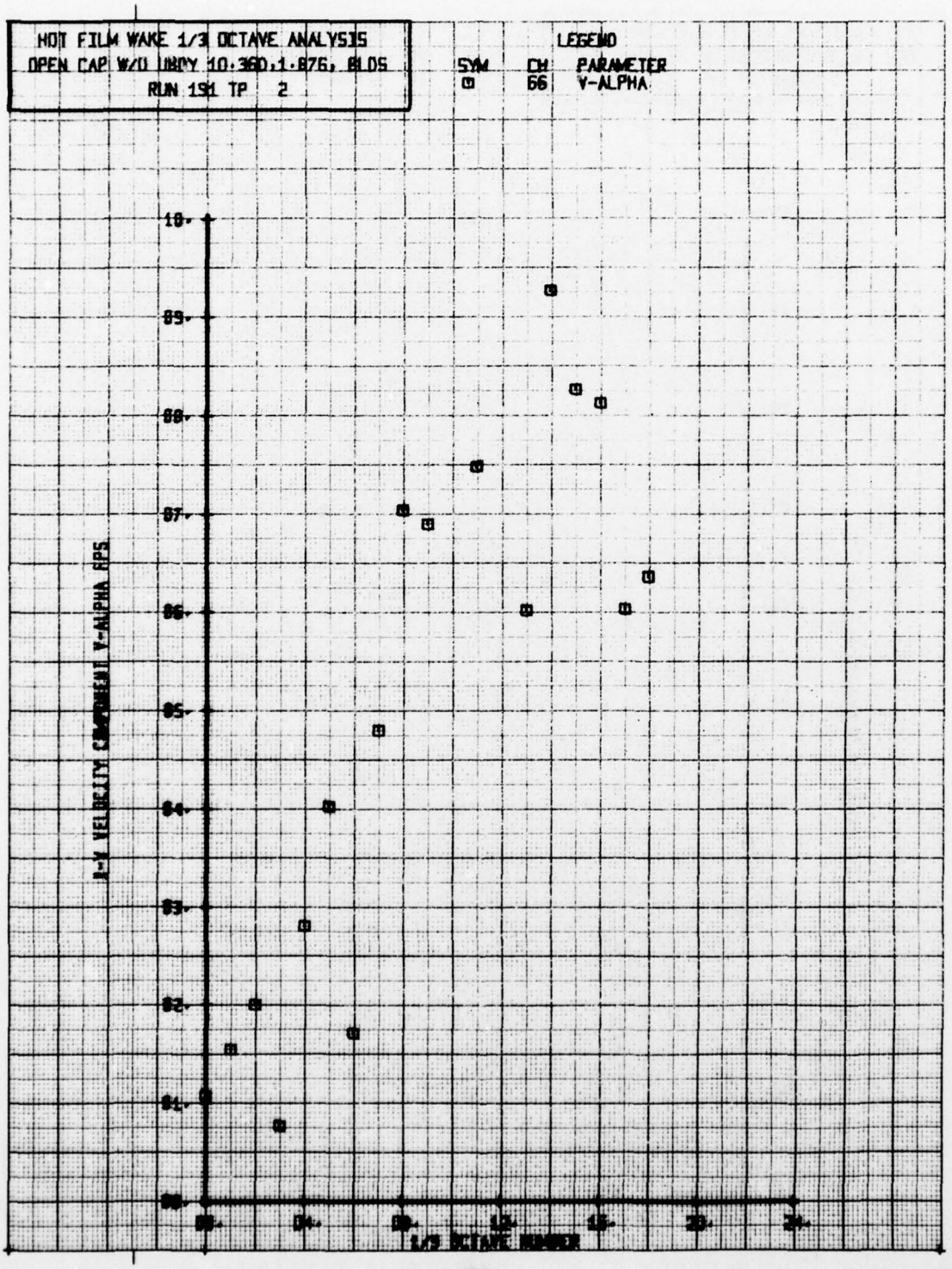

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 10.360,1.87G, BLDS
RUN 191 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

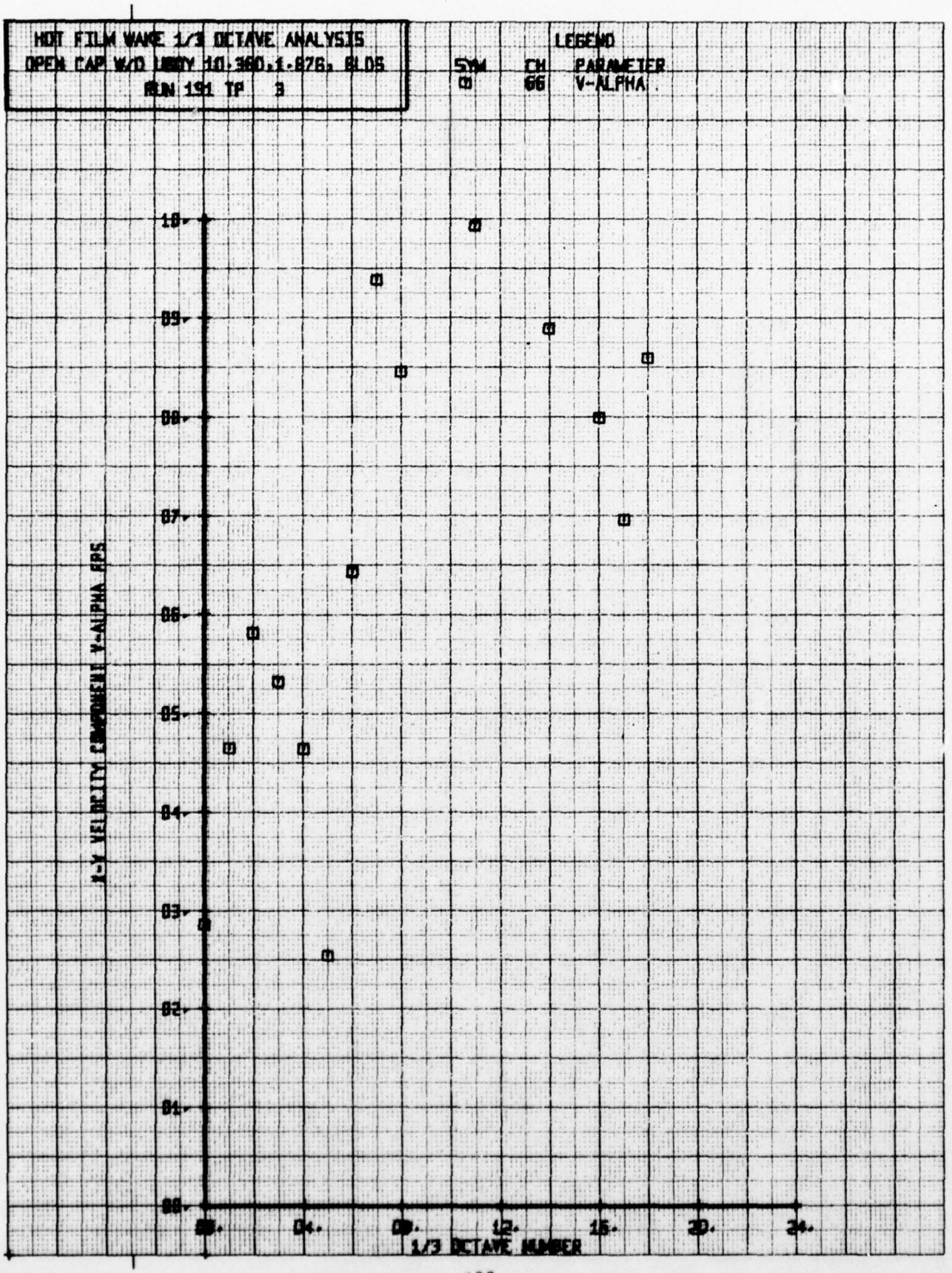

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 10.360,1.87G, BL05
RUN 191 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

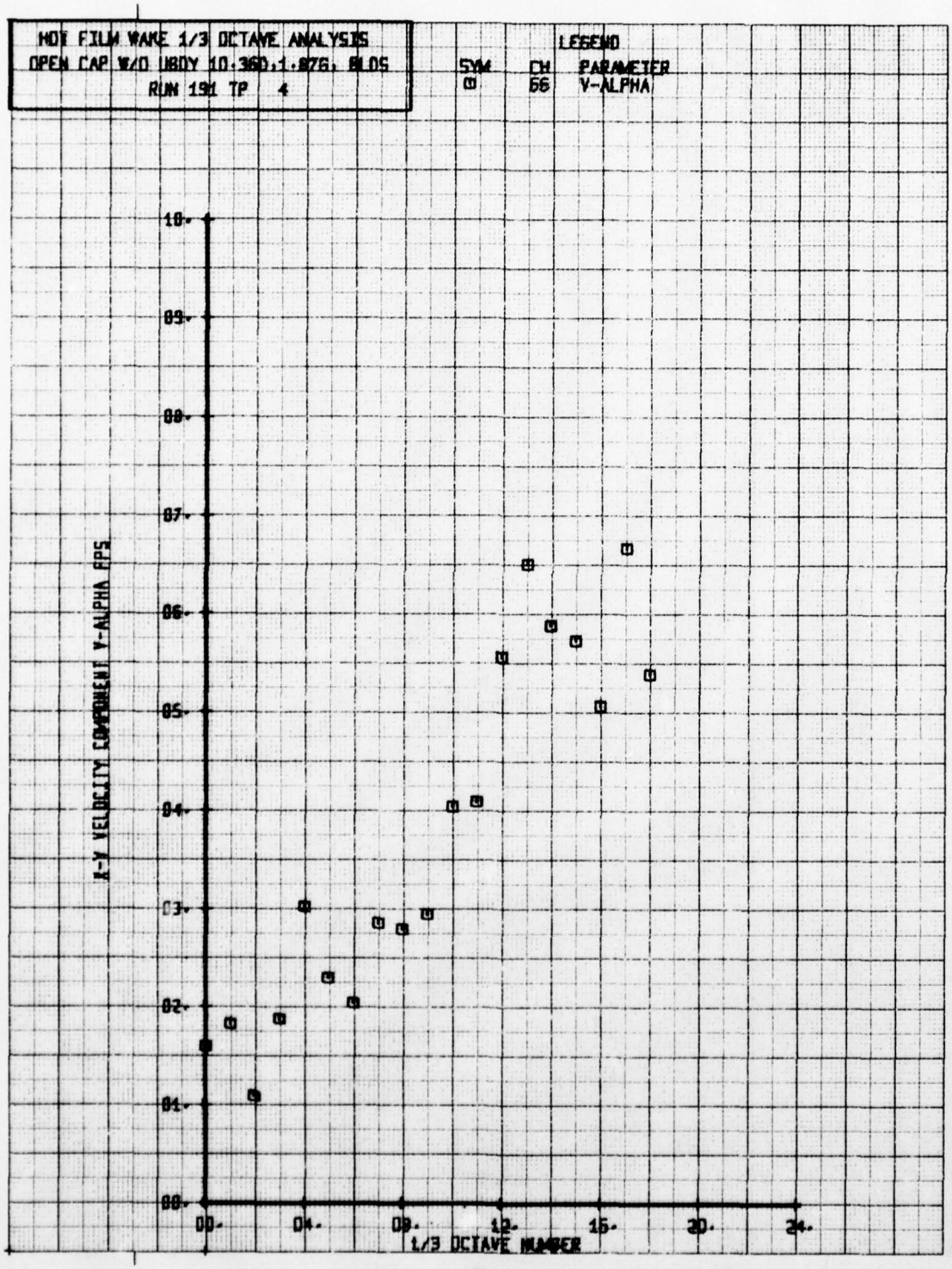

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 10.360,1.876, BLDS
RUN 151 TP 6
LEGEND
SYM CM PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

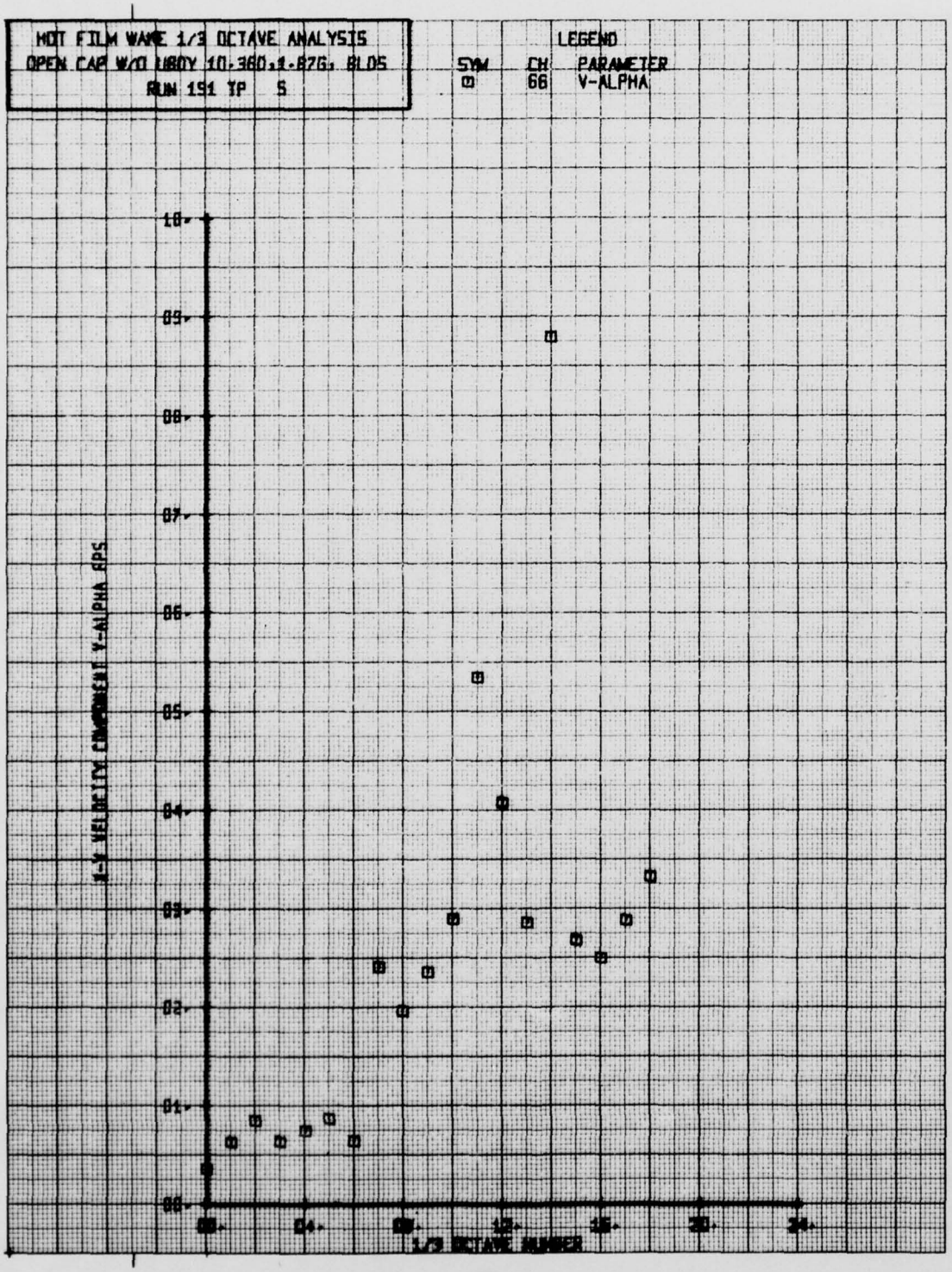

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 10.360,1.876, BLDS
RUN 191 TP 7
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

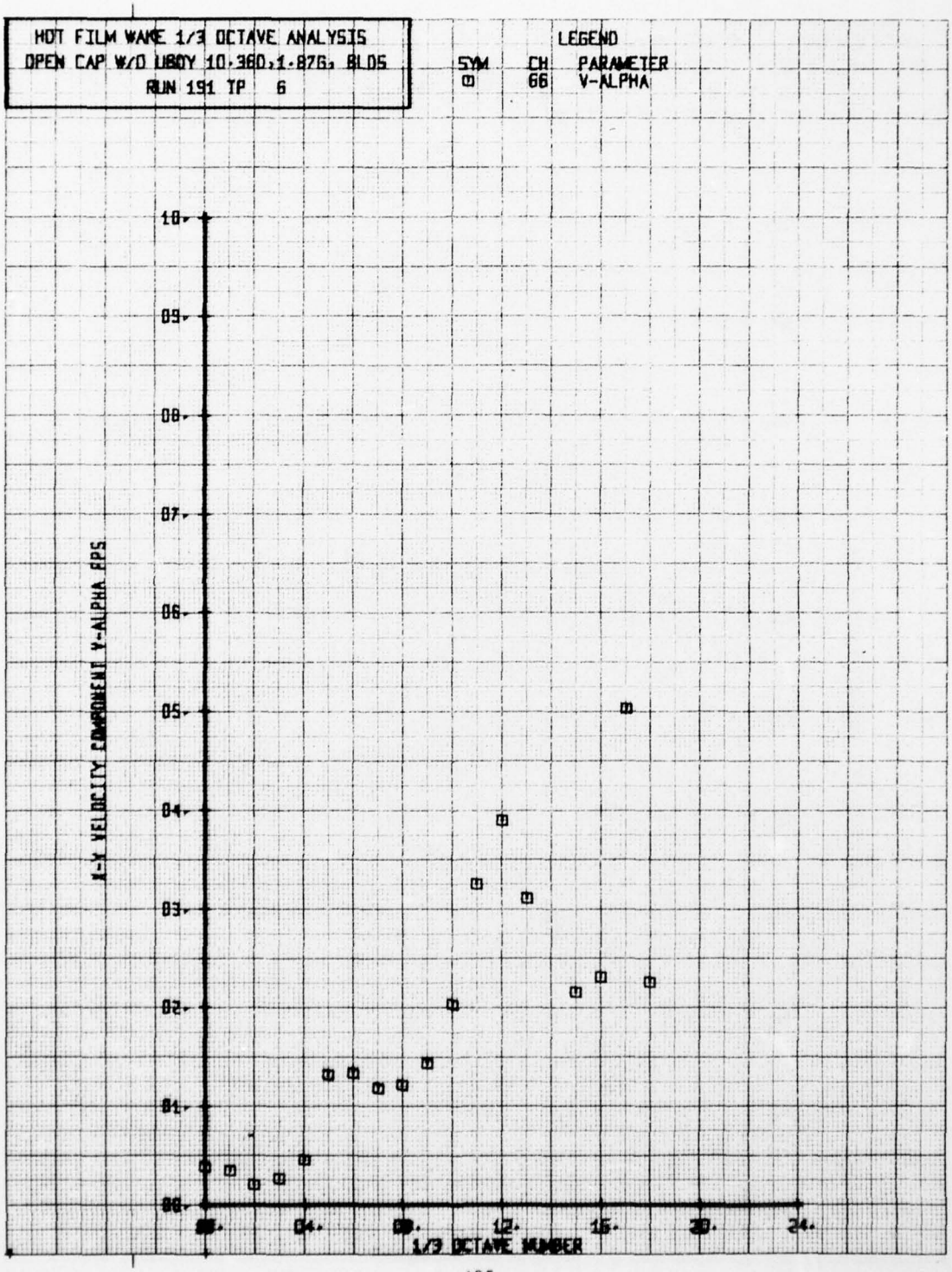

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBDY 10.360,1.876, BLDS
RUN 191 TP 9
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

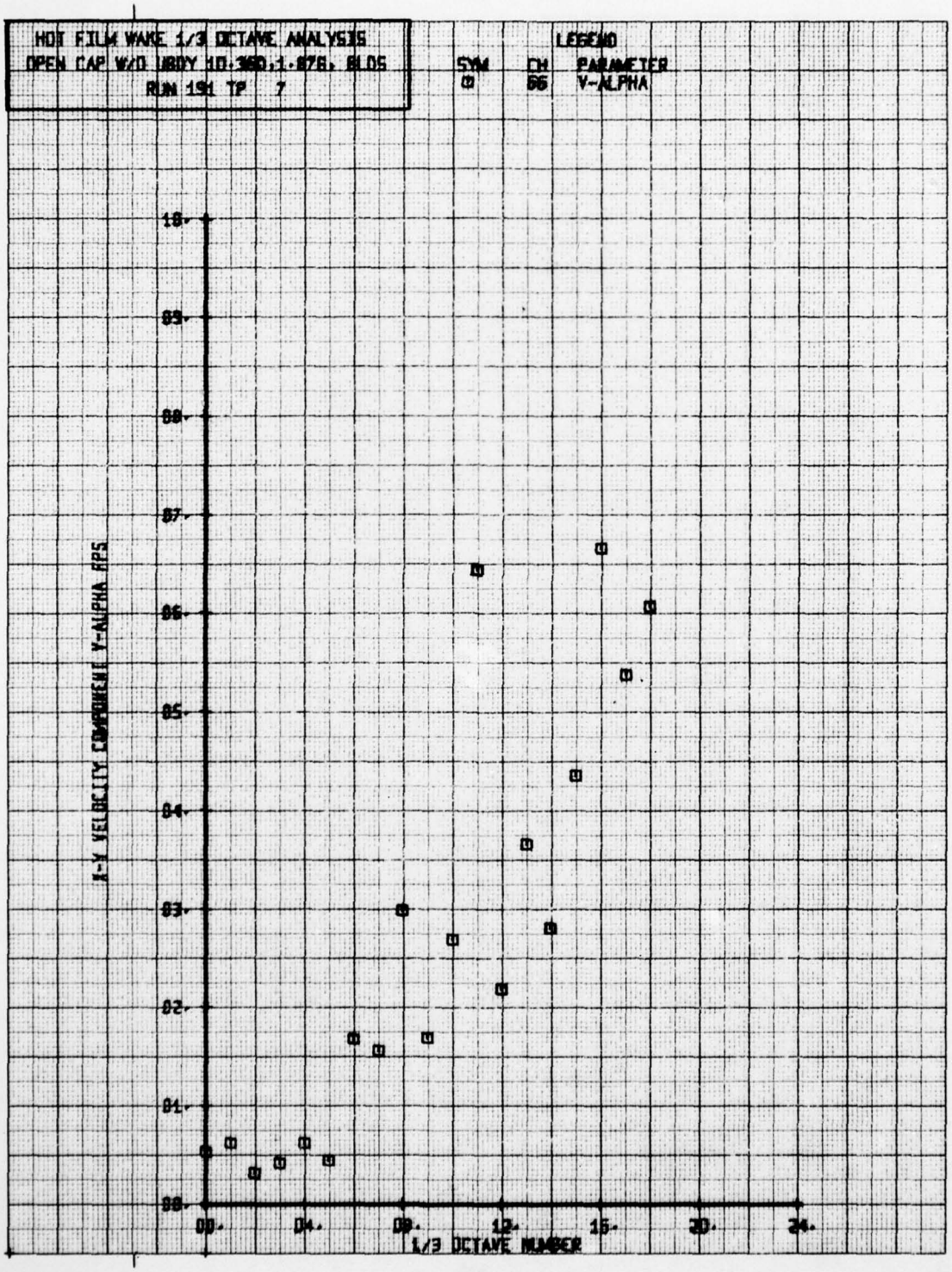

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 10.360,1.876, BLDS
RUN 191 TP 2
LEGEND
SYM CH PARAMETER
66 V-ALPHA
.90
.91
.92
.93
.94
.95
.96
.97
.98
.99
1.0
A-V VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

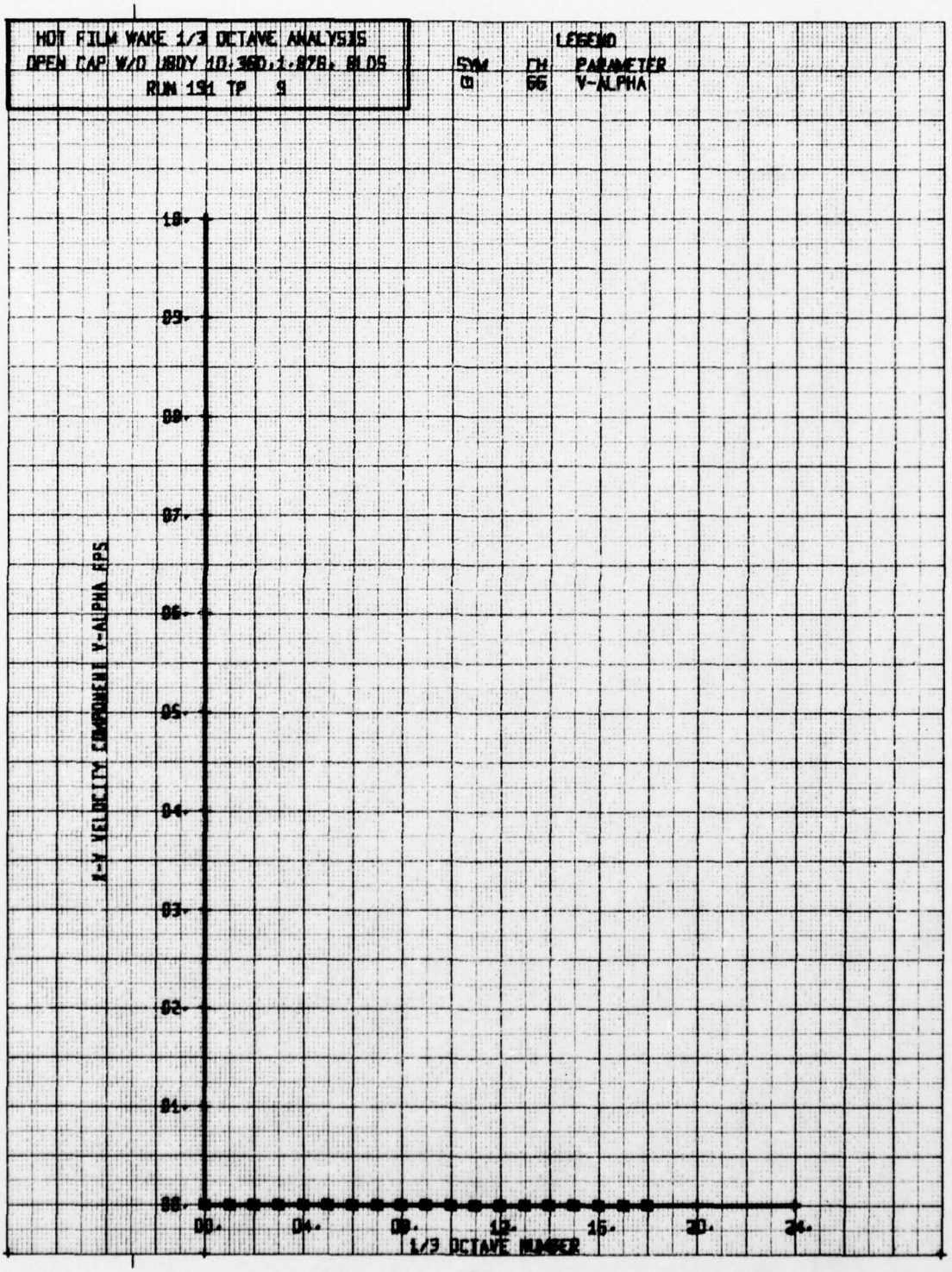

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O LNRTY 10.360,1.876, BLDS
RUN 191 TP 3
LEGEND
SYM CH PARAMETER
66 V-ALPHA
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.0
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

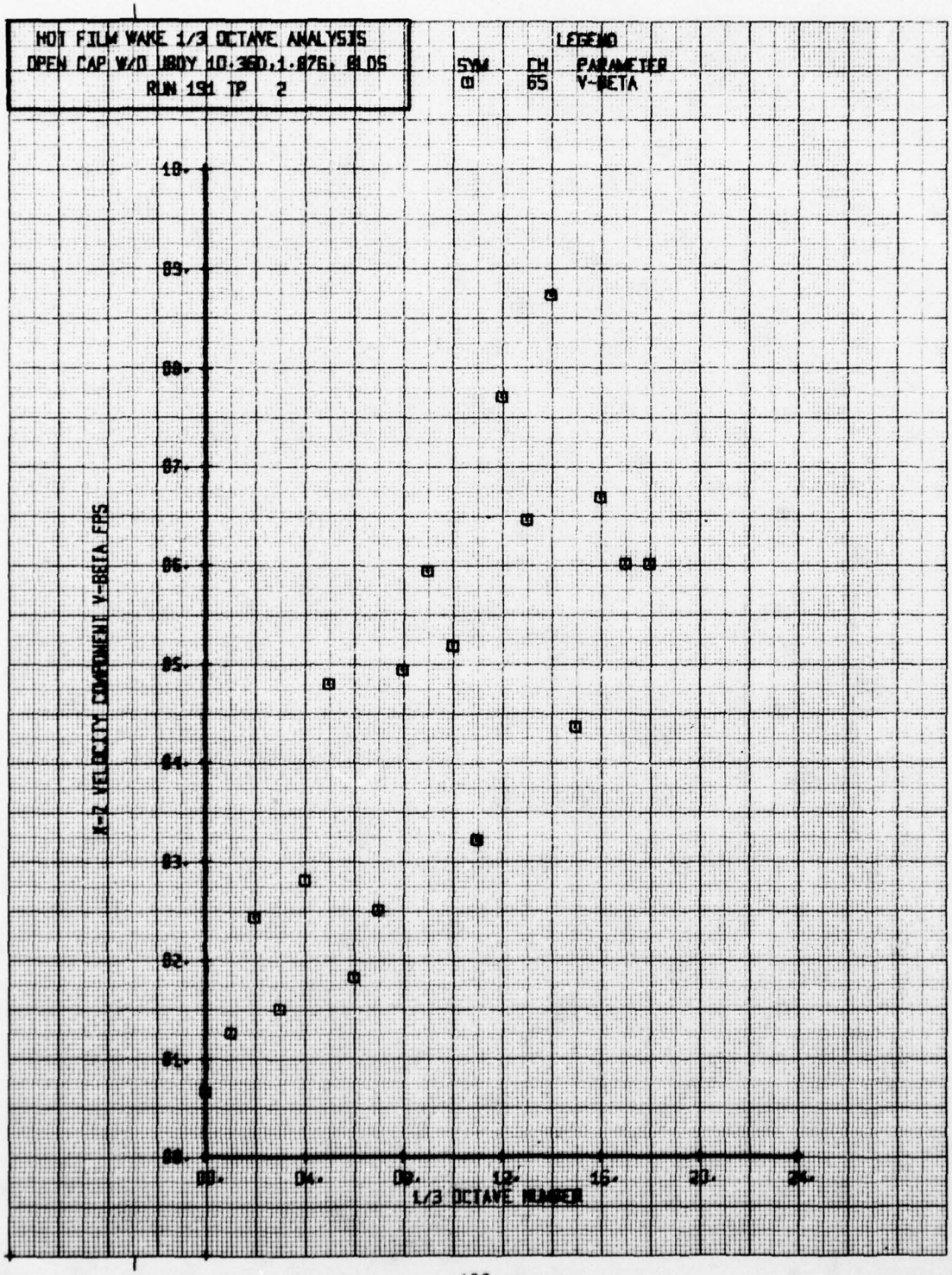

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 10.36D,1.87G, 8LOS
RUN 191 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

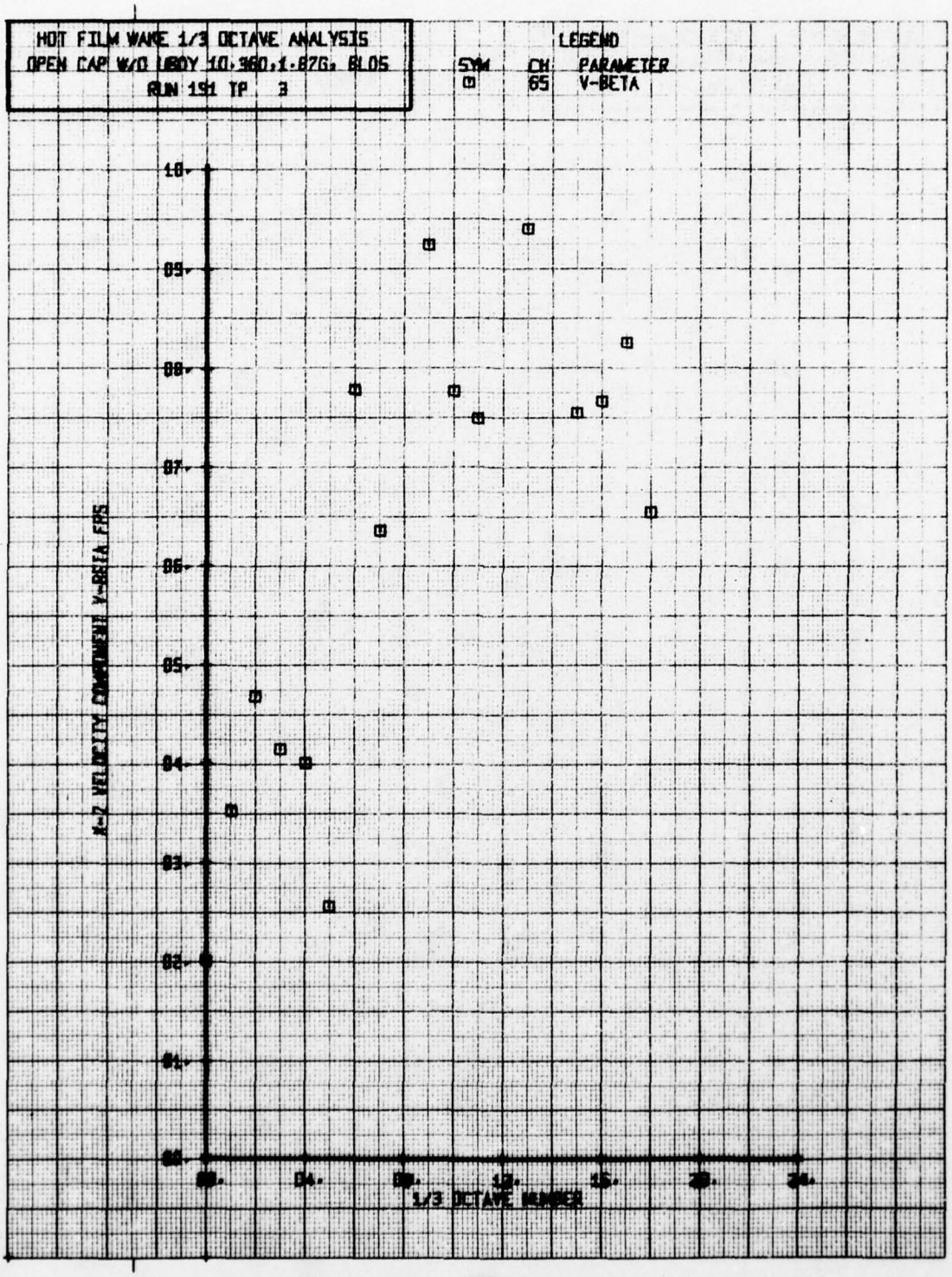

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 10.360,1.87G, BLDS
RUN 191 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

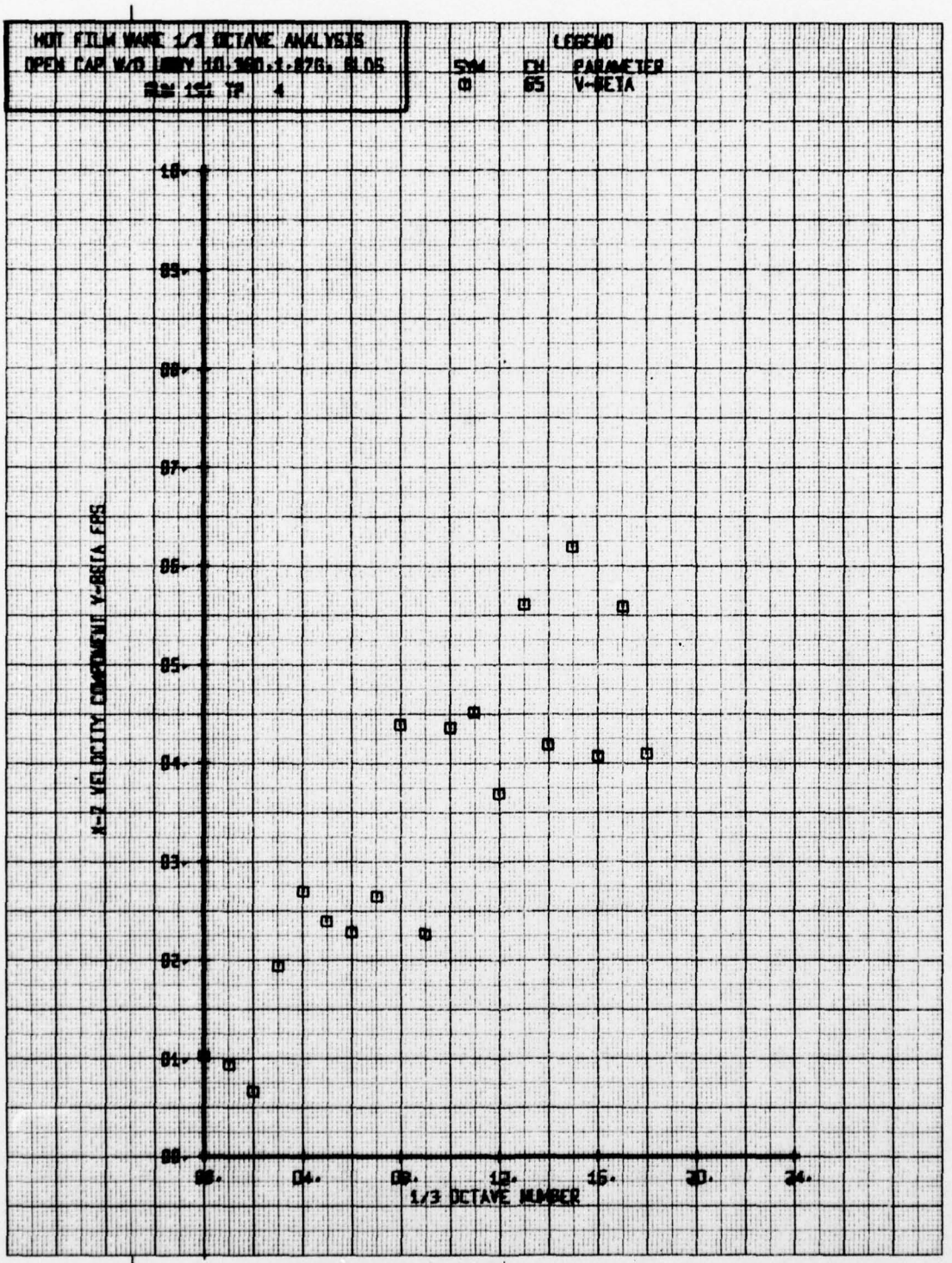

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 10.360,1.876, BLDS
RUN 191 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-X VELOCITY COMPONENT V-ALPHA FPS
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

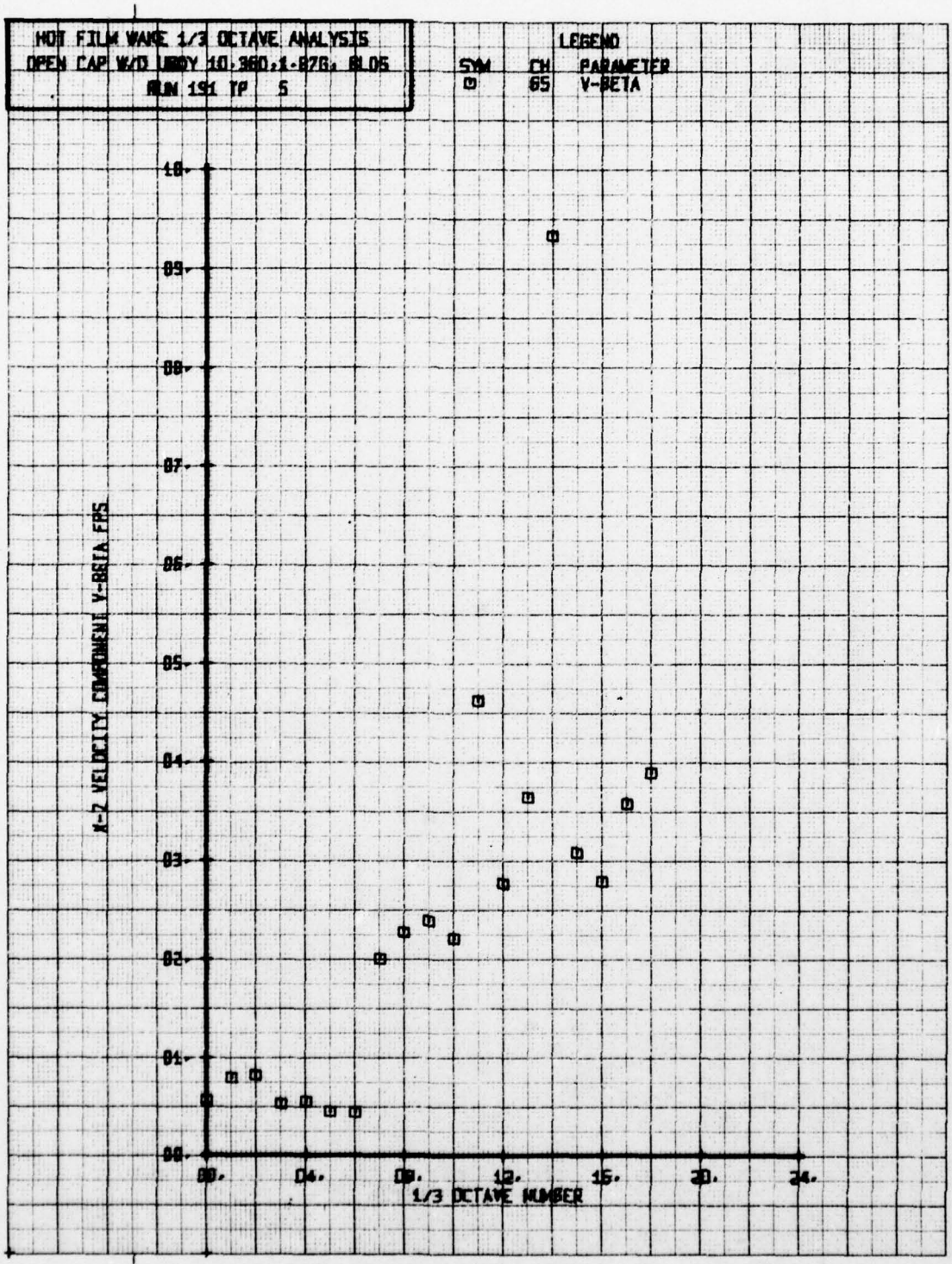

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 10.360,1.876, BLDS
RUN 191 TP 7
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA RPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

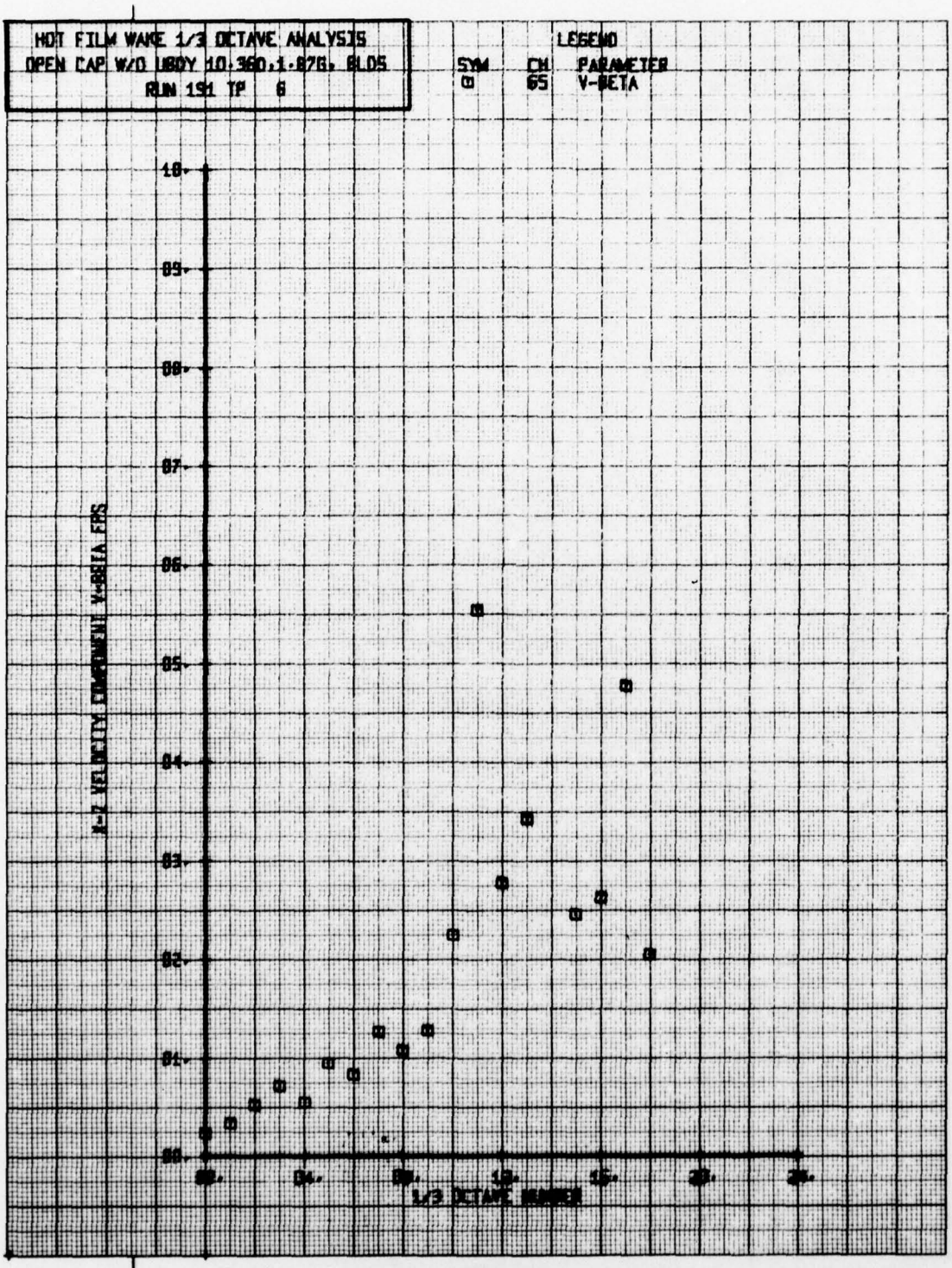

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 10.360,1.878, BLDS
RUN 191 TP 9
LEGEND
SYM CH PARAMETER
66 V-ALPHA
18.
89.
88.
87.
86.
85.
84.
83.
82.
81.
80.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
X-V VELOCITY COMPONENT V-ALPHA FPS

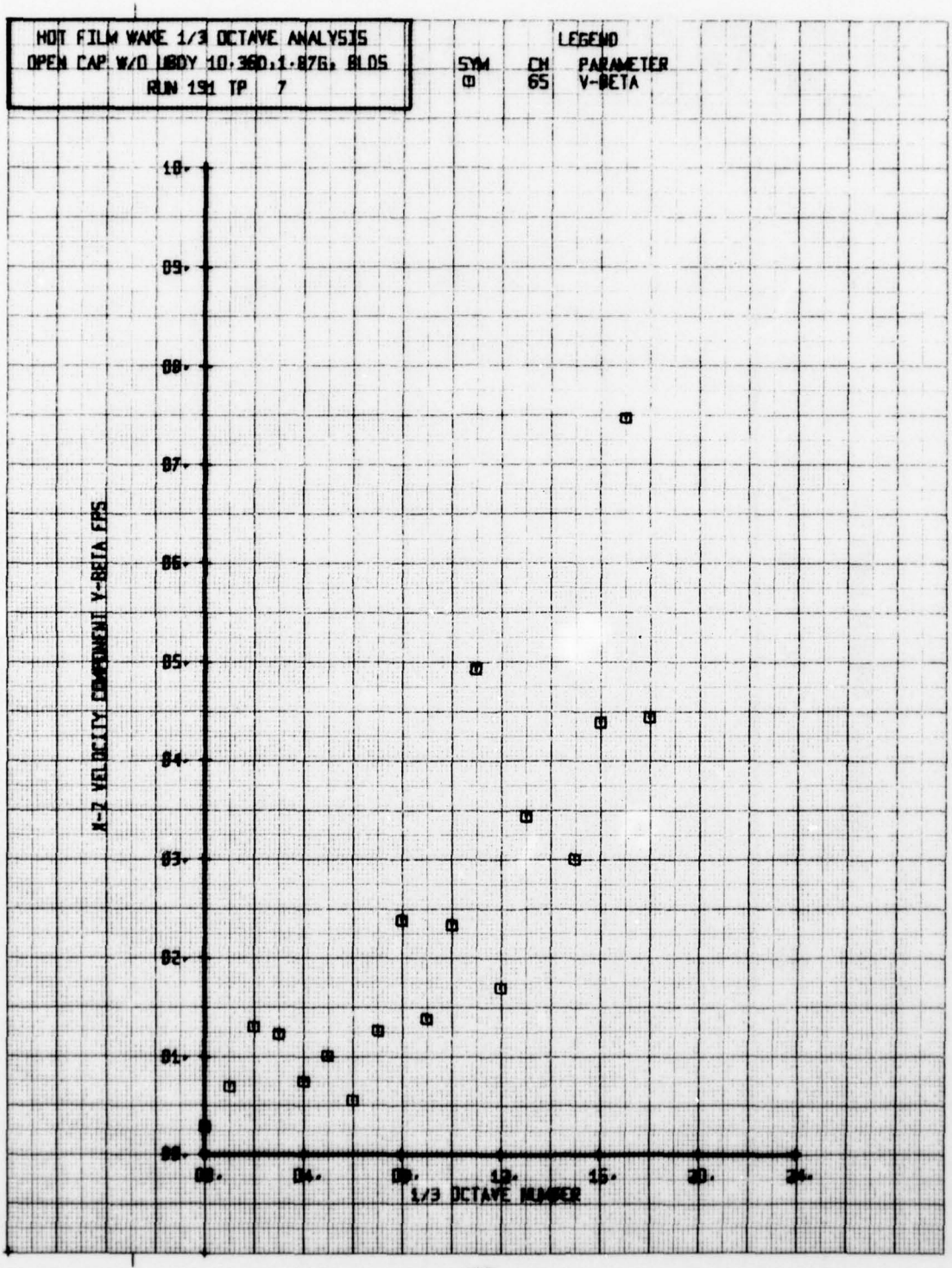

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 10.360,1.876, 0.05
RUN 191 TP 2
LEGEND
SYM CH PARAMETER
65 V-BETA
18.
89.
88.
87.
86.
85.
84.
83.
82.
81.
80.
X-Z VELOCITY COMPONENT V-BETA FPS
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

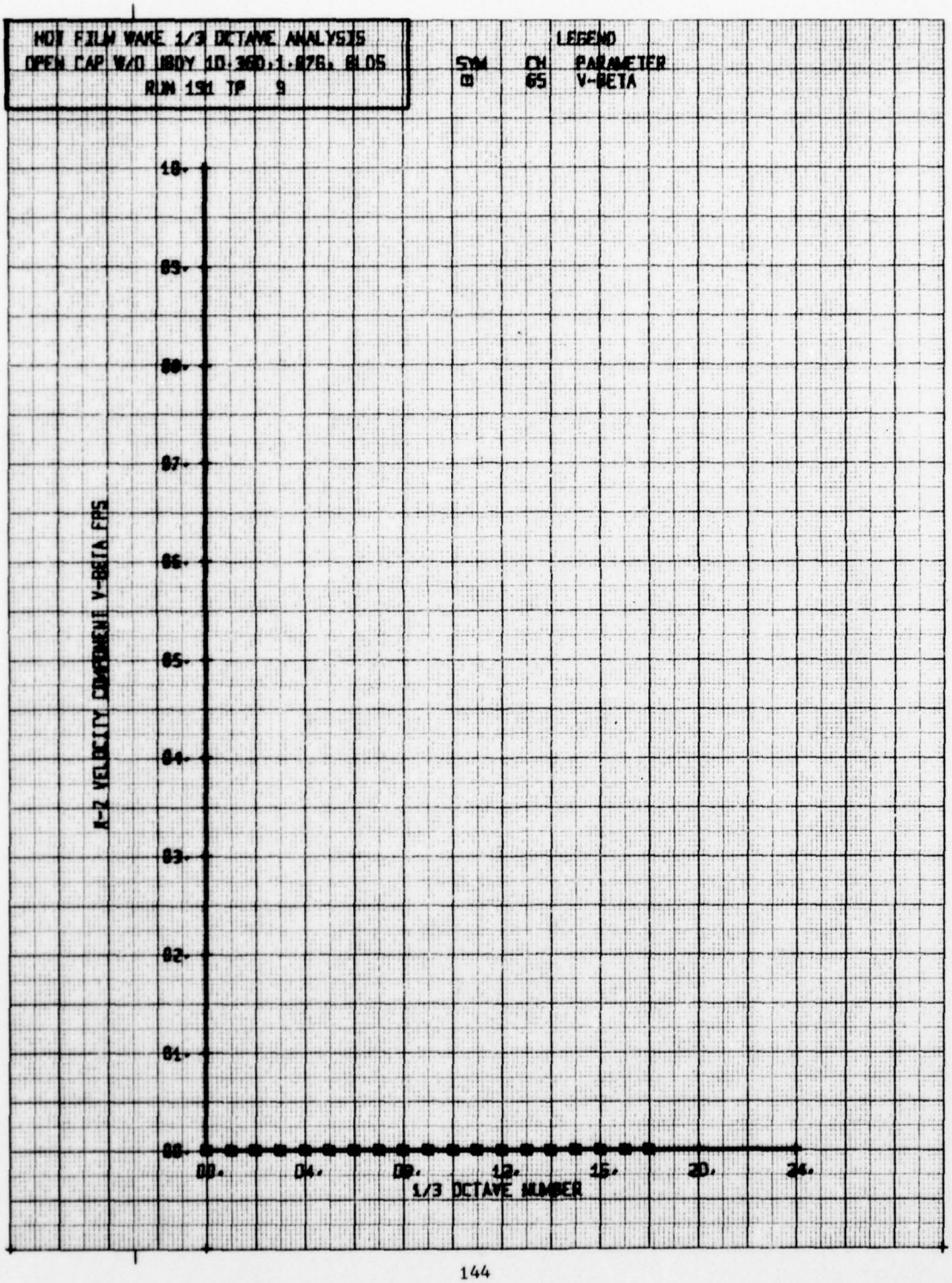

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 10.360,1.87G, BLOS
RUN 191 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
K=2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

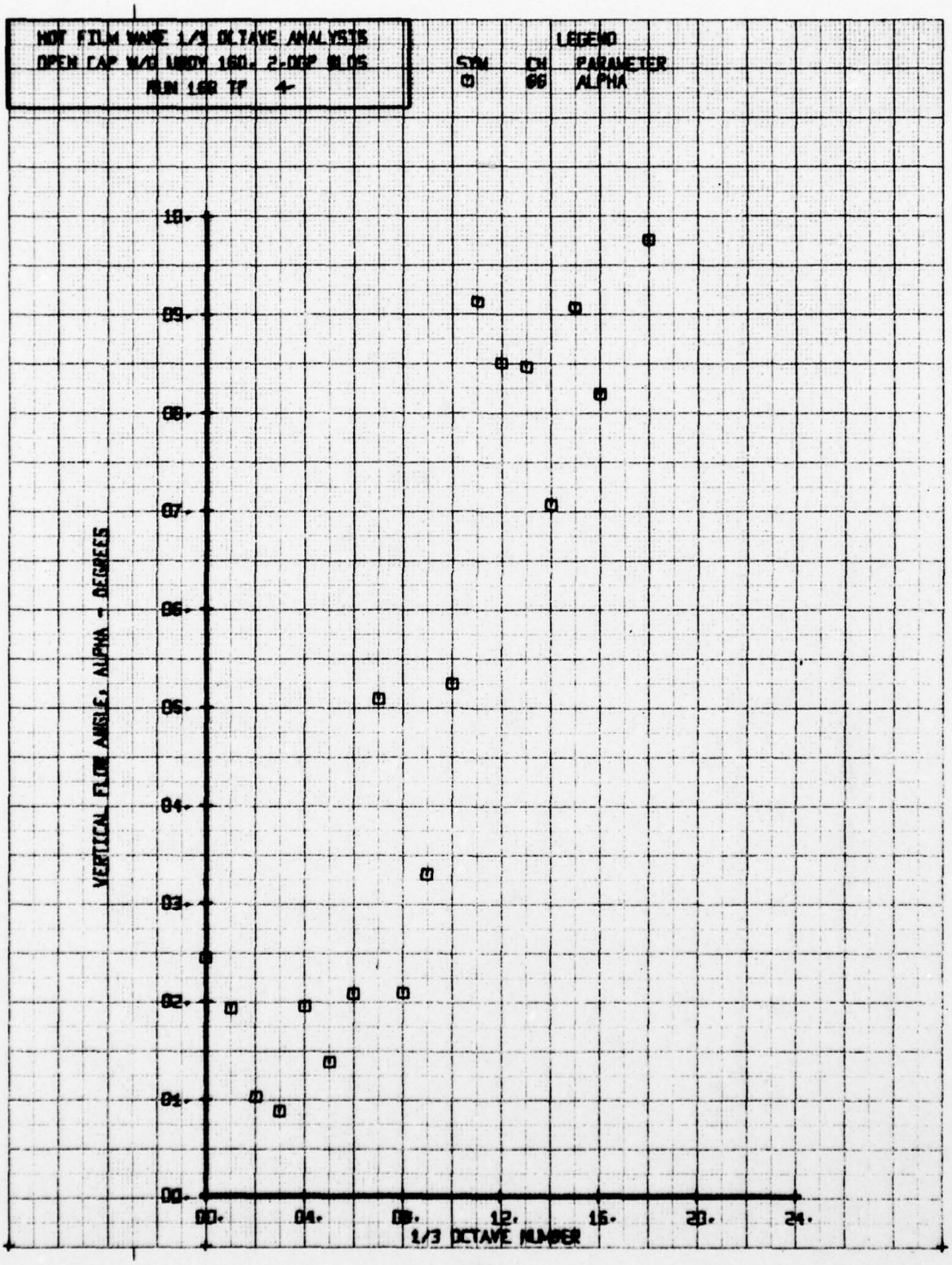

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FRS
1/3 OCTAVE NUMBER

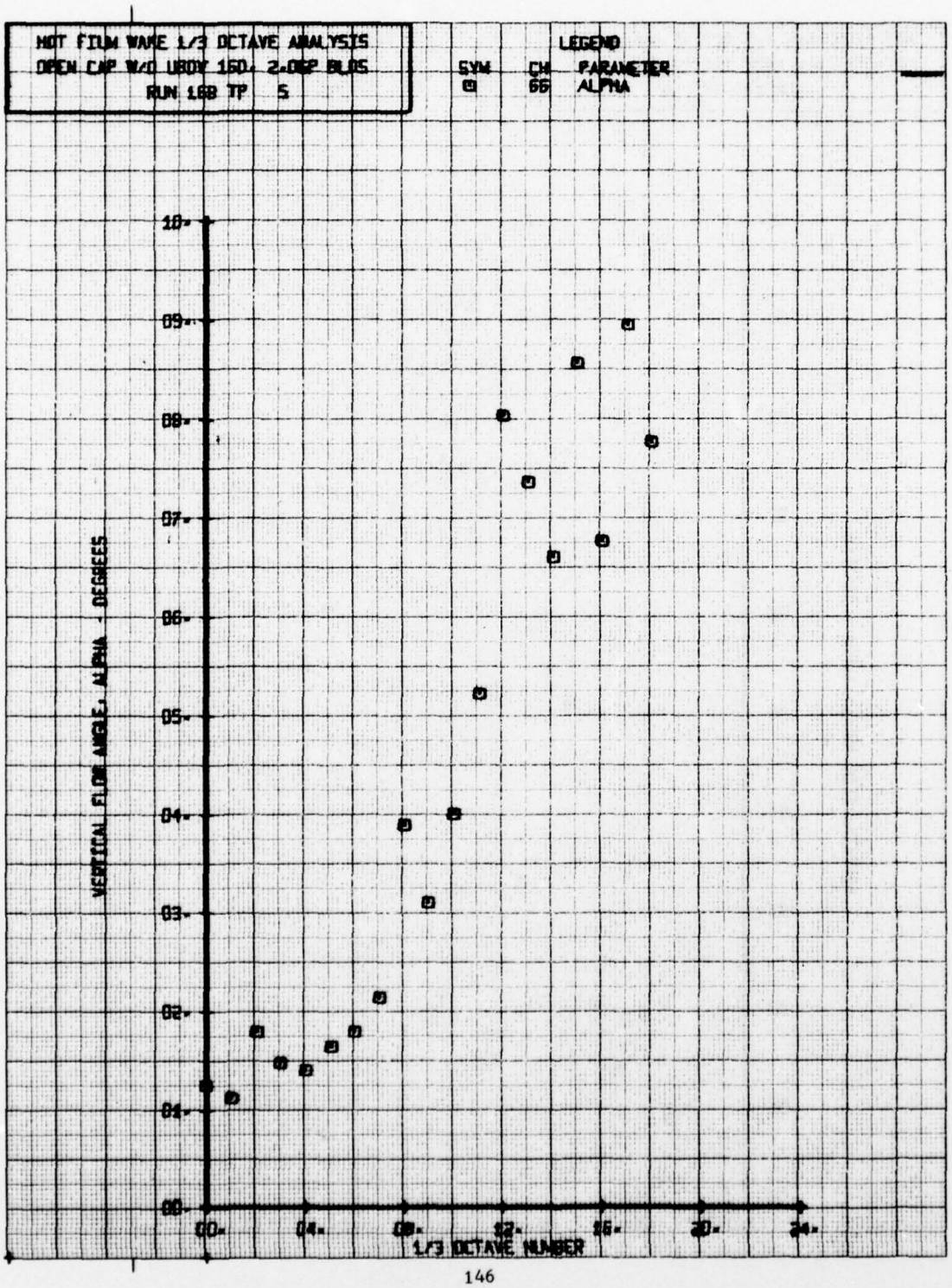

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 10,360,1-87G, BL05
RUN 191 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
K-Z VELOCITY COMPONENT V-BETA FRS
1/3 OCTAVE NUMBER

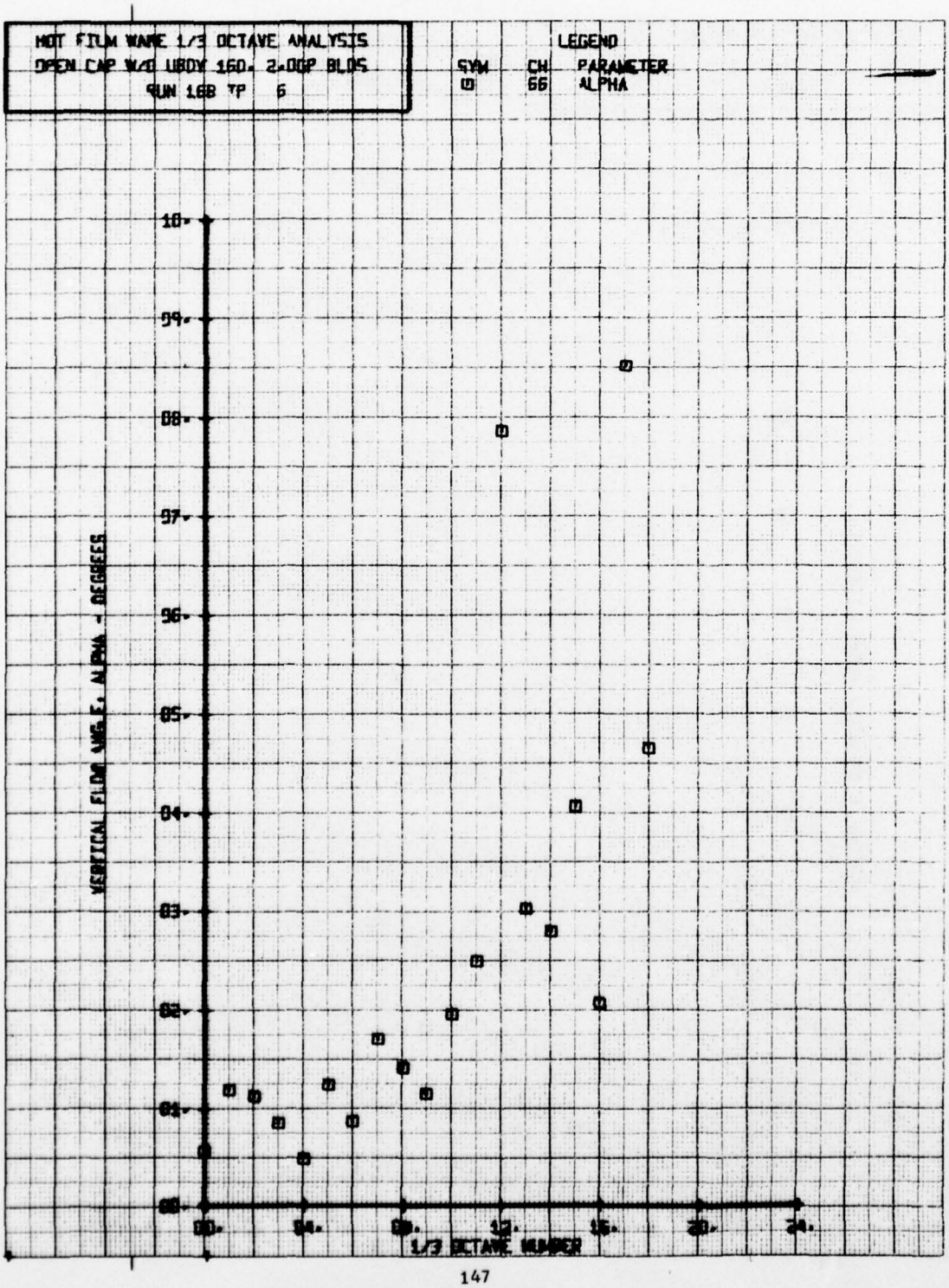

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 10.360,1.876, BLDS
RUN 191 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.0
X-Z VELOCITY COMPONENT V+BETA FPS
1/3 OCTAVE NUMBER

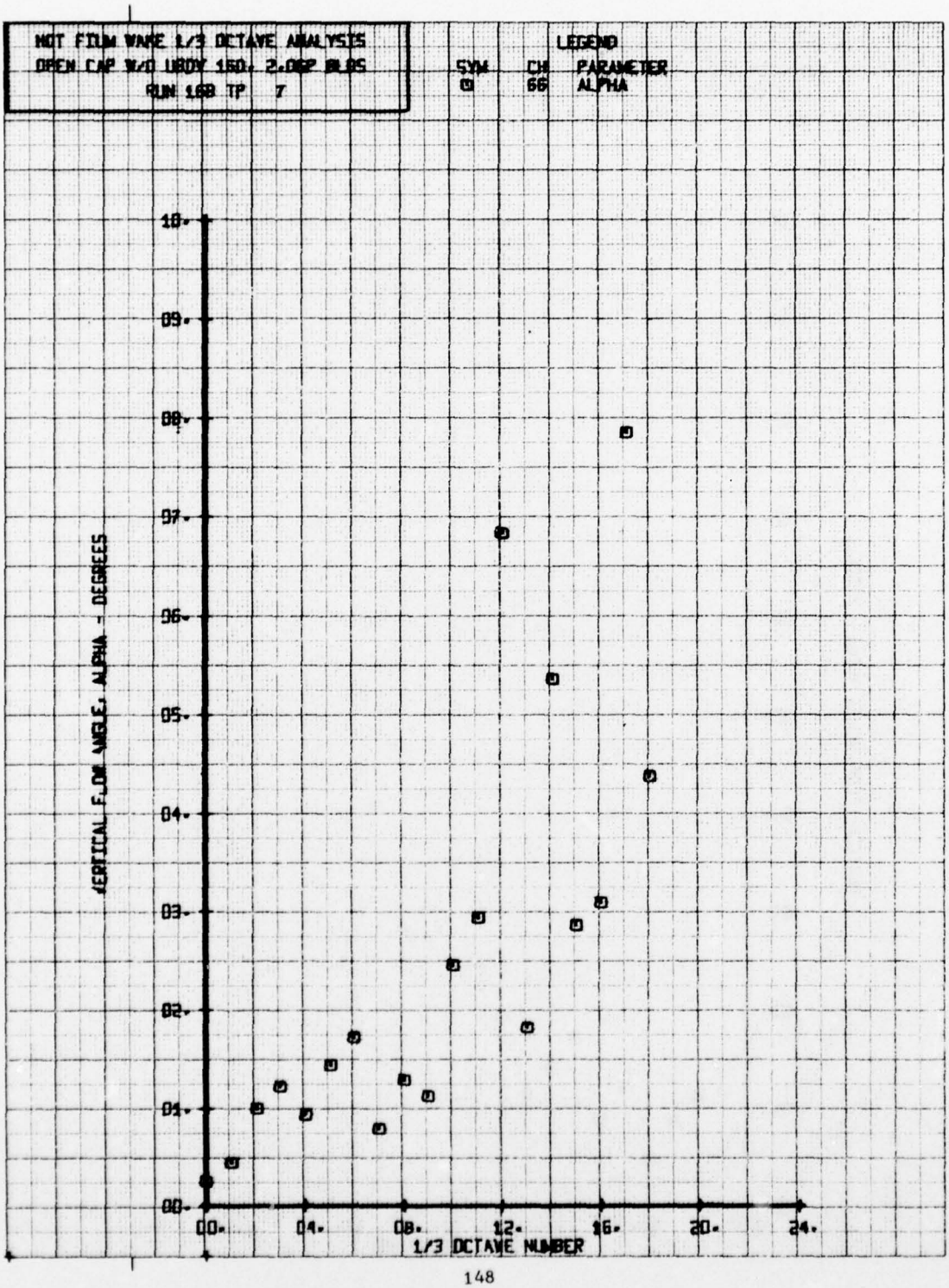

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 10.360,1.876, BLDS
RUN 191 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

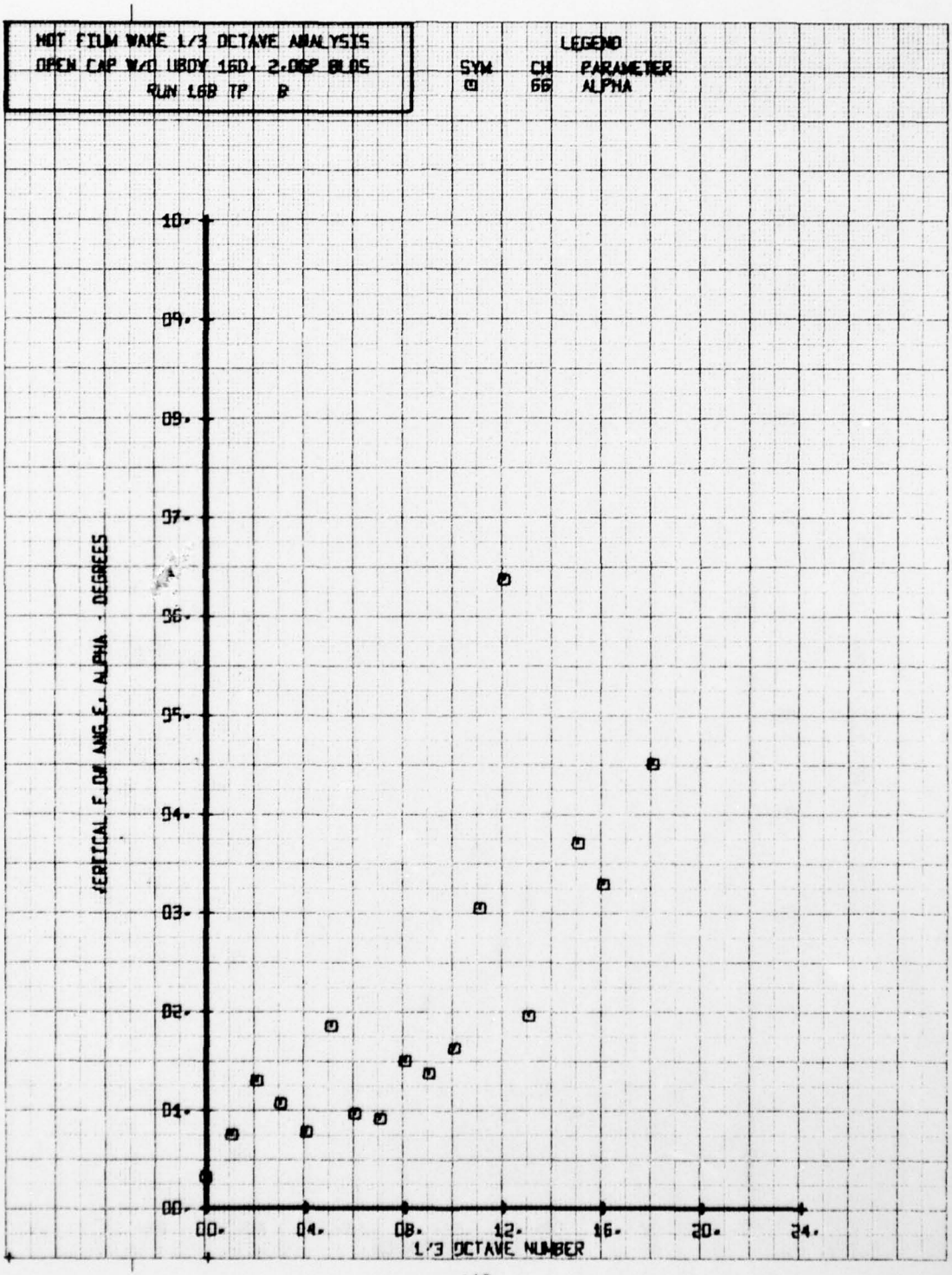

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBOY 10.36D,1.876, BLDS
RUN 151 TP 9
LEGEND
SYM CH PARAMETER
65 V-BETA
18.
85.
86.
87.
86.
85.
84.
83.
82.
81.
80.
K-2 VELOCITY COMPONENT V-BETA FPS
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER

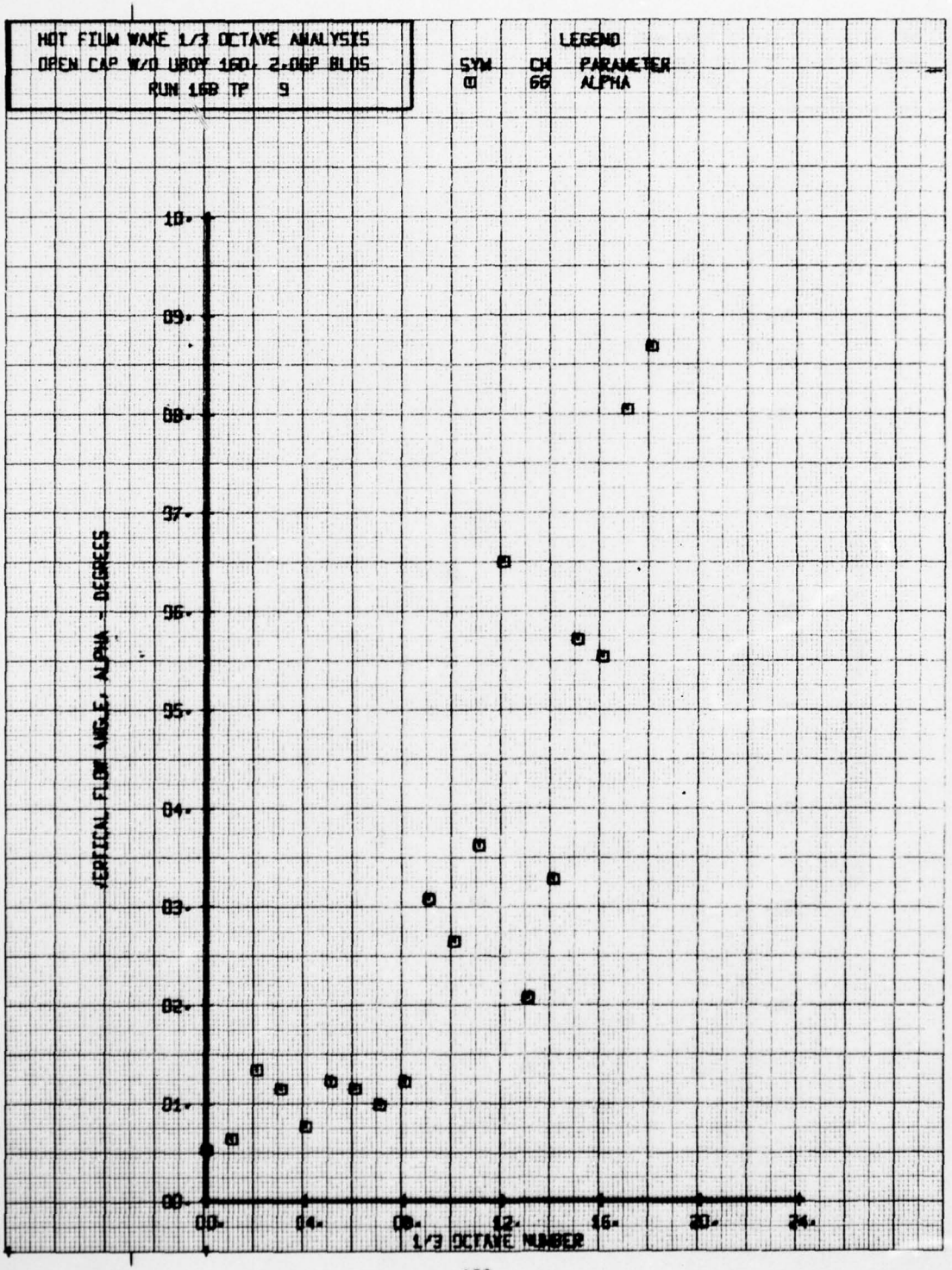

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 160. 2-DEP BLDS
RUN 168 TP 4-
LEGEND
SYM CH PARAMETER
06 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER
VERTICAL FLOW ANGLE, ALPHA - DEGREES

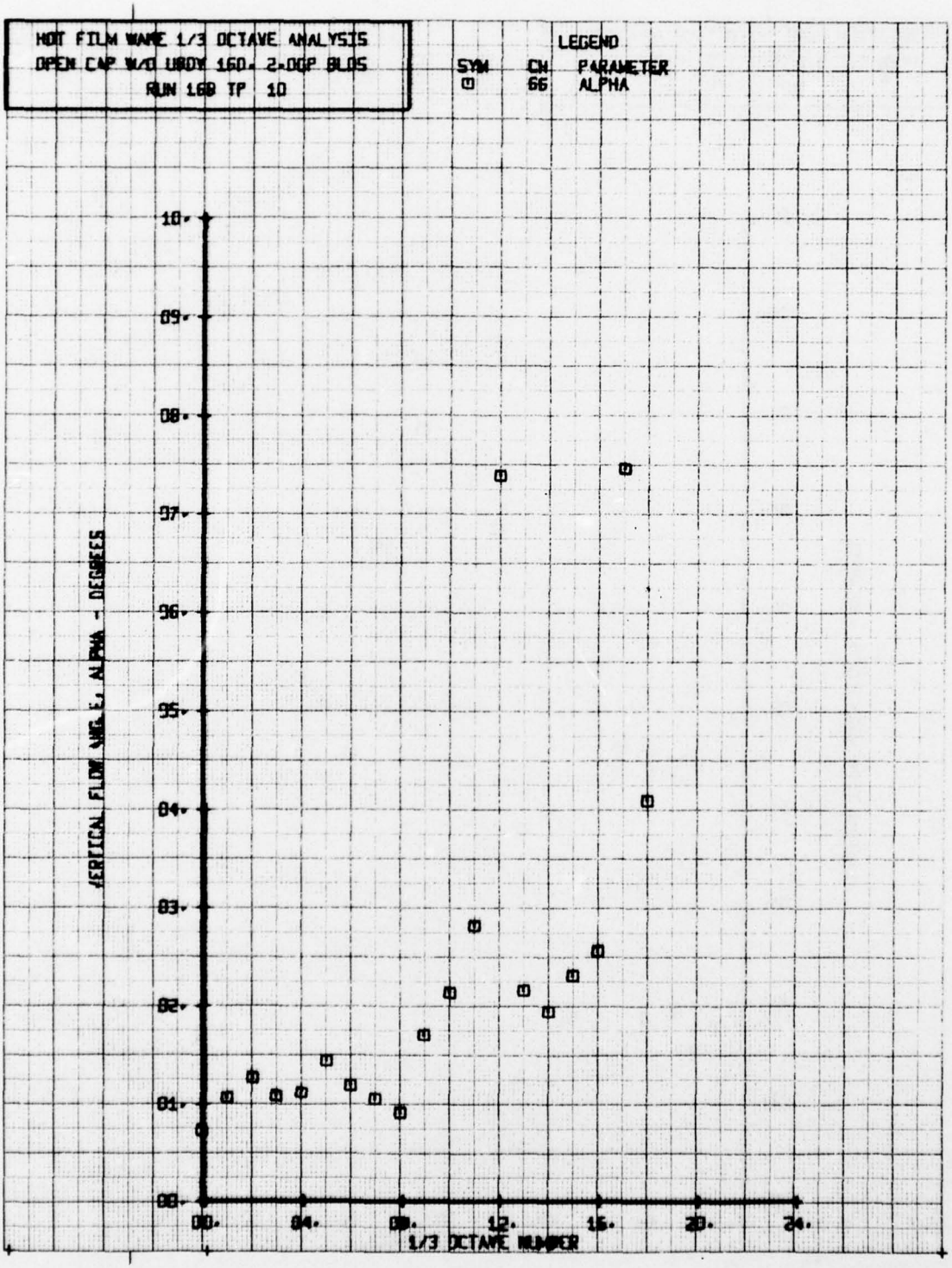

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 2-DEP BLDS
RUN 168 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

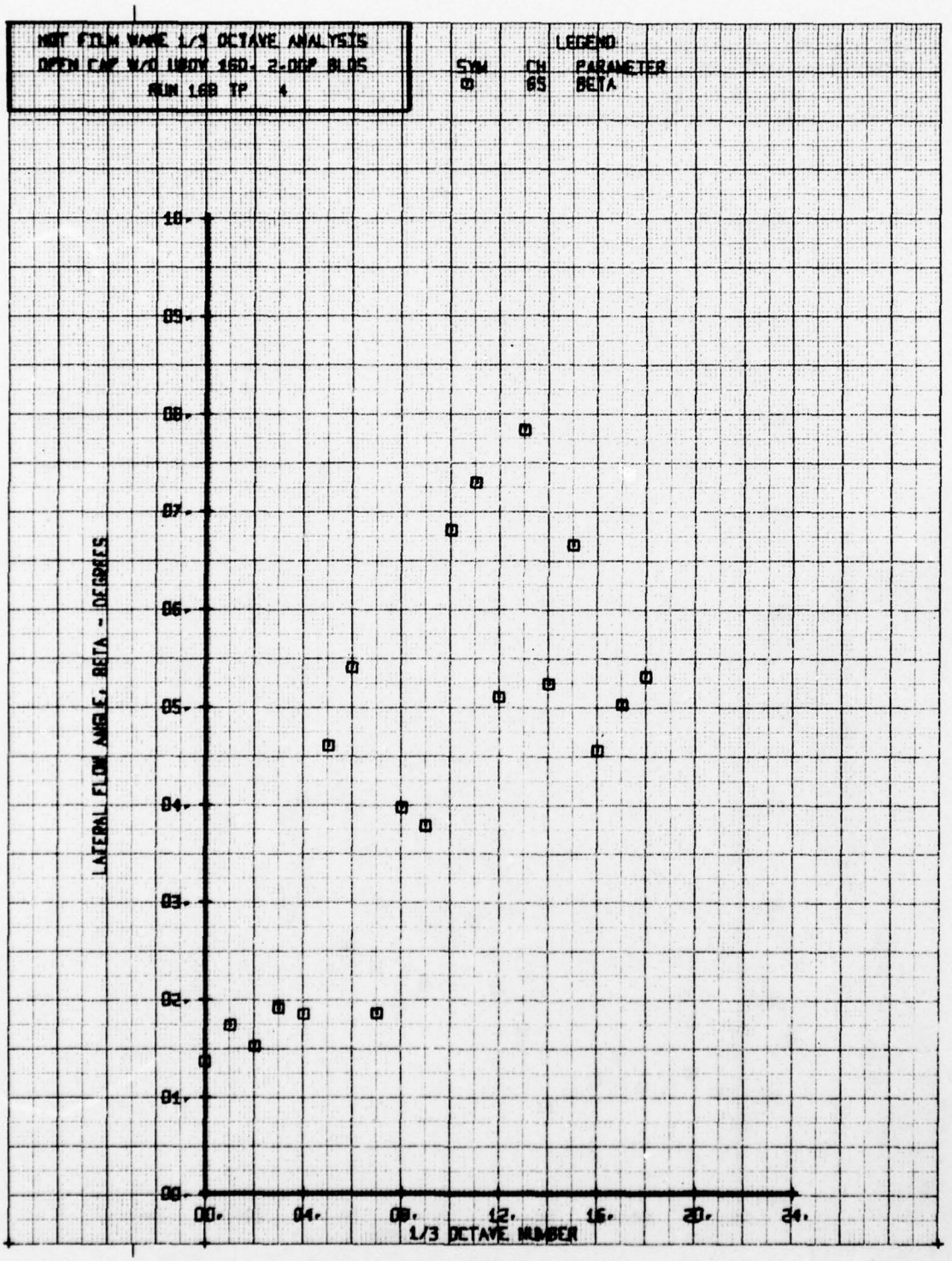

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.00P BLDS
RUN 188 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW W.F. ALPHA - DEGREES
1/3 OCTAVE NUMBER

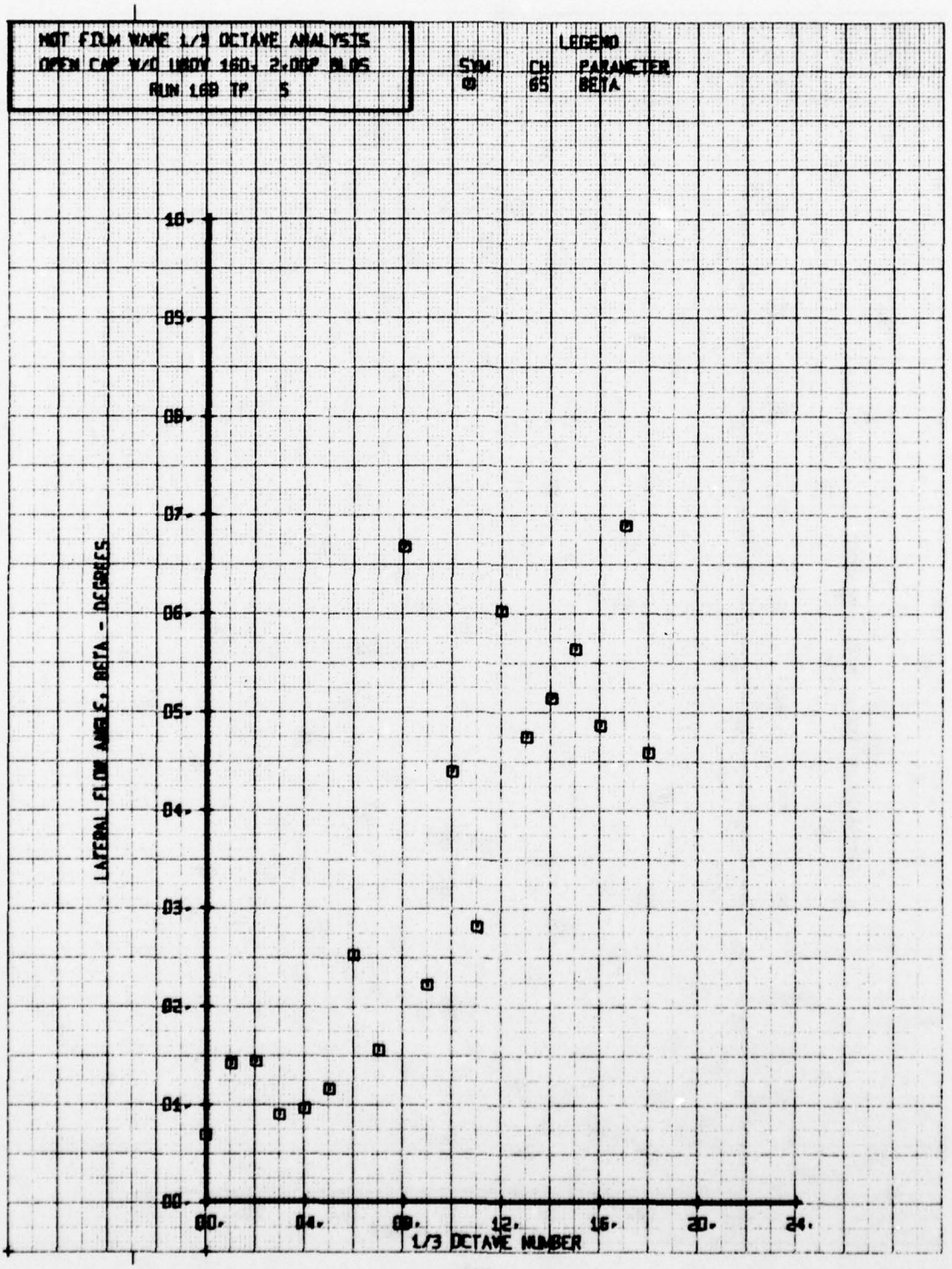

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 150. 2.0SP BLDS
RUN 168 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

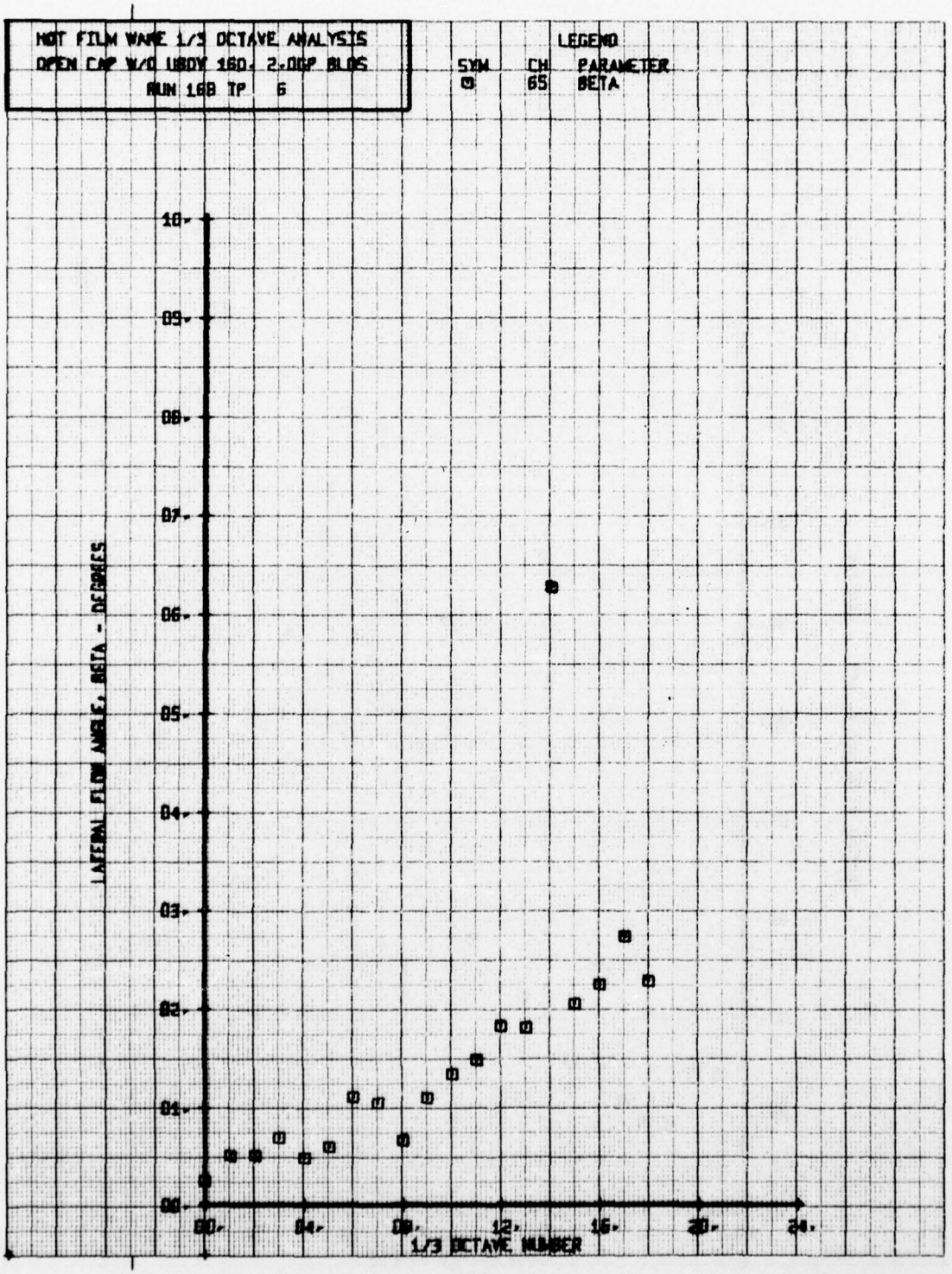

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 2.0GP BLDS
RUN 168 TP B
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
09.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

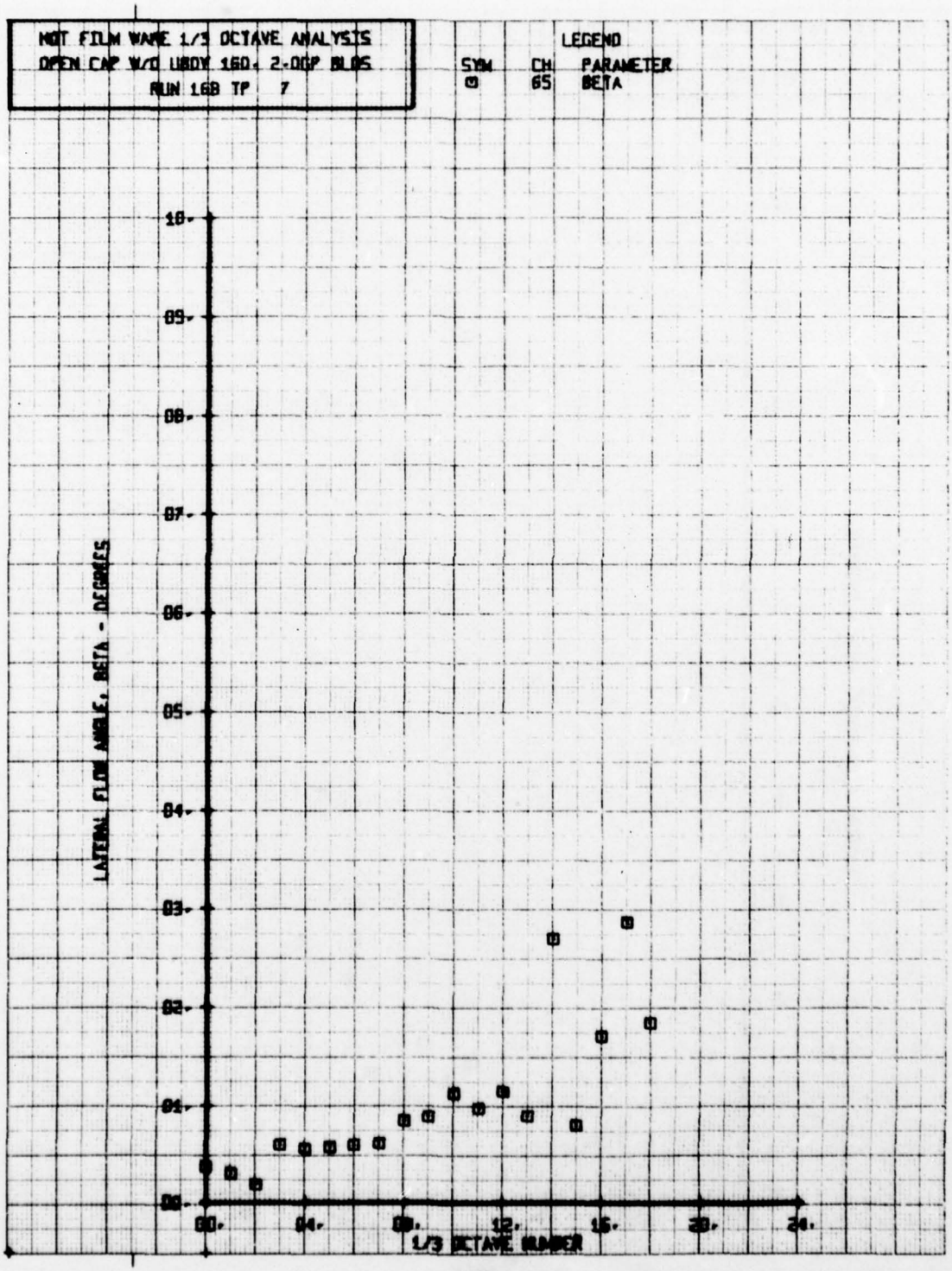

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.0GP BLDS
RUN 168 TP 9
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

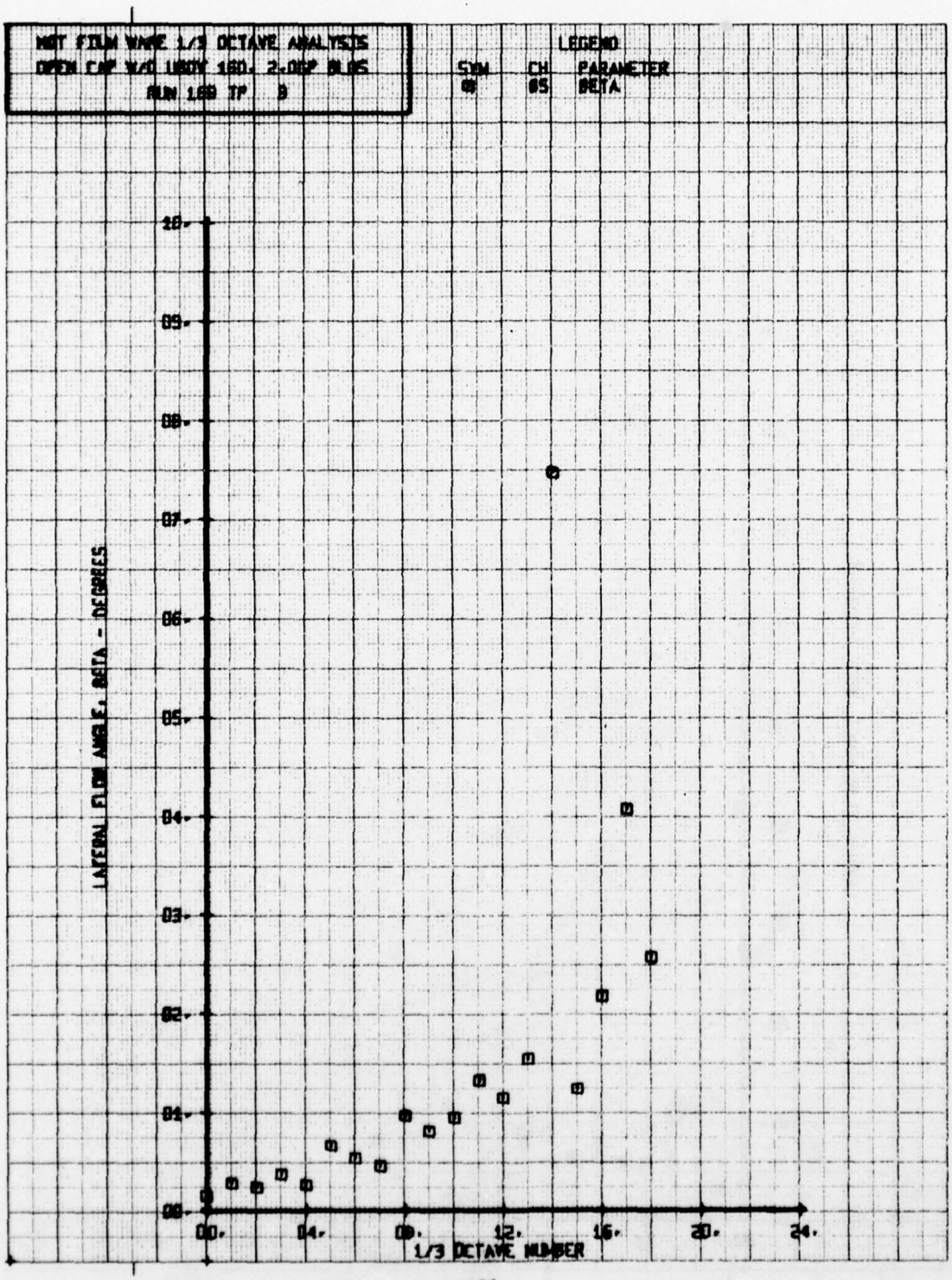

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2-DGP BLDS
RUN 168 TP 10
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

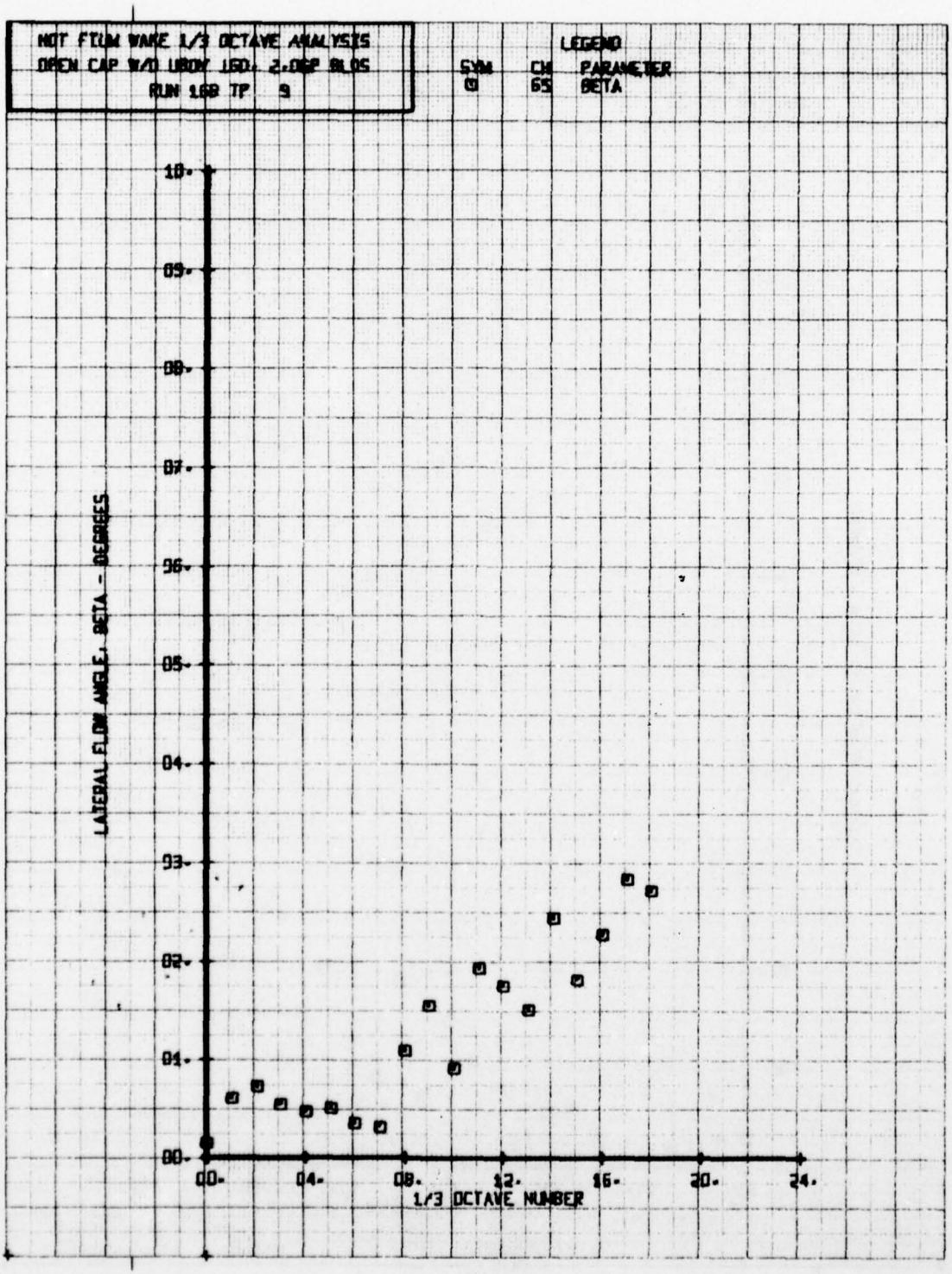

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 16D. 2-DOP BLDS
RUN 168 TP 4
LEGEND
SYM CH PARAMETER
0 65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

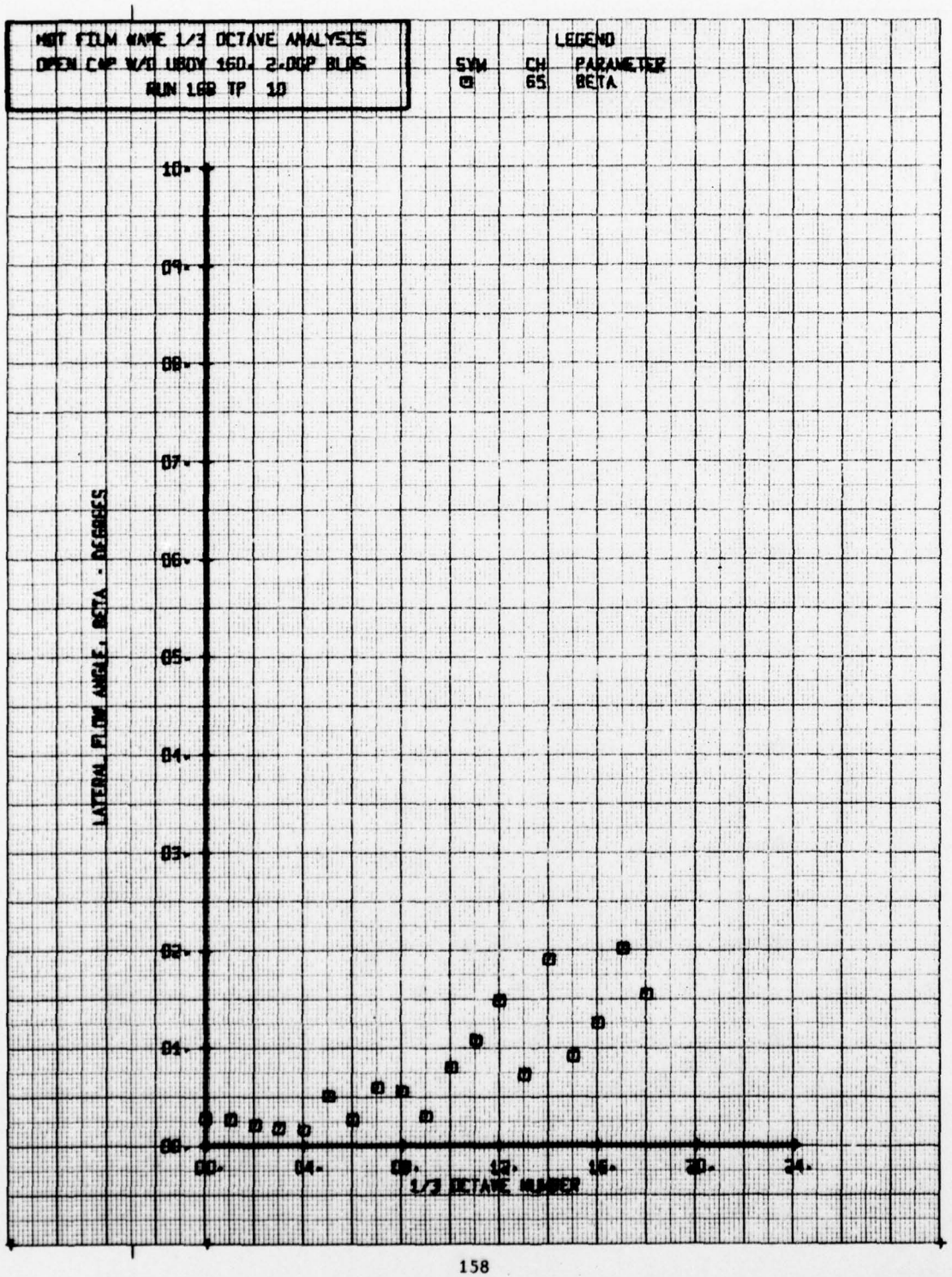

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDV 160. 2.00P BLDS
RUN 168 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

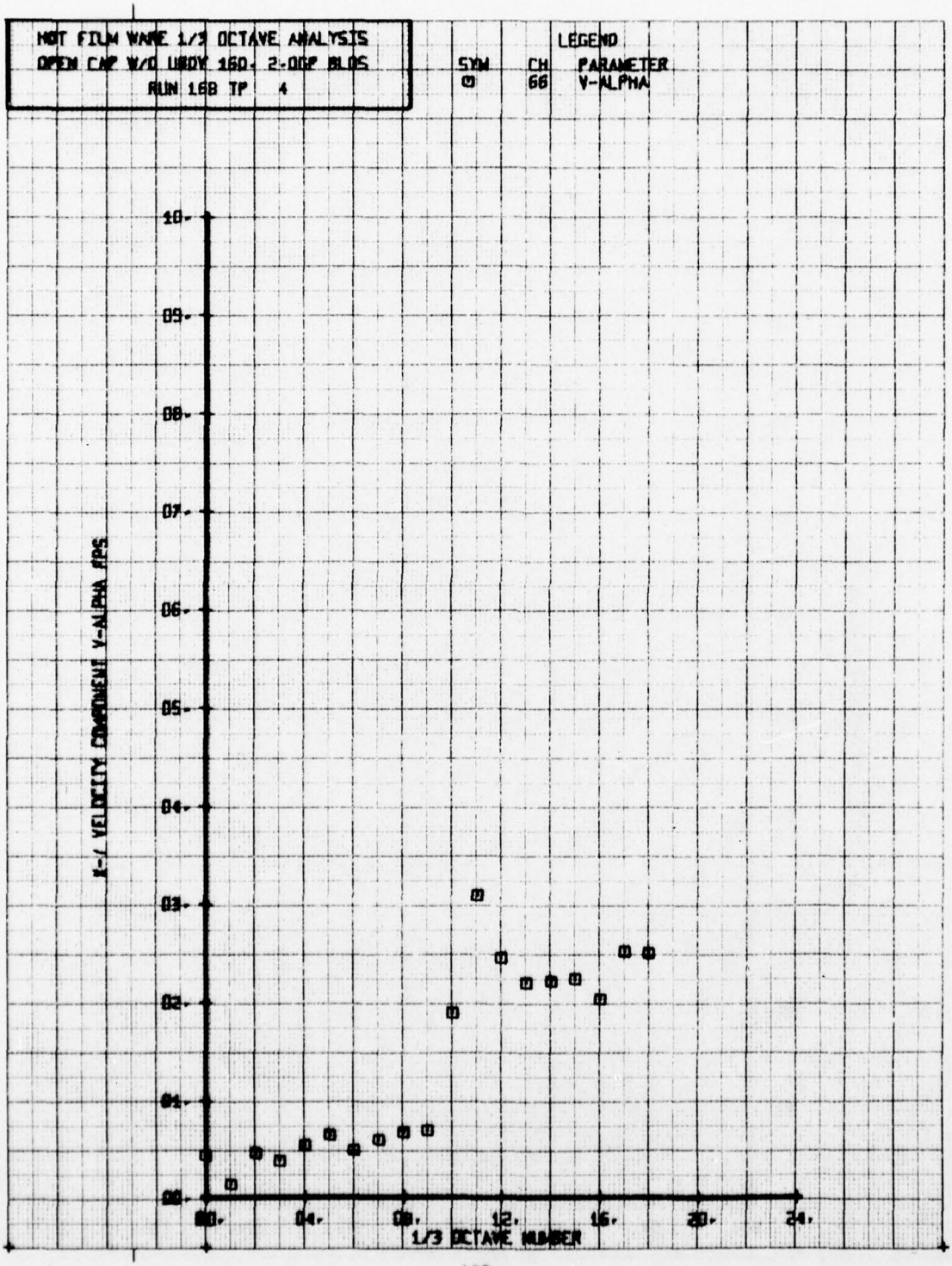

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 180. 2.00P BLDS
RUN 168 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.

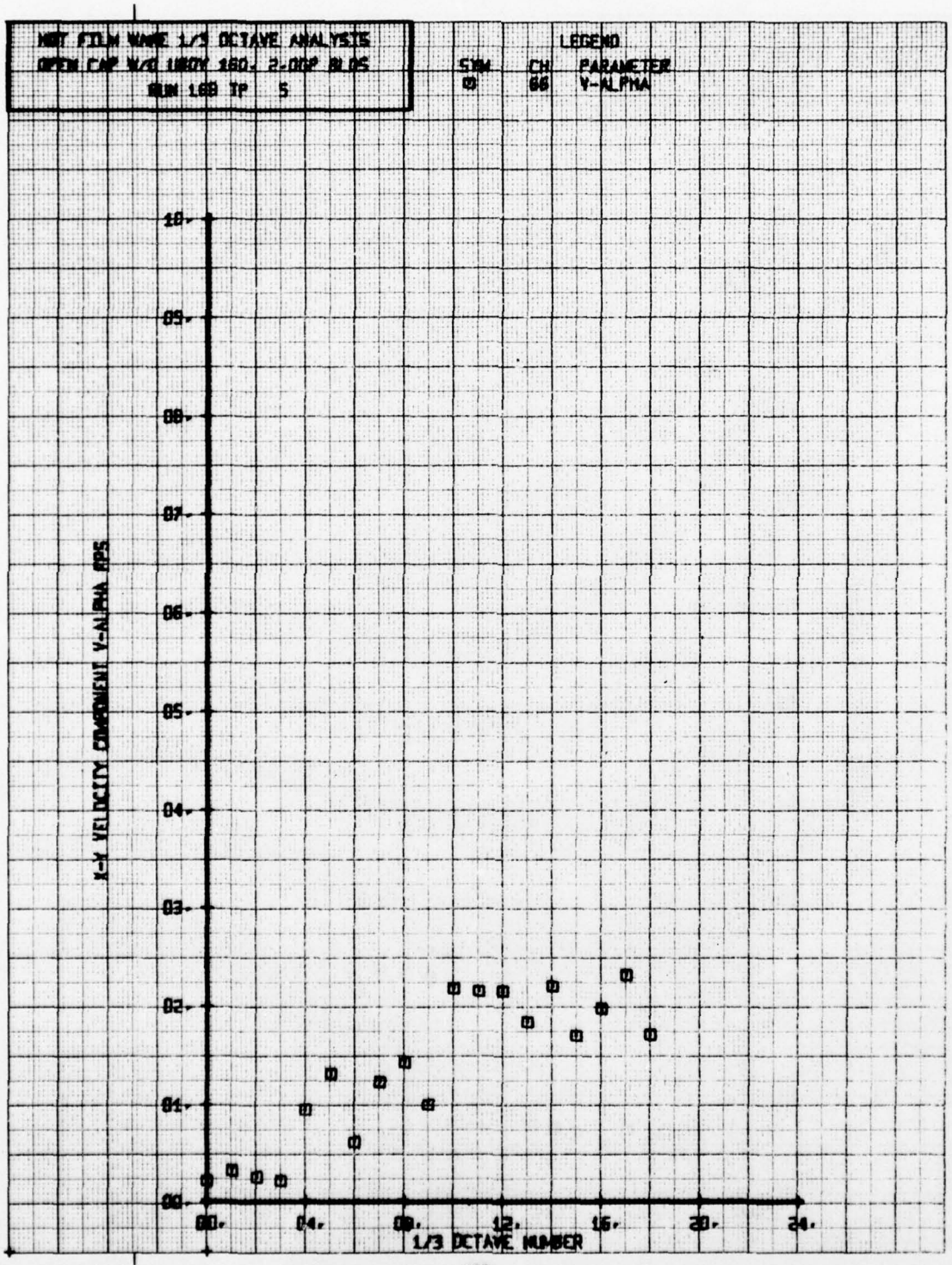

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2-OGP BLDS
RUN 168 TP 7
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

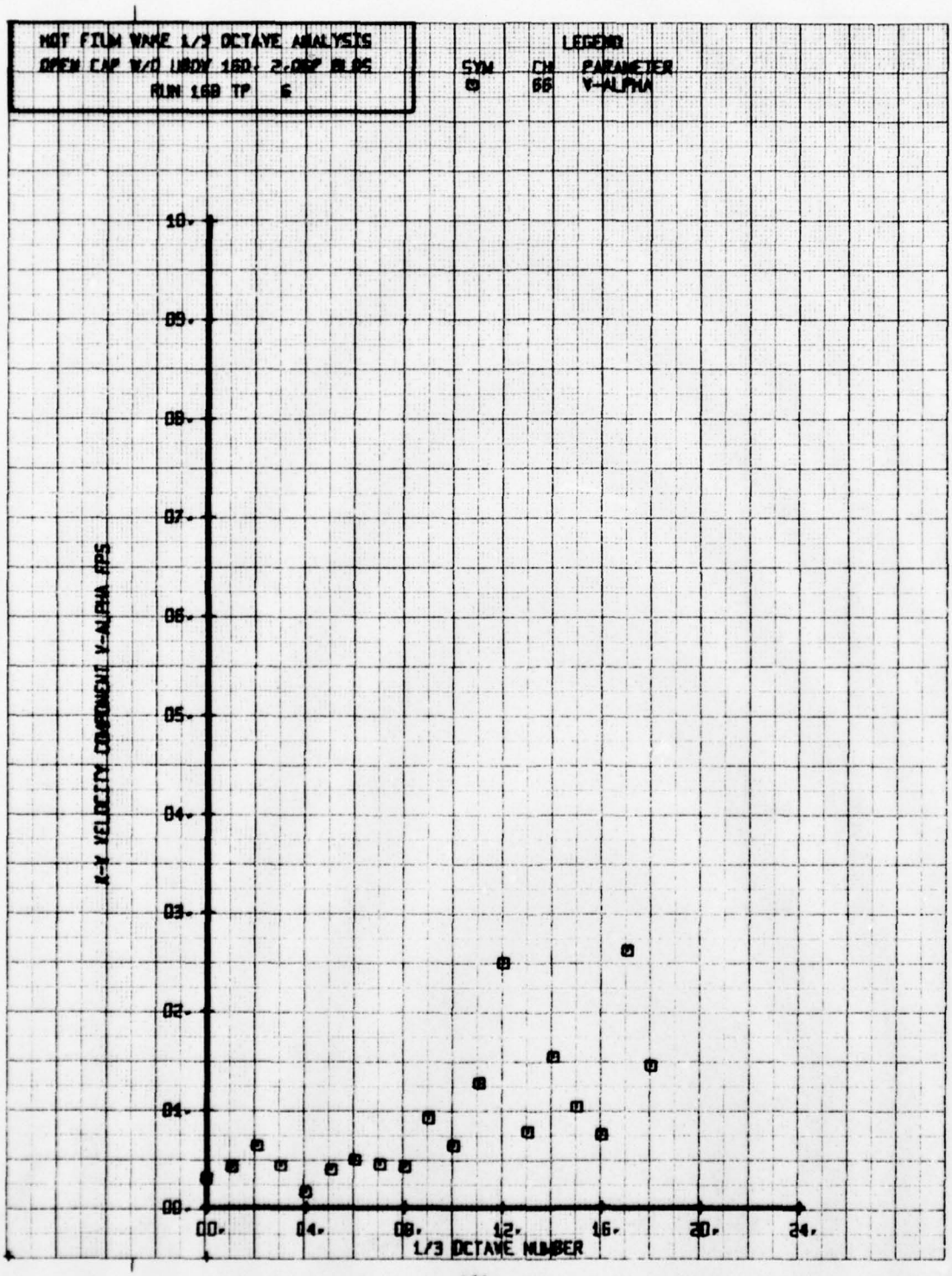

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAV W/O UNDTY 180. 2.0DP BLDS
RUN 168 TP 9
LEGEND
SYM CH PARAMETER
05 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

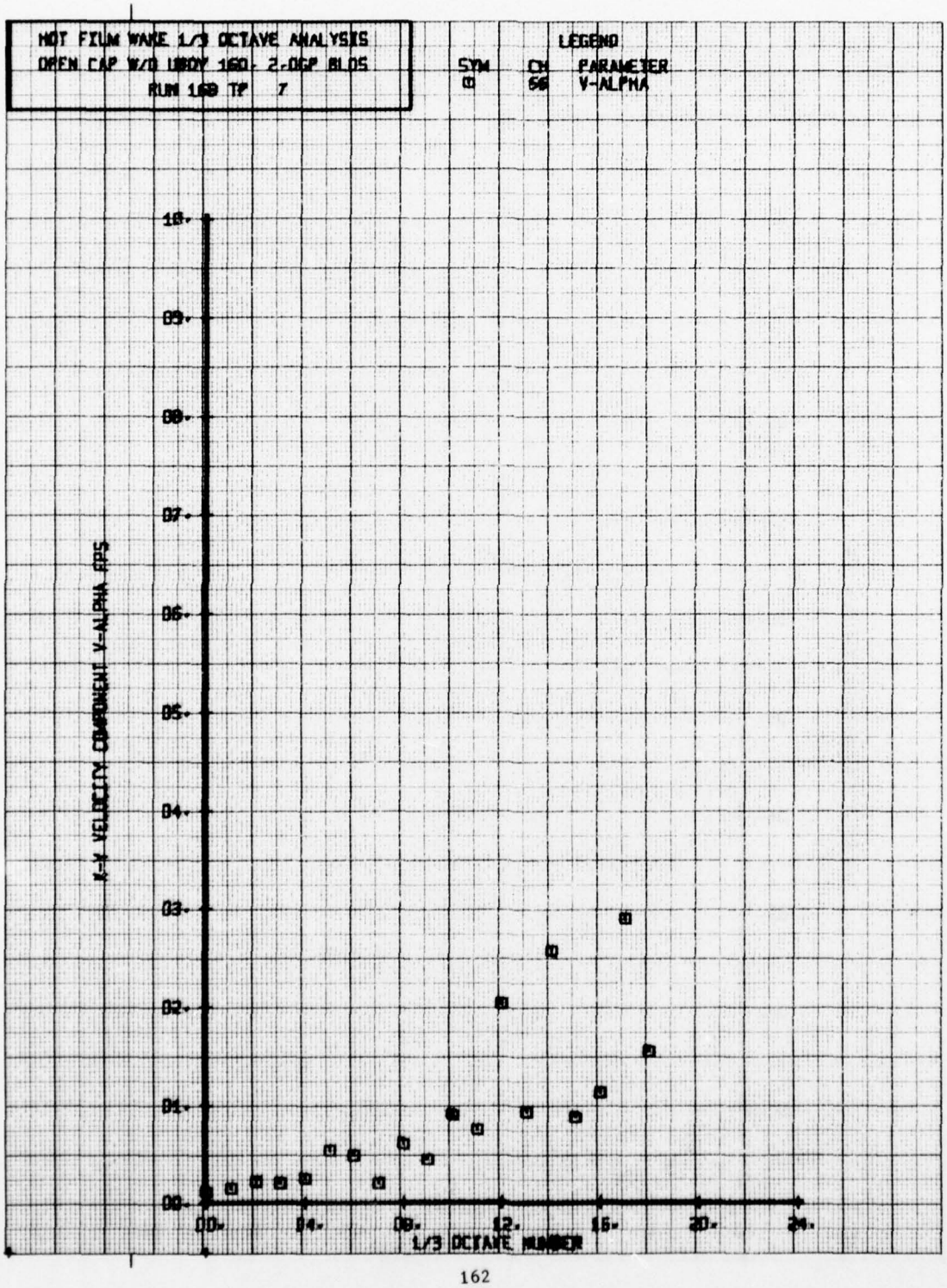

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 1GD. 2.0GP BLDS
RUN 168 TP 9
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
05.
06.
07.
08.
09.
10.

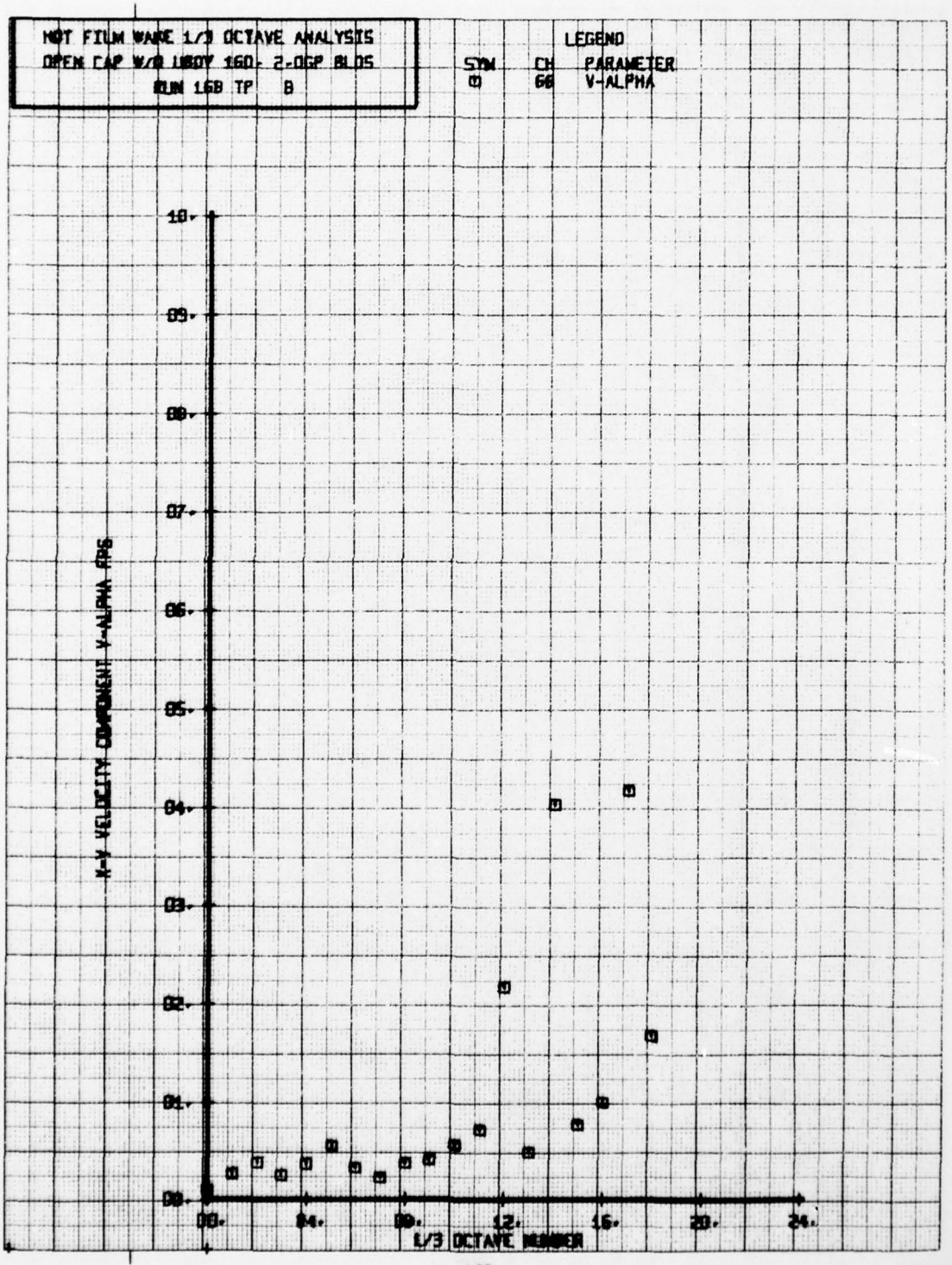

MBT FILM NAME 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.00P BLDS
RUN 168 TP 10
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

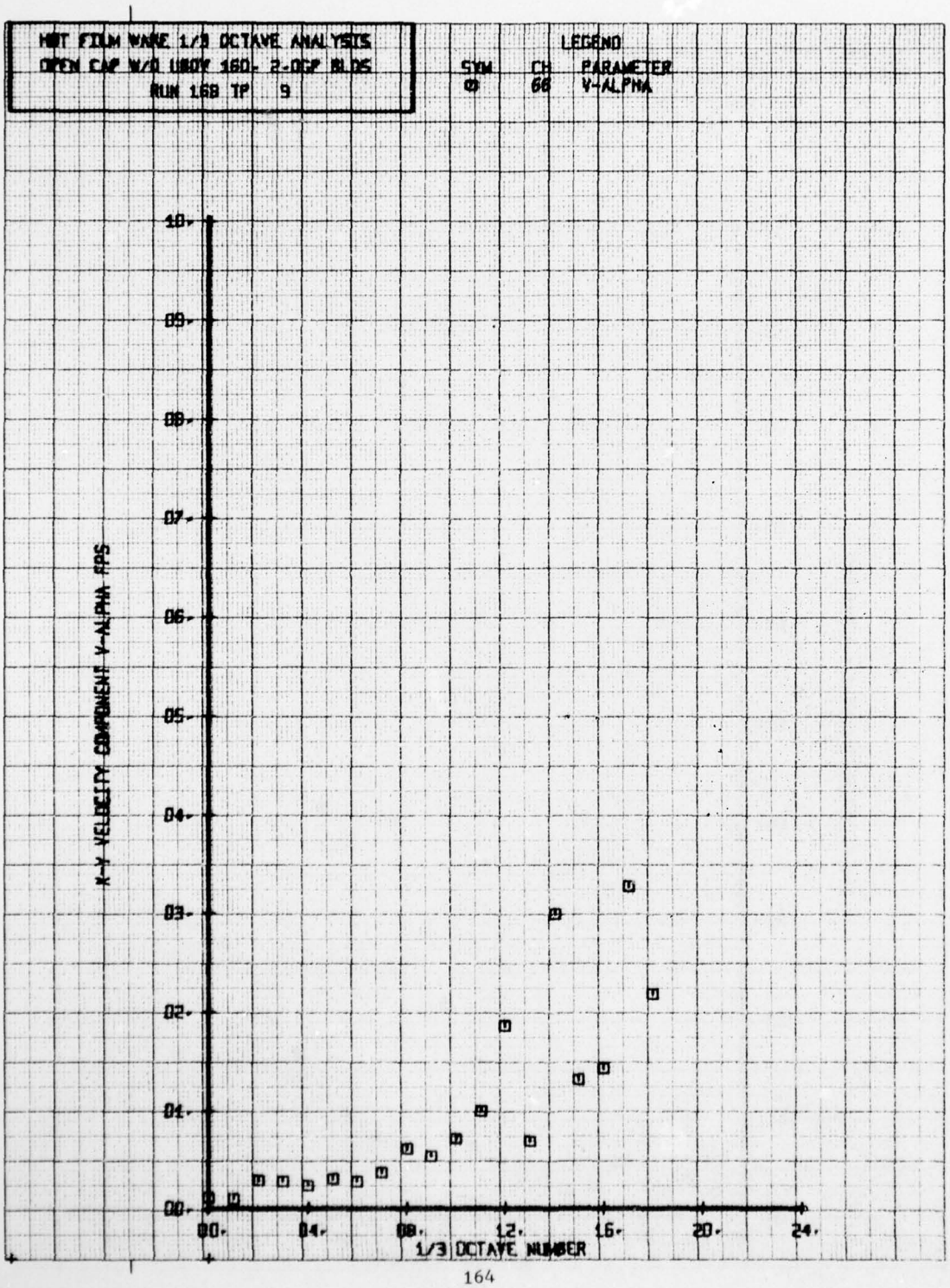

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2-DOF BLDS
RUN 168 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
X-/ VELOCITY COMPONENT V-ALPHA FPS

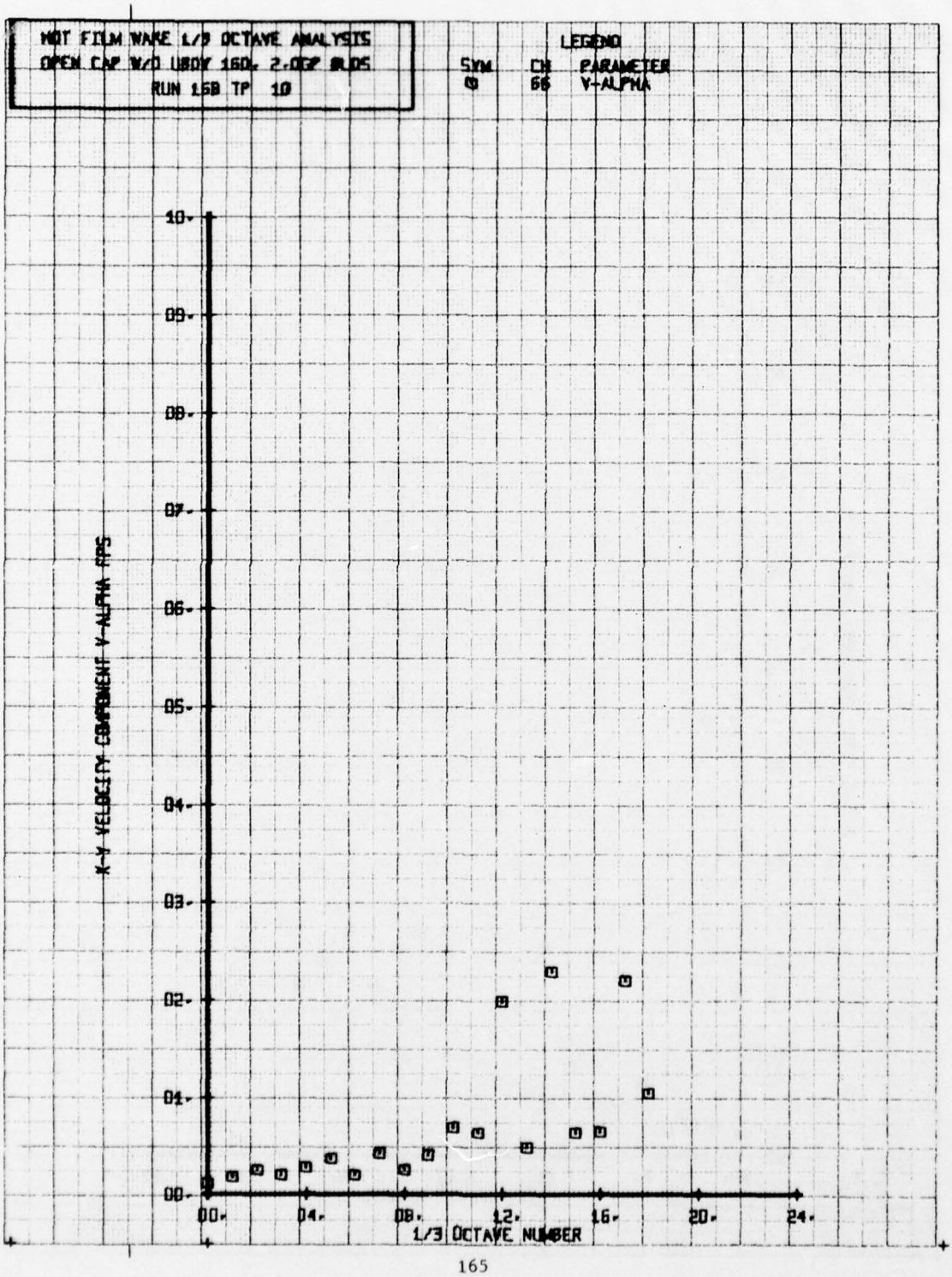

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 160. 2-DGP BLDS
RUN 168 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA RPS
1/3 OCTAVE NUMBER

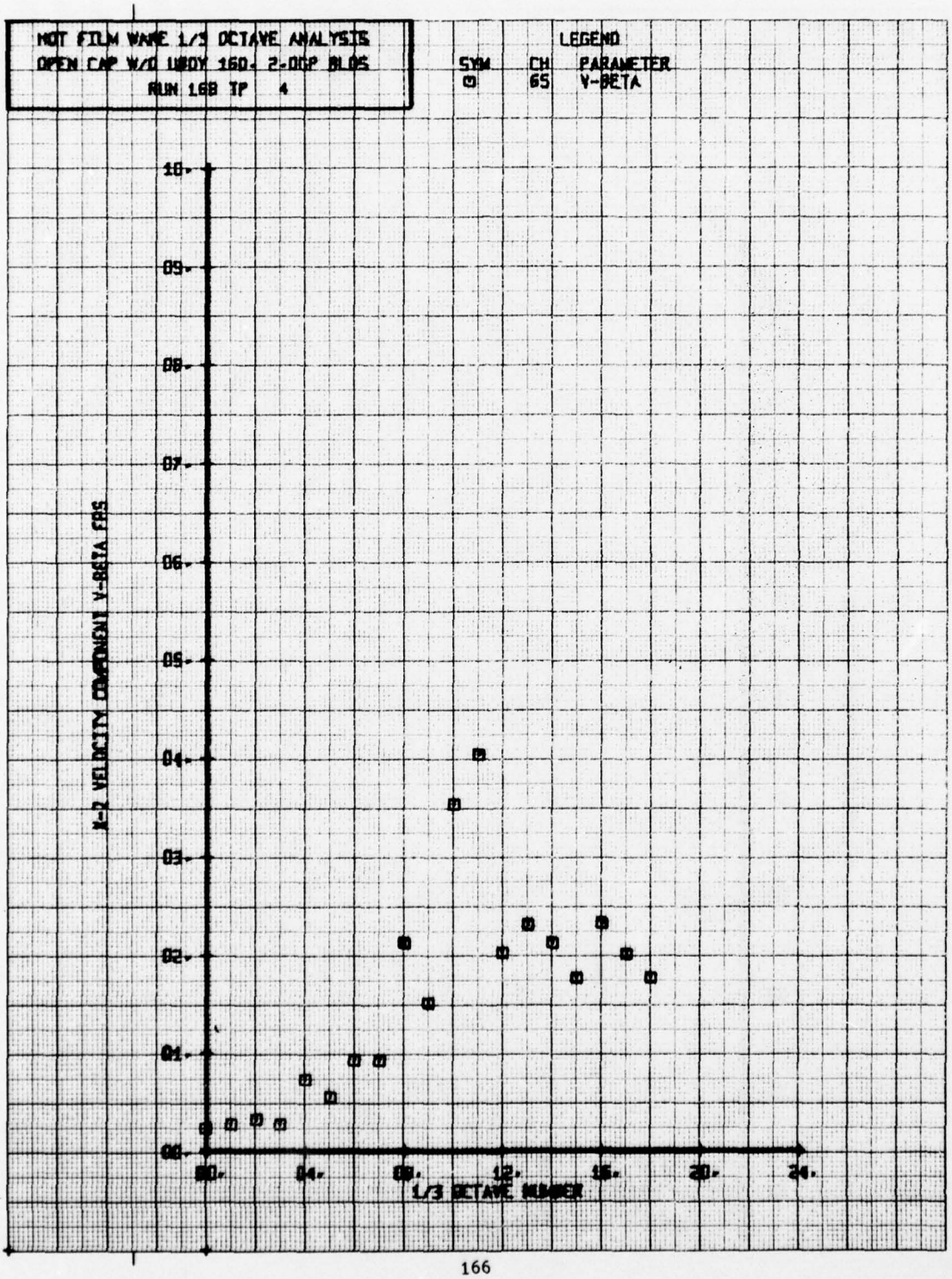

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 2.0DP BLDS
RUN 168 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA RPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

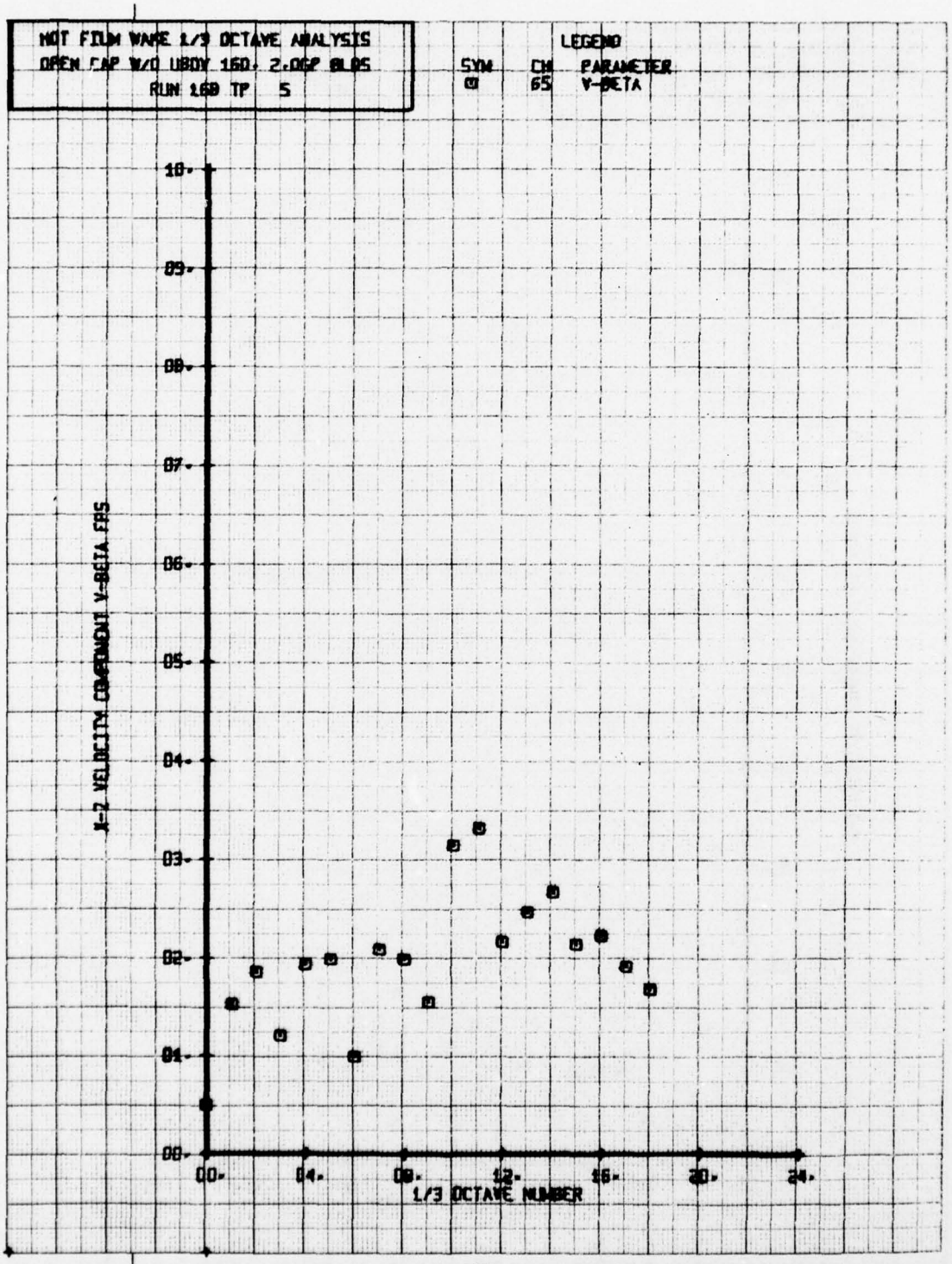

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160- 2-DGP BLDS
RUN 168 TP 7
LEGEND
SYM CH PARAMETER
56 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
K-V VELOCITY COMPONENT V-ALPHA FPS

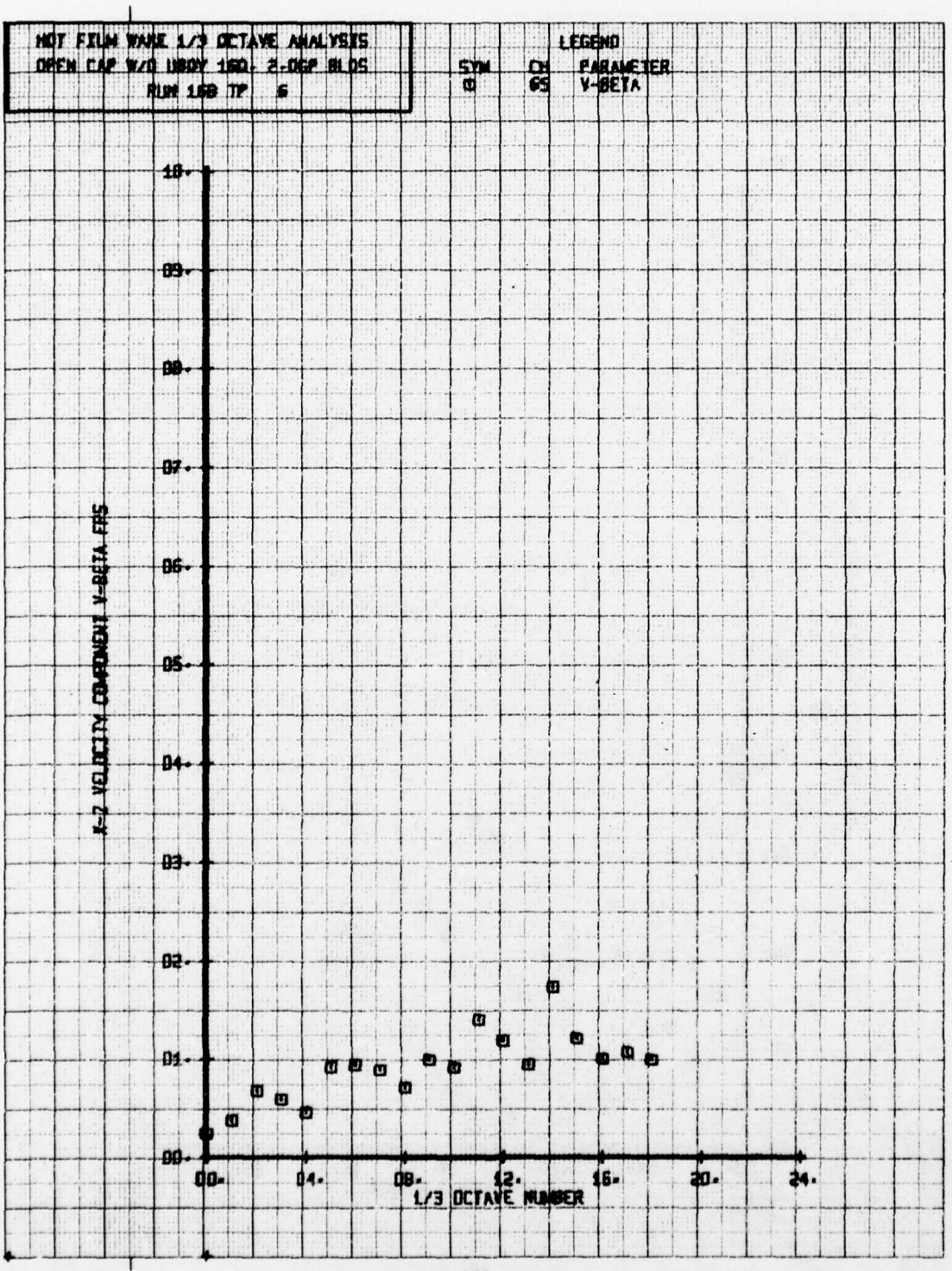

HOT FILM WARE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O LBOY 160. 2-DGP BLDS
RUN 16B TP 8
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

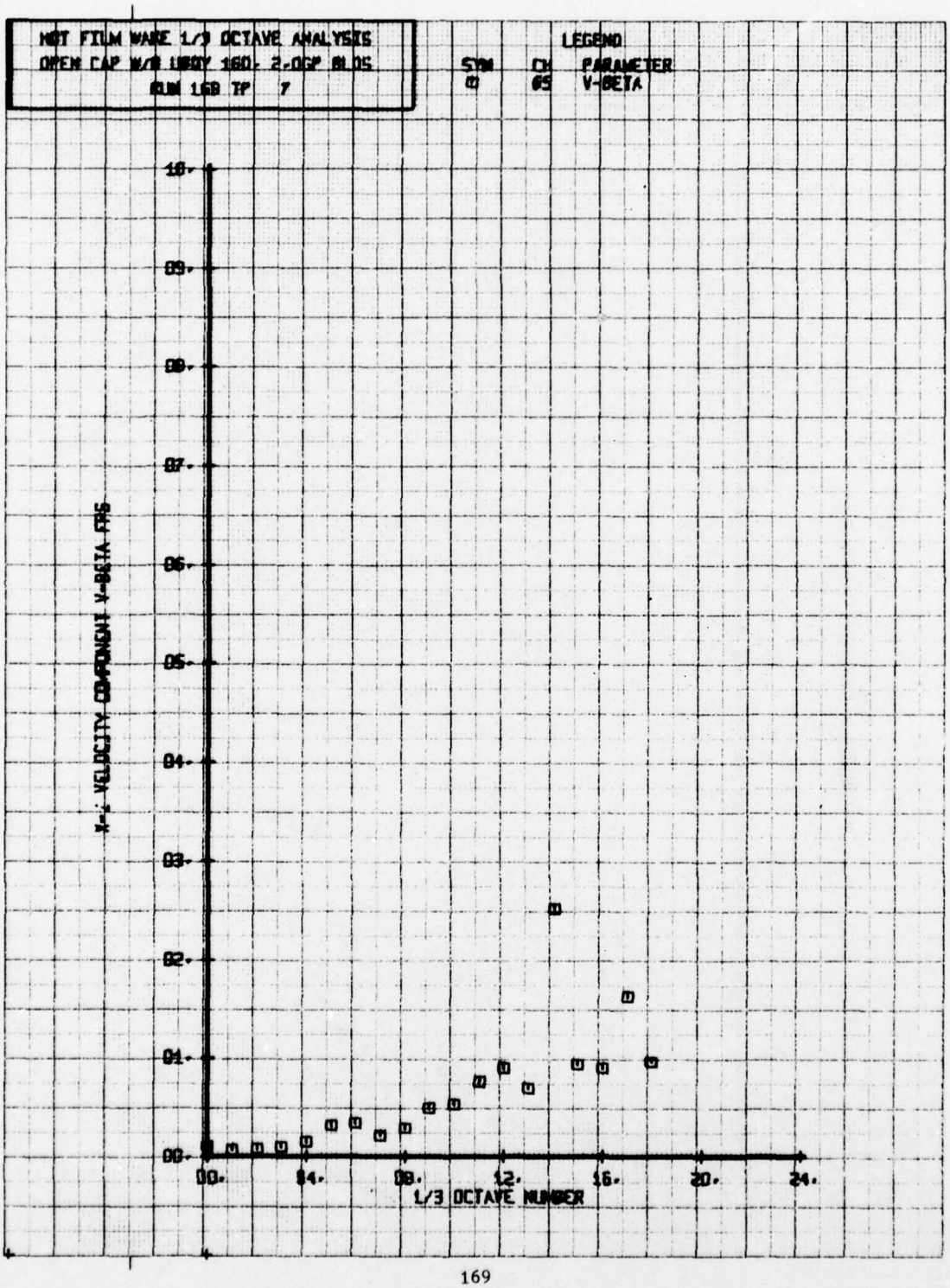

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160- 2-OCP RUNS
RUN 168 TP 9
LEGEND
SYM CH PARAMETER
Ø 66 V-ALPHA
X-V VELOCITY COMPONENT V-ALPHA RPS
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

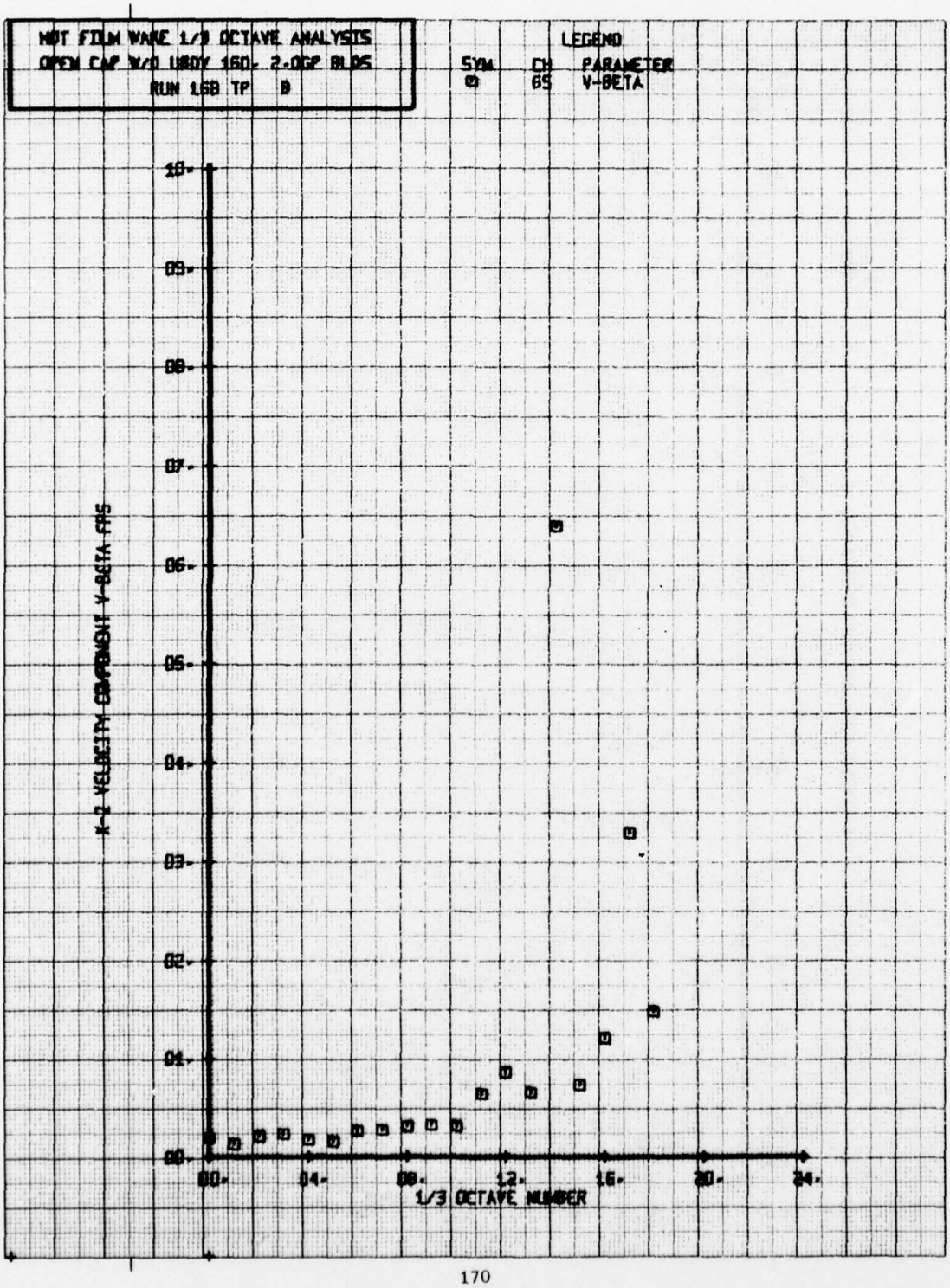

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 160. 2.0IN BLDS
RUN 158 TP 10
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-V VELOCITY COMPONENT V-ALPHA RMS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

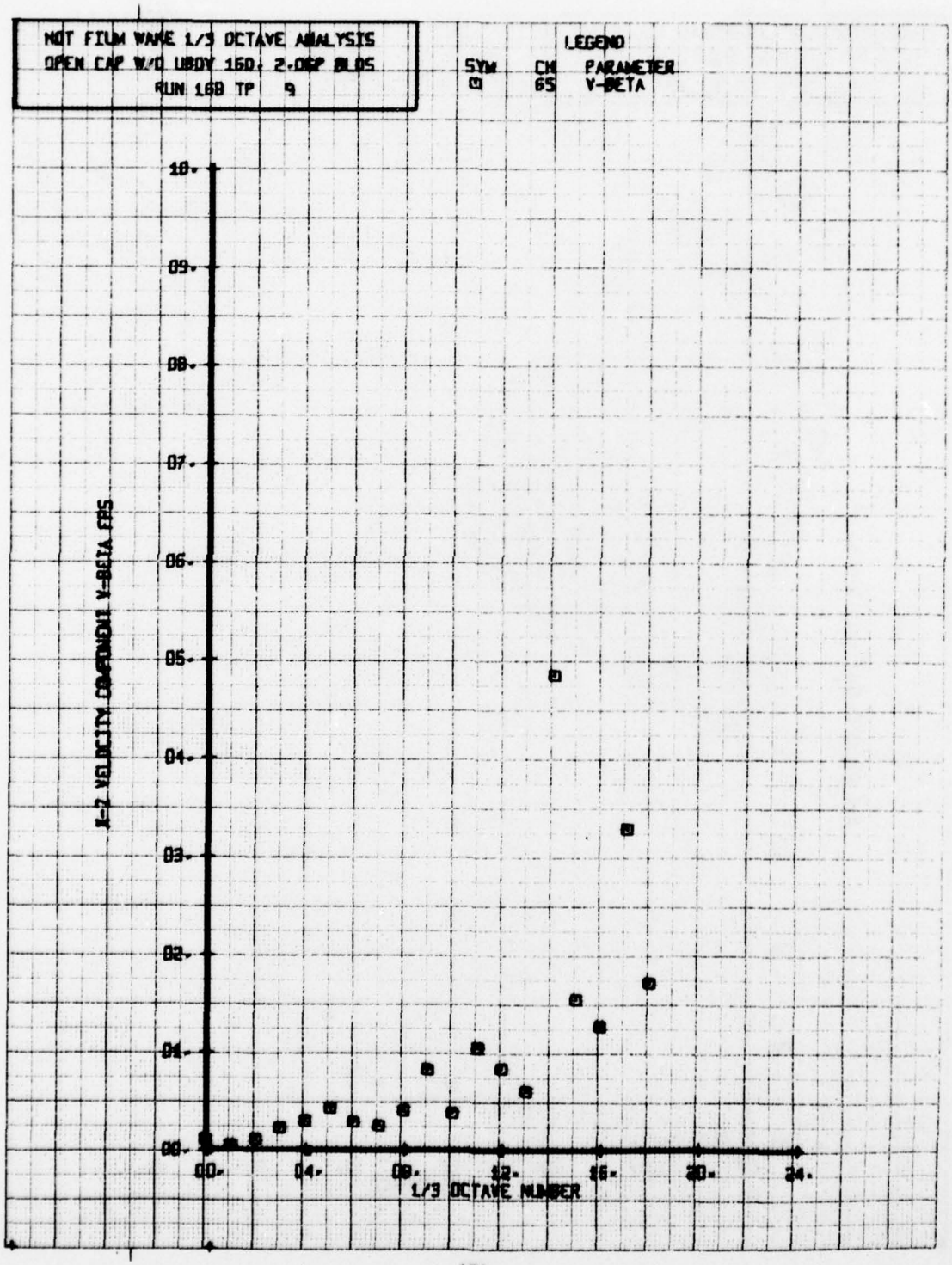

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 2-DGP BLDS
RUN 168 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
N-2 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

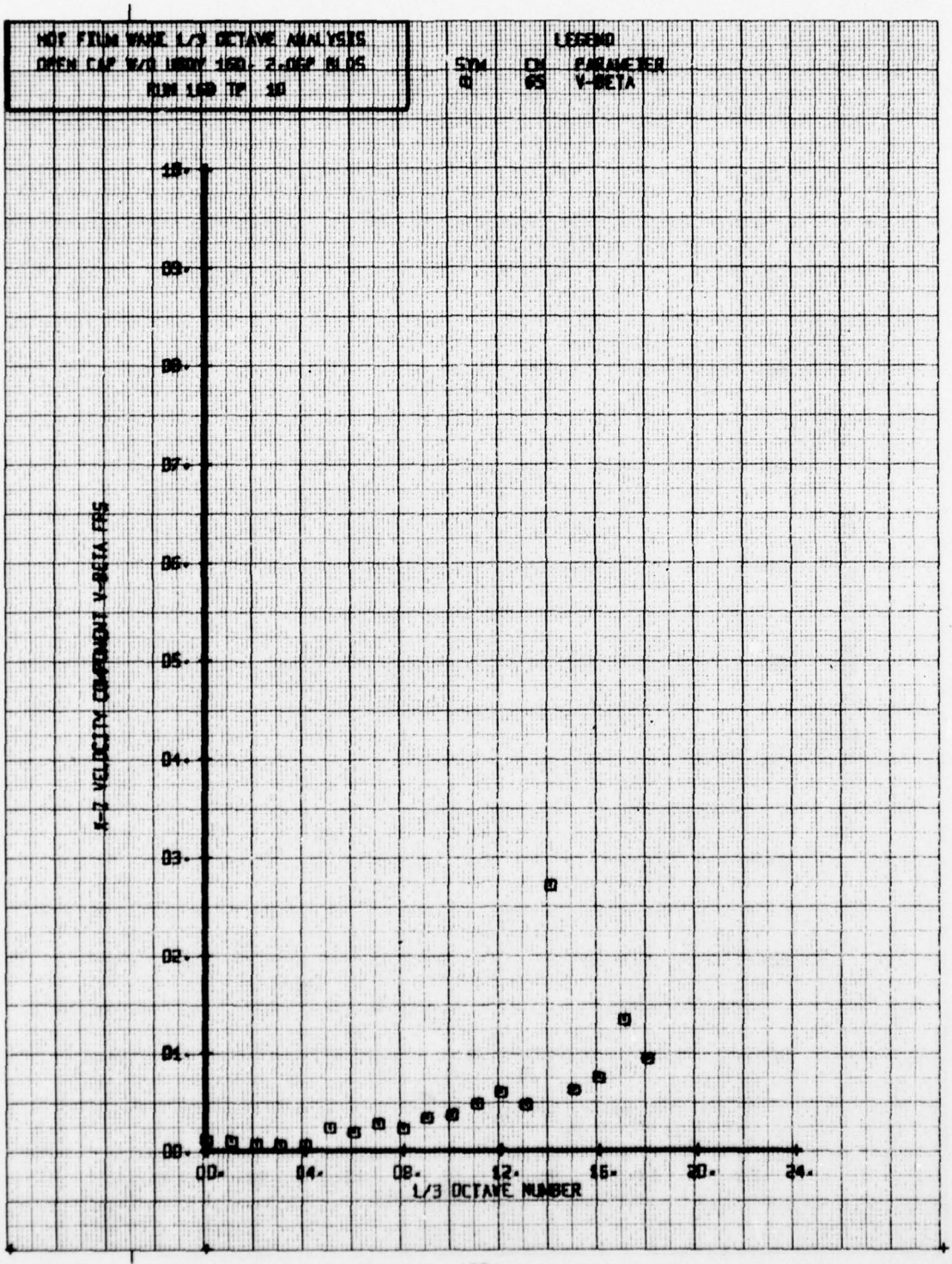

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 2.0GP BLOS
RUN 169 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

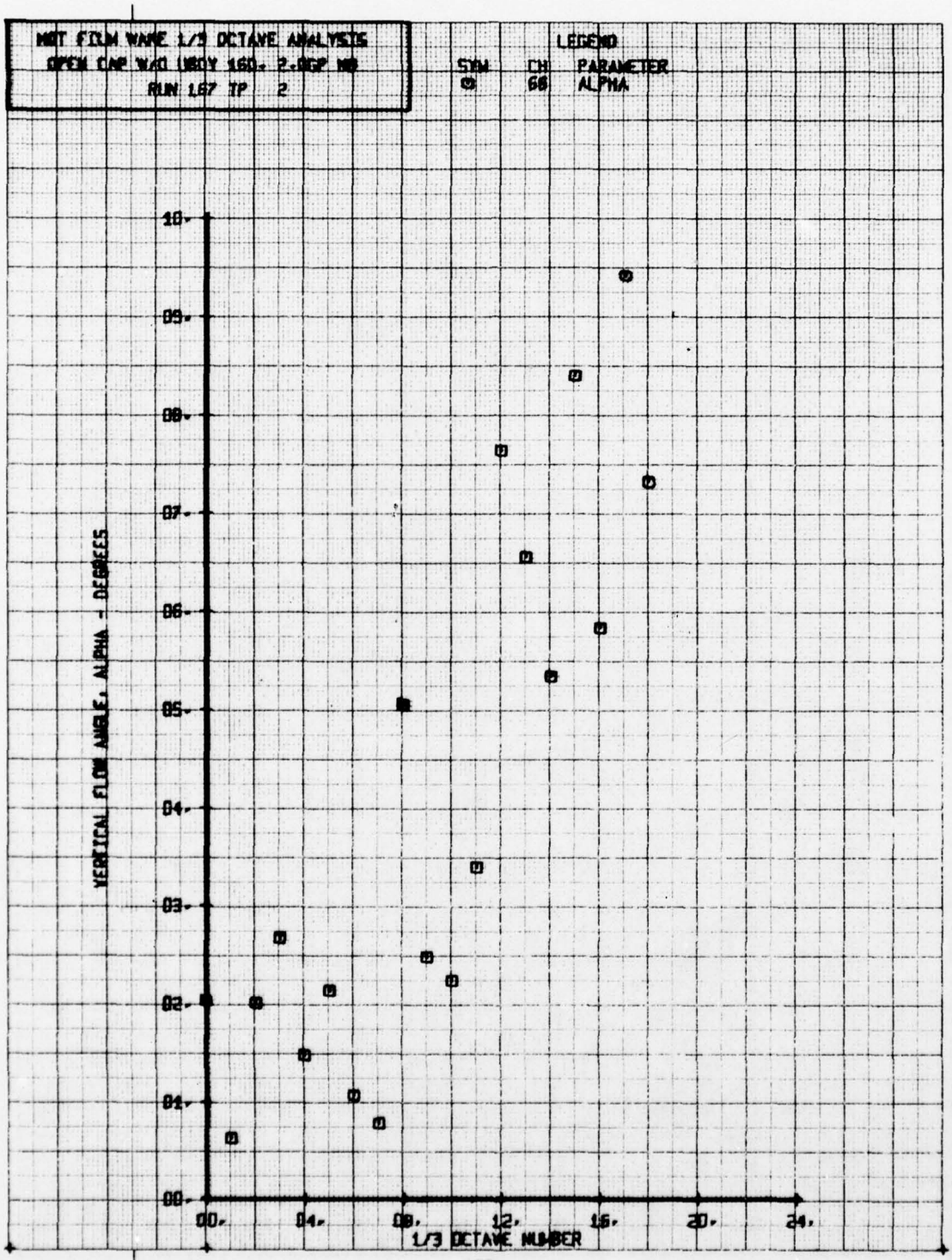

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 2-DGP BLDS
RUN 168 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

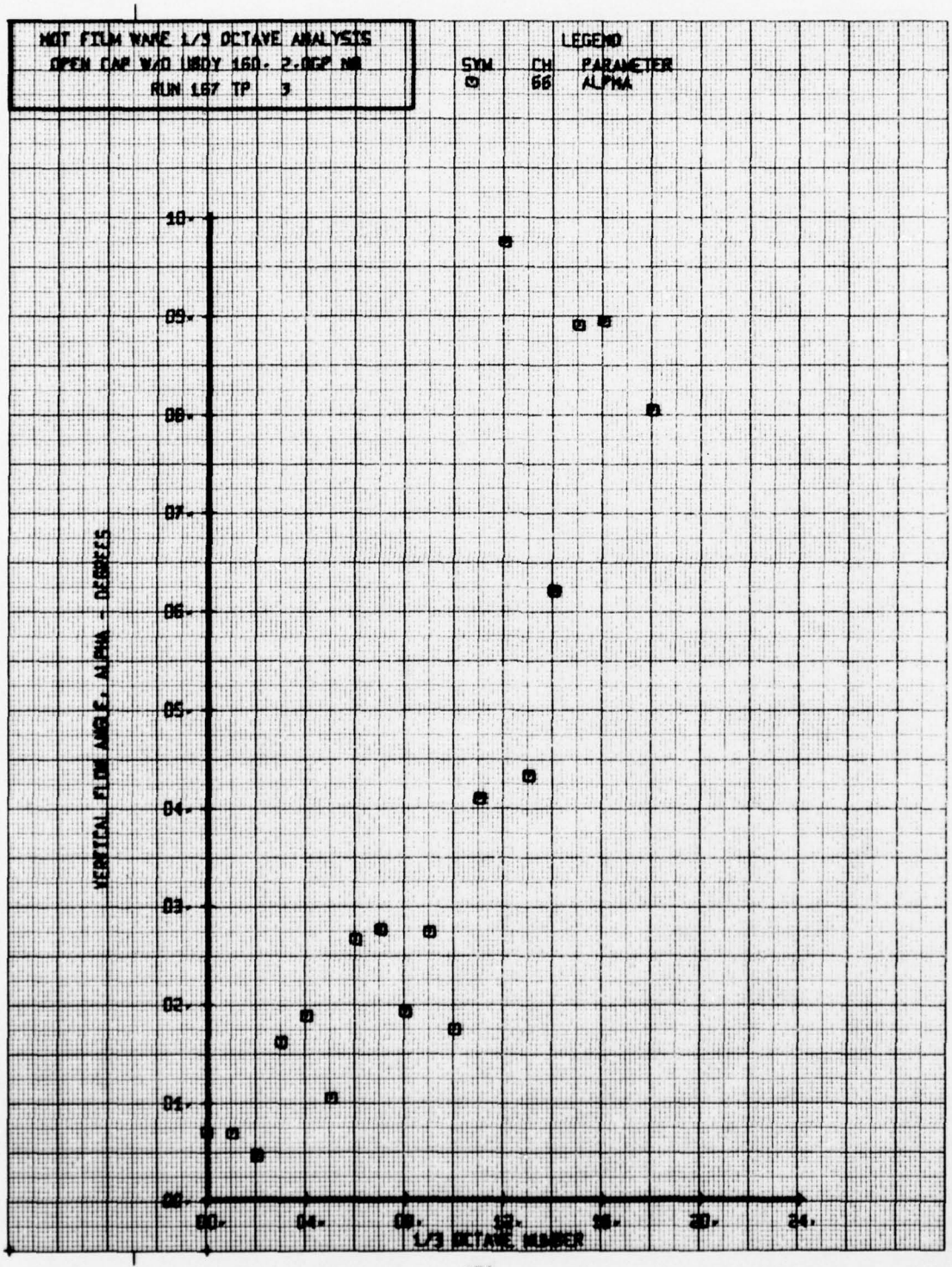

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP BLDS
RUN 168 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

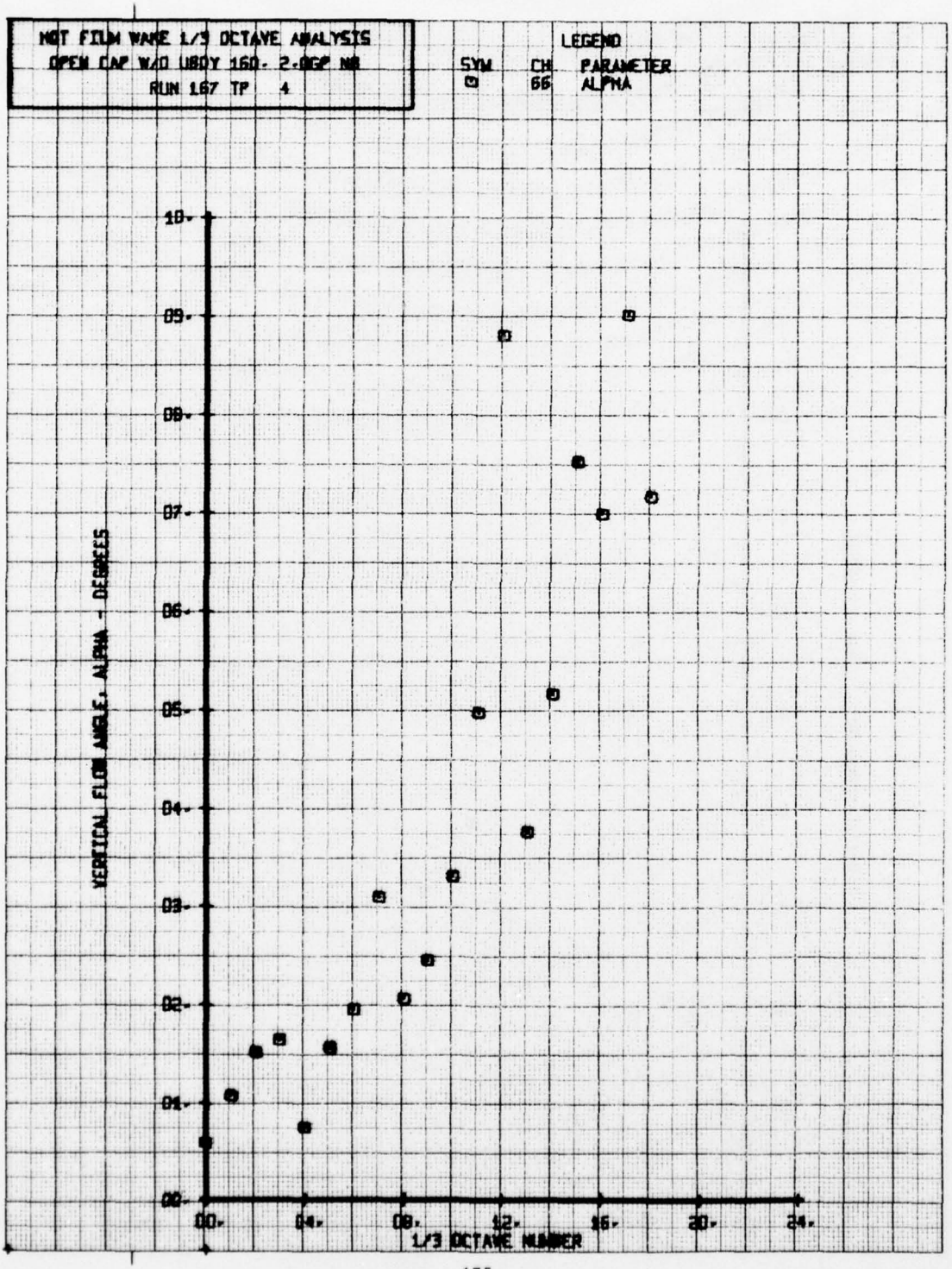

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160- 2-DGP BLDS
RUN 168 TP 9
LEGEND
SYM CH PARAMETER
65 V-BETA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
00- 04- 08- 12- 16- 20- 24-
1/3 OCTAVE NUMBER

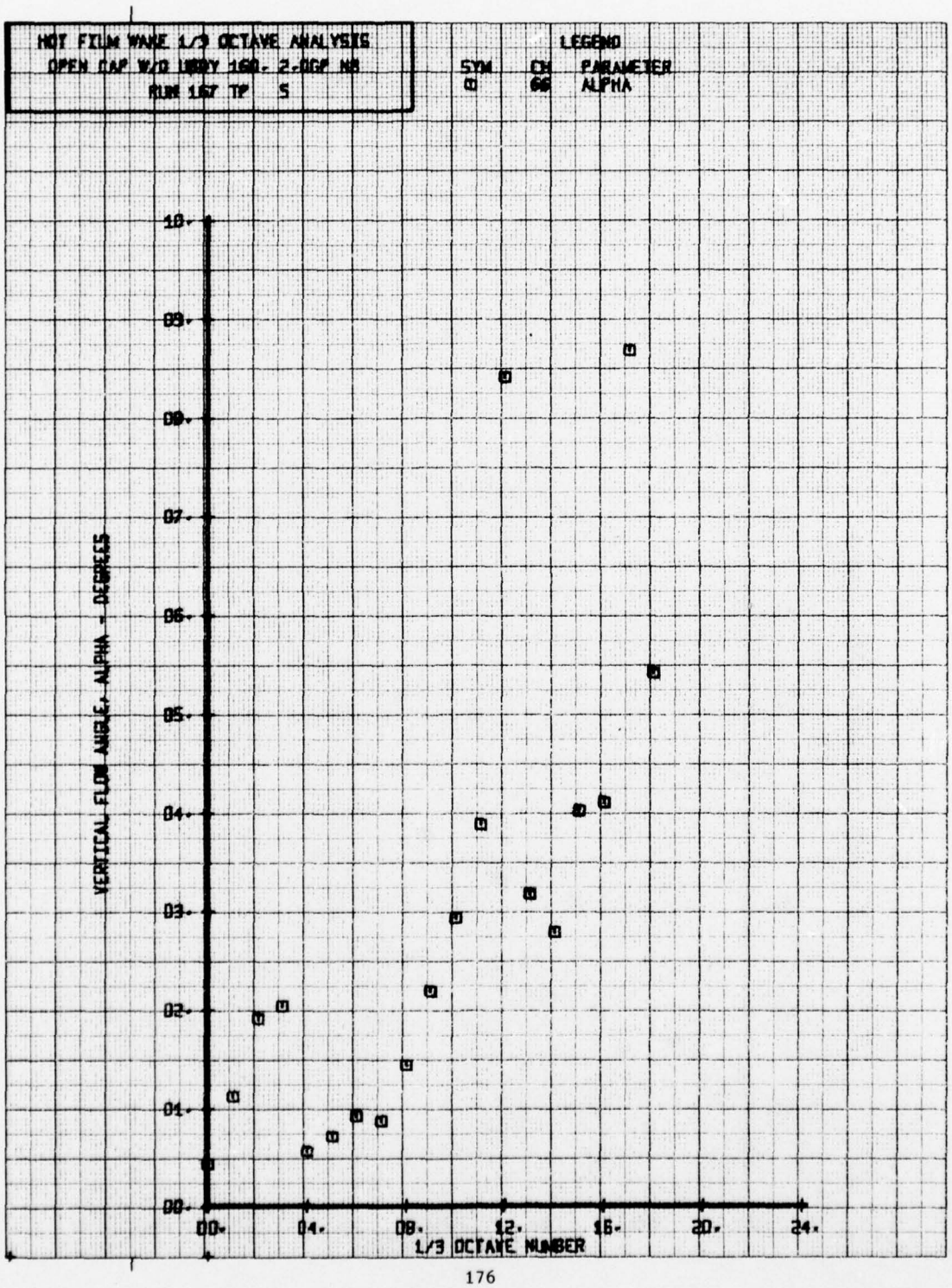

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2-DGP BLDS
RUN 168 TP 9
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
K-2 VELOCITY COMPONENT V-BETA GBS

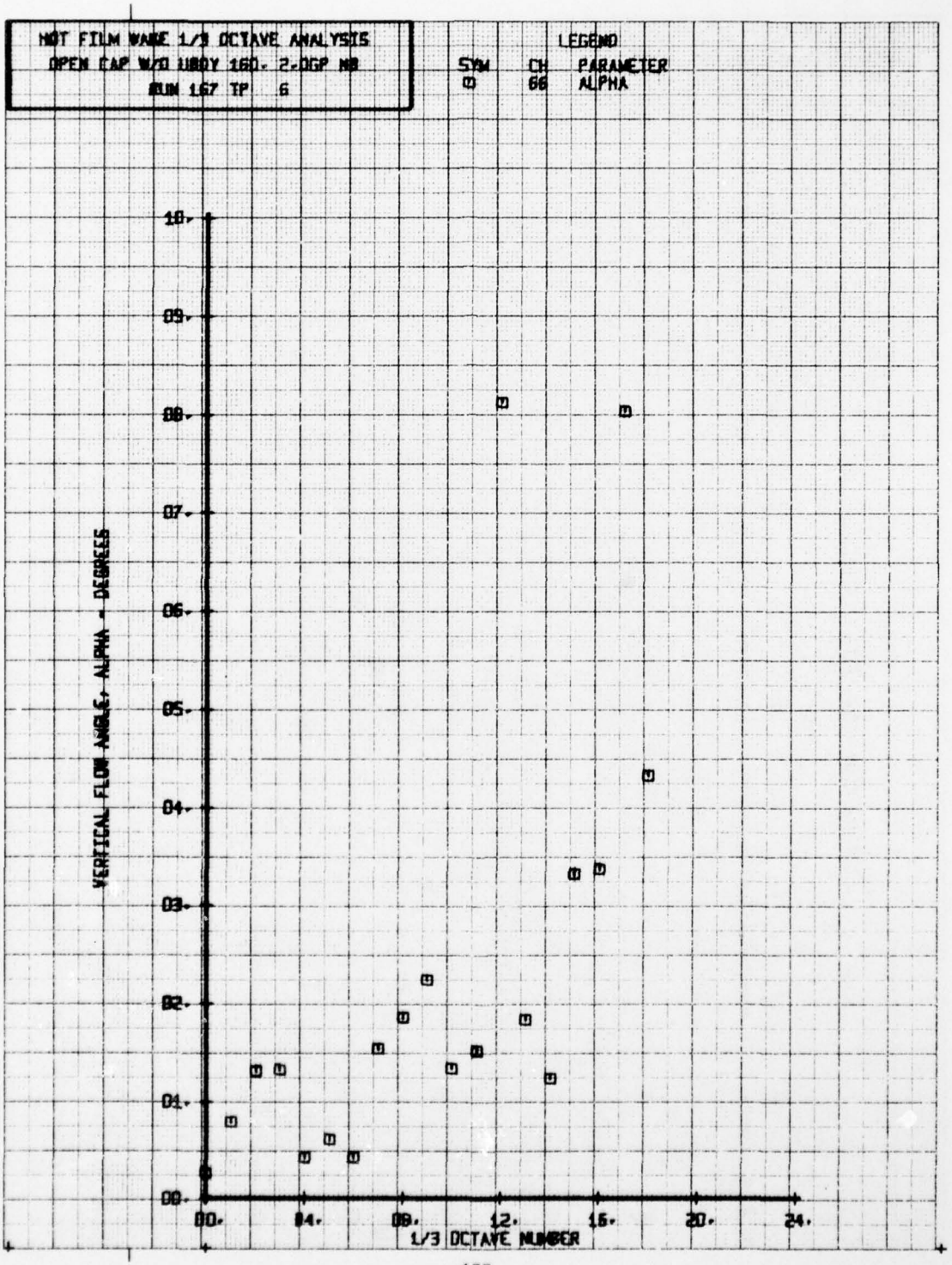

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP BLDS
RUN 160 TP 10
LEGEND
SYM CM PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

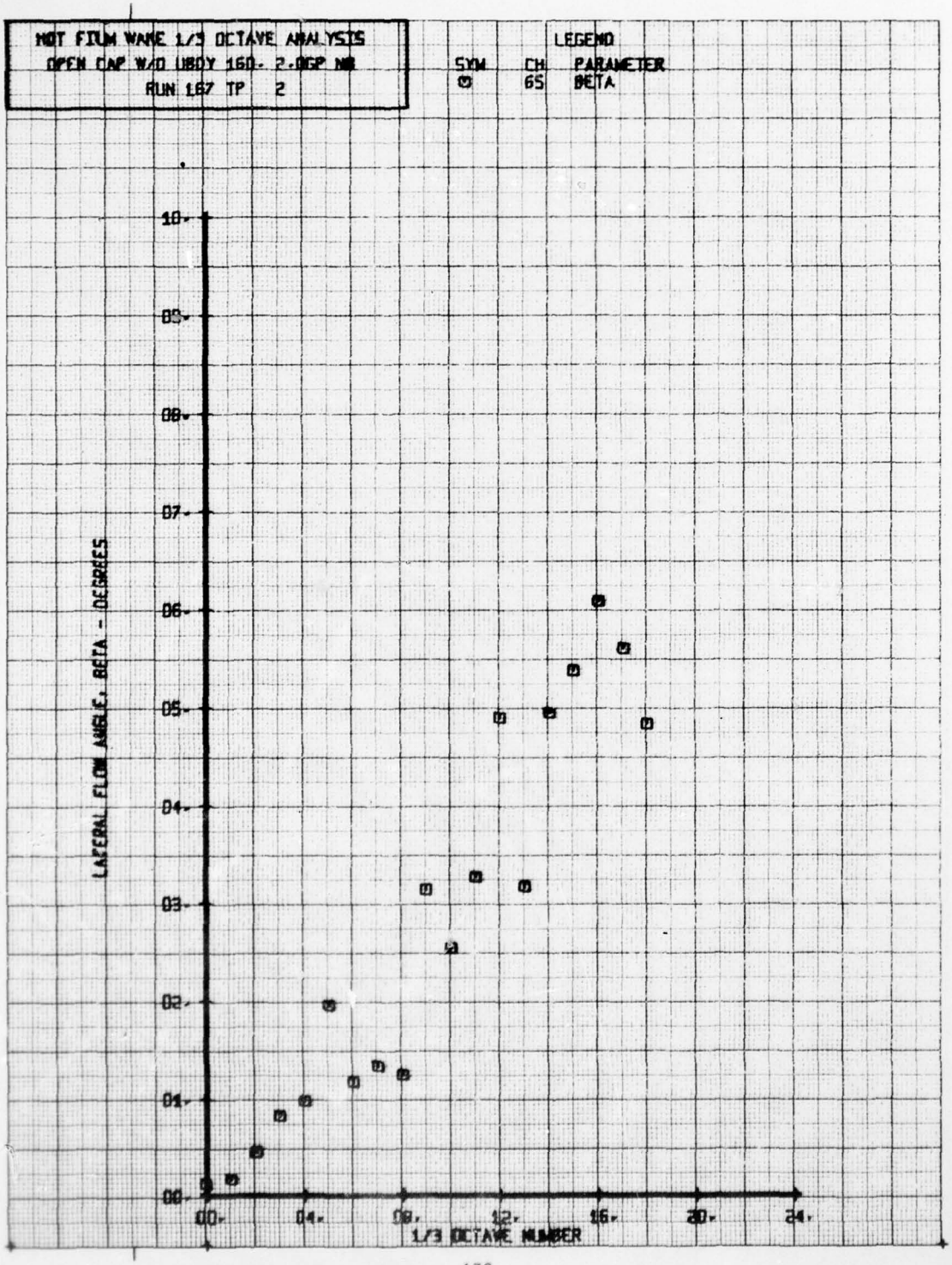

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.0GP NB
RUN 167 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

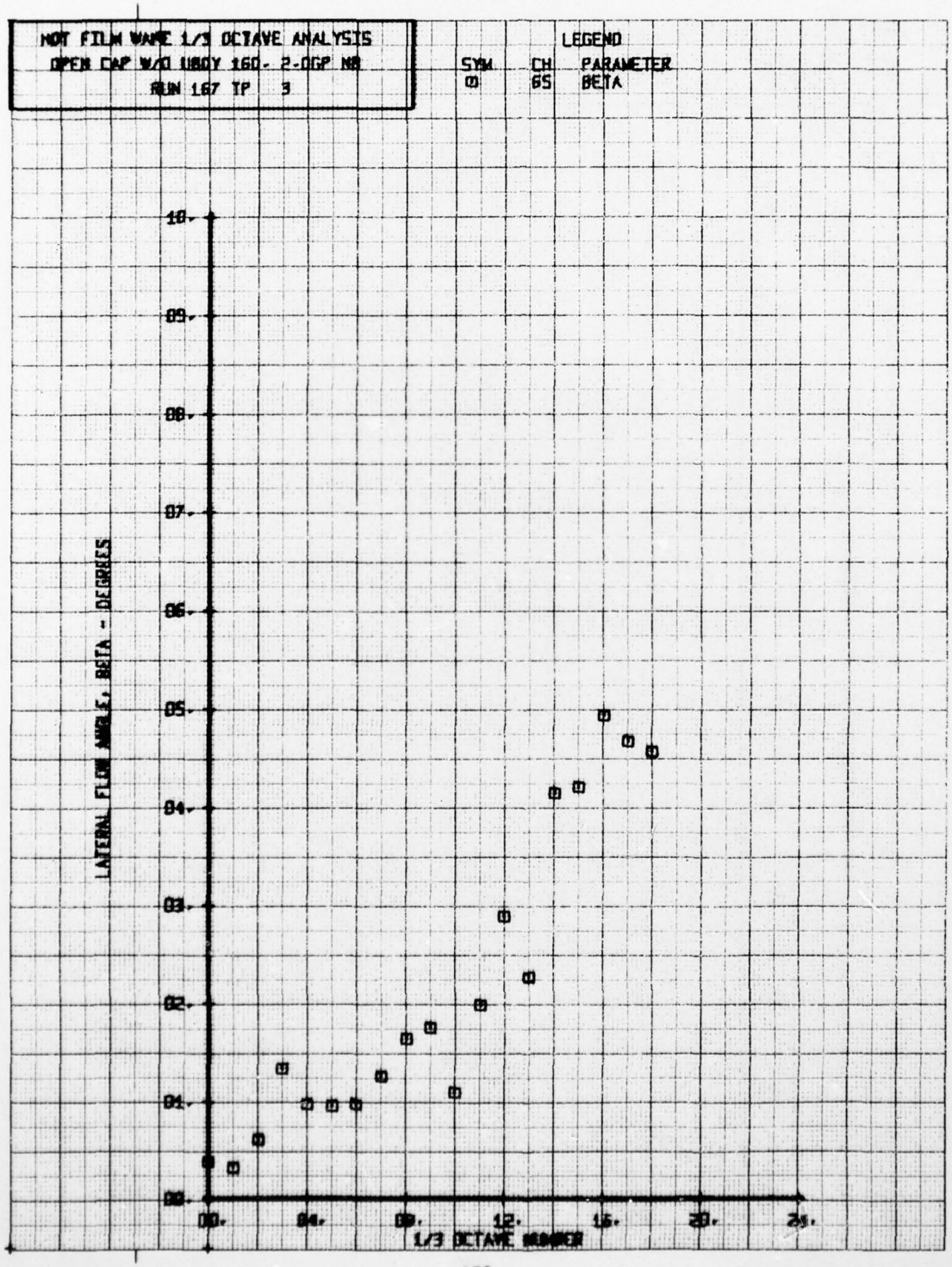

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 160. 2.0GP NB
RUN 167 TP 3
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

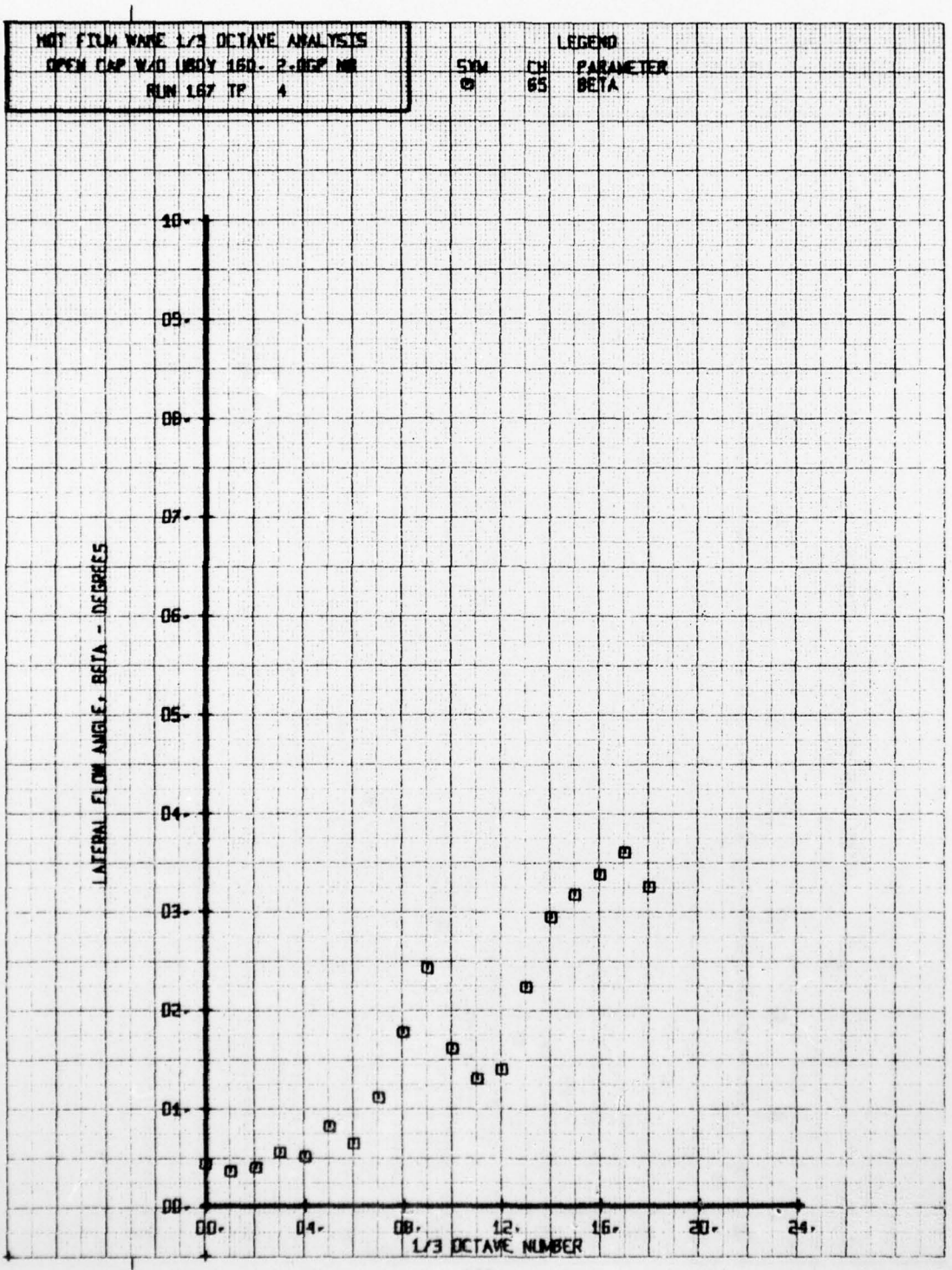

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.0GP NB
RUN 167 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

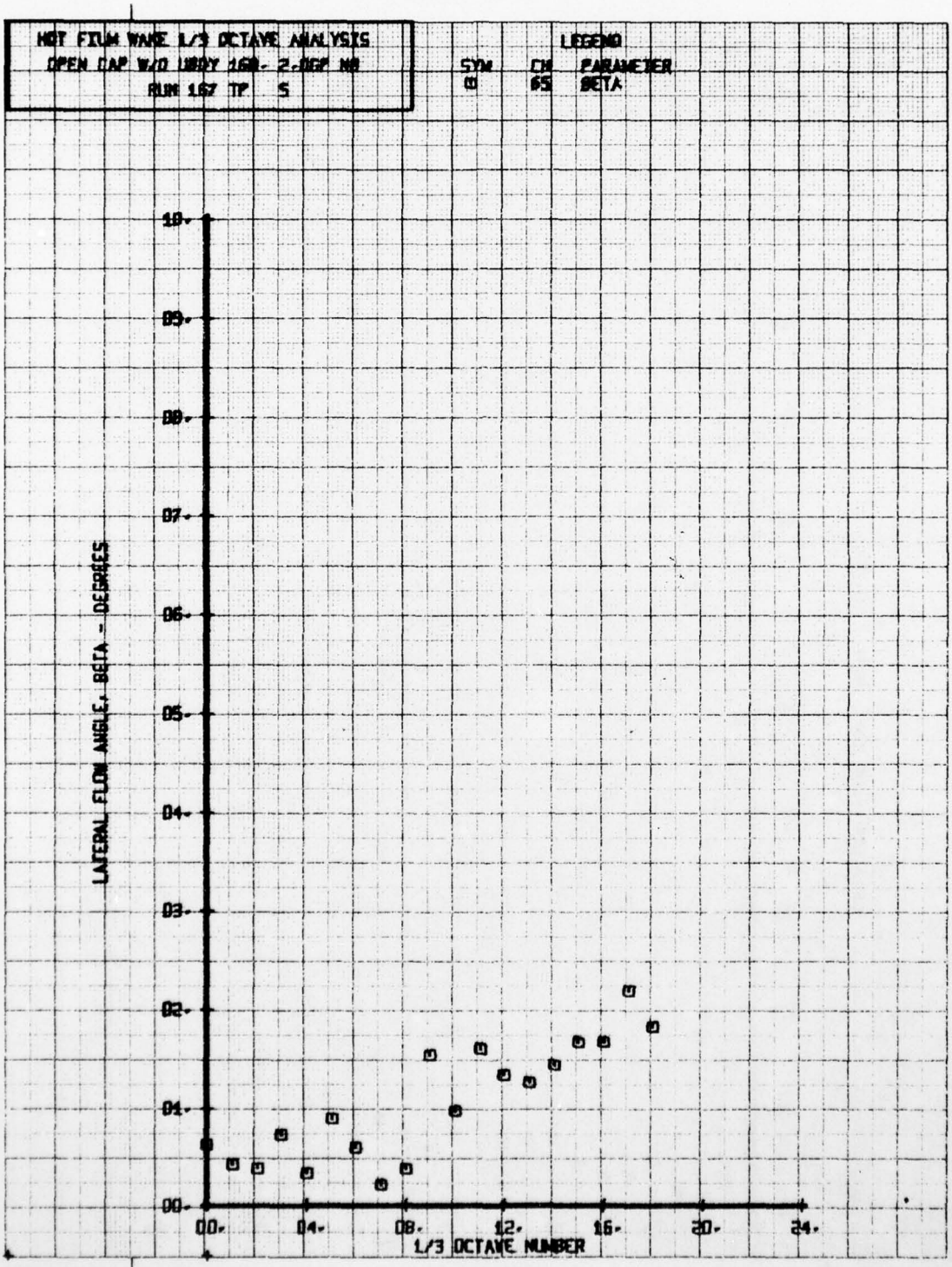

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O [illegible] 160. 2.0GP NB
RUN 167 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

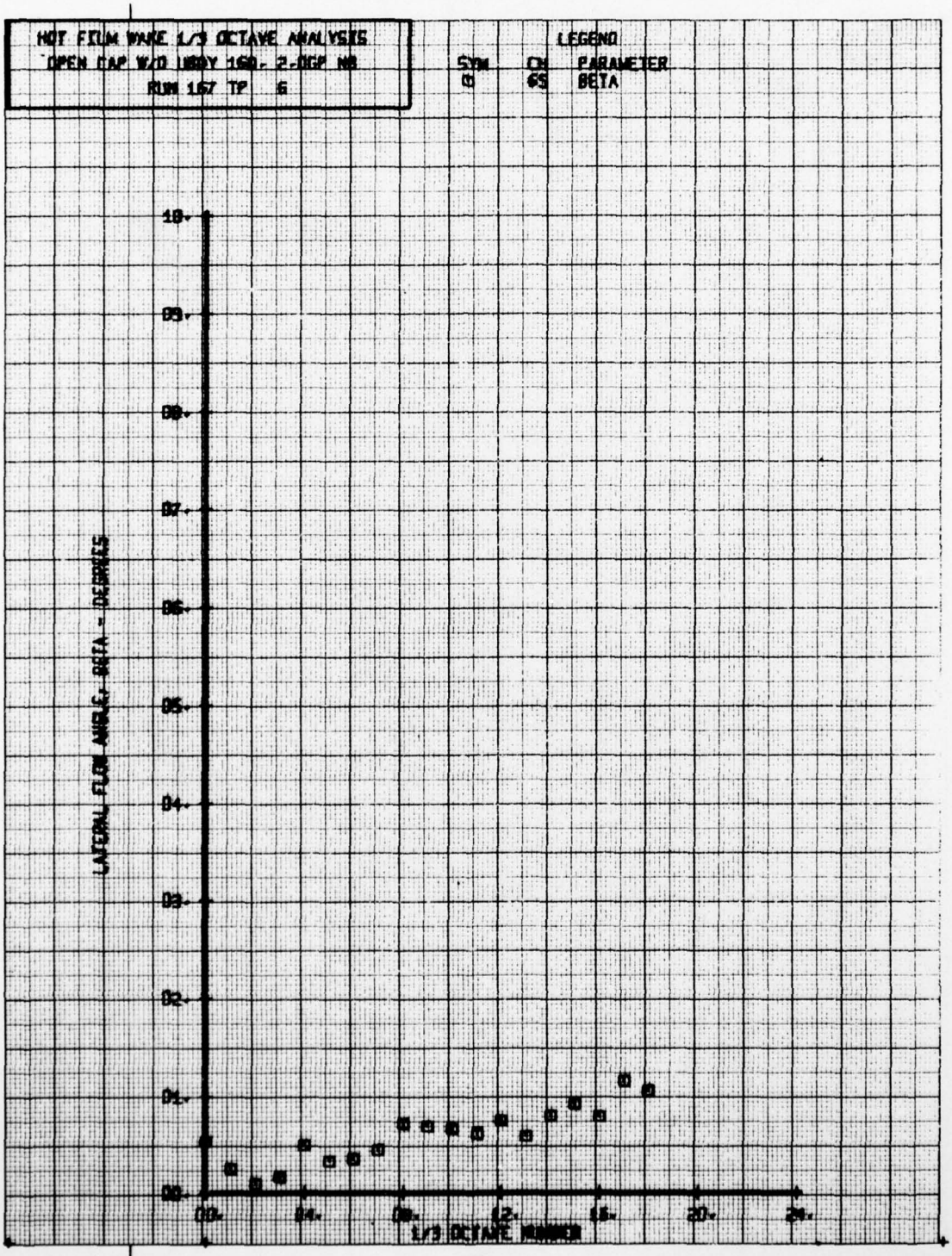

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP NB
RUN 167 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

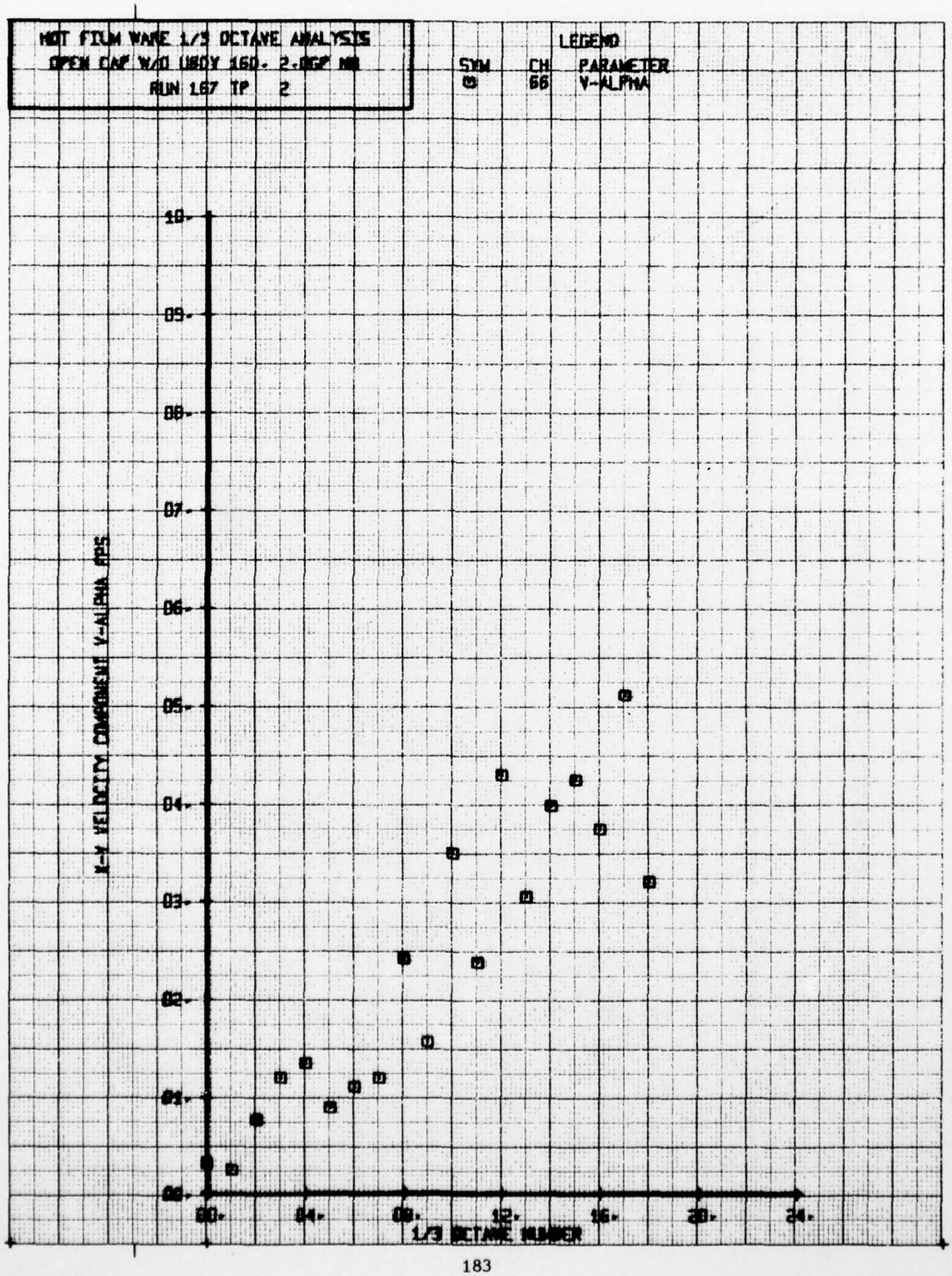

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP NB
RUN 167 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

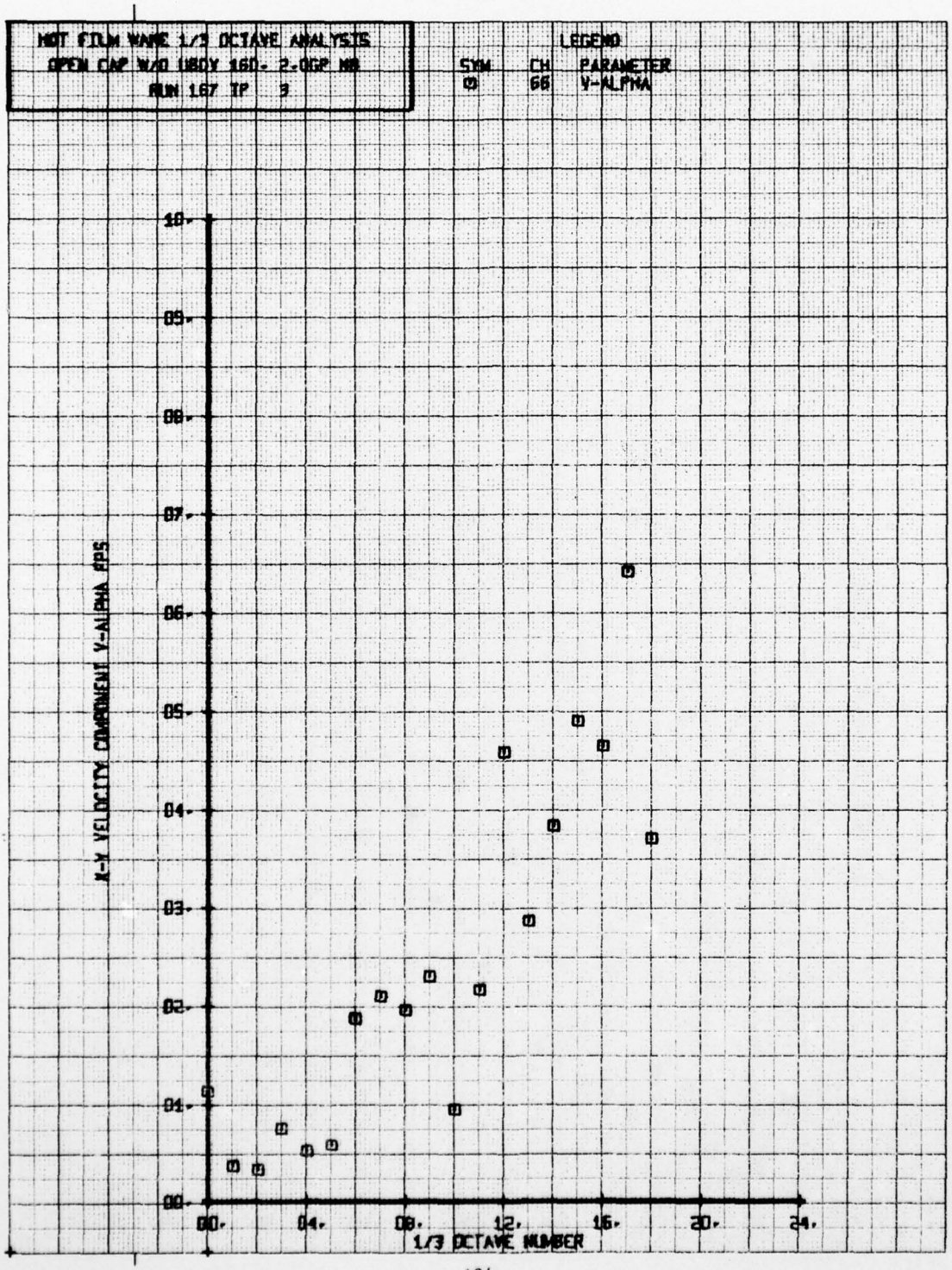

MOT FILM WAVE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160- 2-OGP NB
RUN 167 TP 3
LEGEND
SYM CH PARAMETER
6S BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

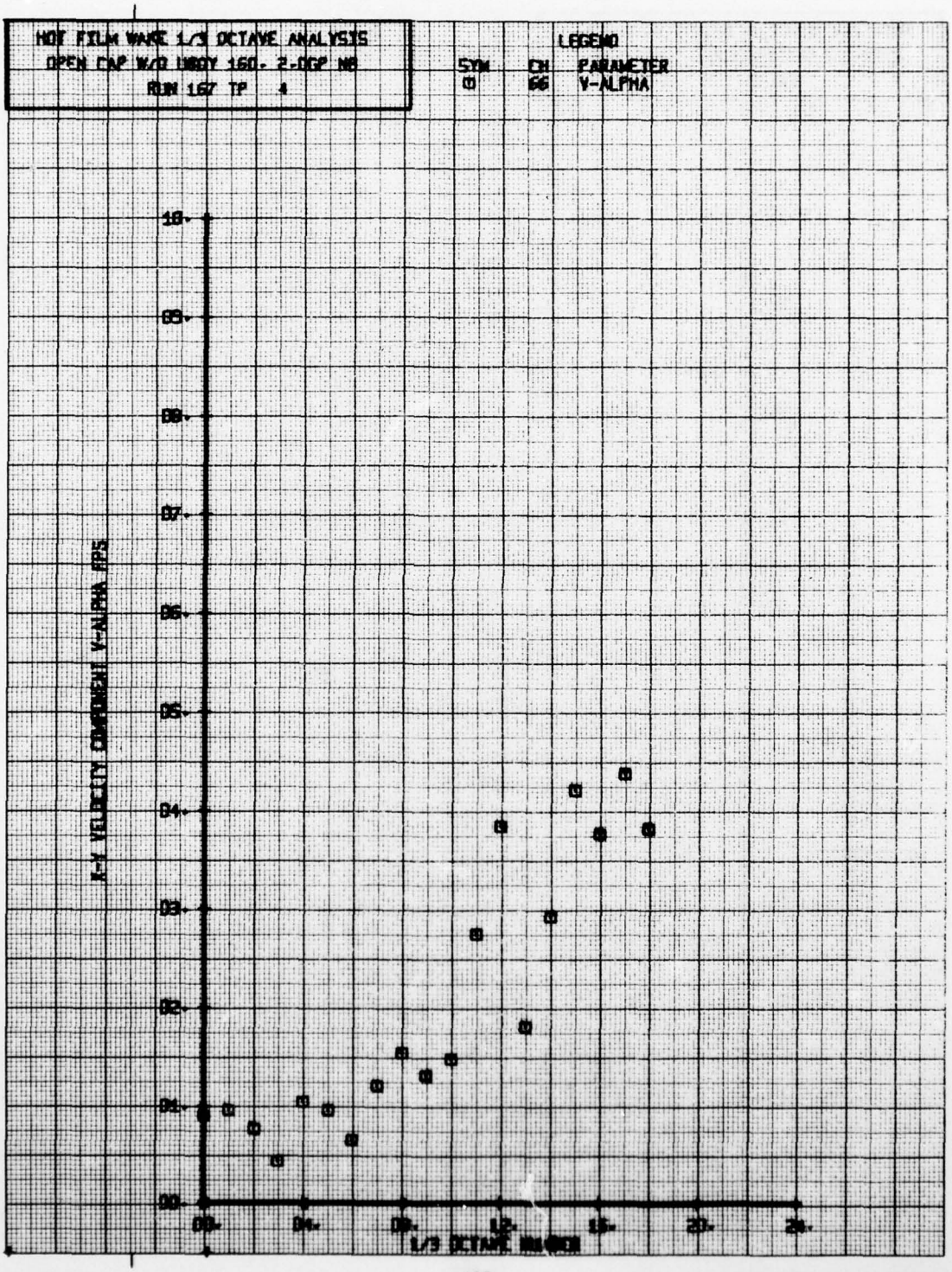

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.0GP MB
RUN 167 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

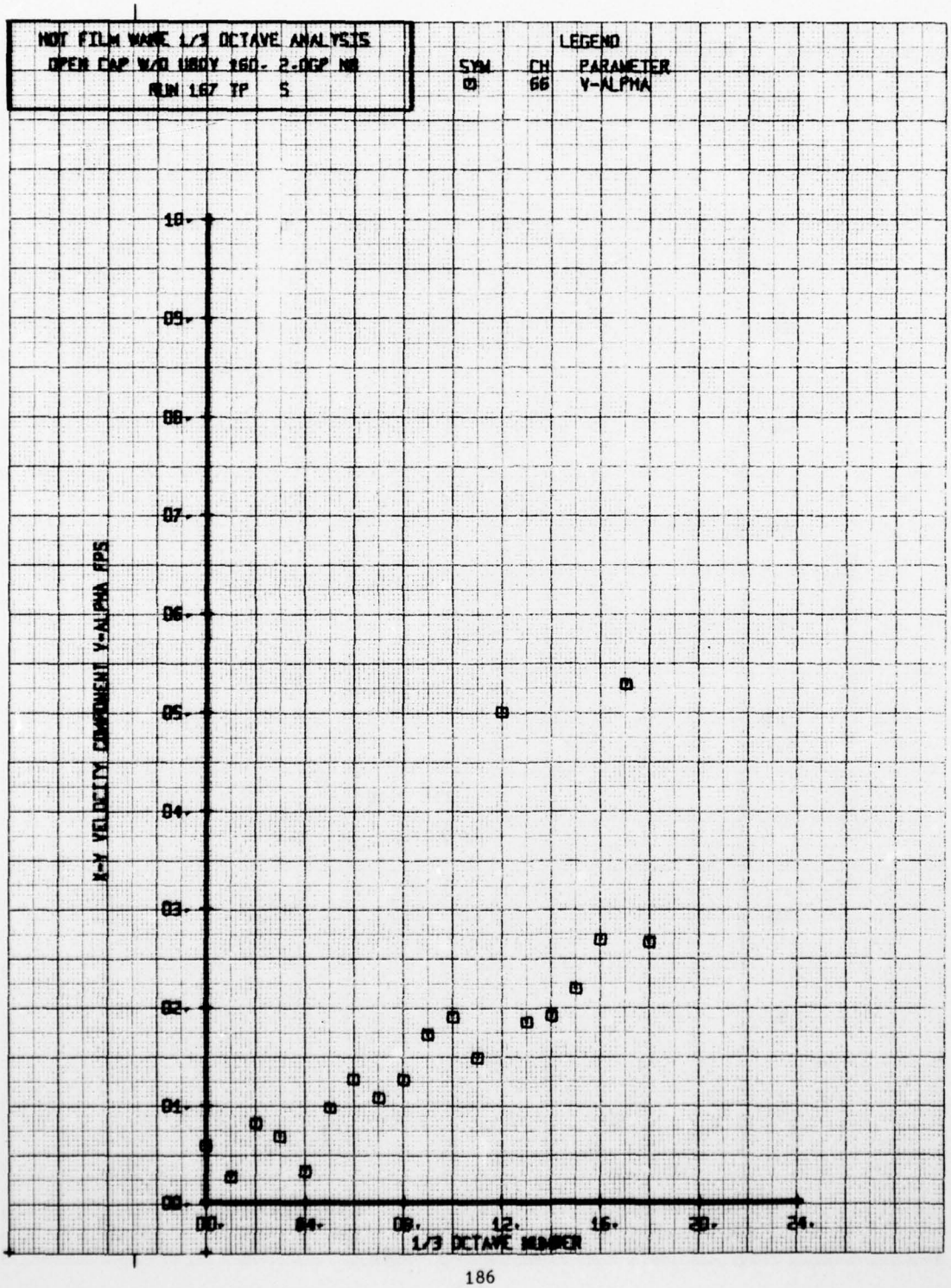

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 16R- 2.0GP NB
RUN 167 TP 5
LEGEND
SYM CH PARAMETER
0 65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

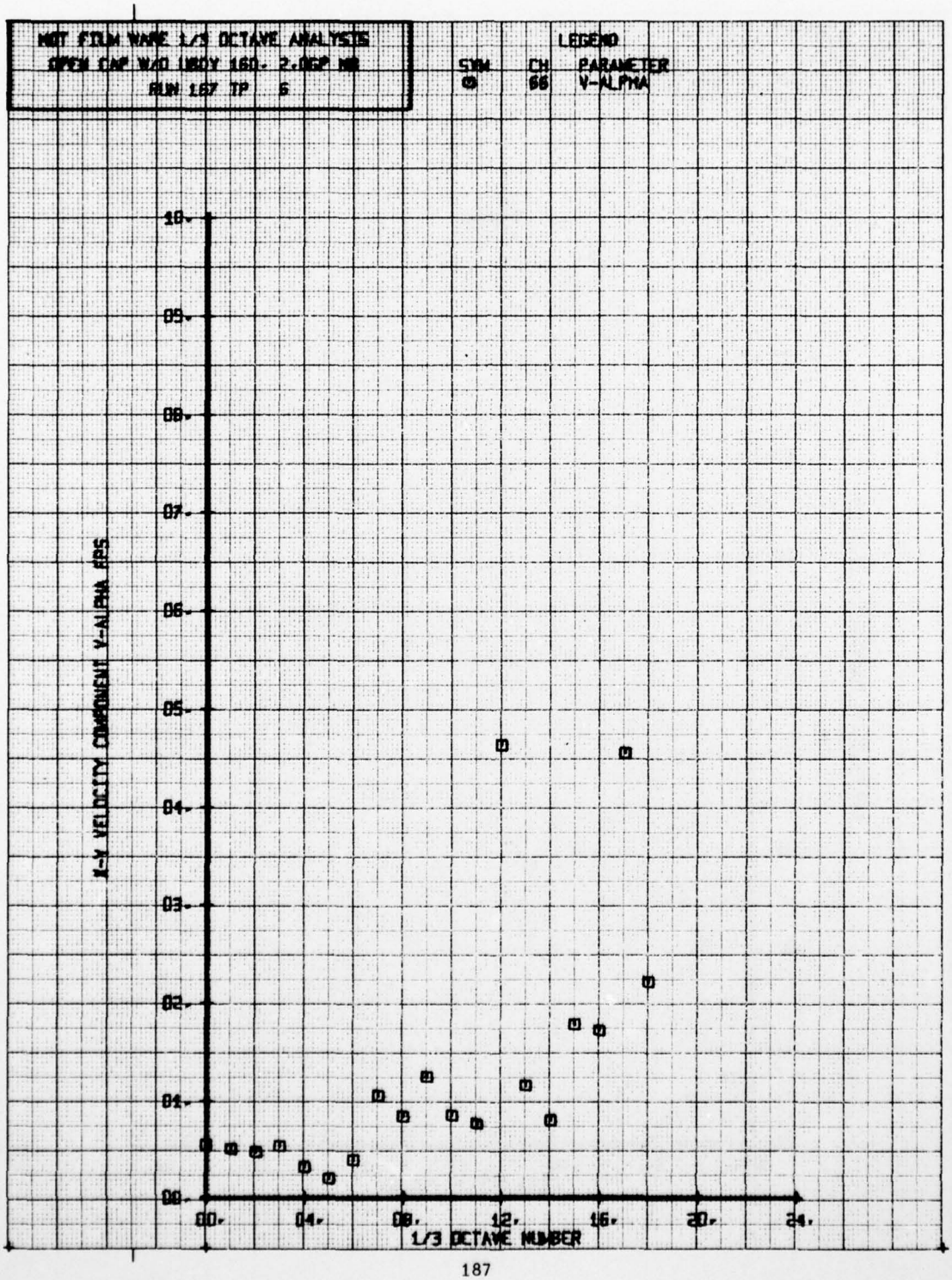

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 160. 2.0GP NB
RUN 167 TP 6
LEGEND
SYM CH PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

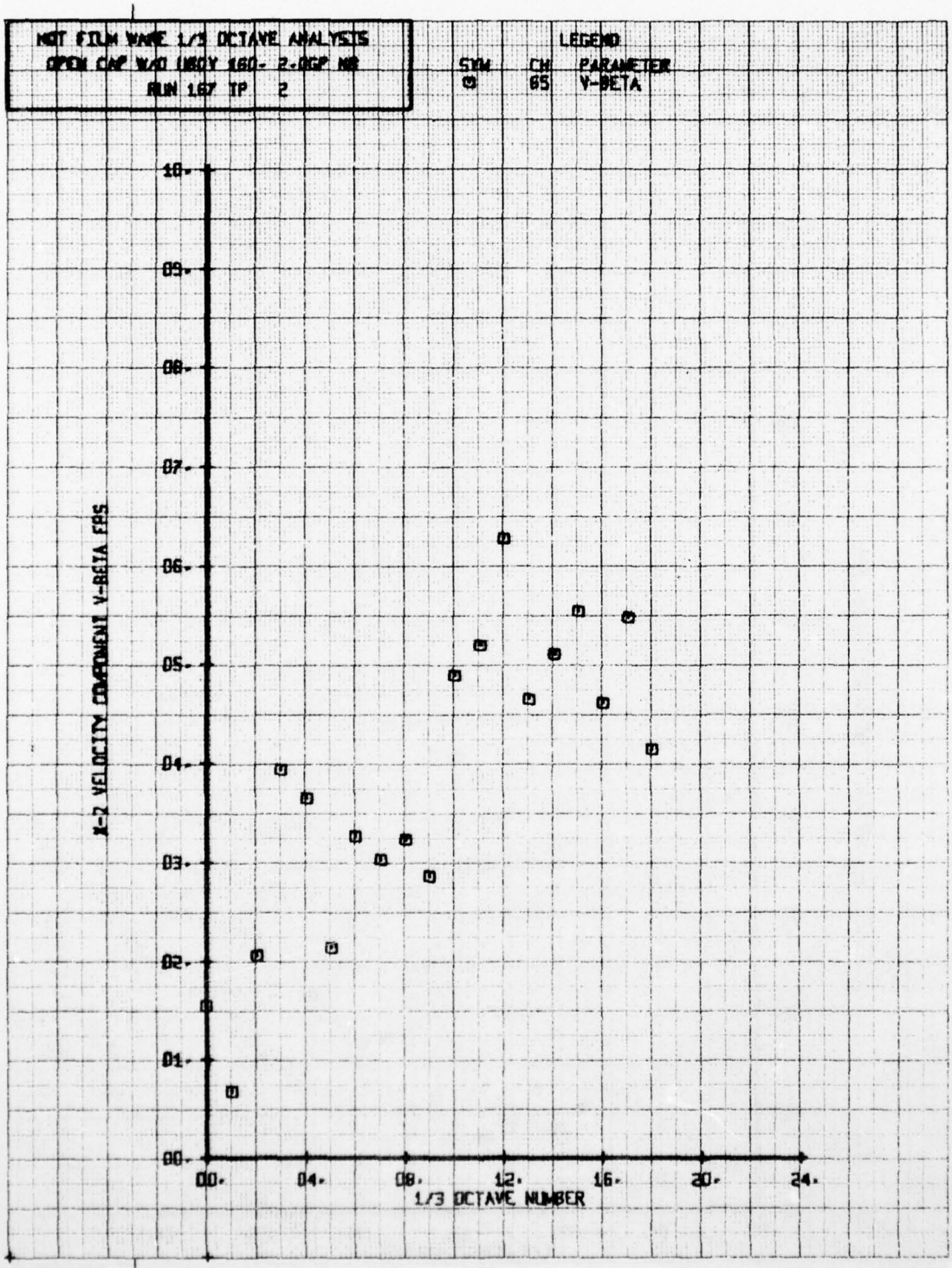

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.0GP MR
RUN 167 TP 2
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER
K-V VELOCITY COMPONENT V-ALPHA RMS

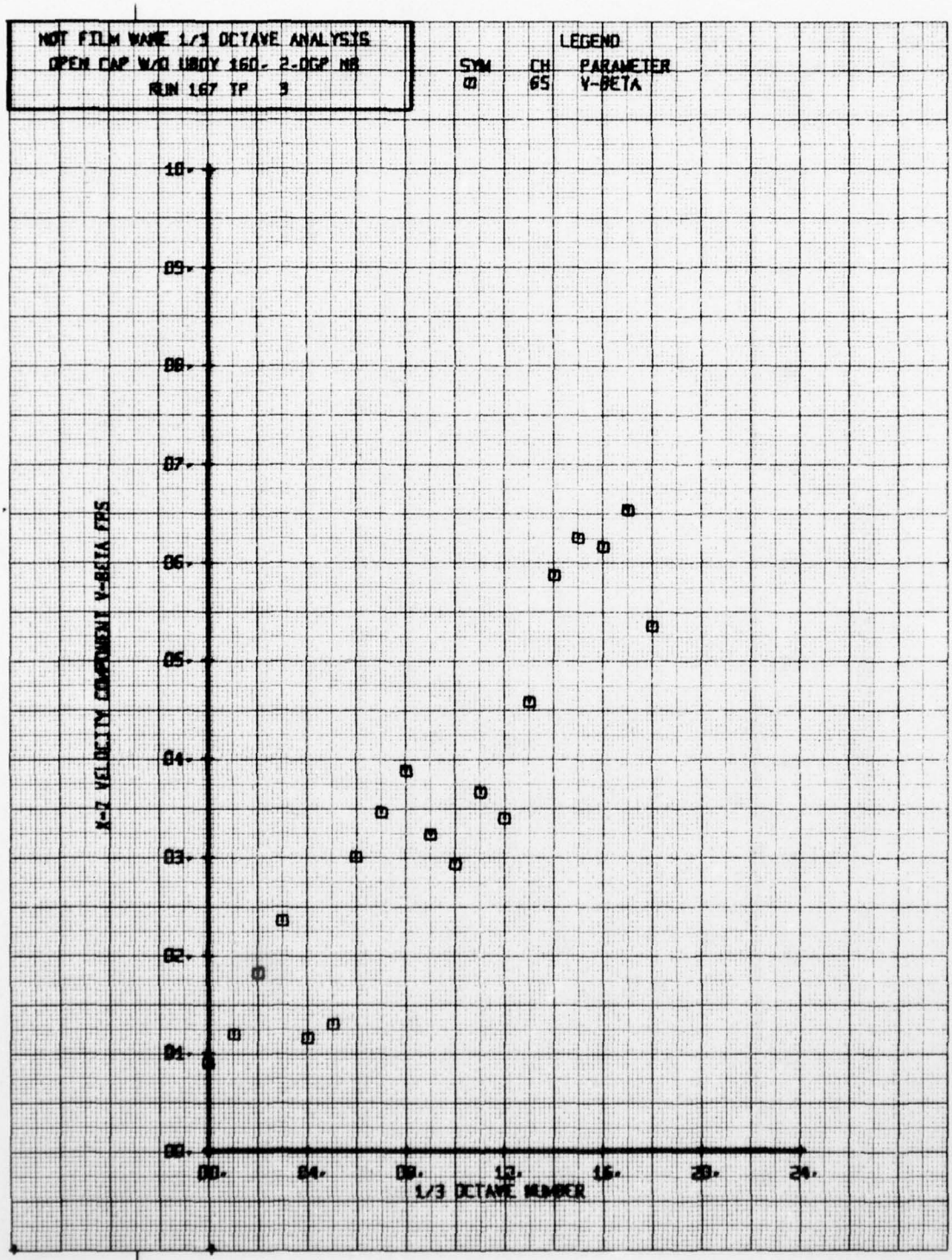

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 160- 2-OGP MB
RUN 167 TP 3
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

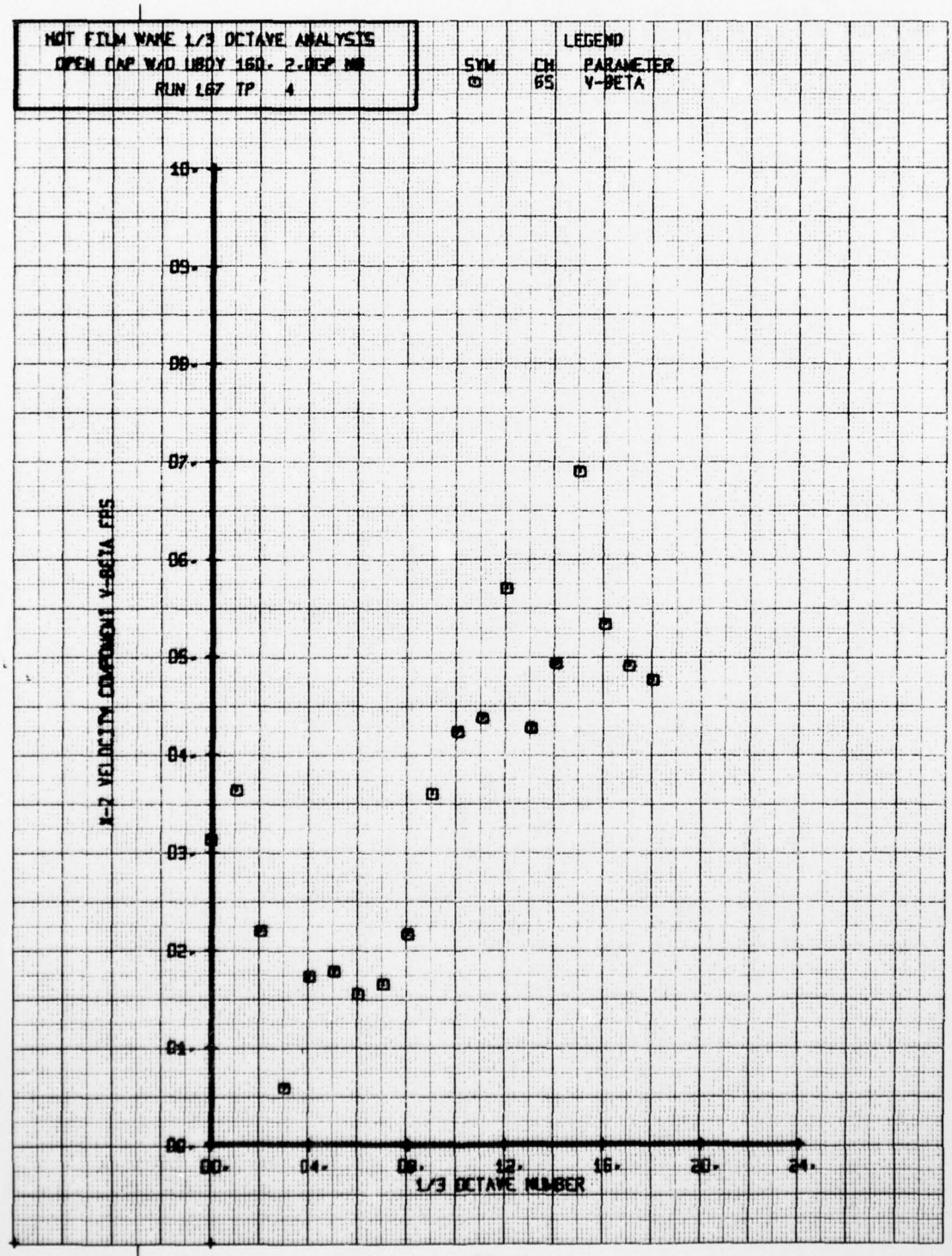

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O BODY 160. 2-DGP NB
RUN 167 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
A-V VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE BANDS

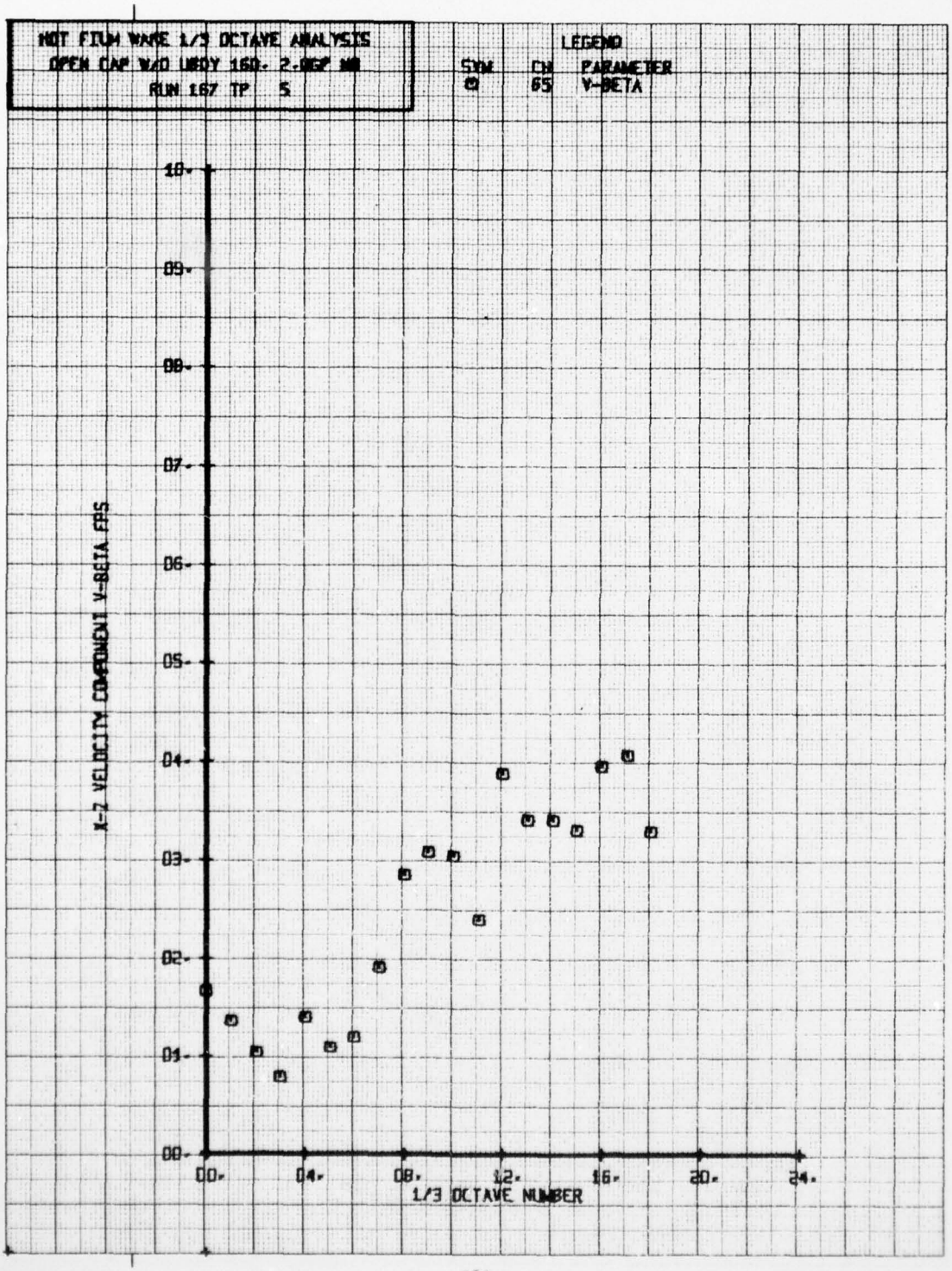

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2.0GP NB
RUN 167 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
V-V VELOCITY COMPONENT V-ALPHA FPS


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O WBOY 160. 2.0GP MR
RUN 167 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-V VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O IBOY 160- 2.0GP MR
RUN 167 TP 2
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FRS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

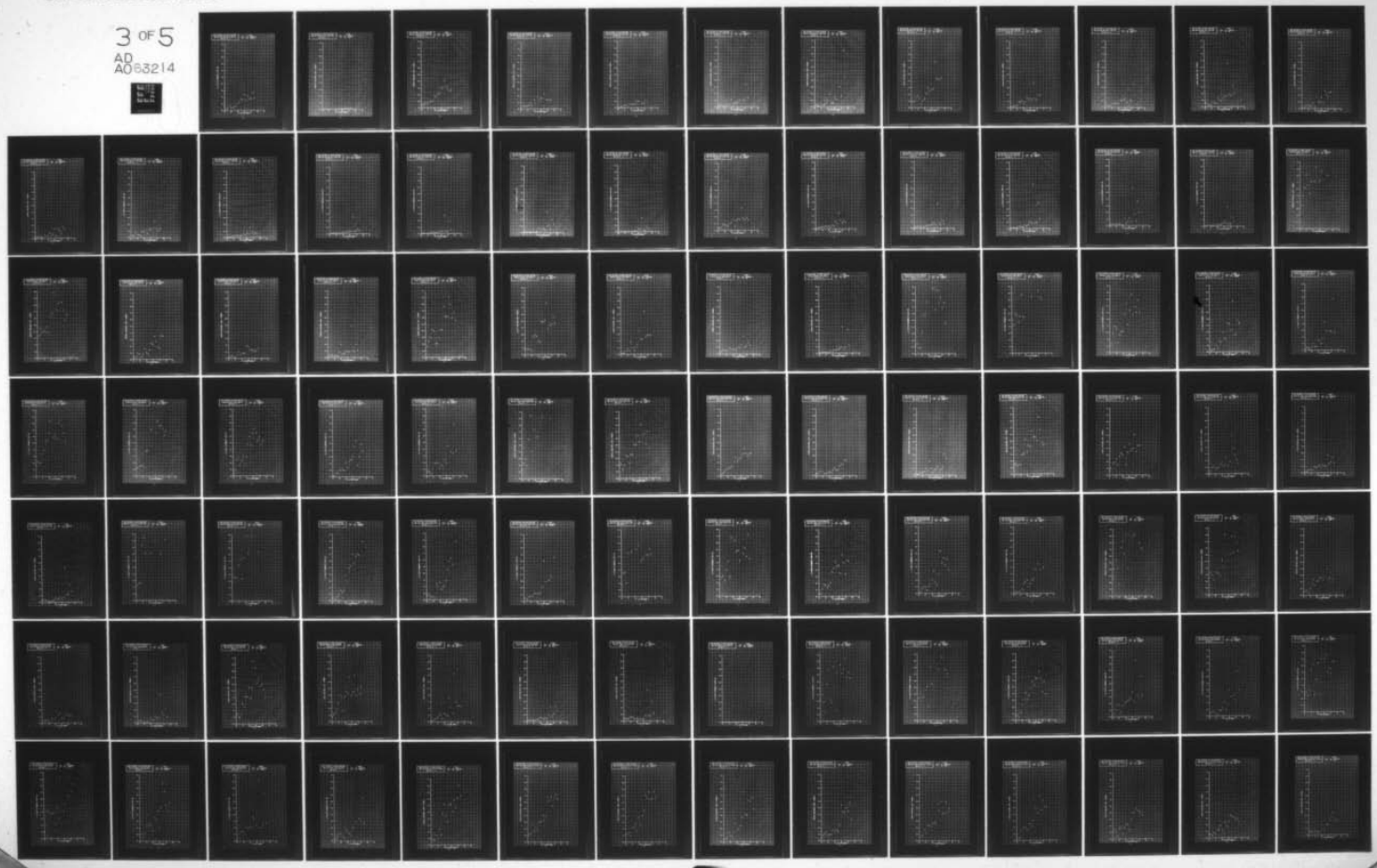

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 2-DGP NB
RUN 167 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

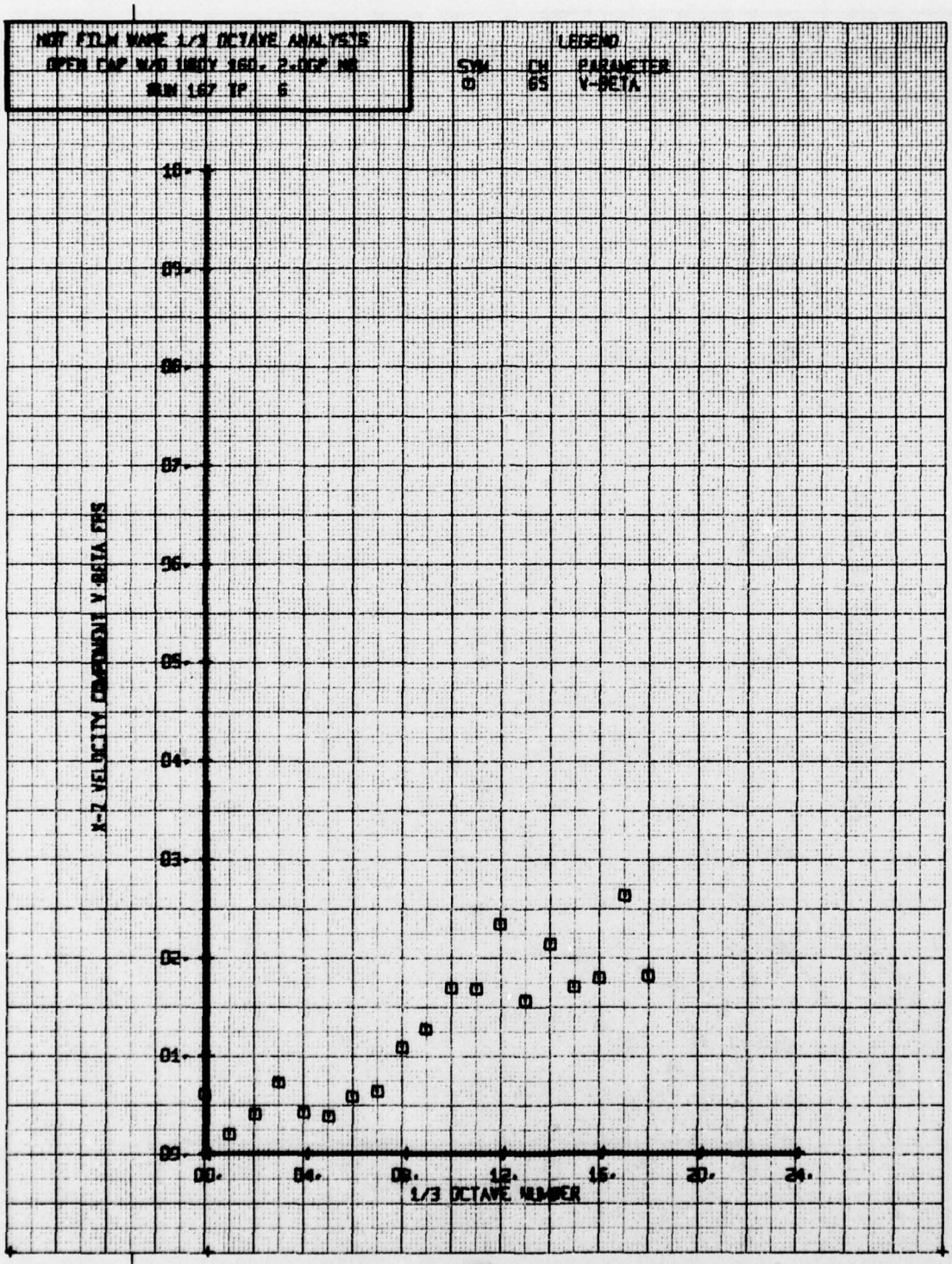

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP NB
RUN 167 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

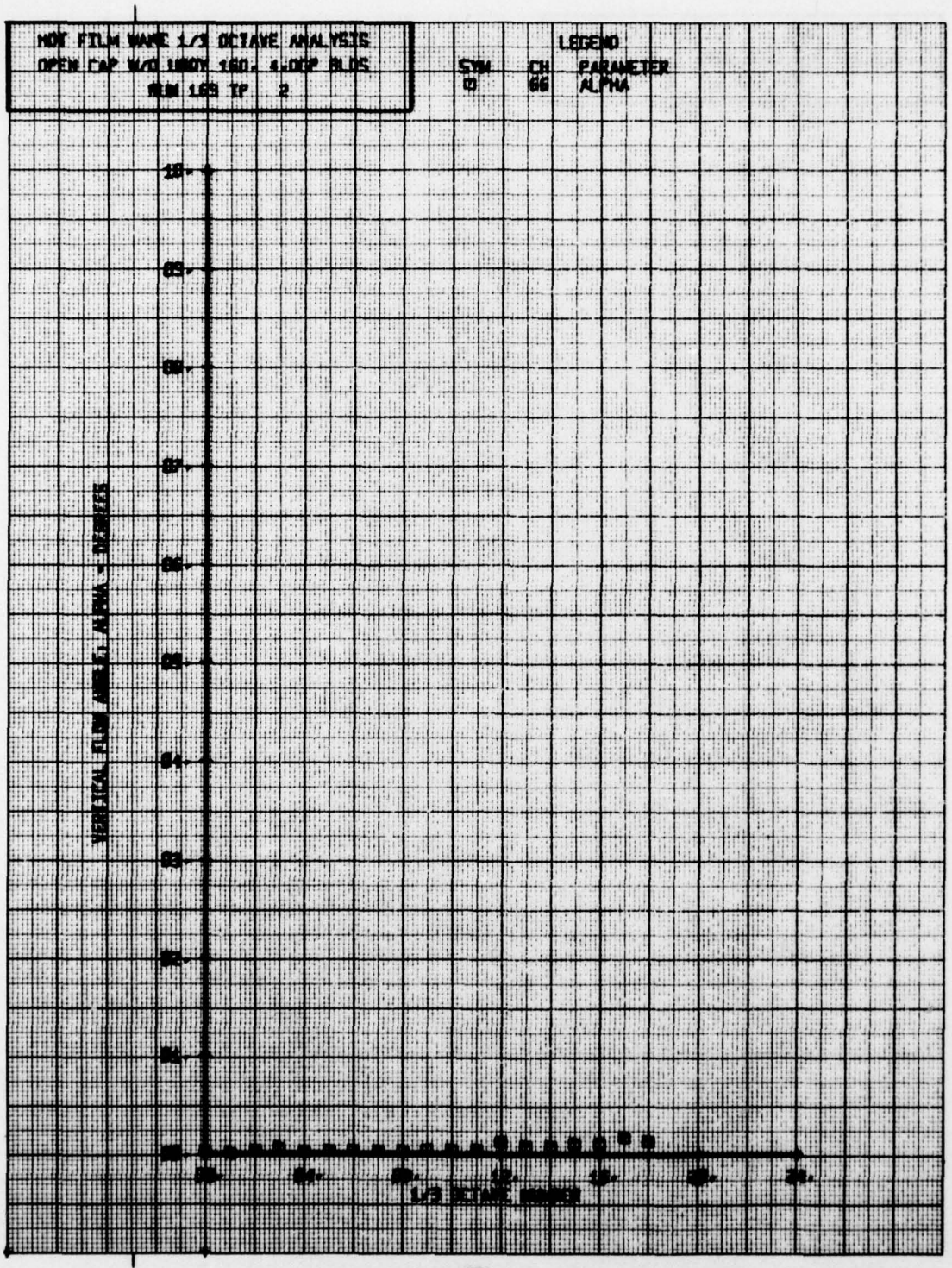

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP MR
RUN 167 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Z VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

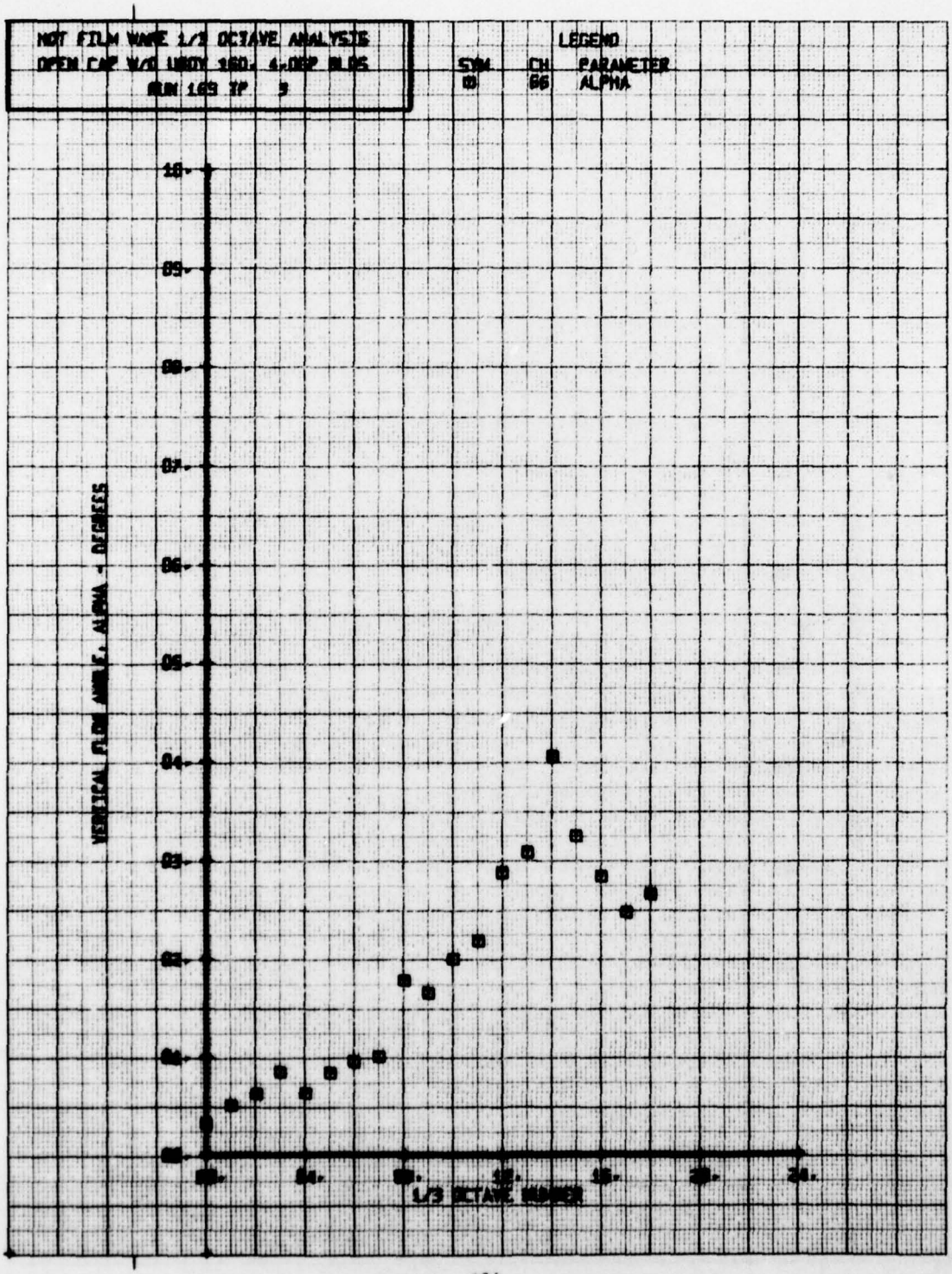
AD-A063 214 BOEING VERTOL CO PHILADELPHIA PA F/G 1/3
INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFI--ETC(U)
SEP 78 P F SHERIDAN DAAJ02-77-C-0020
UNCLASSIFIED USARTL-TR-78-23D NL

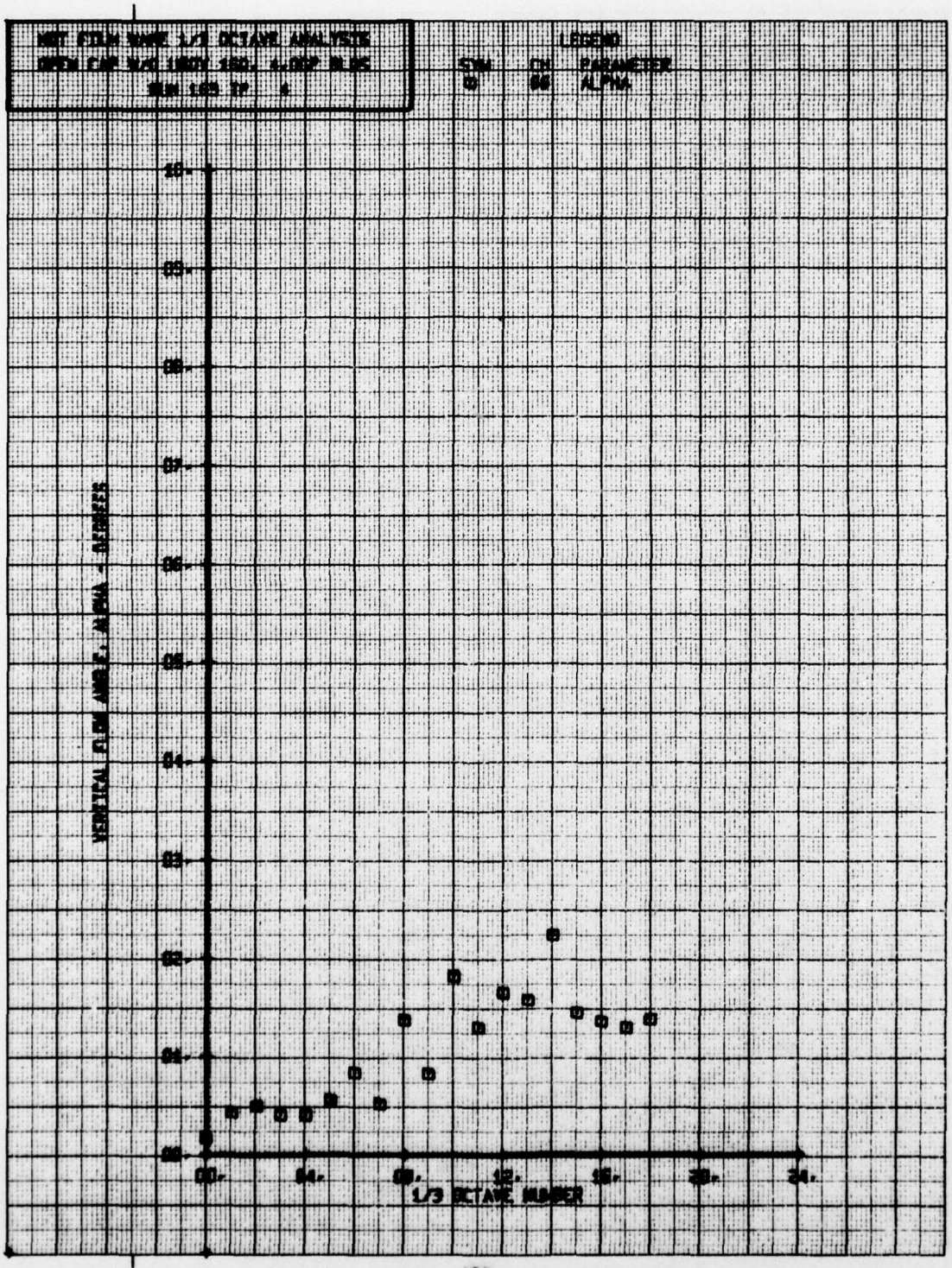
3 OF 5
AD
AD63214

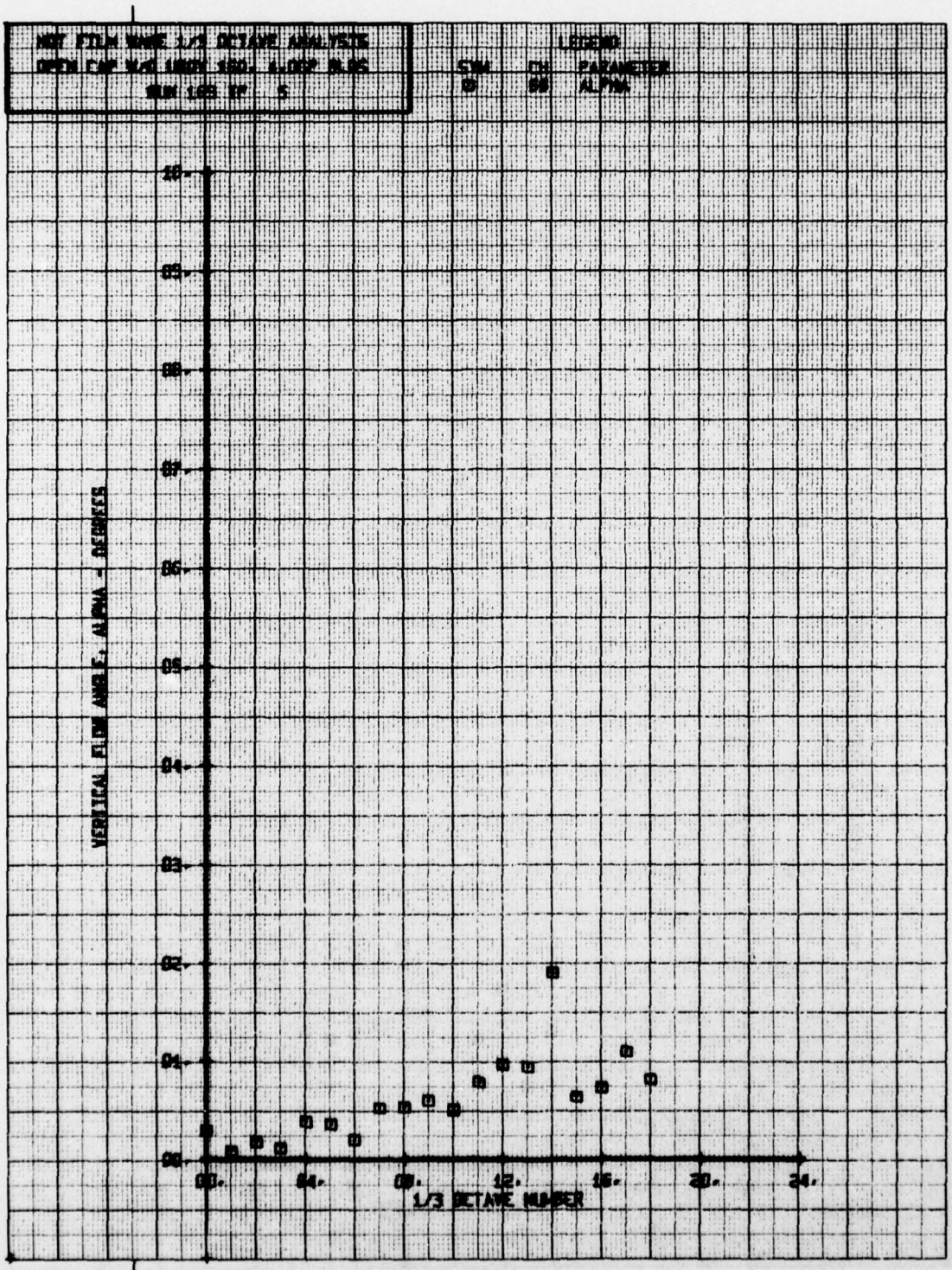


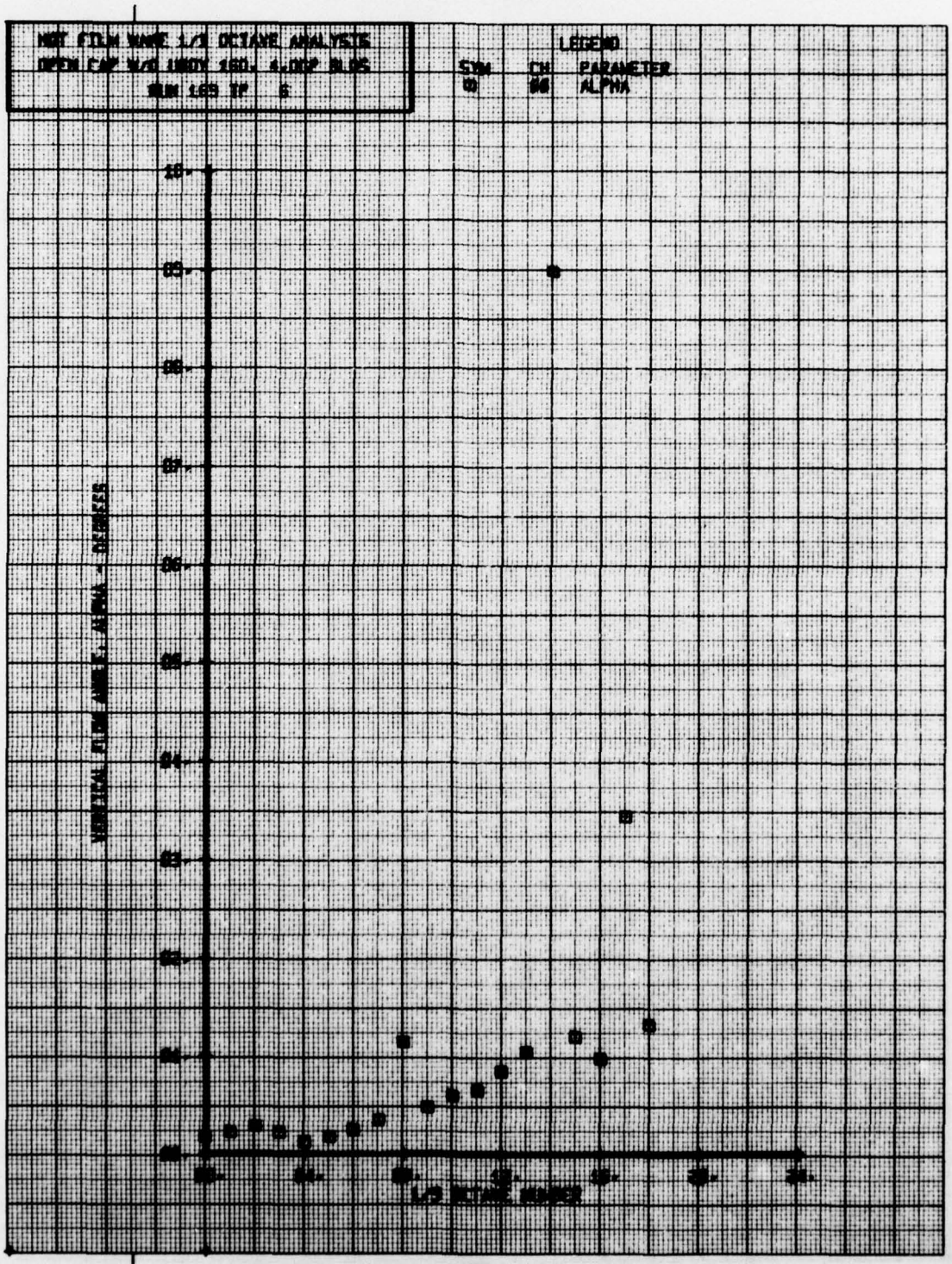

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O 1BODY 160. 2-DGP NR
RUN 167 TP 6
LEGEND
SYM CH PARAMETER
6S V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

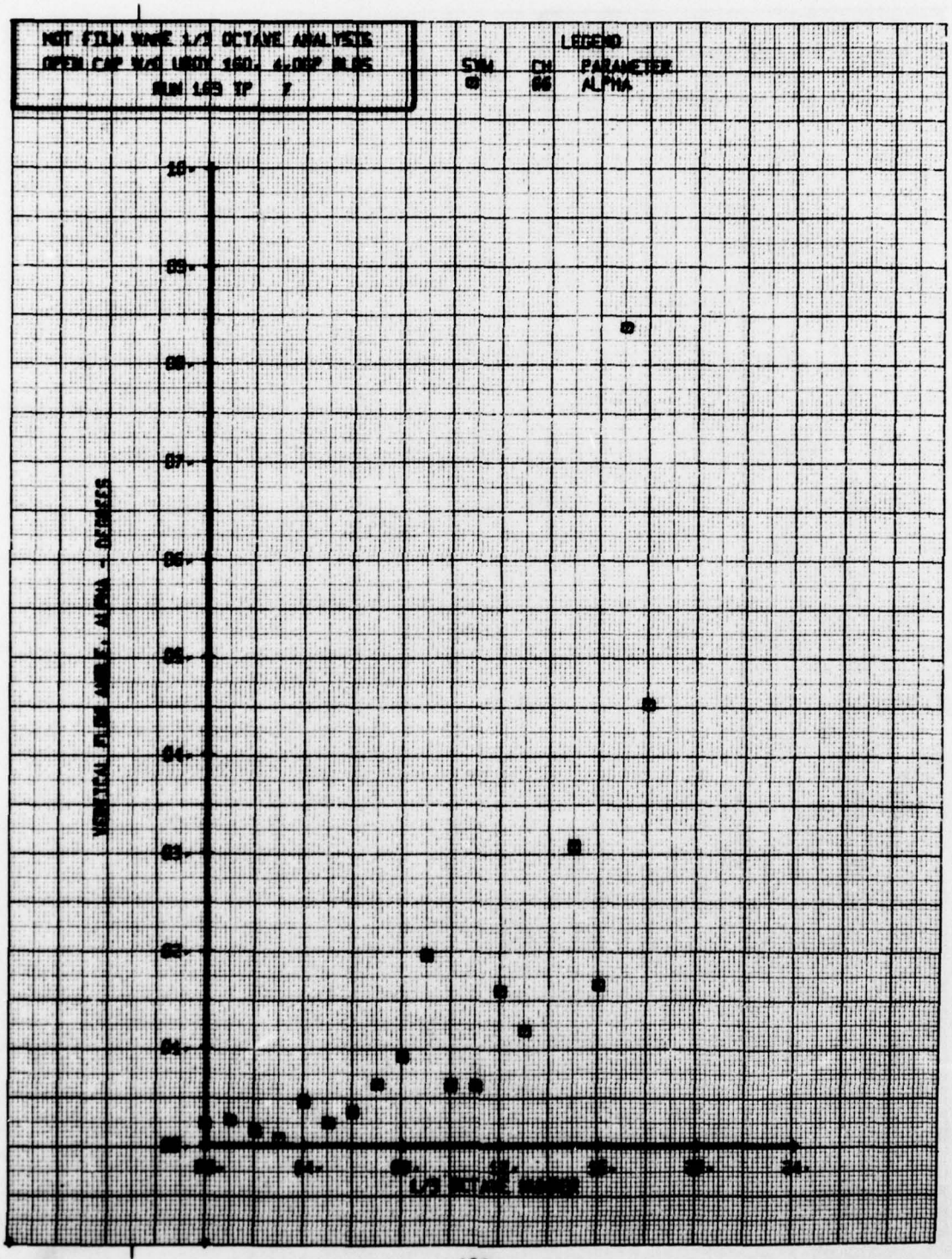

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 160. 4.0GP BLDS
RUN 169 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

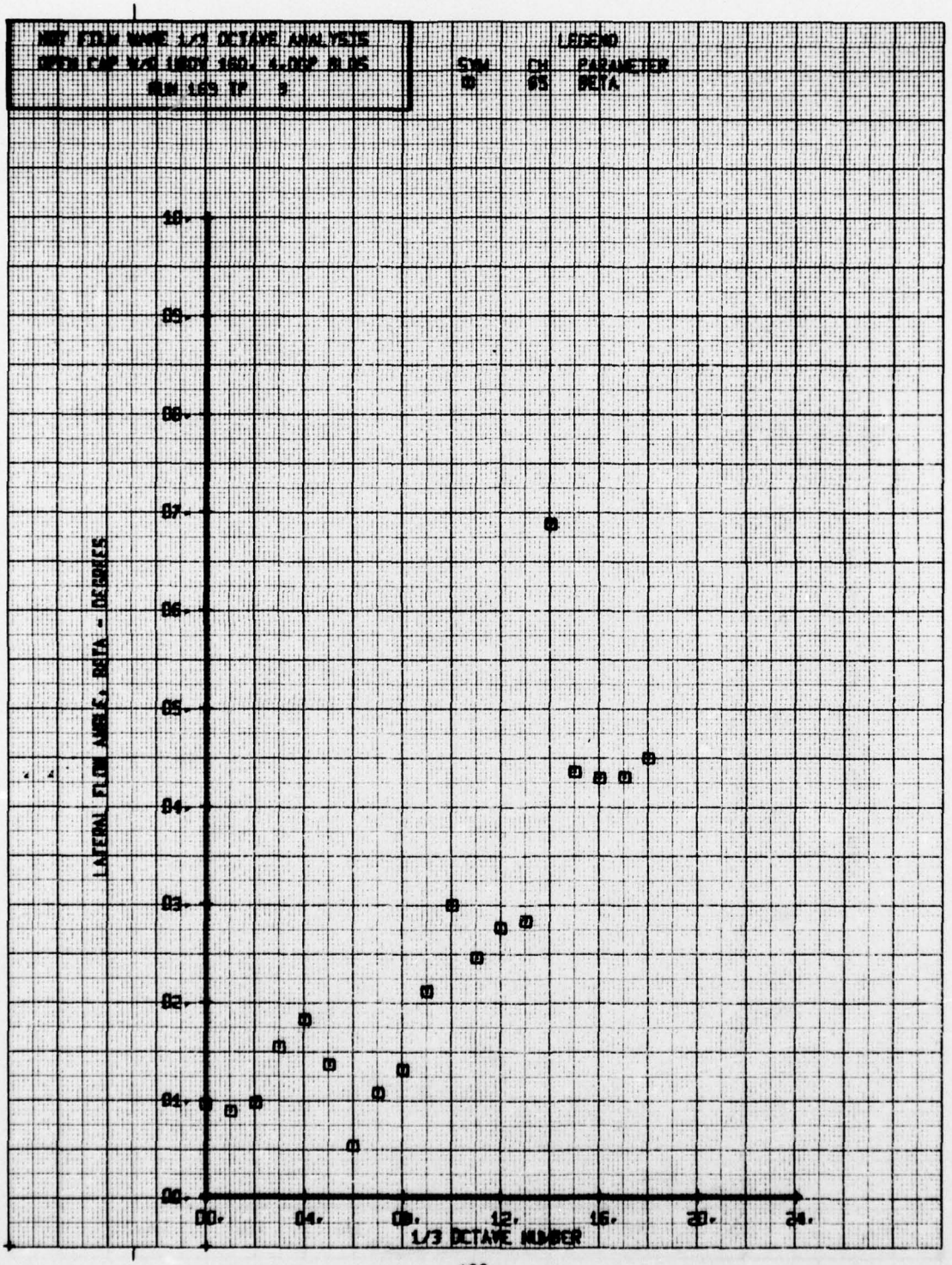

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 160. 4.DEP BLDS
RUN 163 TP 3
LEGEND
SYM CH PARAMETER
0 66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER


LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

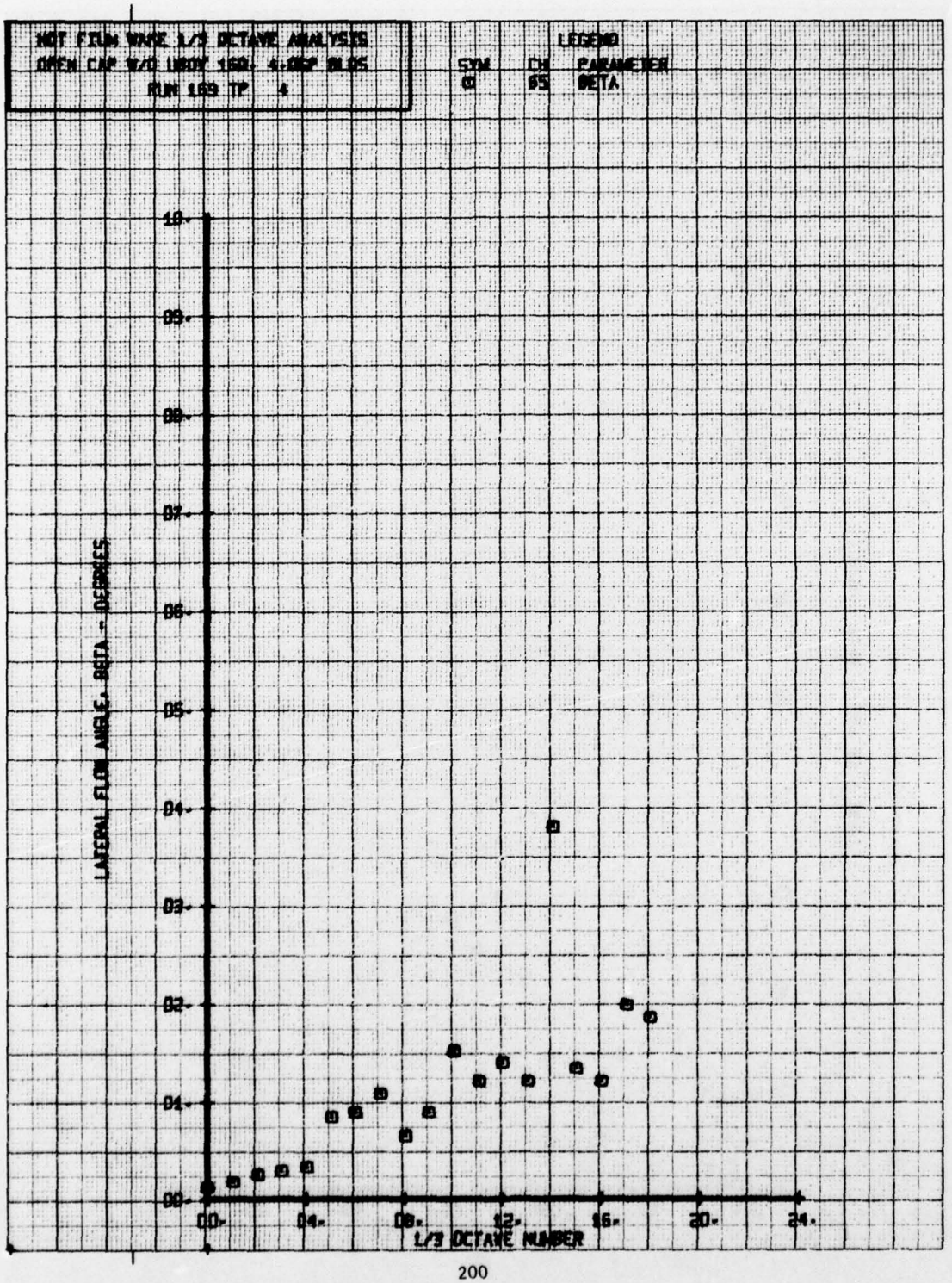

LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

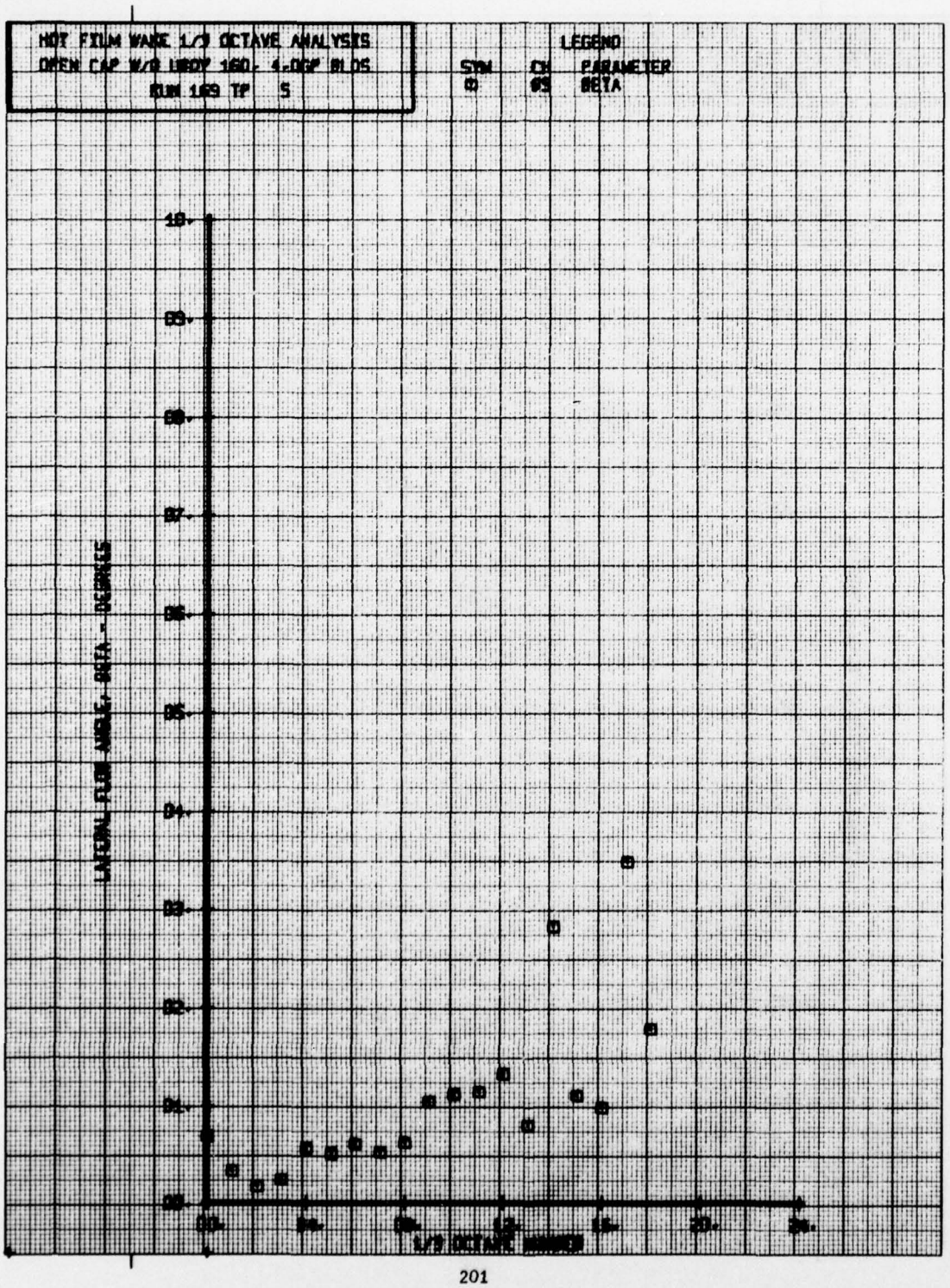

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 180. 4.00" BLDS
RUN 165 TP 6
LEGEND
SYM CH PARAMETER
80 ALPHA
VERTICAL DIM AMPL, ALPHA - DEGREES
1/3 OCTAVE BANDS

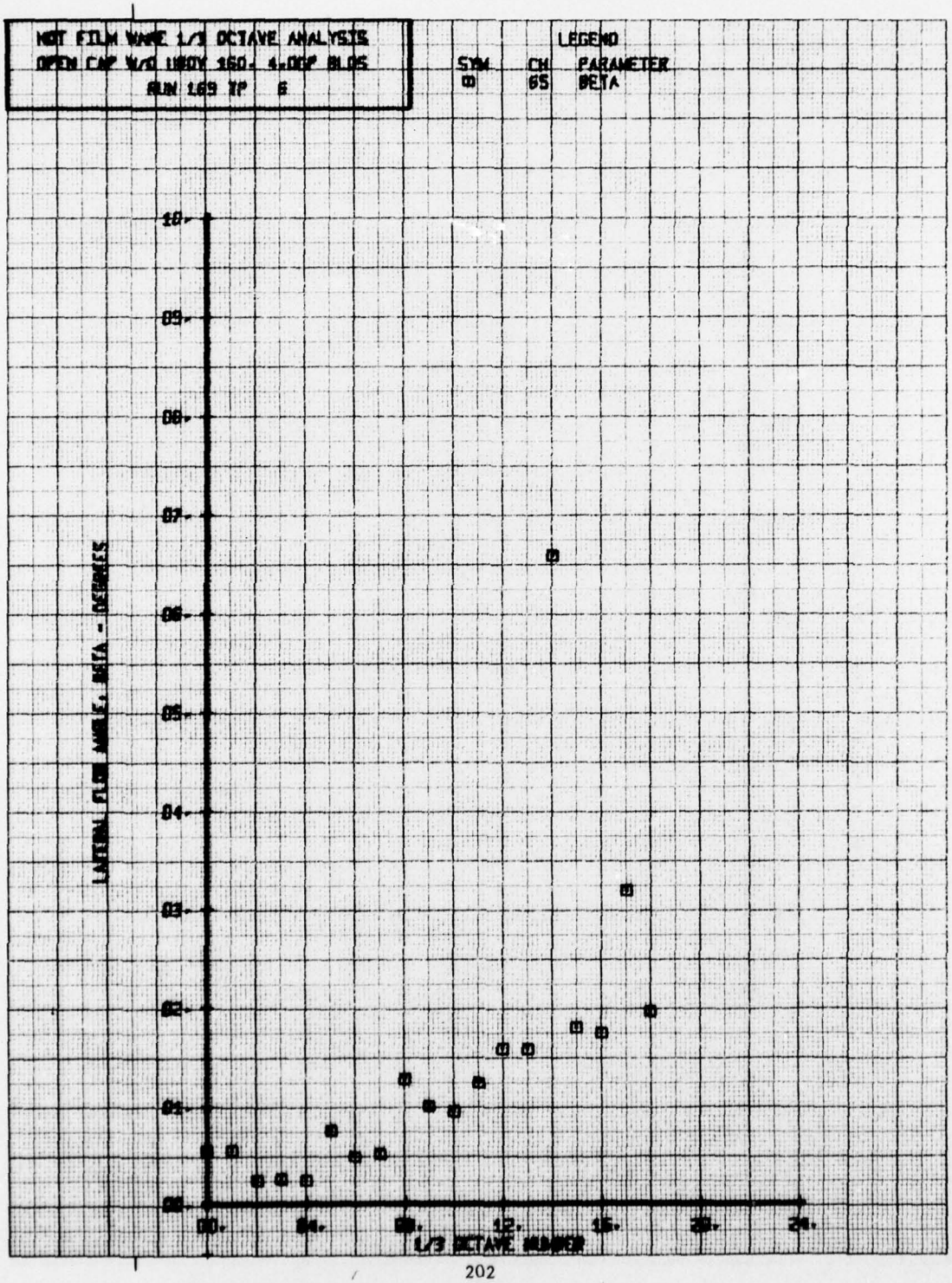

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 4.DEP BLDS
RUN 183 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE BANDS

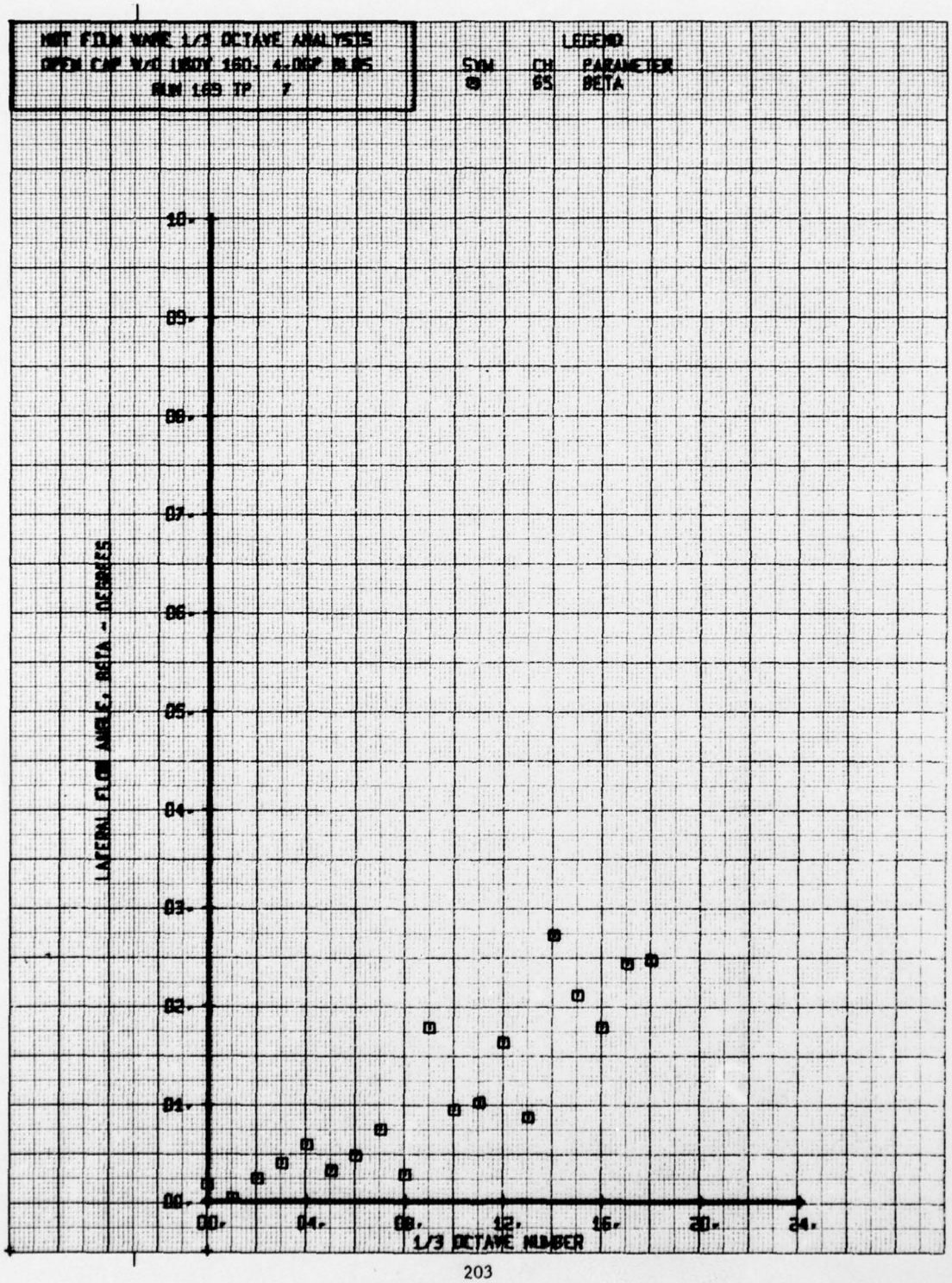


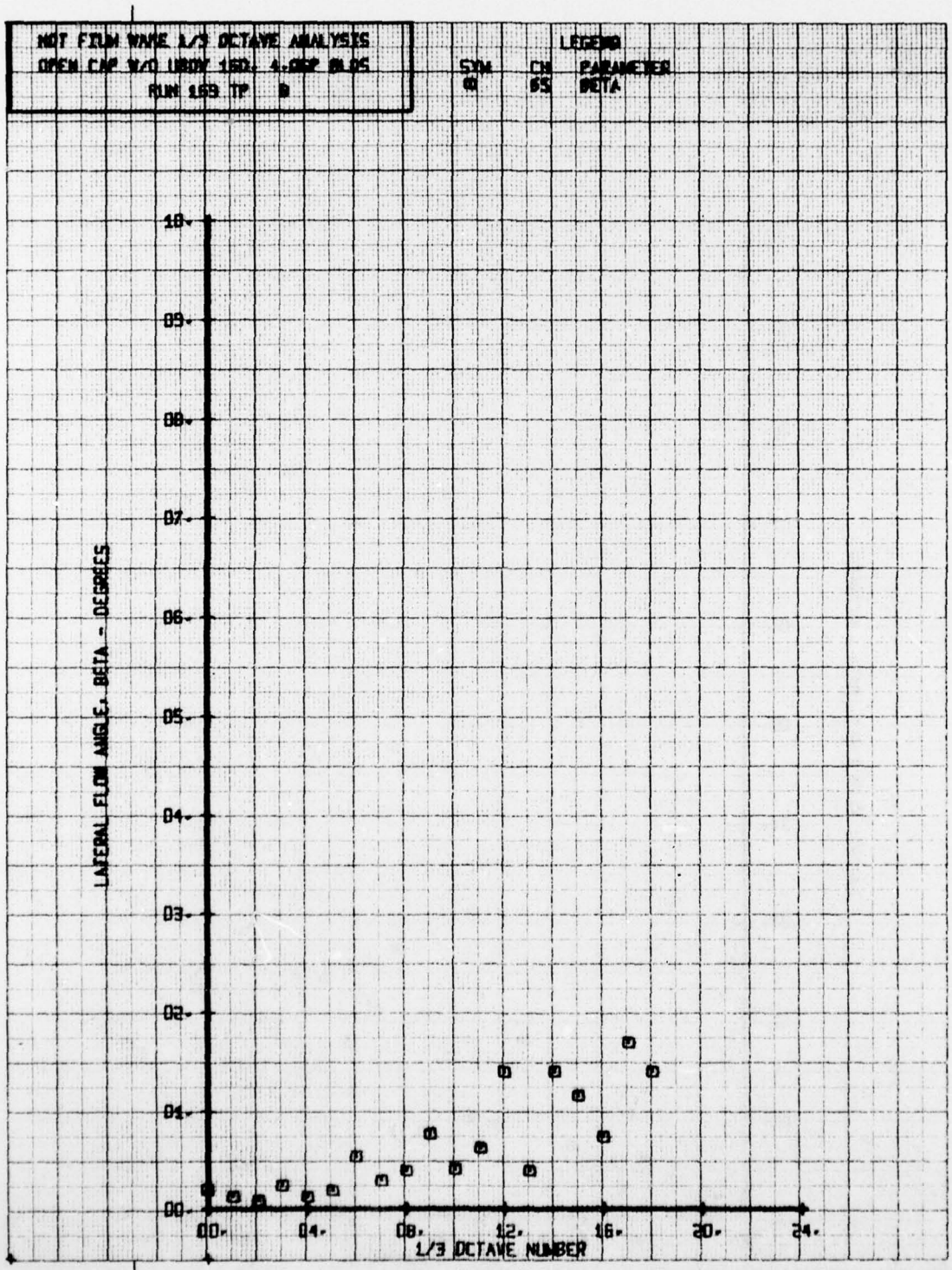
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 160. 4-DEP BLDS
RUN 169 TP 4
LEGEND
SYM CH PARAMETER
BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

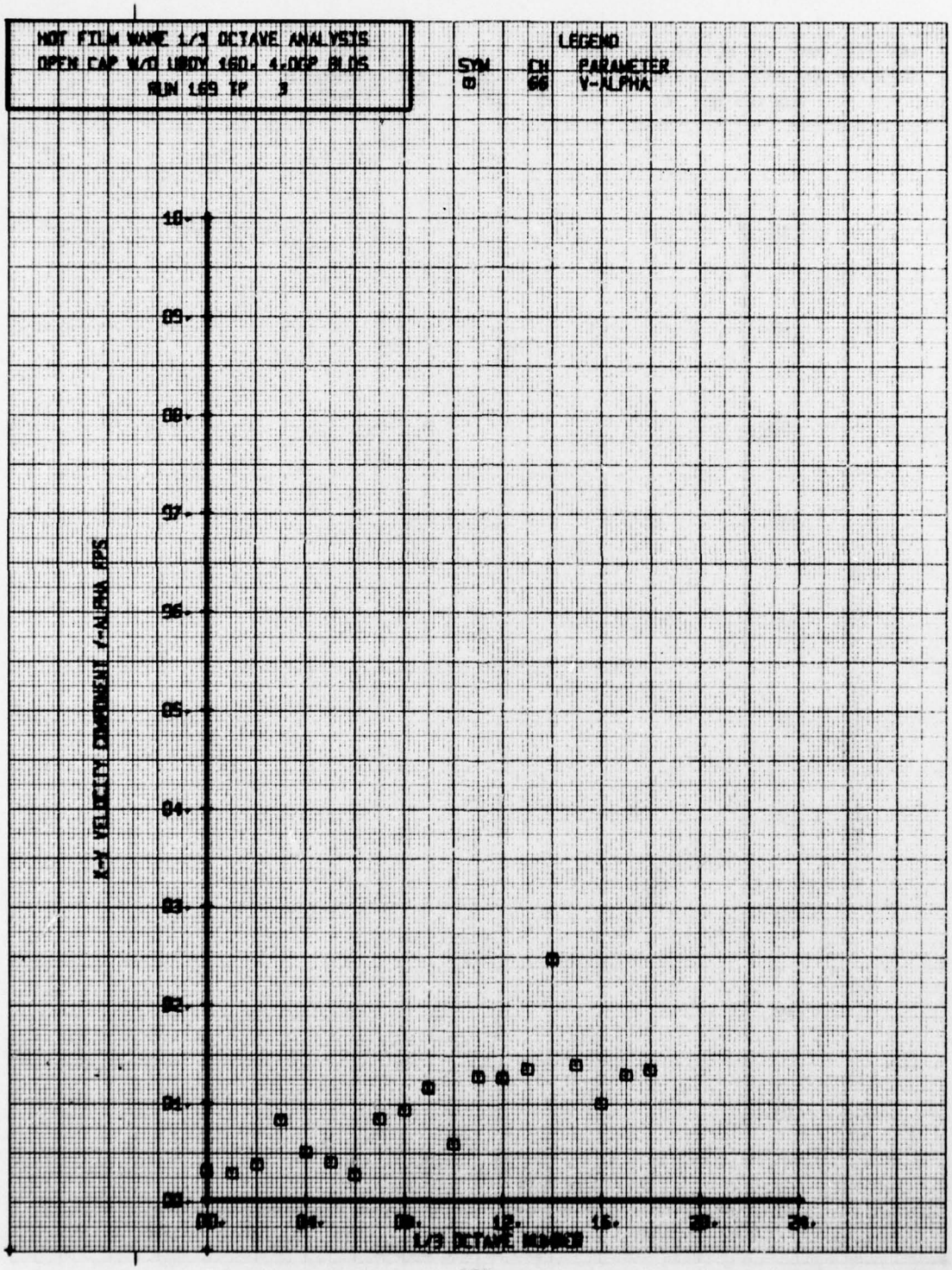

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDP 160. 4.0GP BLDS
RUN 169 TP 5
LEGEND
STN
CH
PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

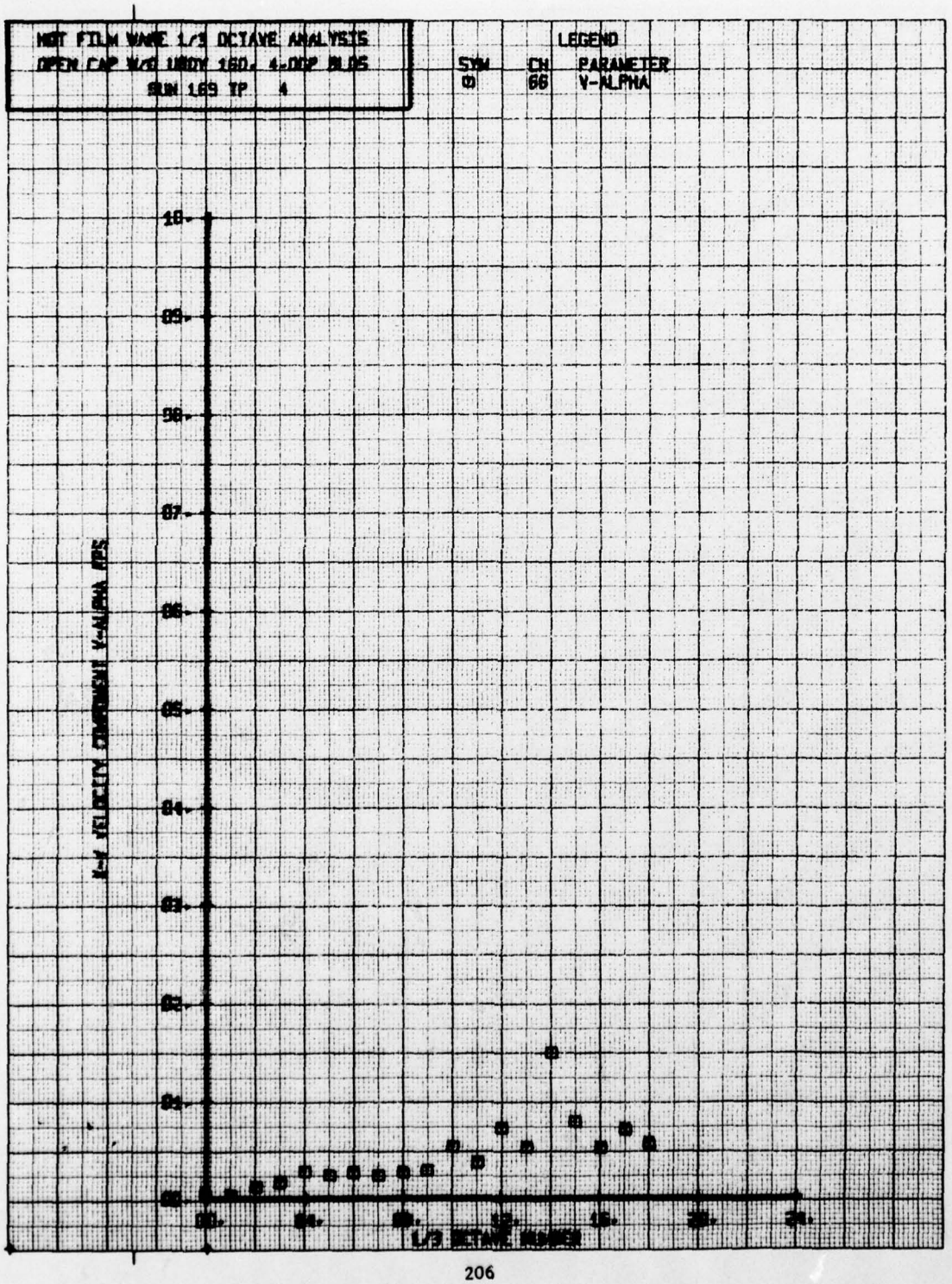

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O HBDY 160. 4.00" BLDS
RUN 169 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

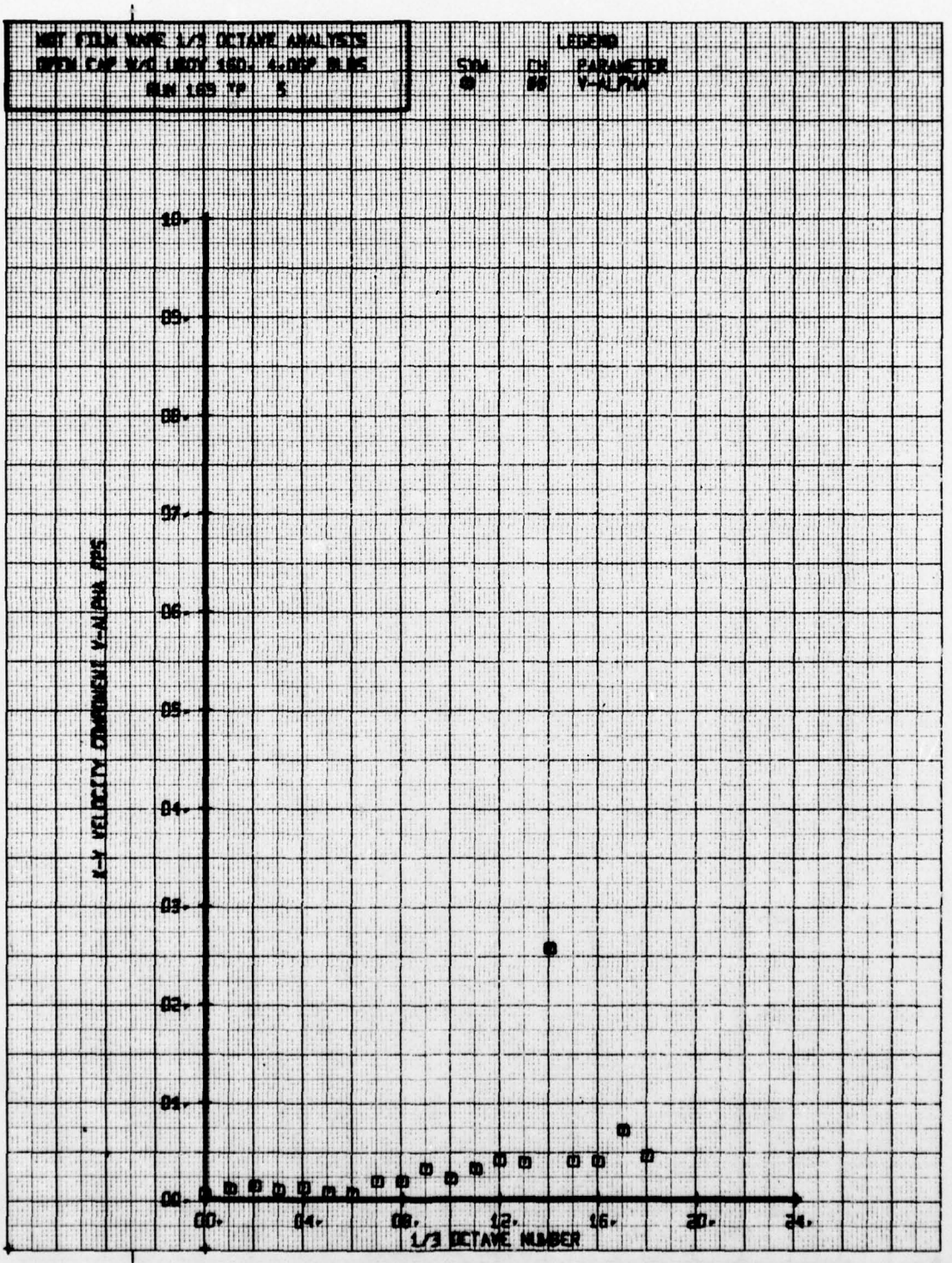

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDY 160. 4.DEG BLWS
RUN 169 TP 7
LEGEND
SYM CH PARAMETER
69 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER



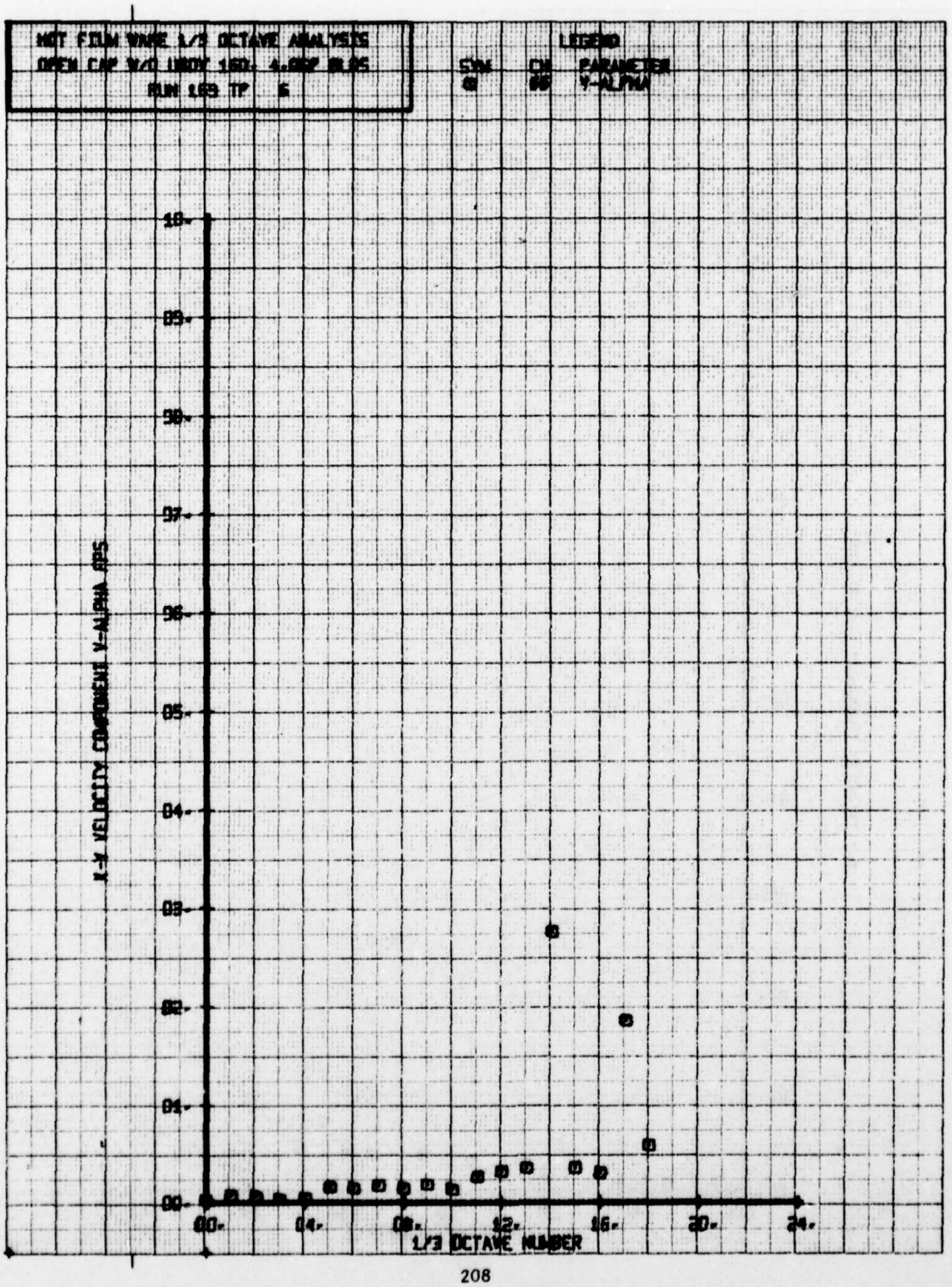
NOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOV 160. 4.0GP BLDS
RUN 169 TP 8
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

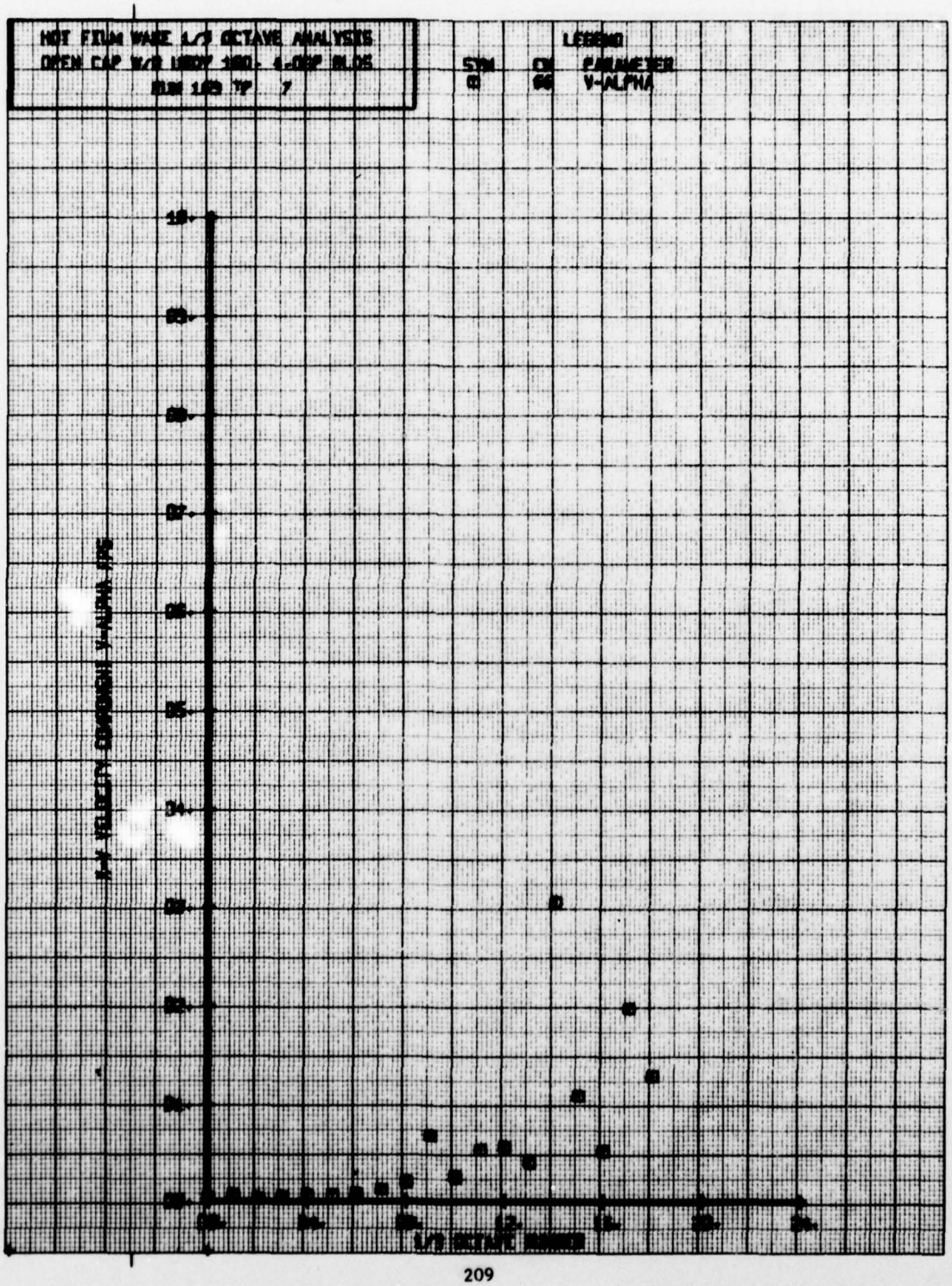

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 160. 4.0DP BLDS
RUN 169 TP 3
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT (-ALPHA RPS
1/3 OCTAVE

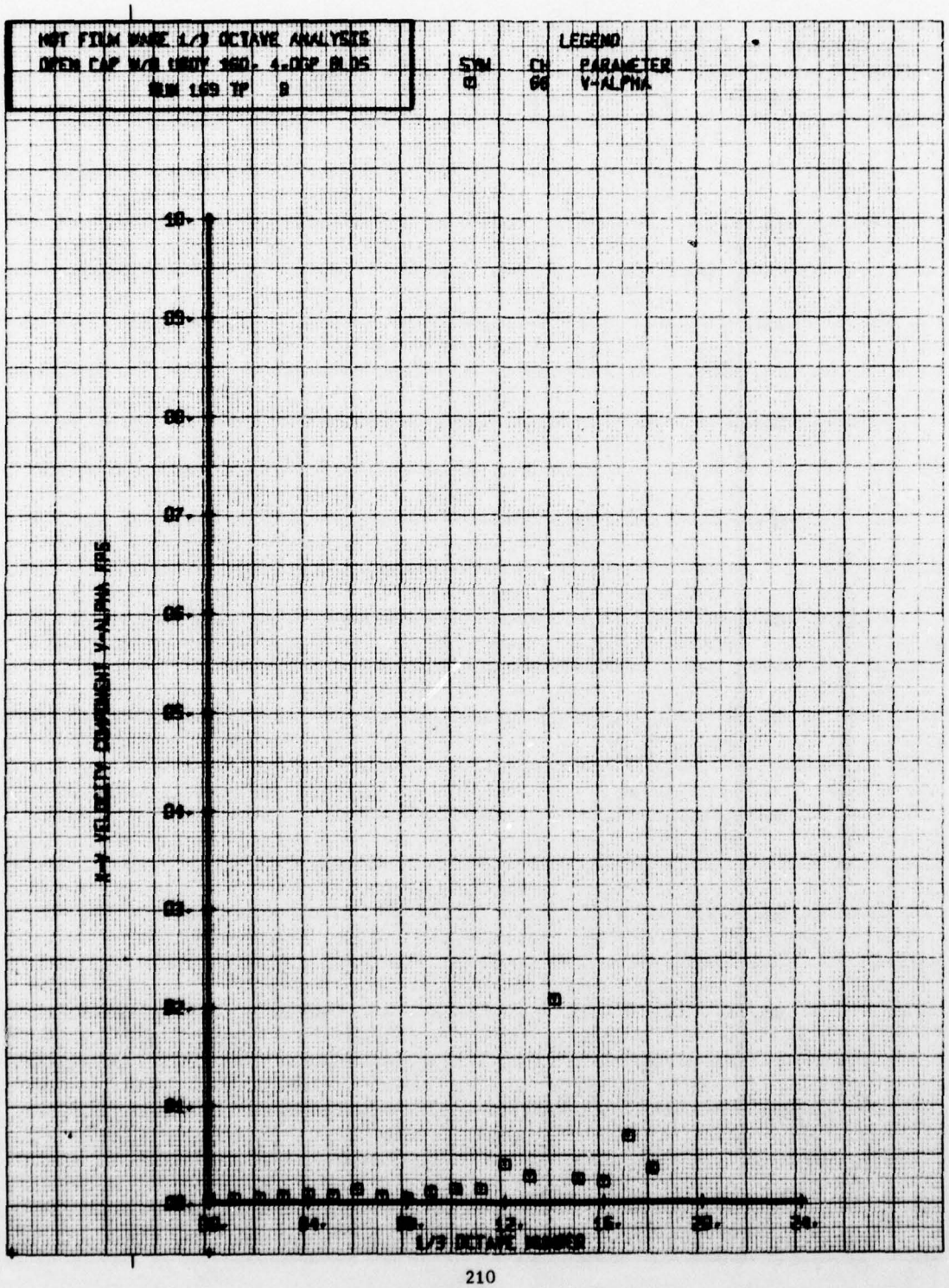

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160. 4-DGP BLDS
SUN 169 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
1/3 OCTAVE NUMBER

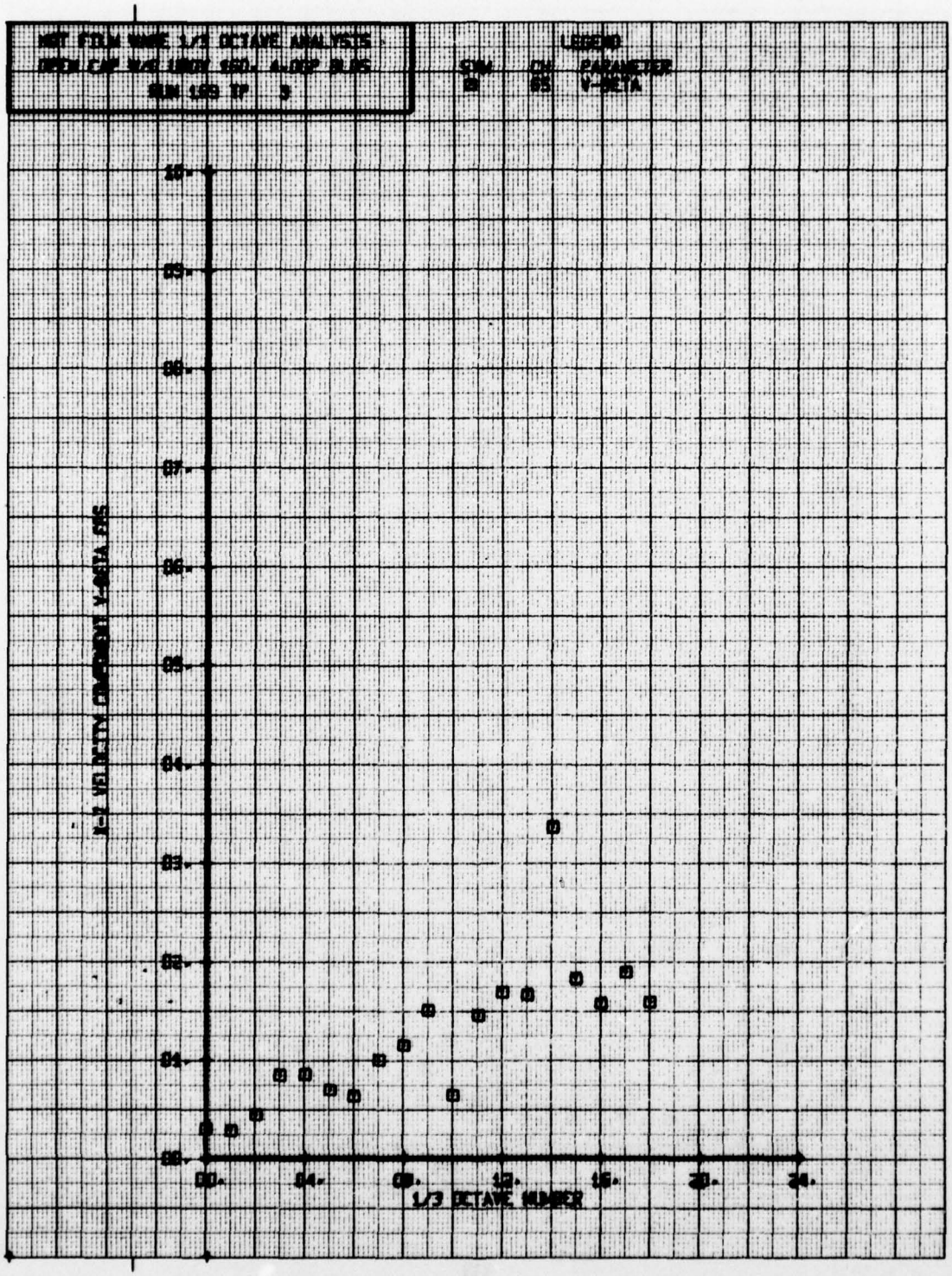


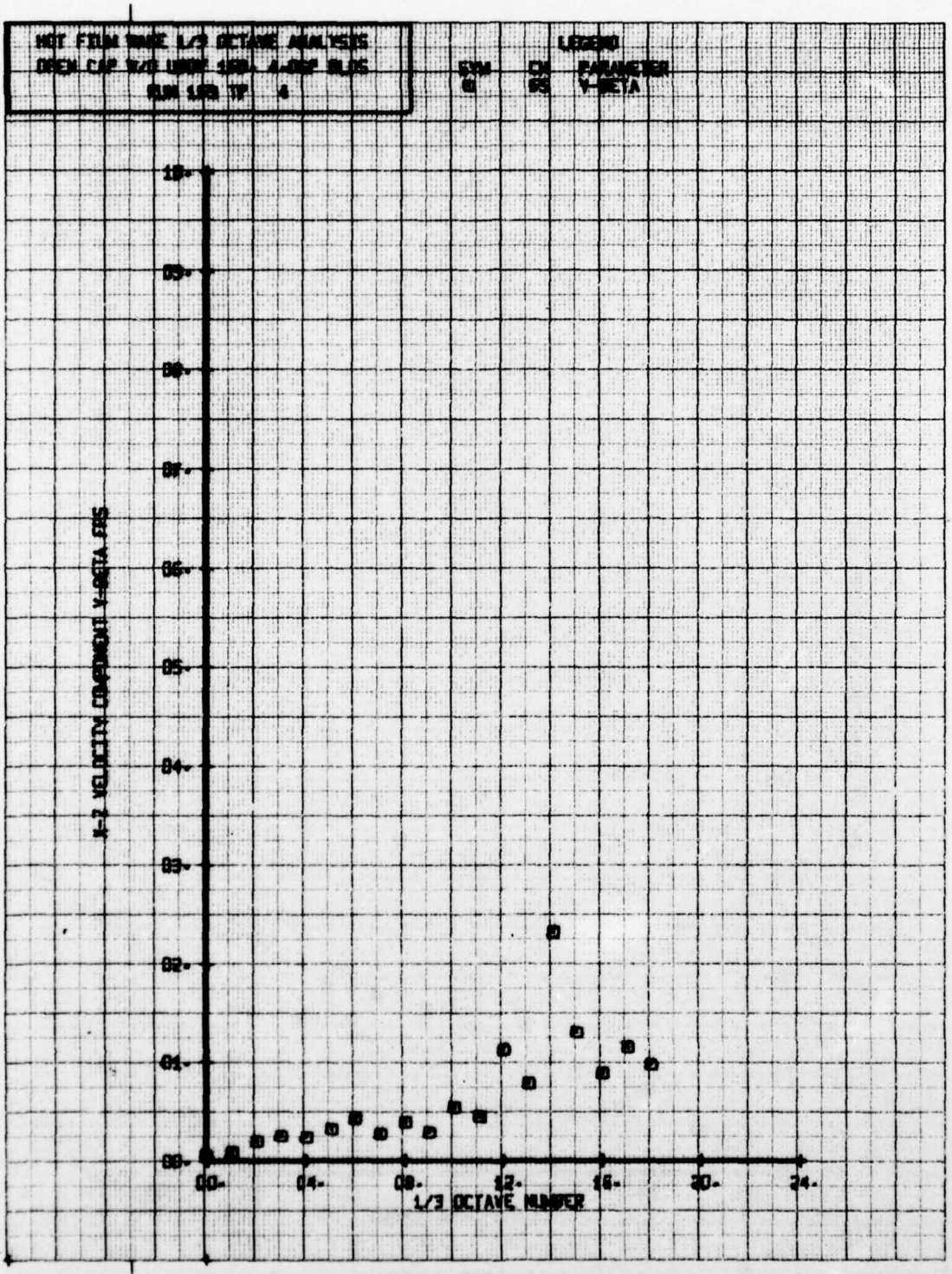
NOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160. 4.0GP BLDS
RUN 169 TP 5
LEGEND
SYM CH PARAMETER
Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
1/3 OCTAVE NUMBER

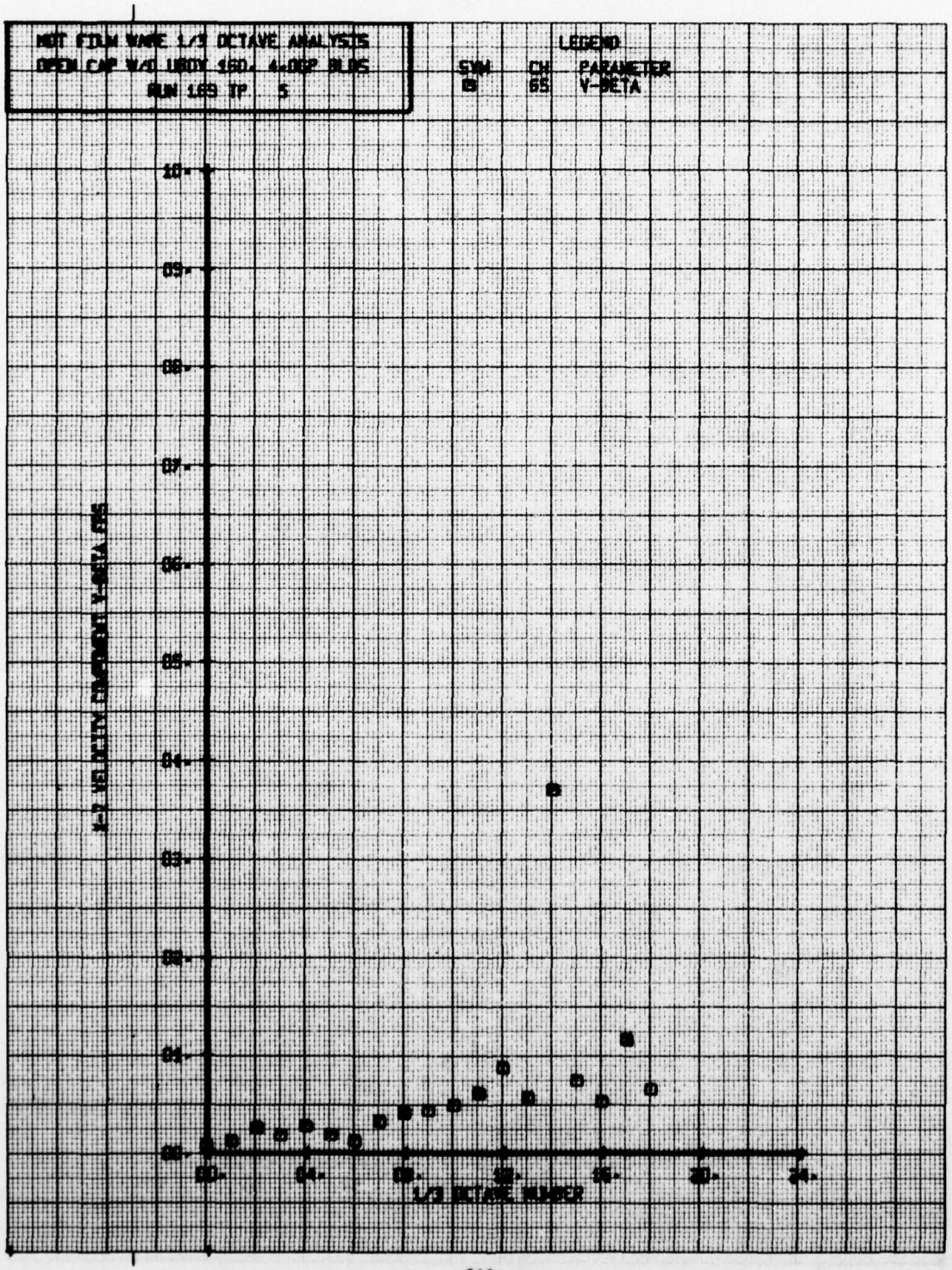

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDV 160. 4.0GP BLDS
RUN 169 TP 6
LEGEND
SYM CH PARAMETER
Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

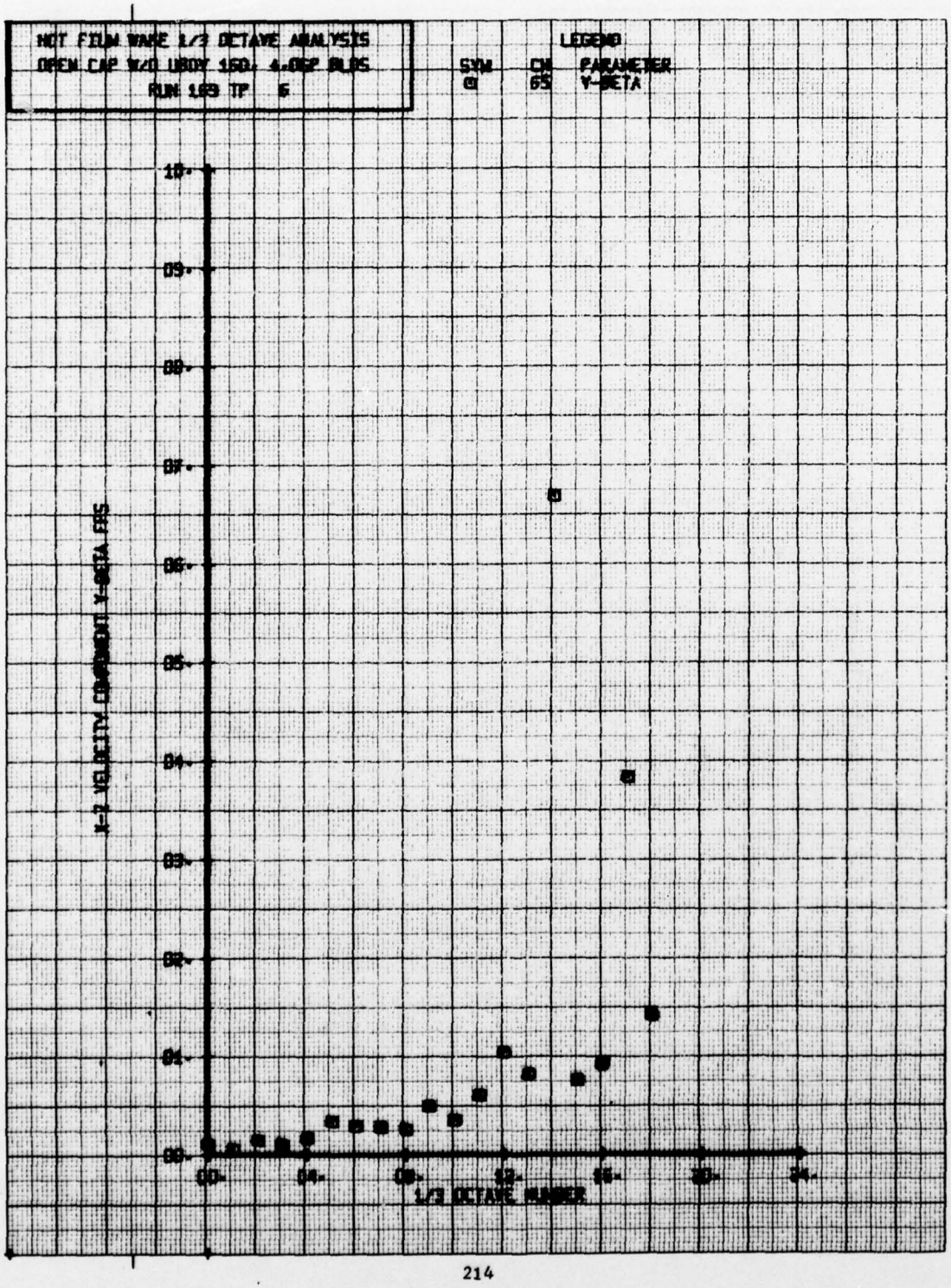

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O
LEGEND
SYM CM PARAMETER
V-ALPHA
1/3 OCTAVE NUMBER

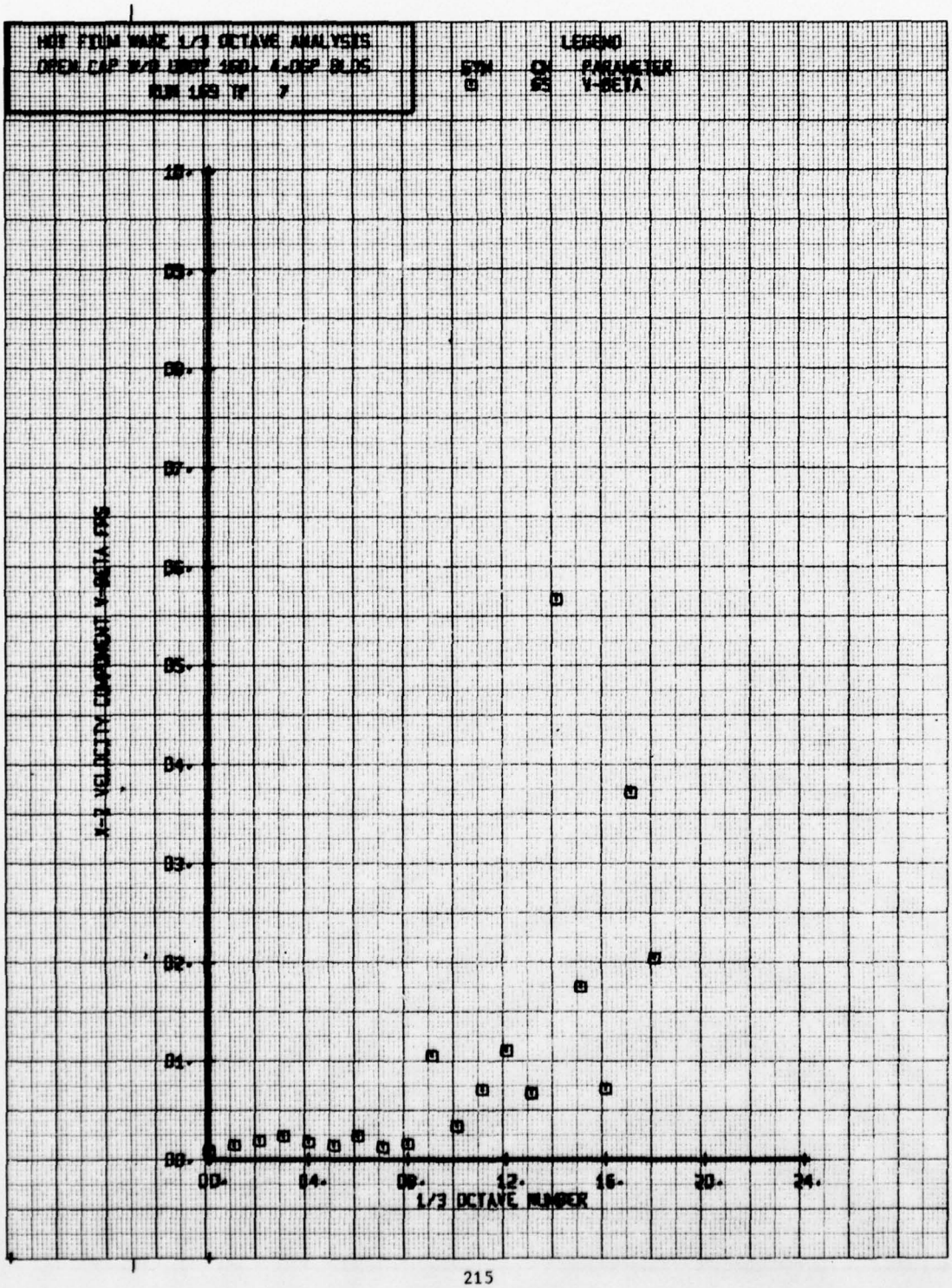

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBDY 160- 4.0GP BLDS
RUN 169 TP 8
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

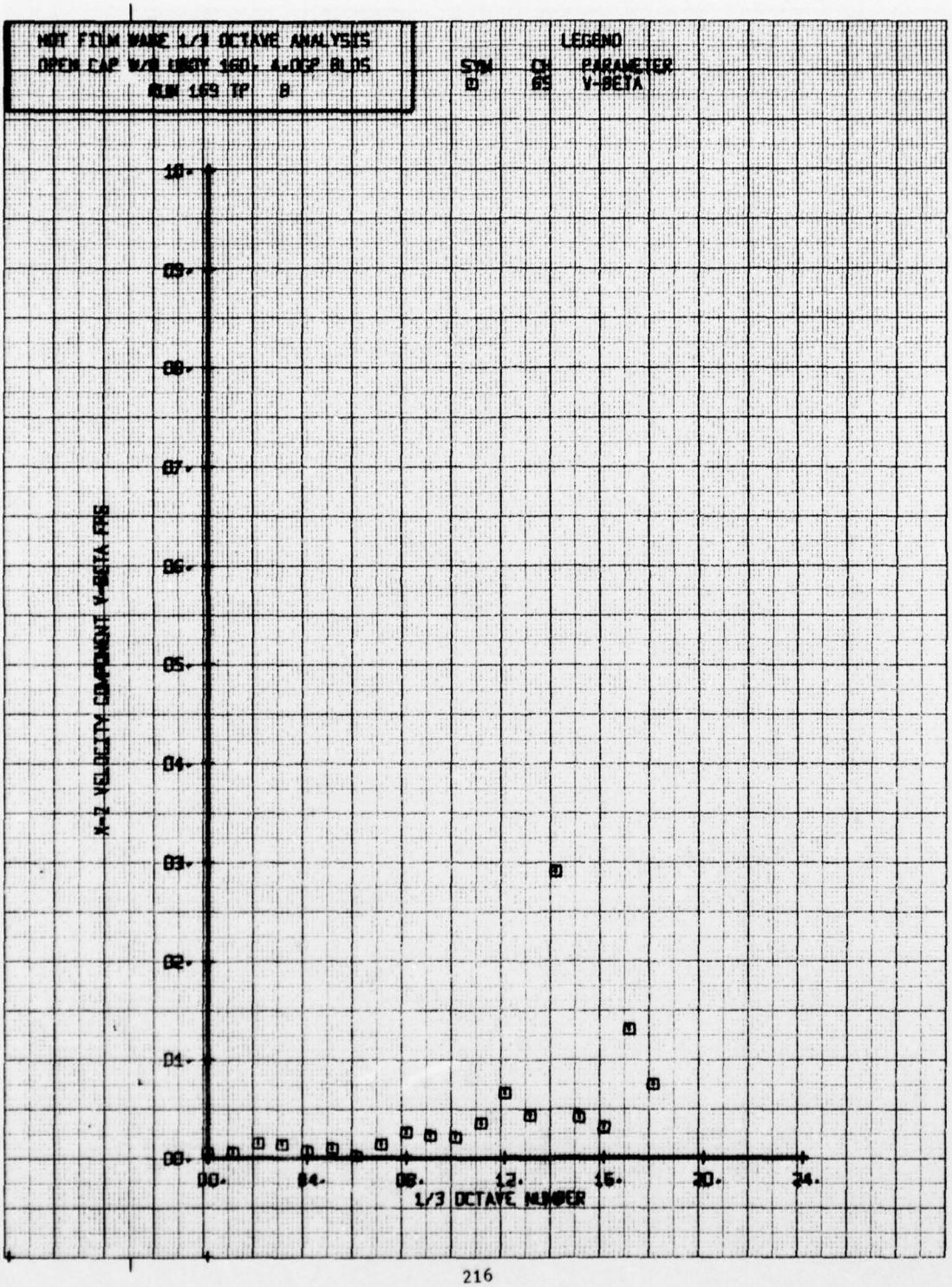

LEGEND
PARAMETER
V-BETA
1/3 OCTAVE NUMBER

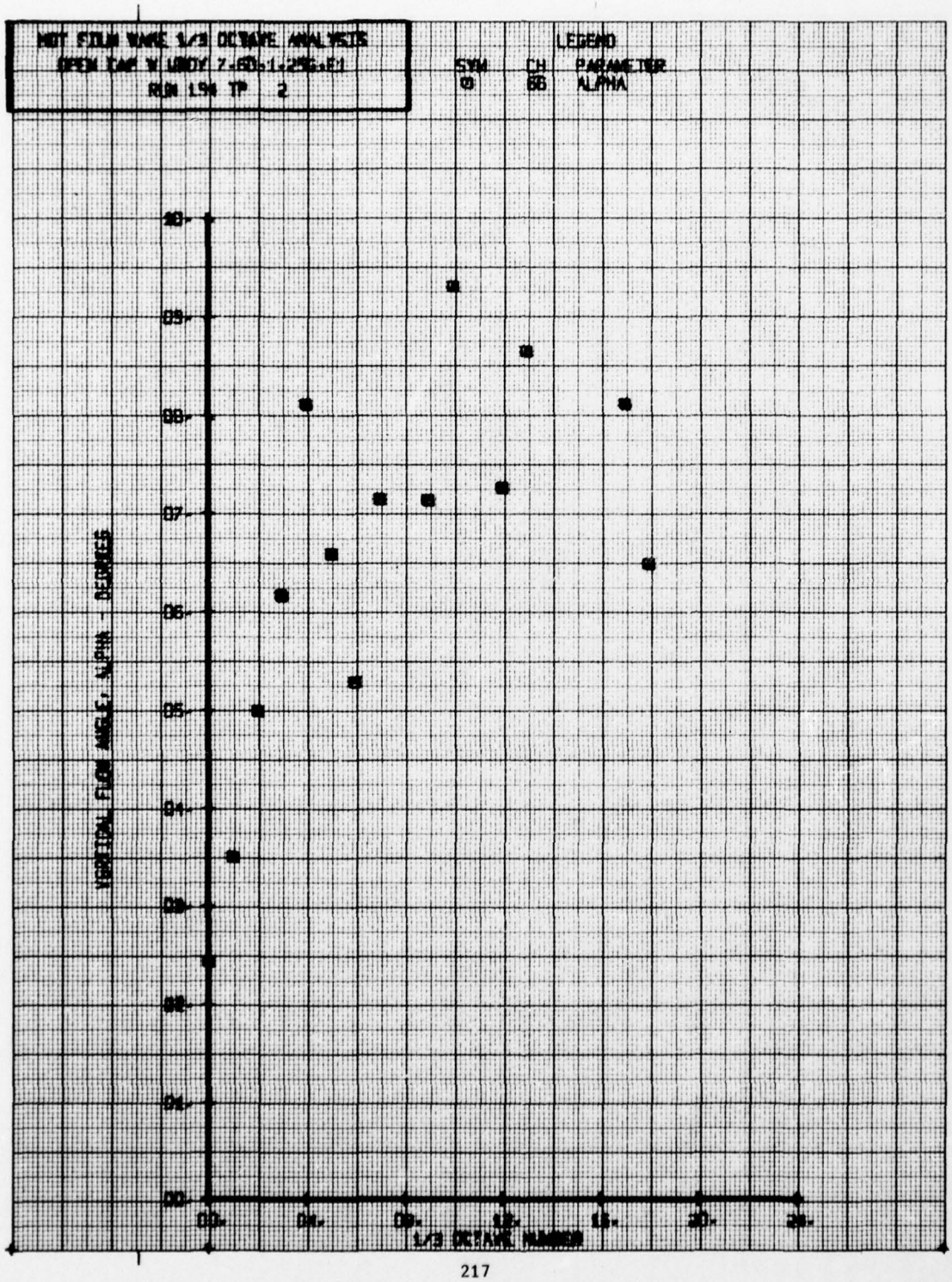

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDV 160, 4-DEP BLDS
RUN 160 TP 4
LEGEND
SYM CM PARAMETER
FS Y-BETA
X-Z VELOCITY COMPONENT Y-BETA FRS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

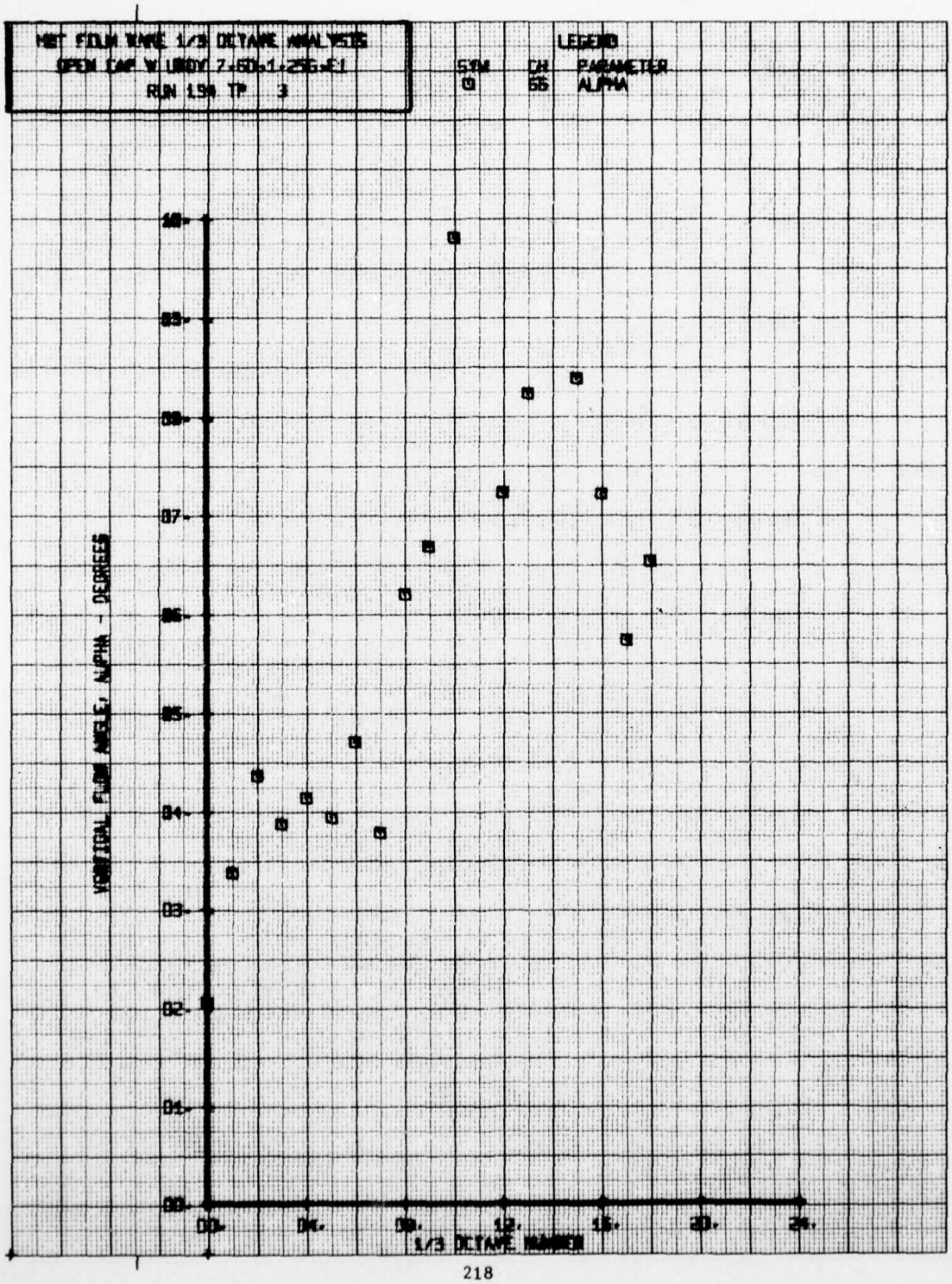

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBOY 160/ 4.0DP BLDS
RUN 169 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

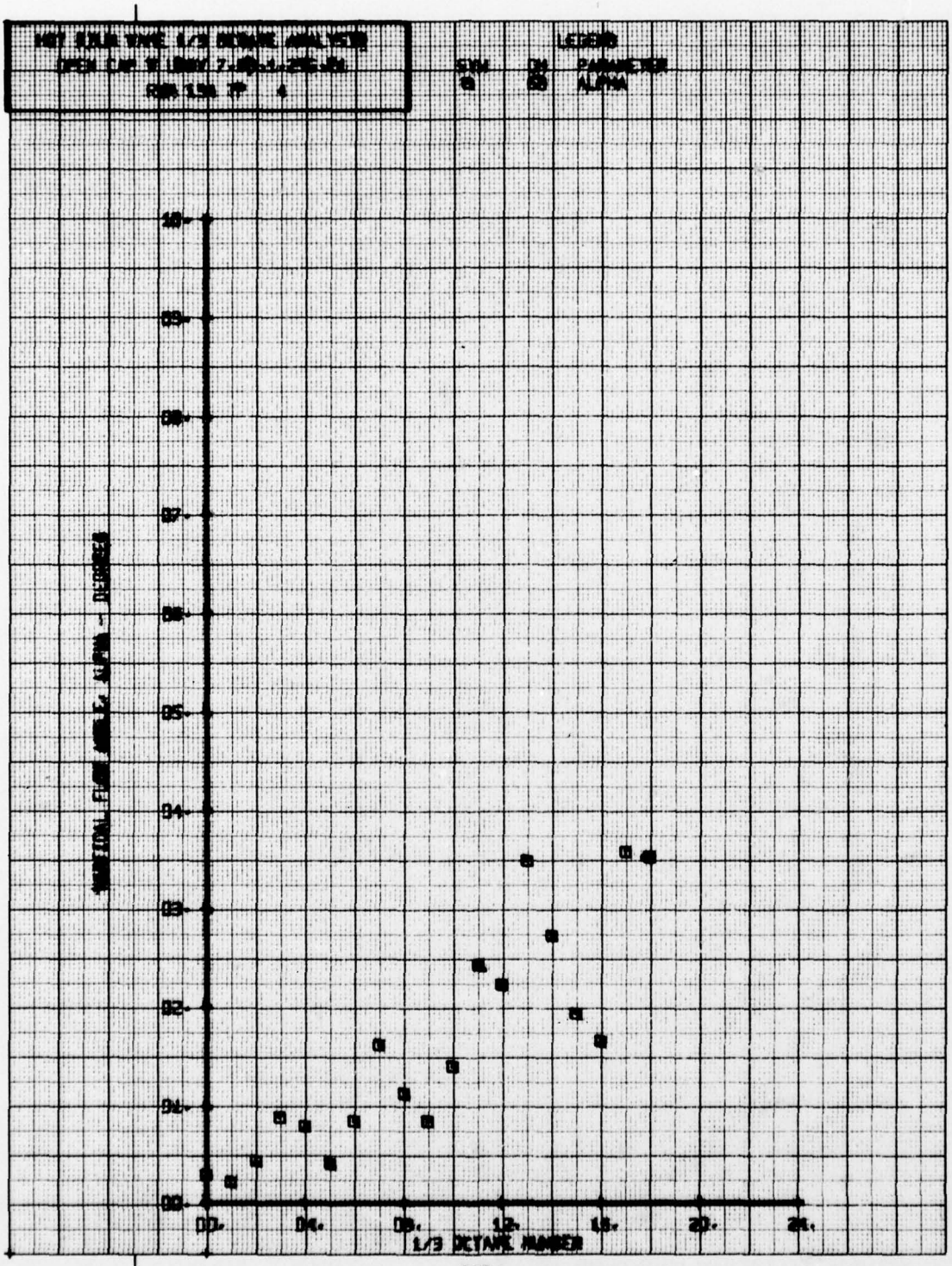

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UBODY 150. 4.062 BLDS
RUN 183 TP 6
LEGEND
SYM CH PARAMETER
65 Y-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

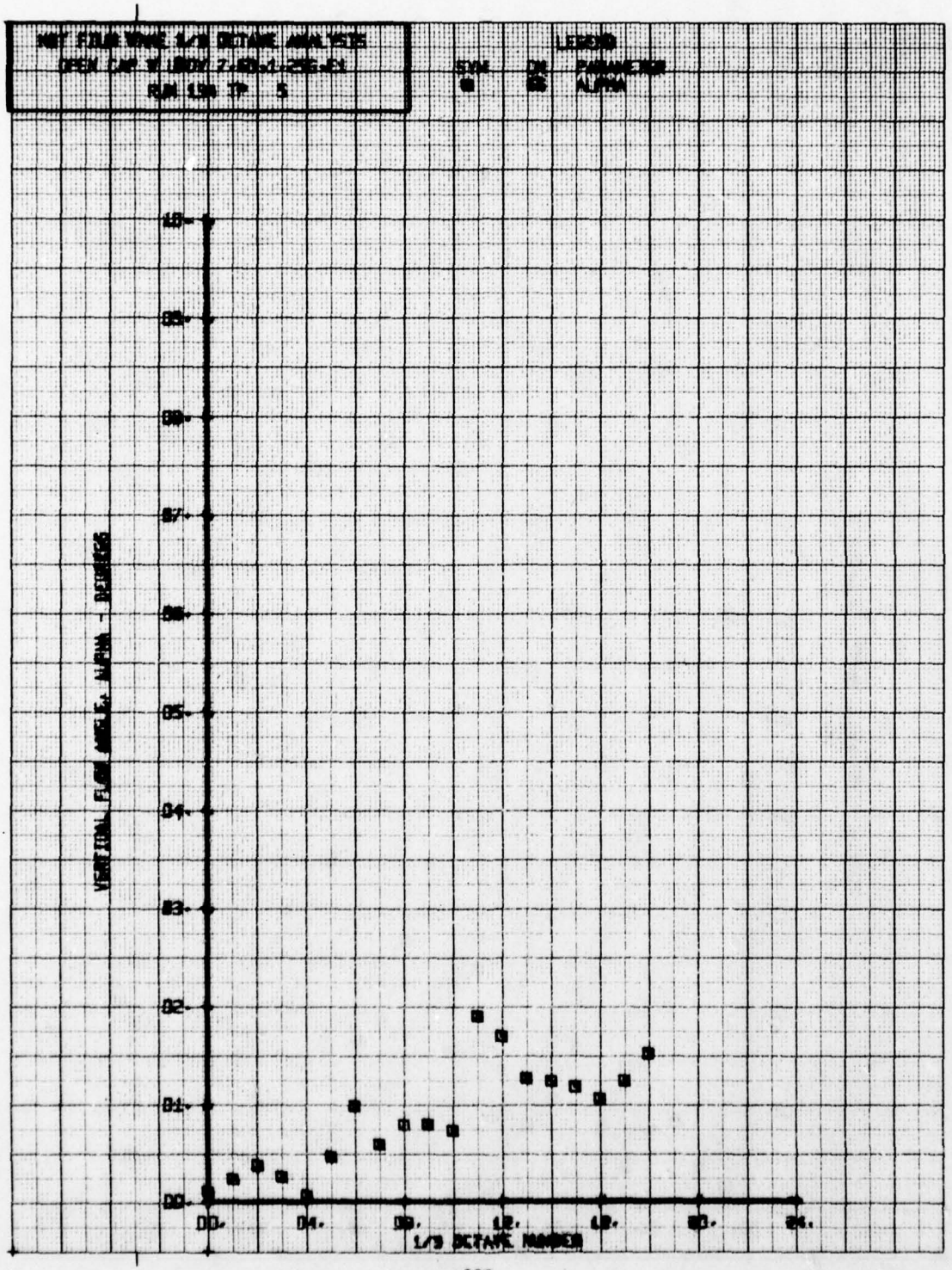

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/O UNDP 160. 4-DGP BLDS
RUN 169 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

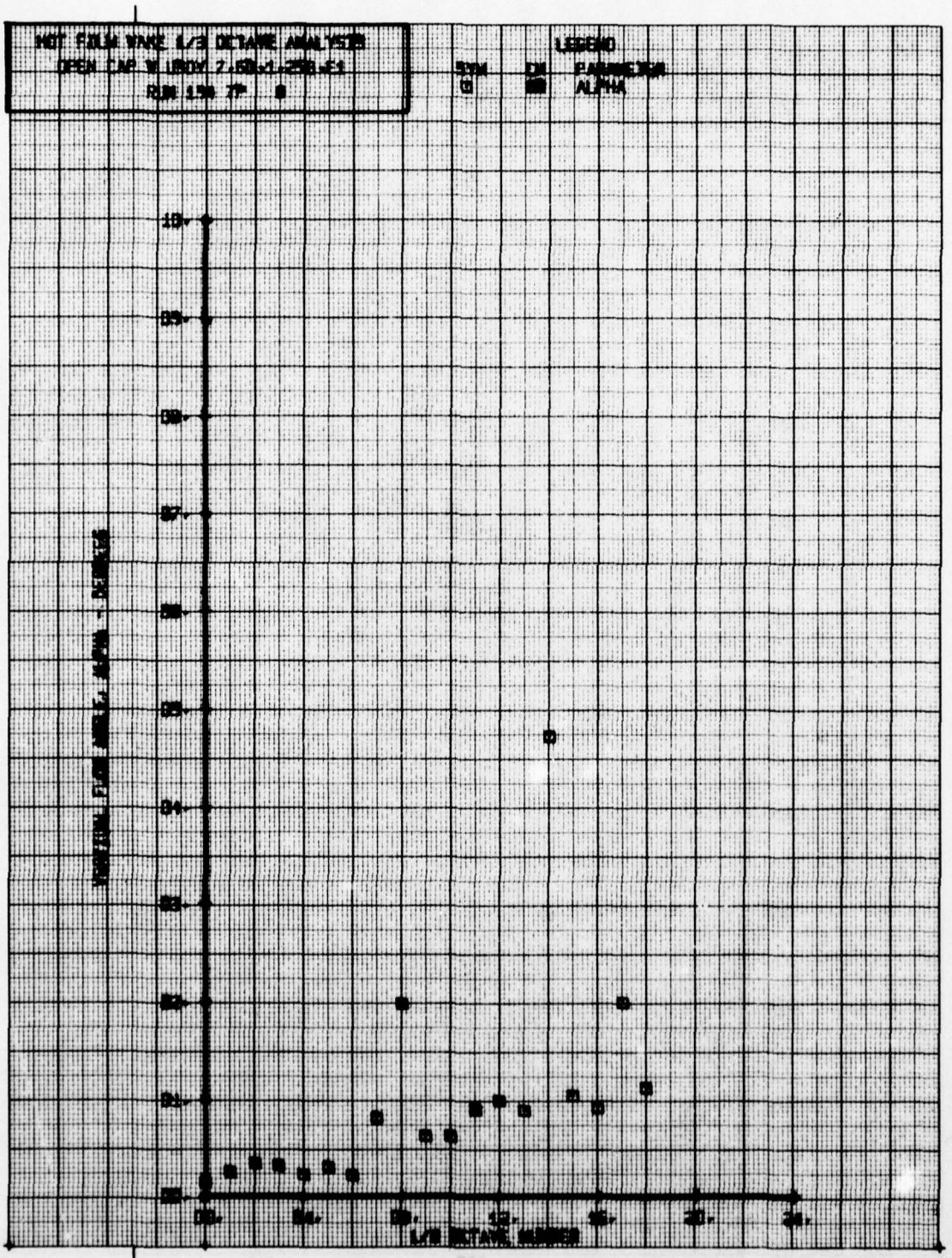

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W/R UBDY 160. 4.0GP BLDS
RUN 169 TP 8
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Z VELOCITY COMPONENT V-BETA FRS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

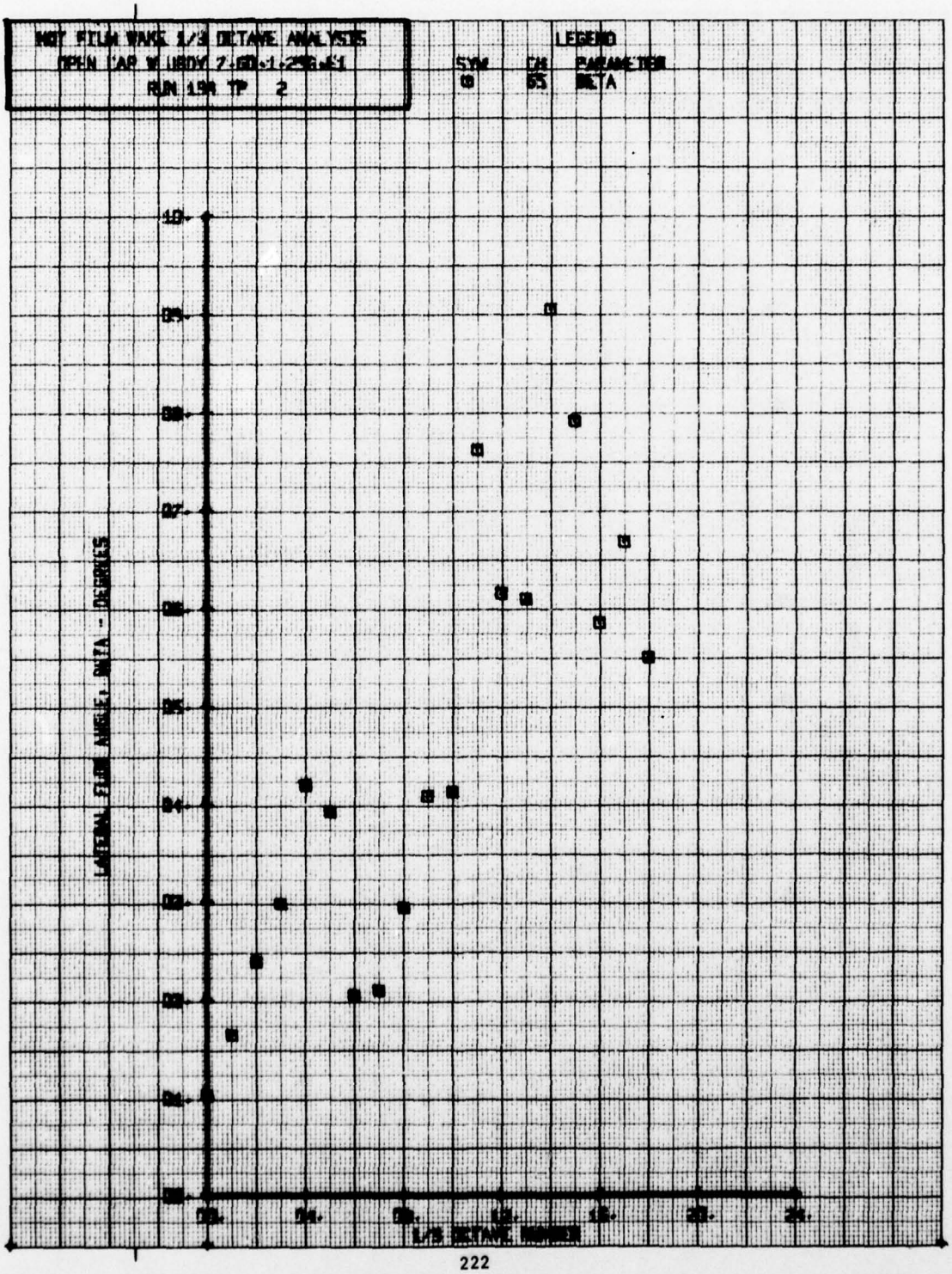

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 7.6D-1.25G-E1
RUN 194 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

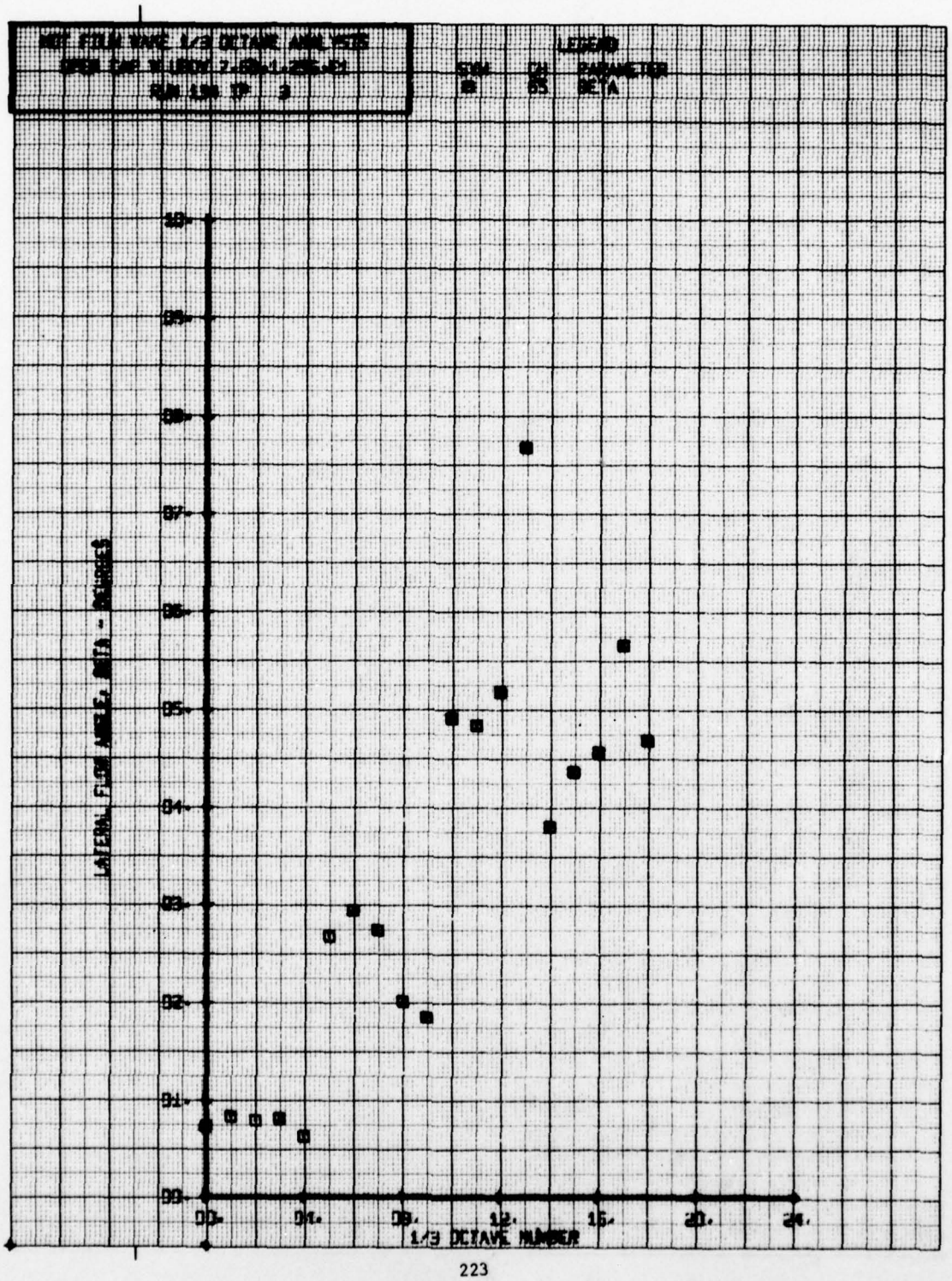

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 7.6D,1.25G,E1
RUN 194 TP 3
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

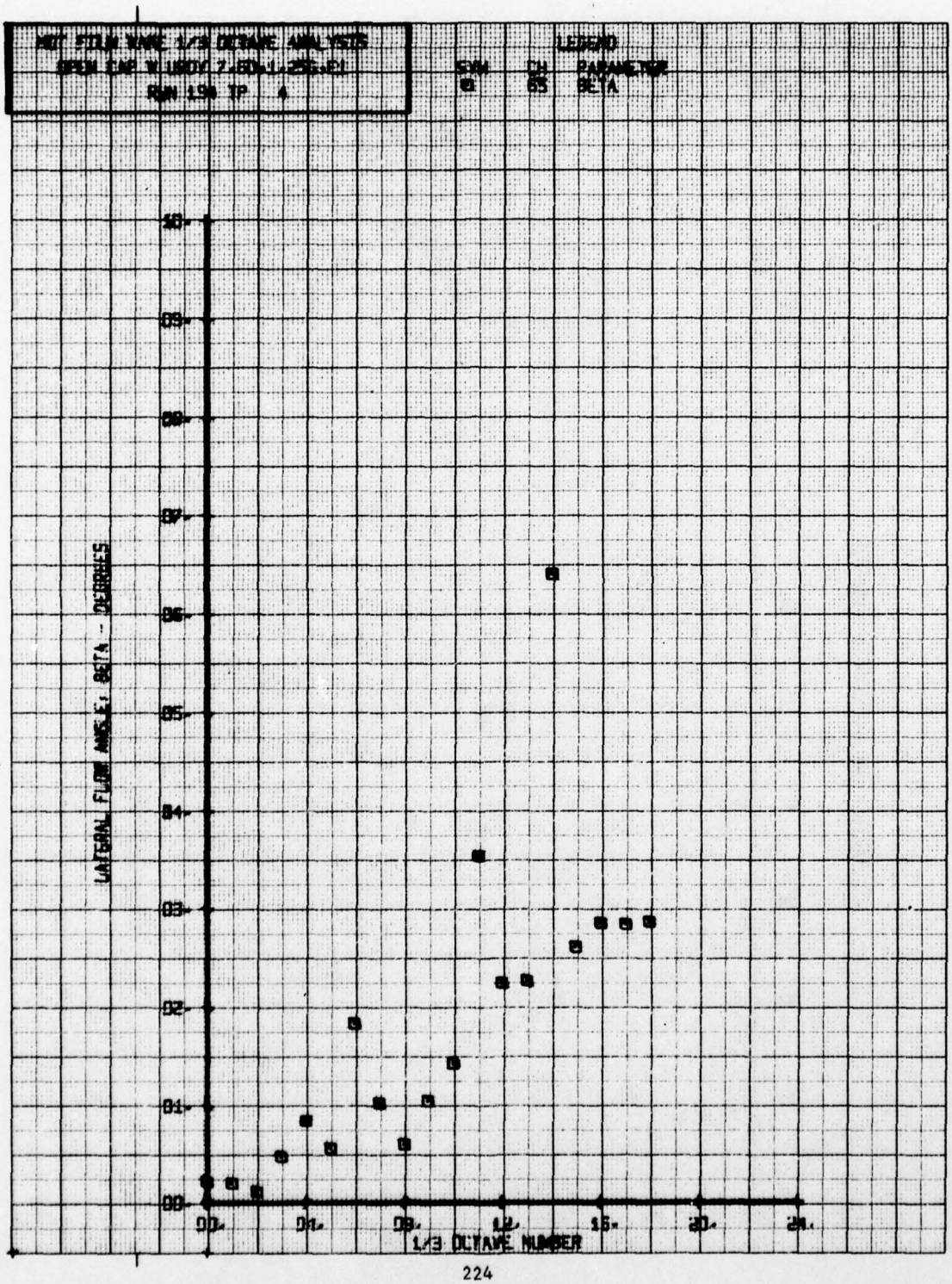

LEGEND
PARAMETER
ALPHA
1/3 OCTAVE NUMBER


LEGEND
SYM
PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

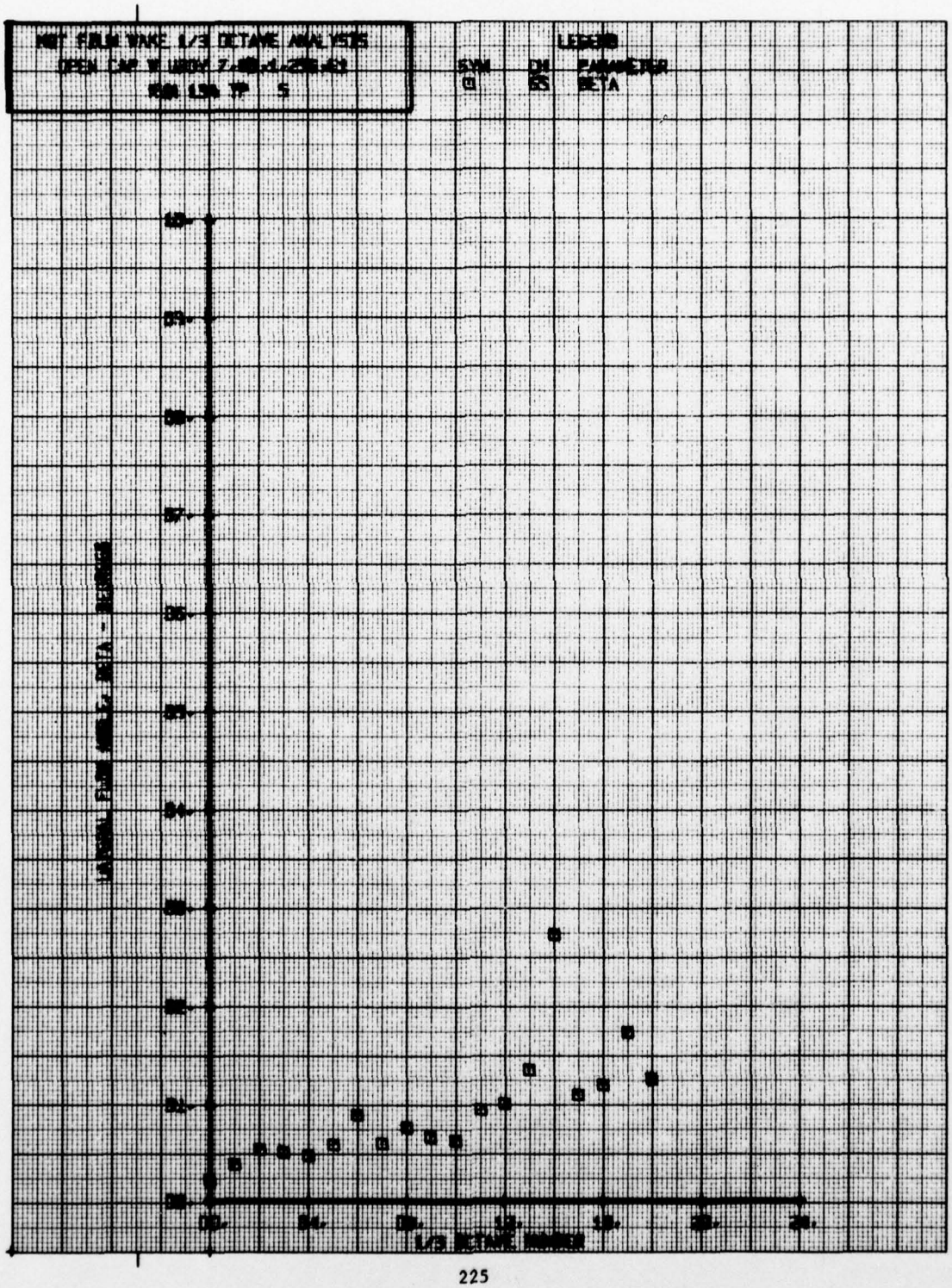

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY
LEGEND
SYM
PARAMETER
ALPHA
1/3 OCTAVE NUMBER

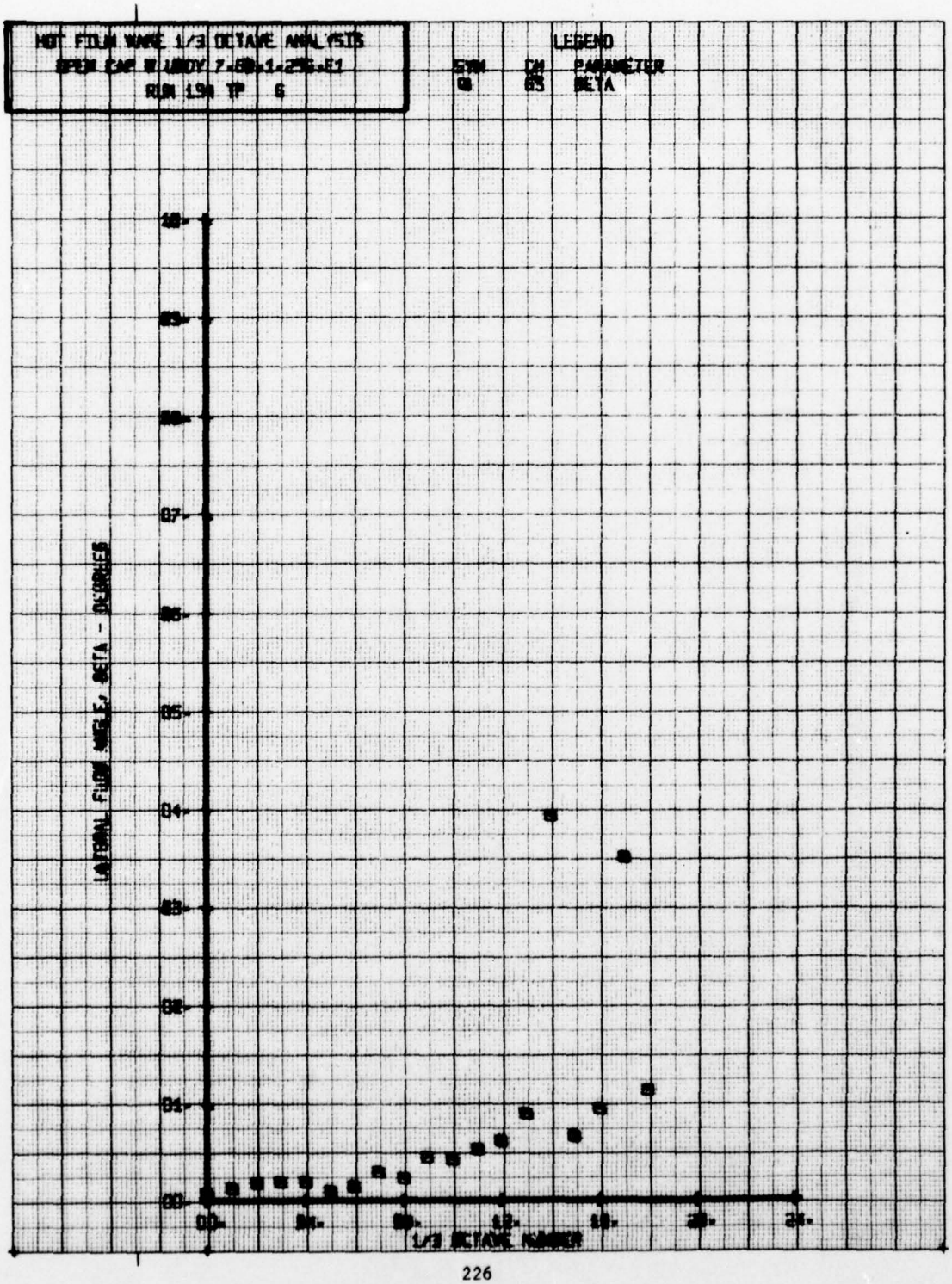

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7-GD-1-25G-E1
RUN 194 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

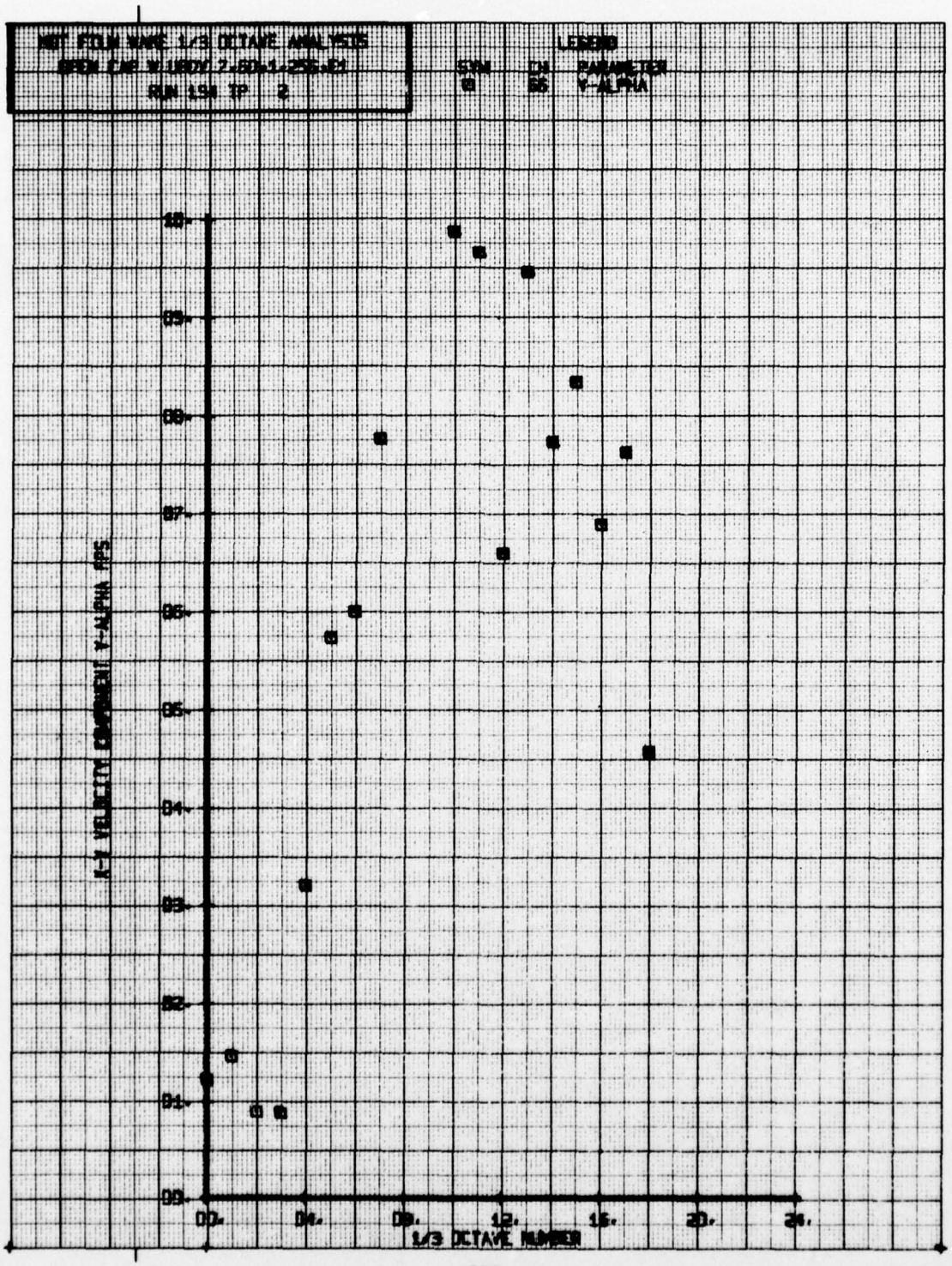

LEGEND
SYM DE PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

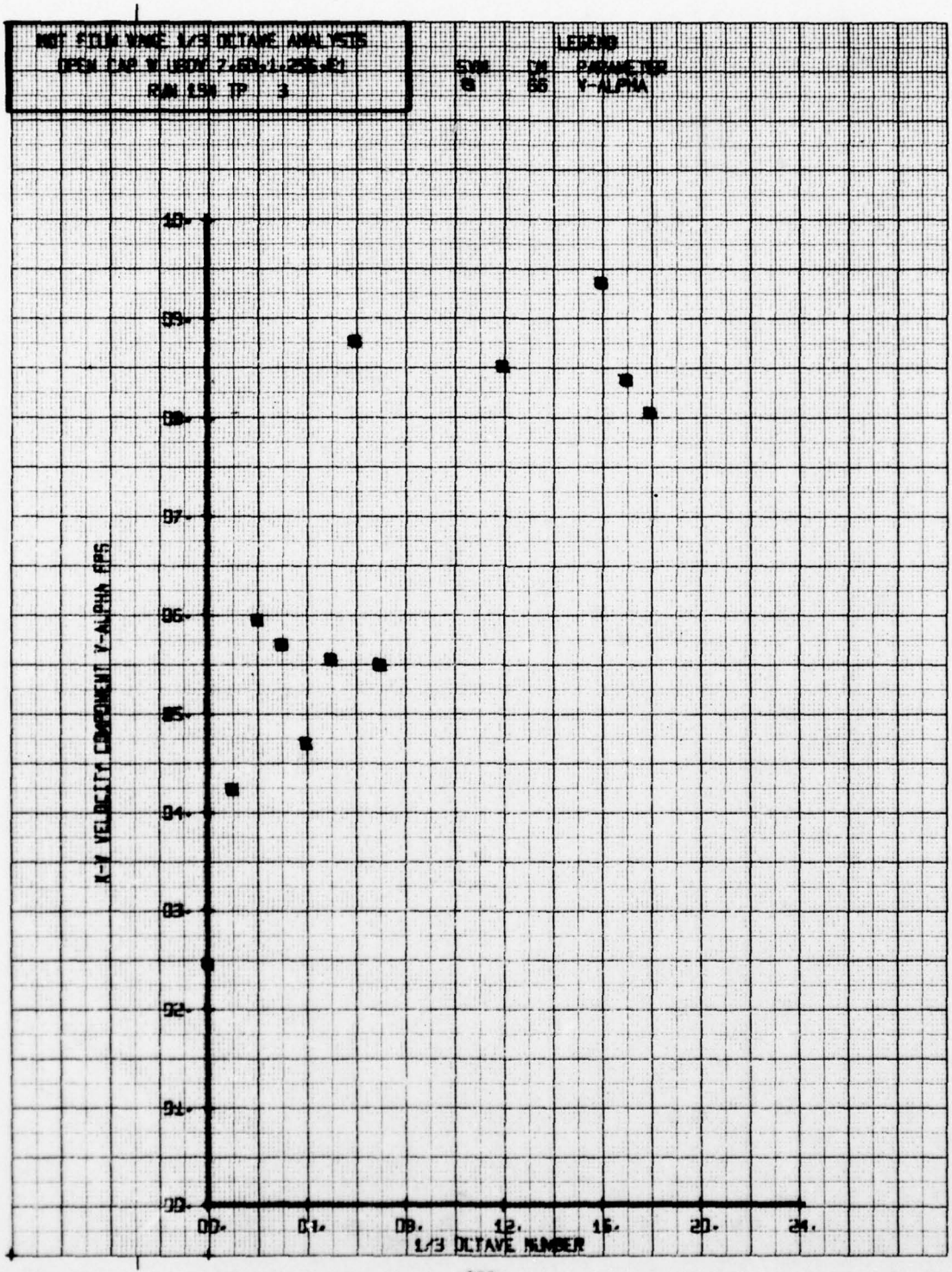


LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

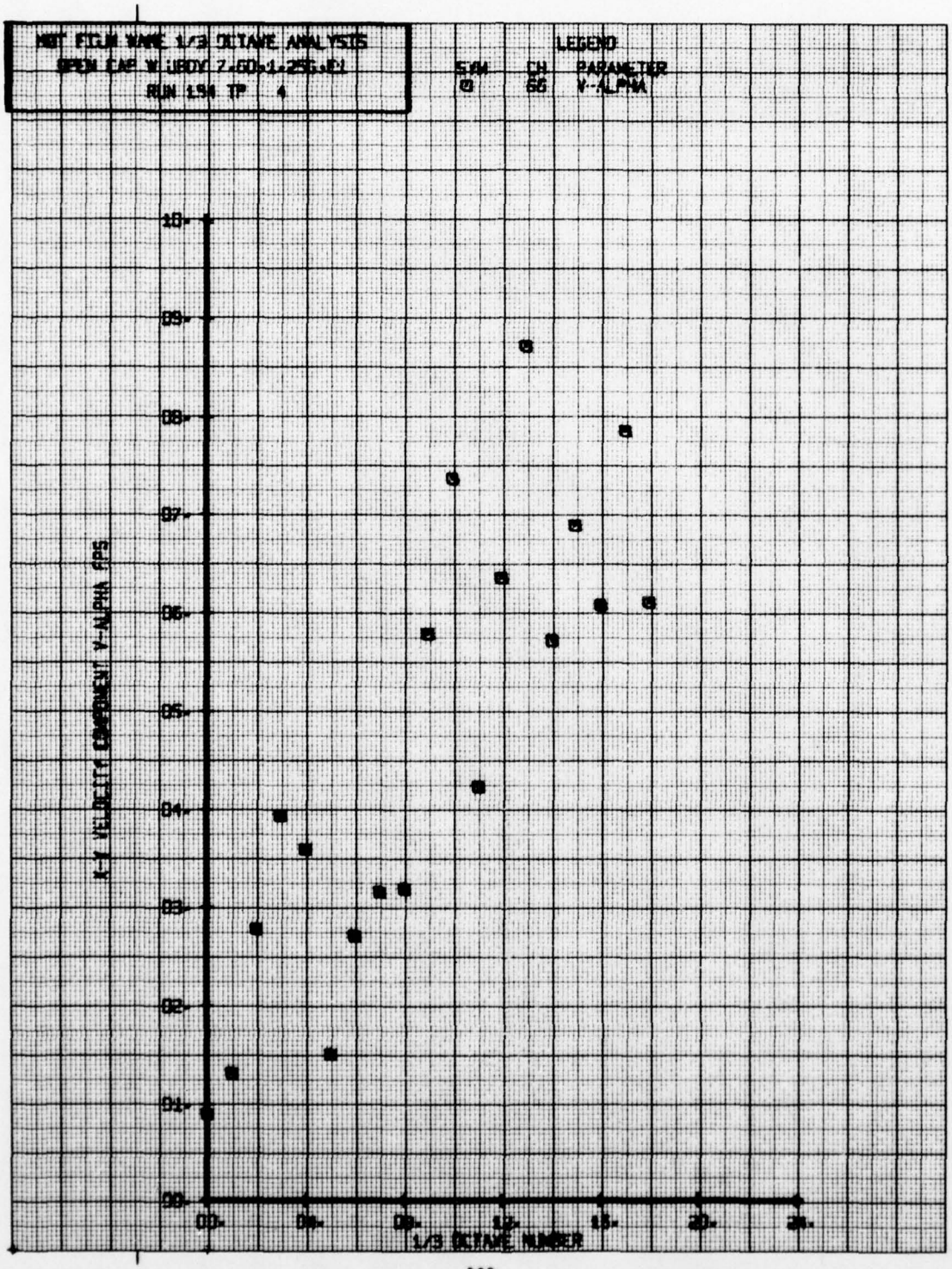

LEGEND
SYM CH PARAMETER
BETA
1/3 OCTAVE NUMBER

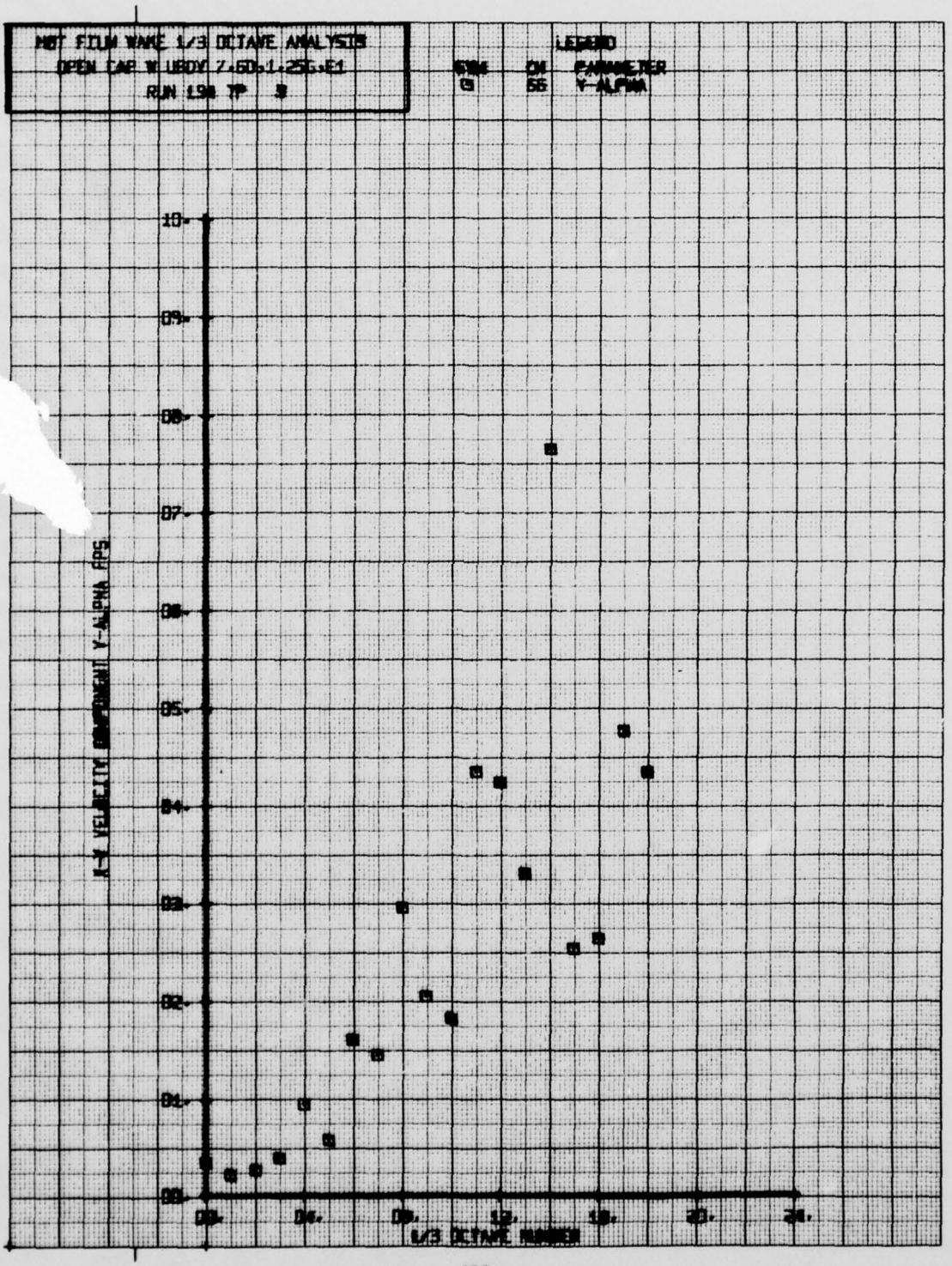

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
RUN 194 TP 6
LEGEND
SYM PM PARAMETER
BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

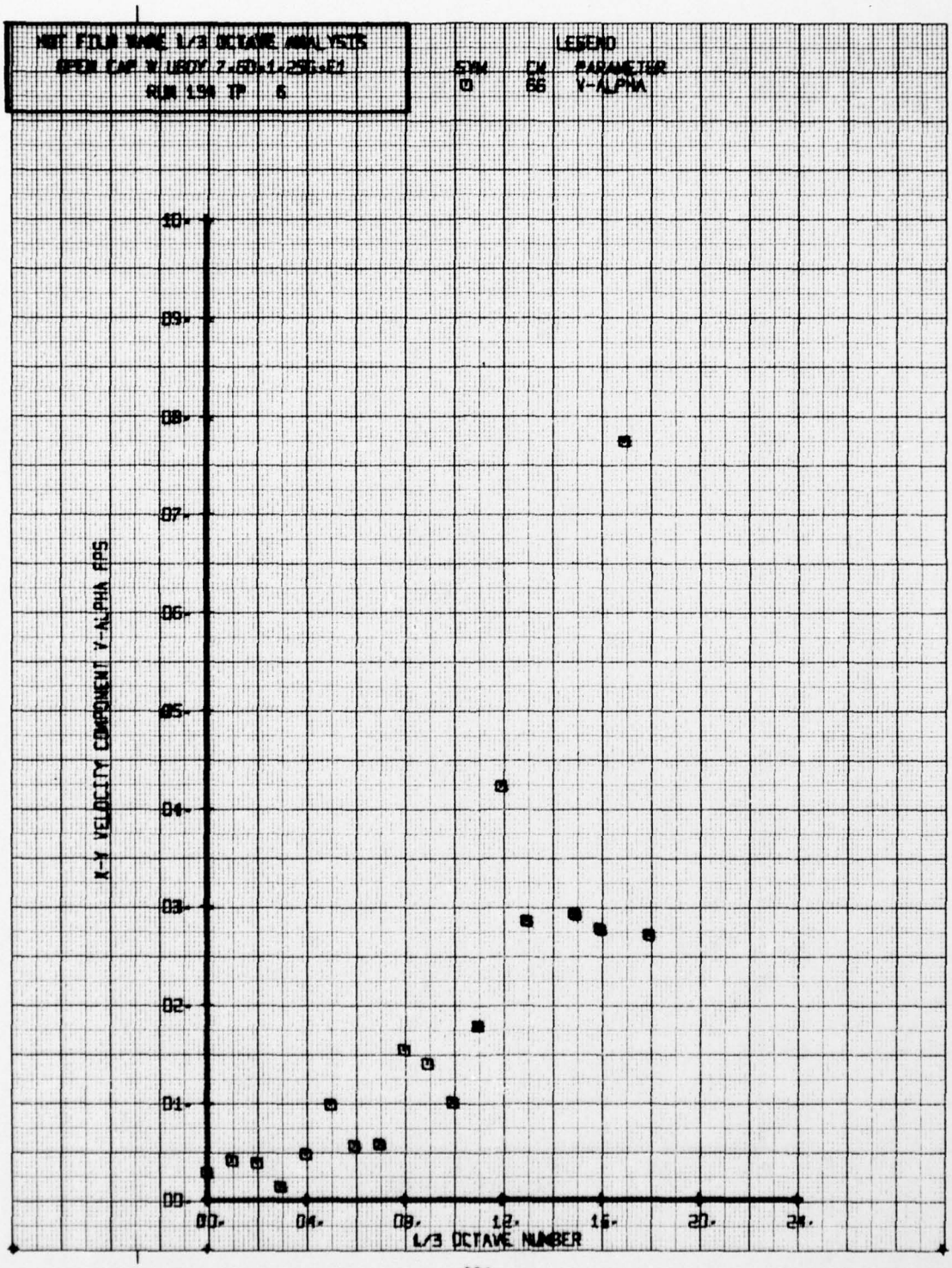

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
RUN 154 TP 2
LEGEND
SYM PARAMETER
Y-ALPHA
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

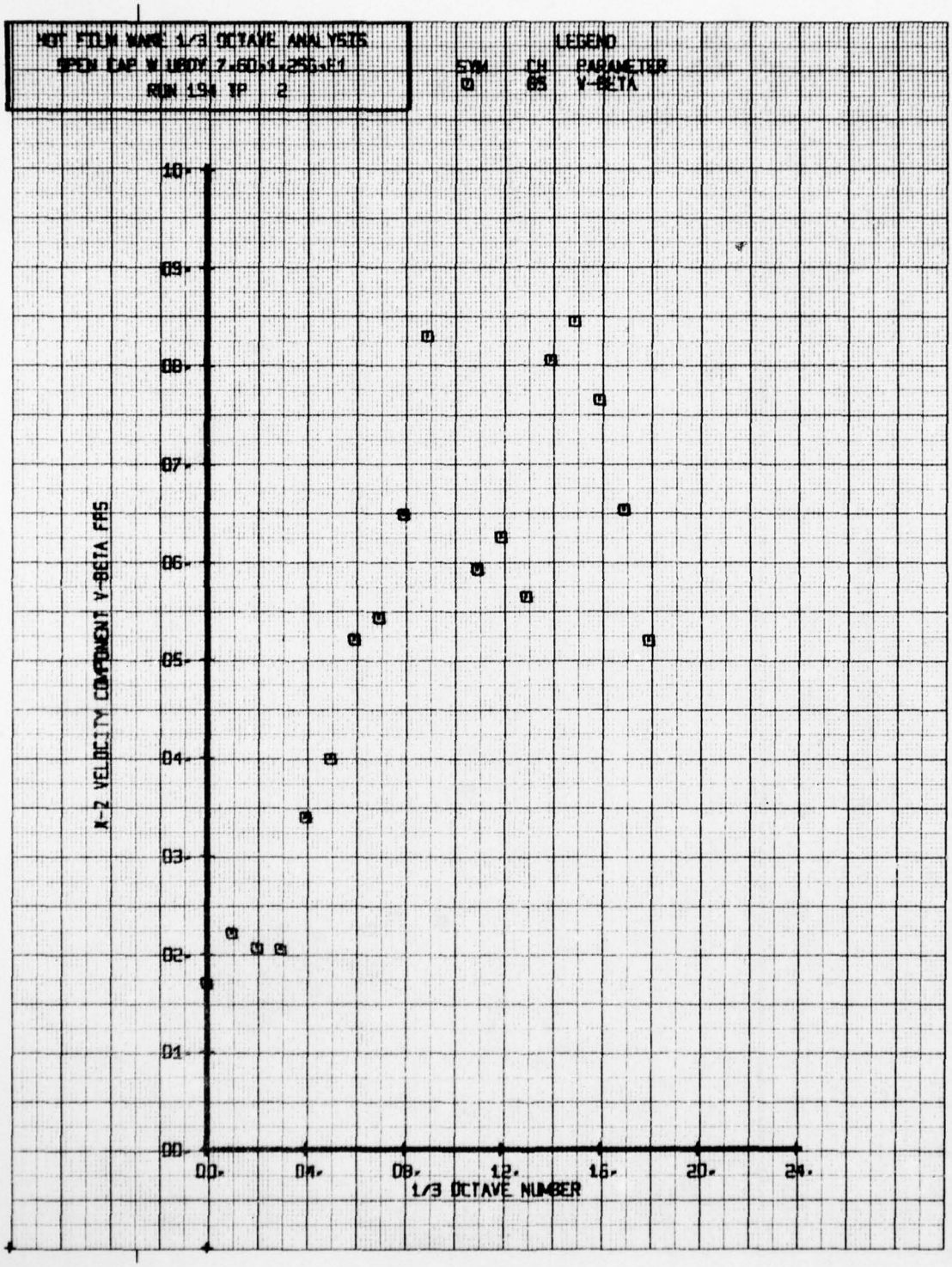


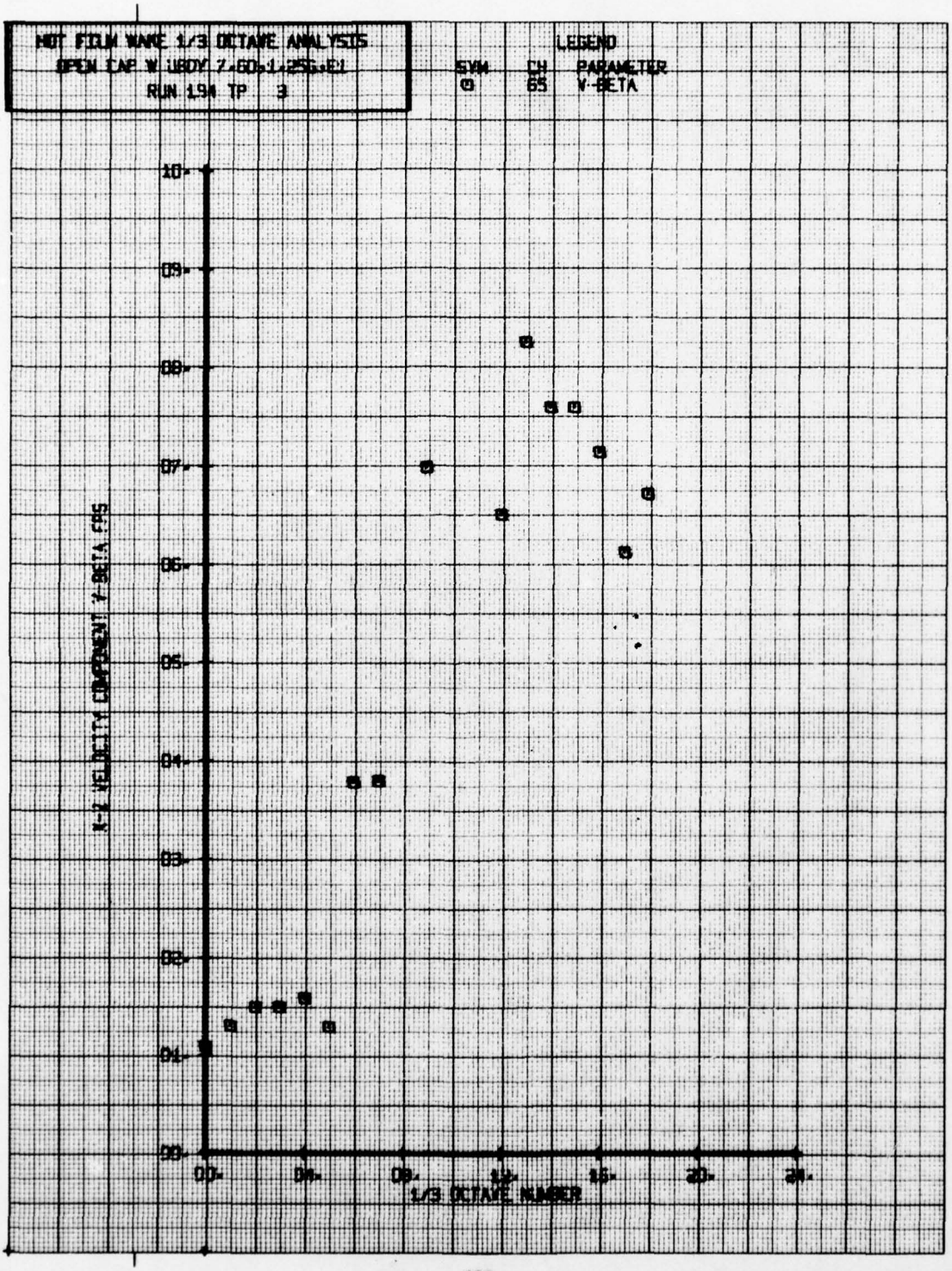
LEGEND
SYM CM PARAMETER
66 V-ALPHA
X-V VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

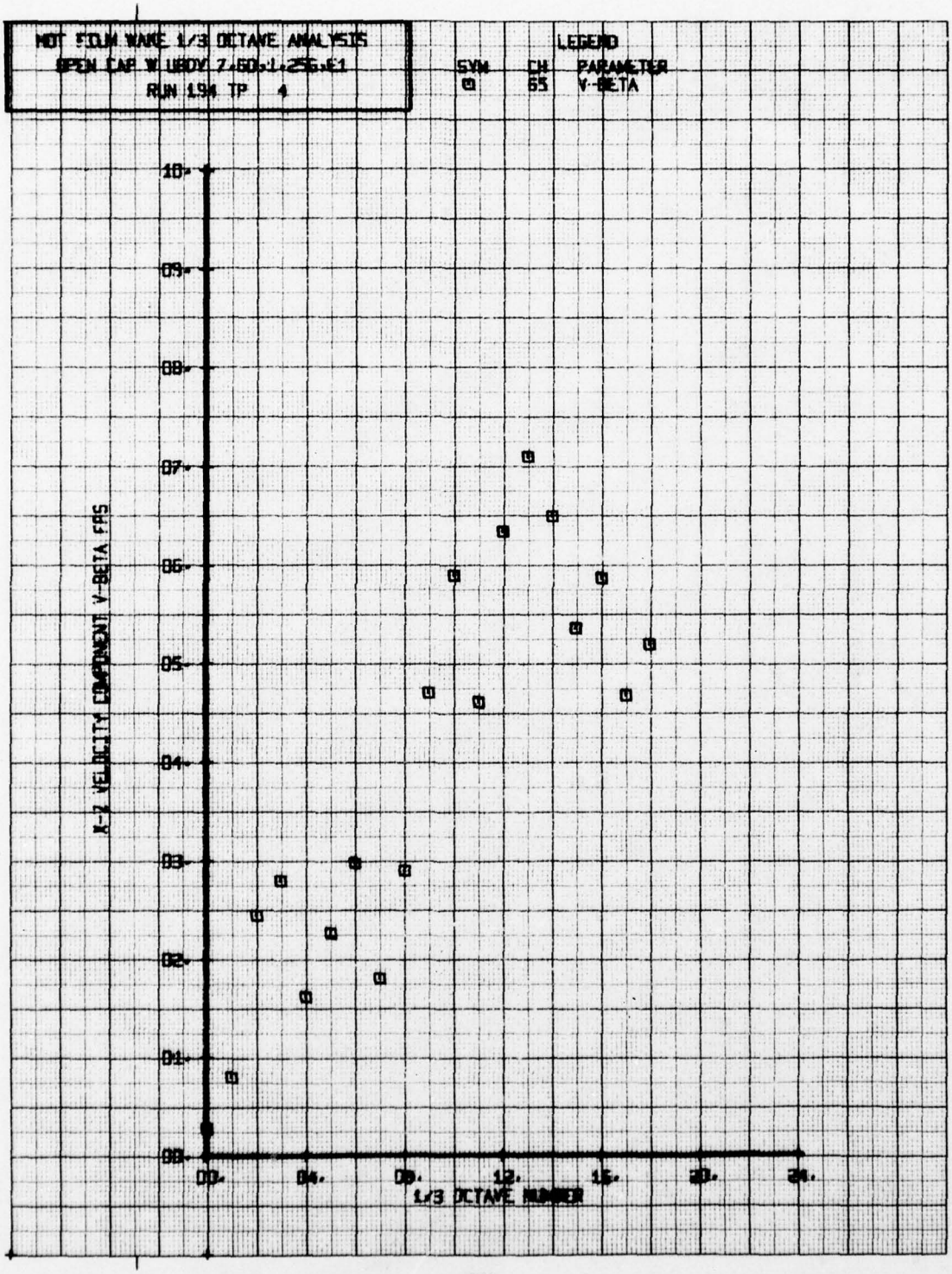

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60,1.25G,E1
RUN 194 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

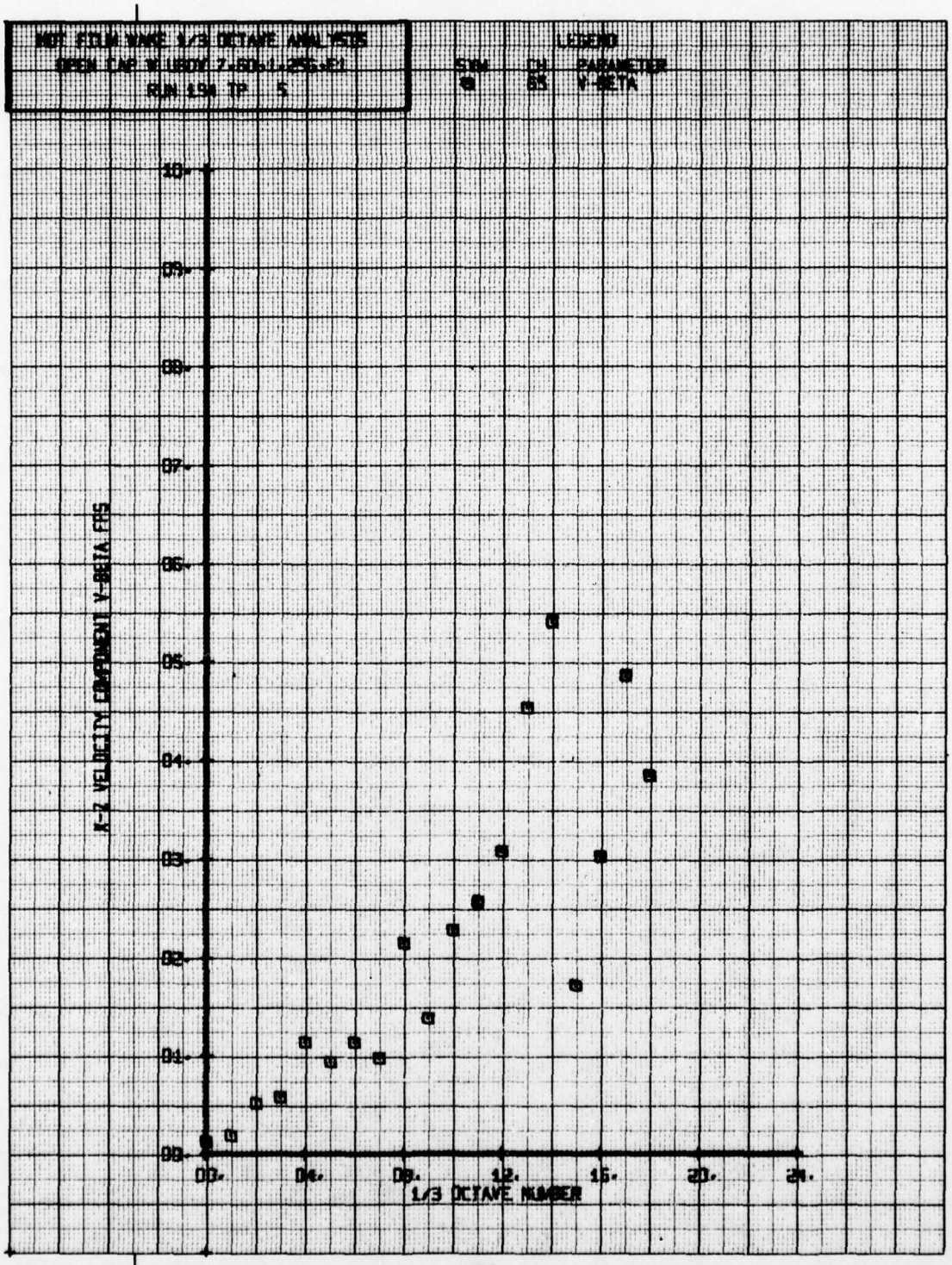

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.6D,1.25G,E1
RUN 194 TP 3
LEGEND
CH PARAMETER
56 Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
1/3 OCTAVE NUMBER

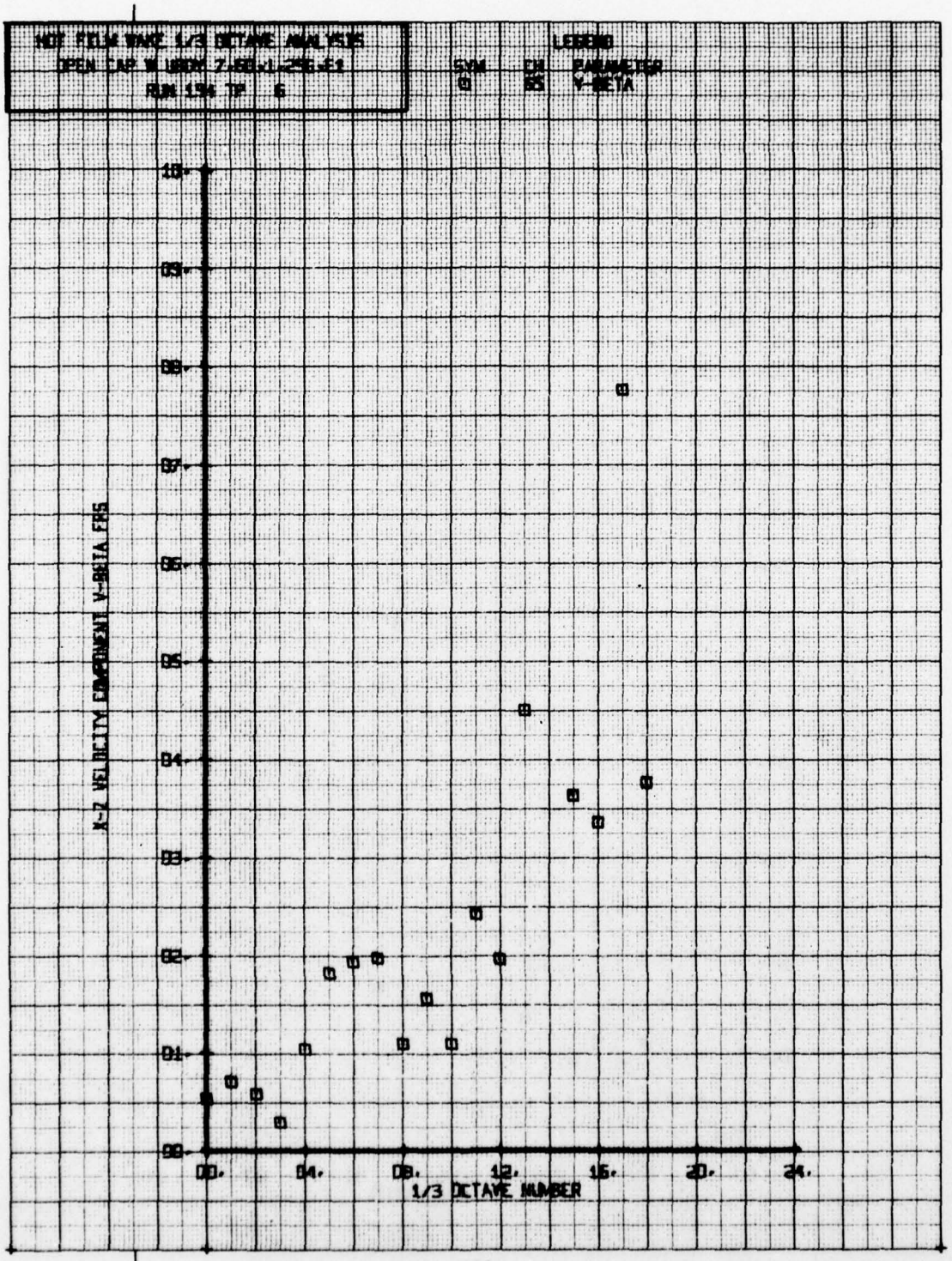

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP V UBOY 7.60x1.25G+E1
RUN 194 TP 6
LEGEND
SYM CM PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
00.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

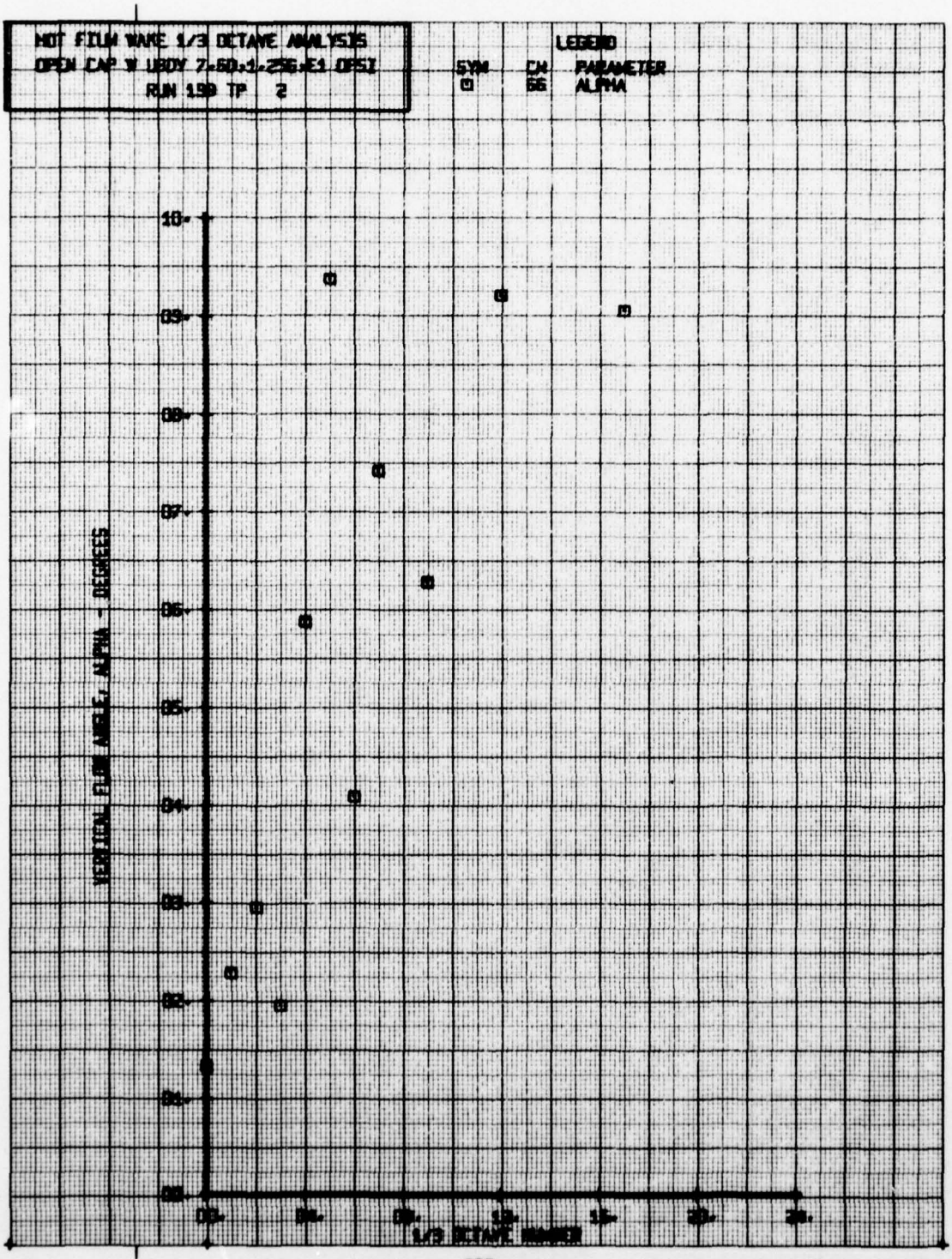

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60,1.25G,E1
RUN 194 TP 2
LEGEND
SYM CH PARAMETER
05 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
00.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

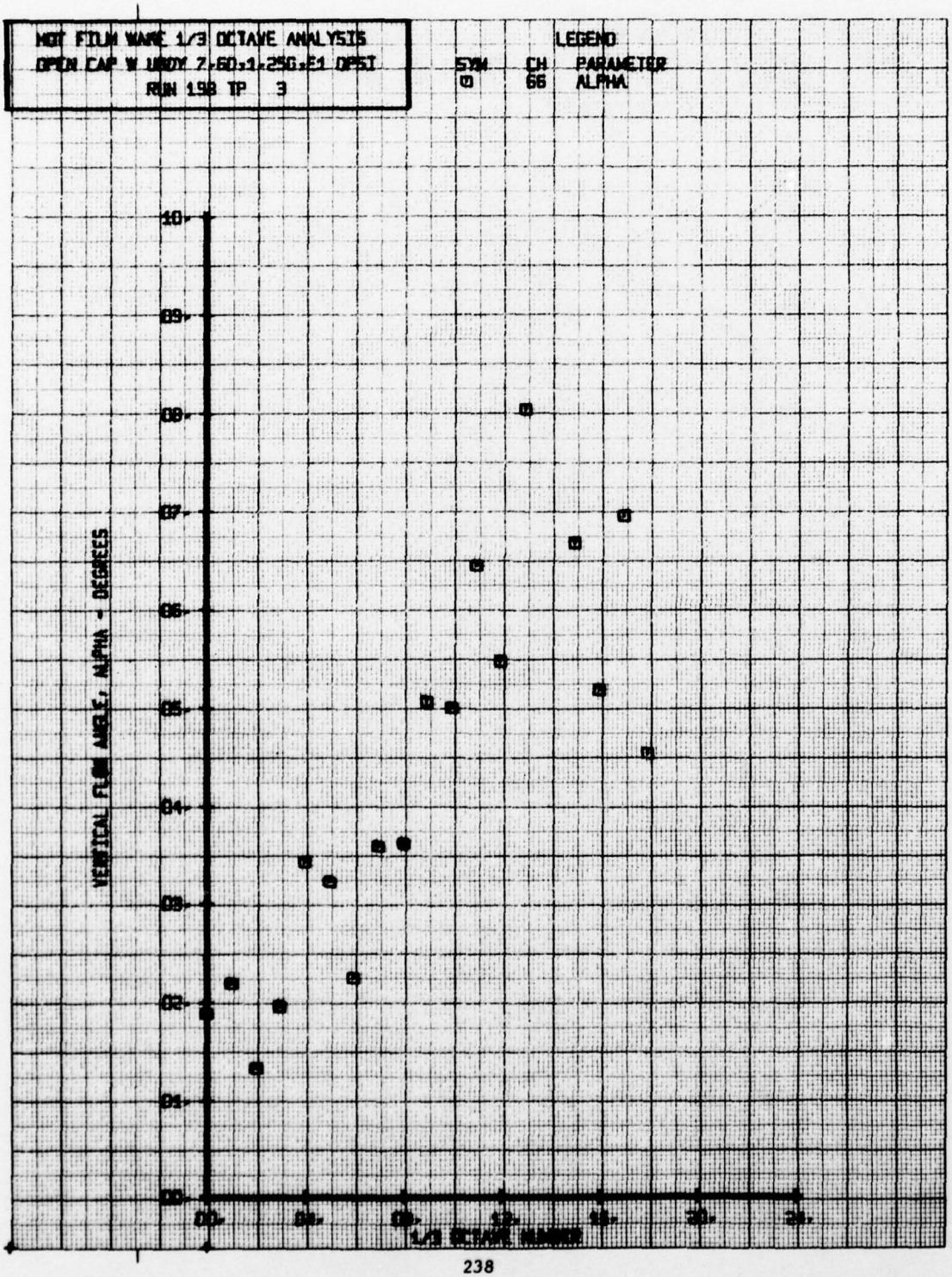

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60+1.25G.E1
RUN 194 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
10
09
08
07
06
05
04
03
02
01
00
X-Z VELOCITY COMPONENT Y-BETA.CRS
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER

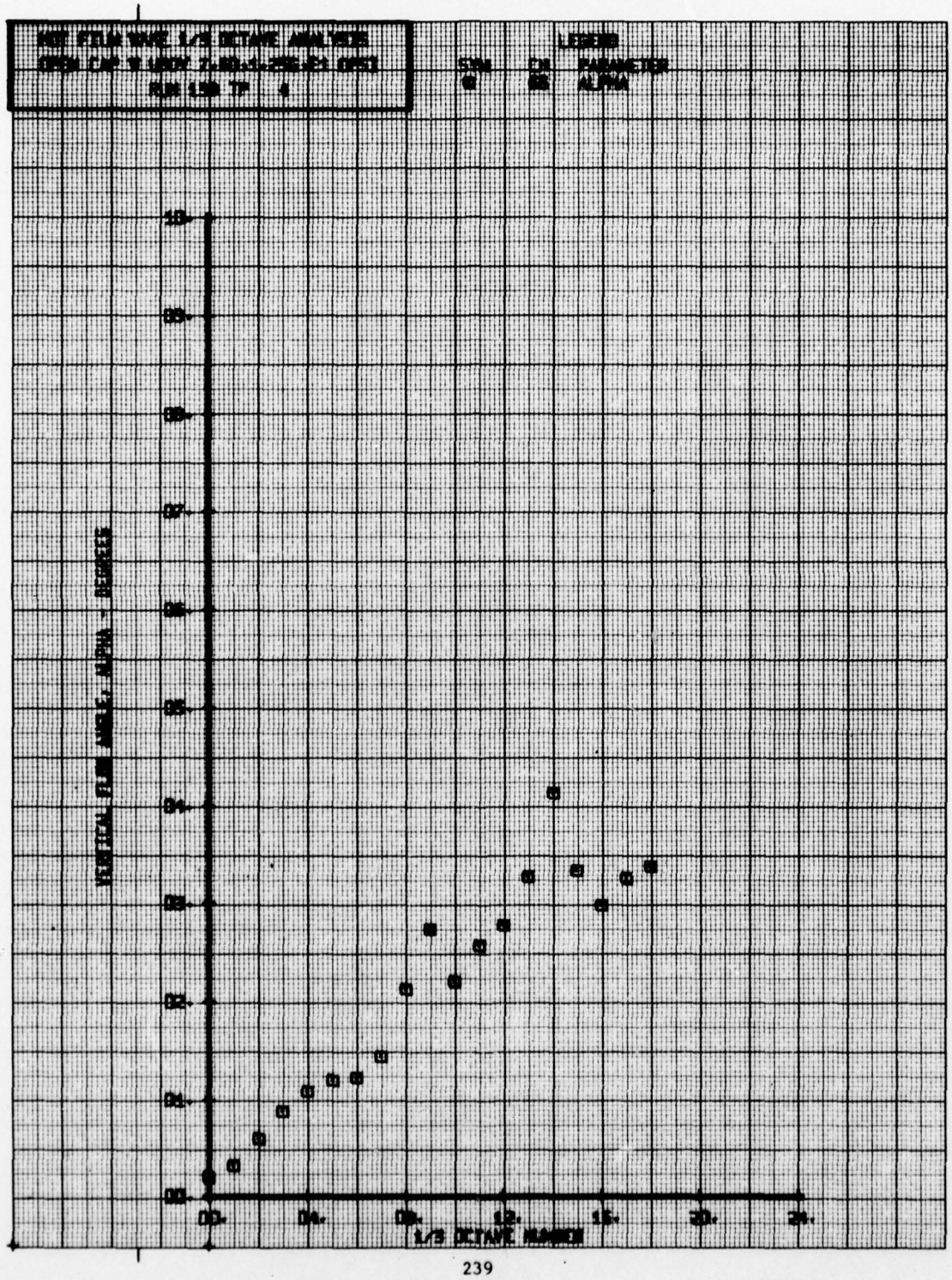

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60,1.25,E1
RUN 194 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Z VELOCITY COMPONENT V-BETA FRS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

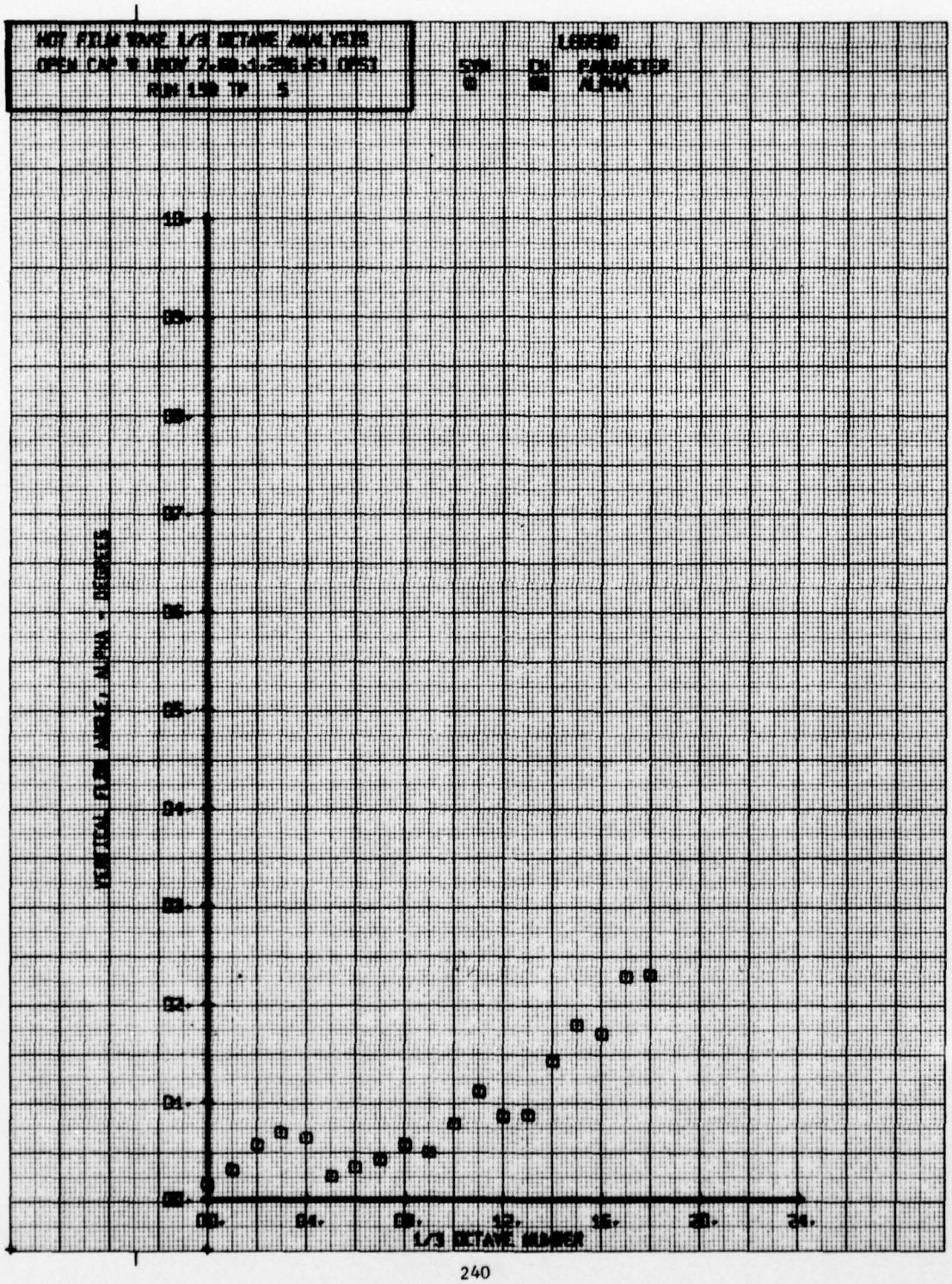

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 7.60,1.25,E1
RUN 194 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

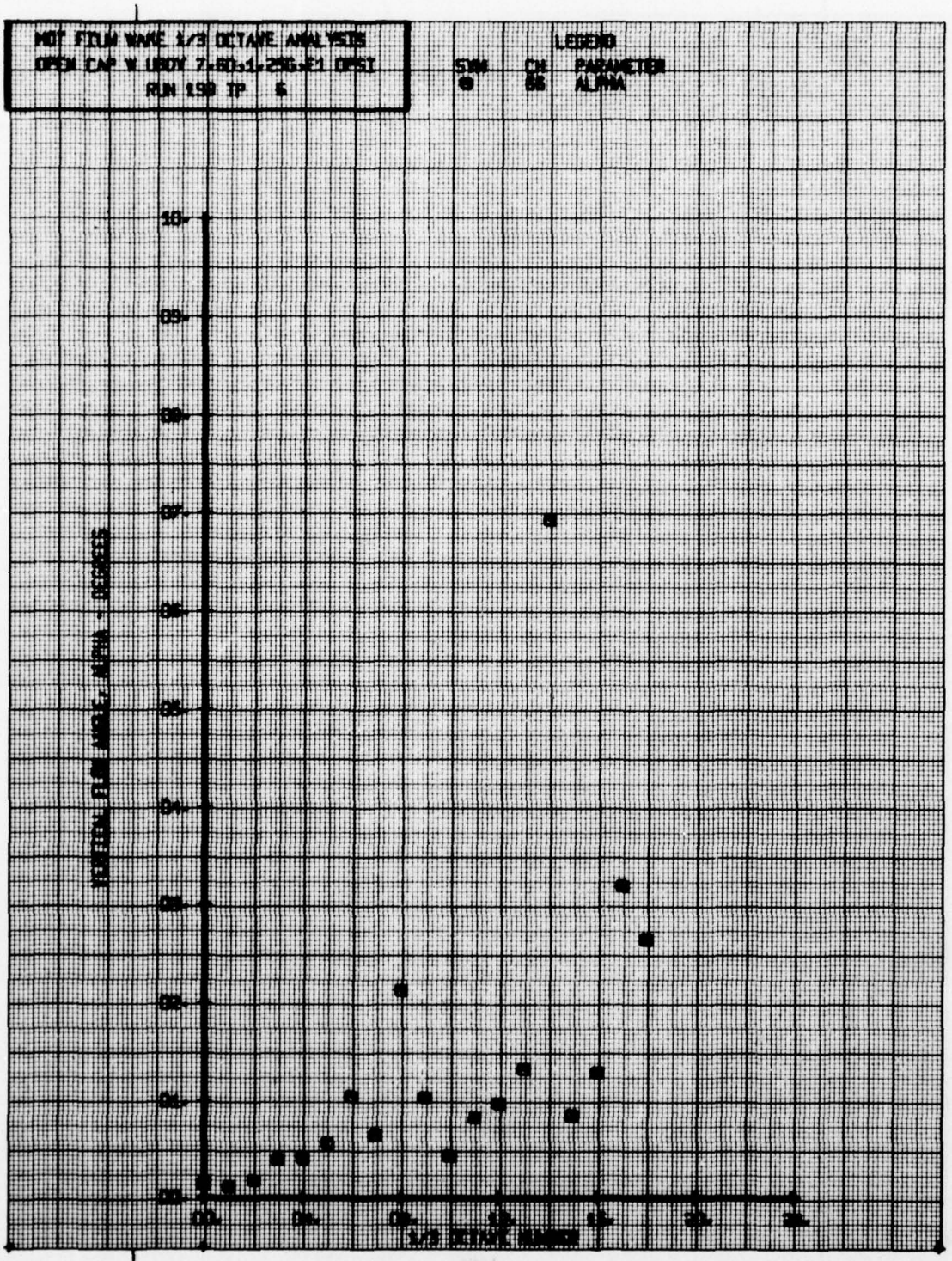

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60x1.256x.E1
RUN 194 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FRS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

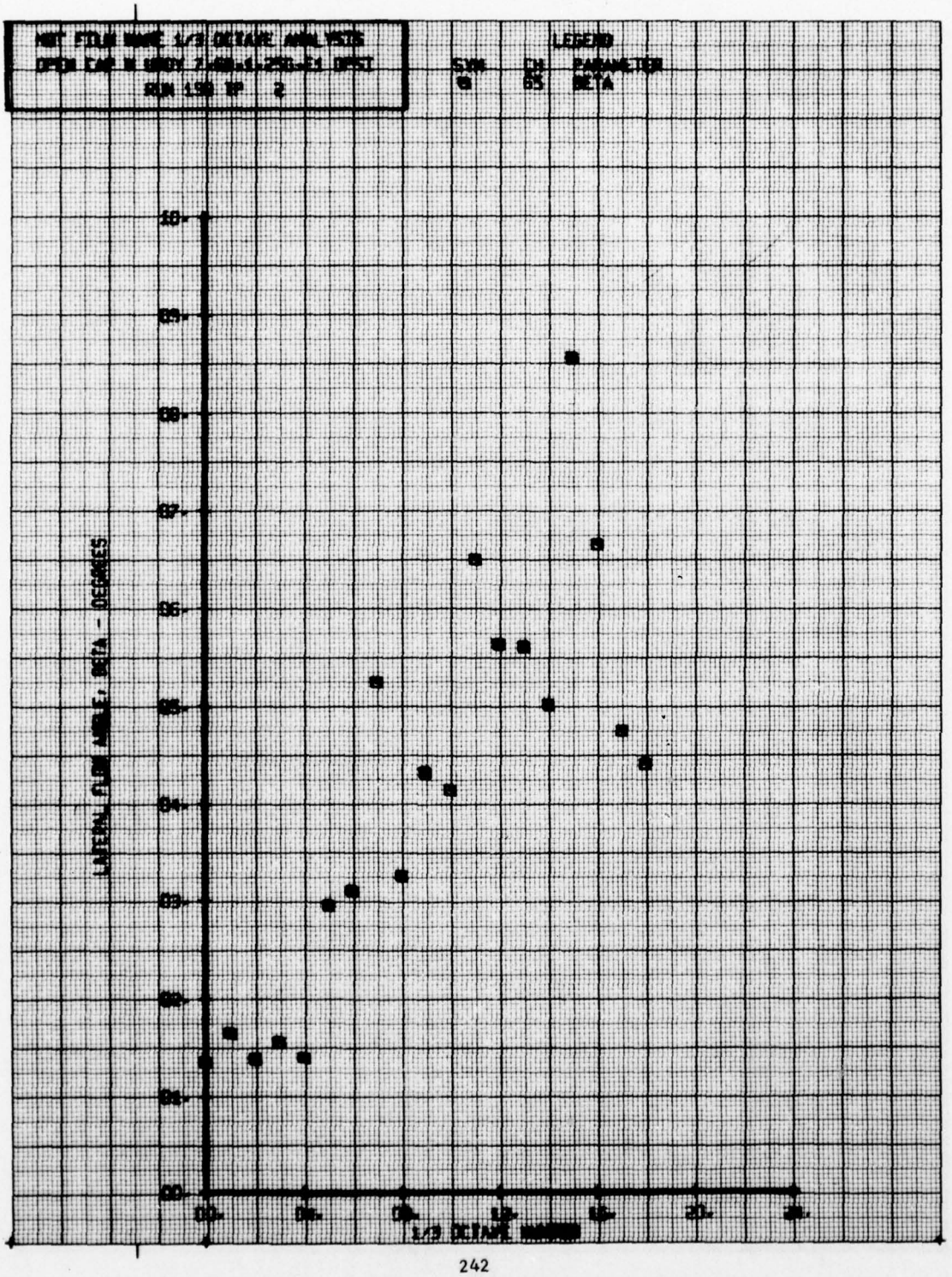

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60.1.256.E1 OPSI
RUN 159 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

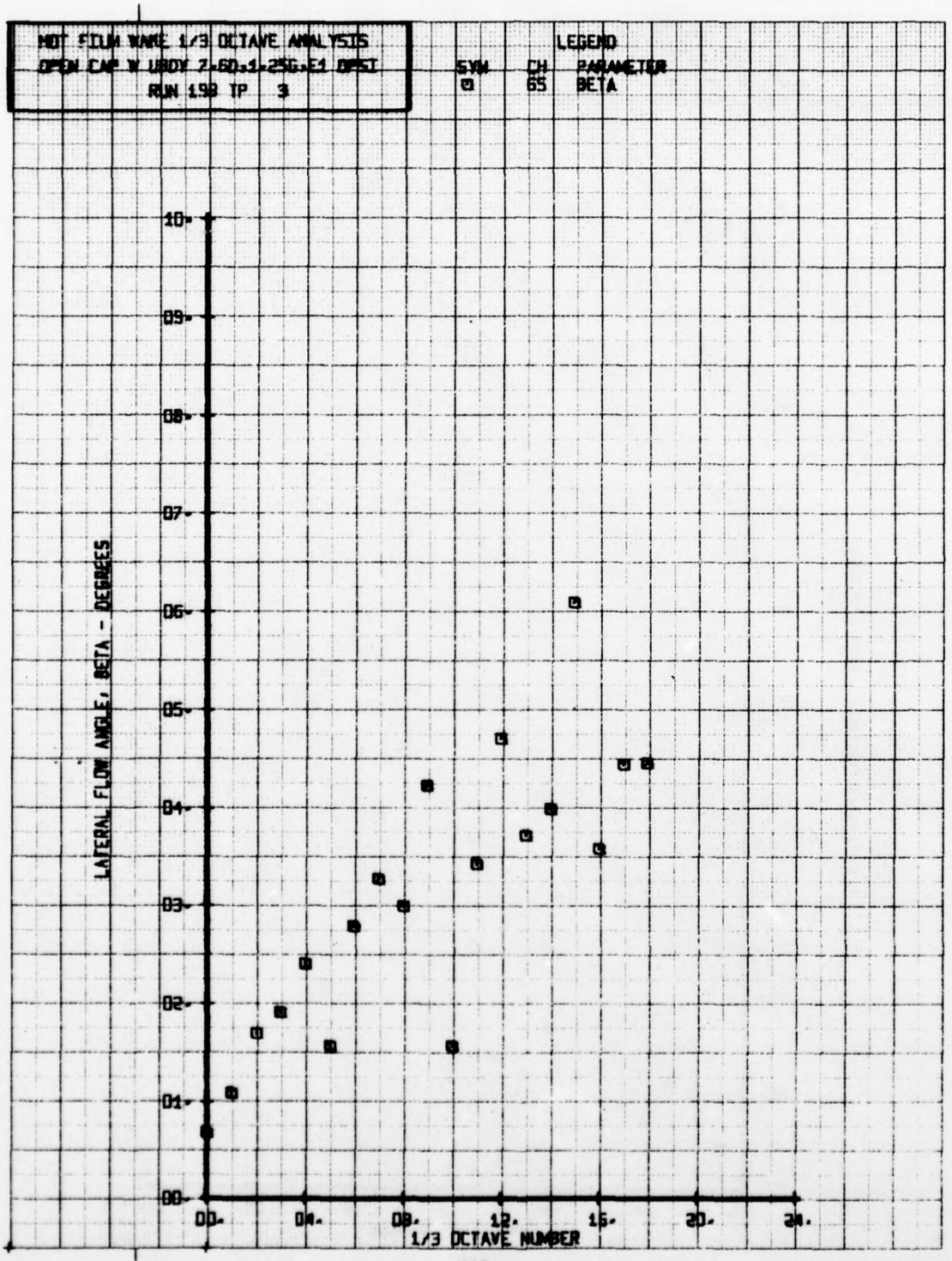

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBODY 7.60,1.25G,21 DPSI
RUN 198 TP 3
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
1/3 OCTAVE NUMBER

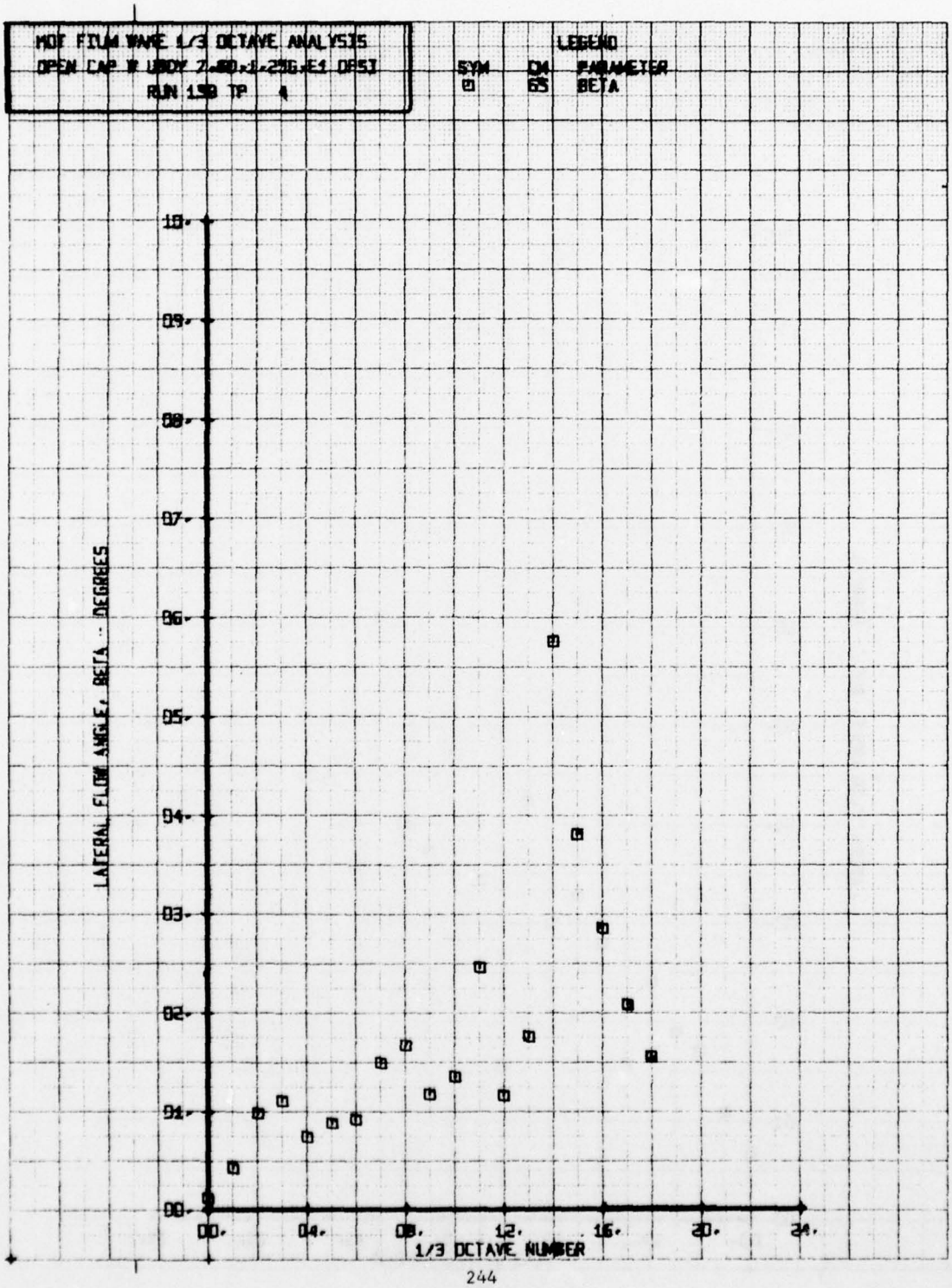

LEGEND
PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
LEGEND
SYM CH PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

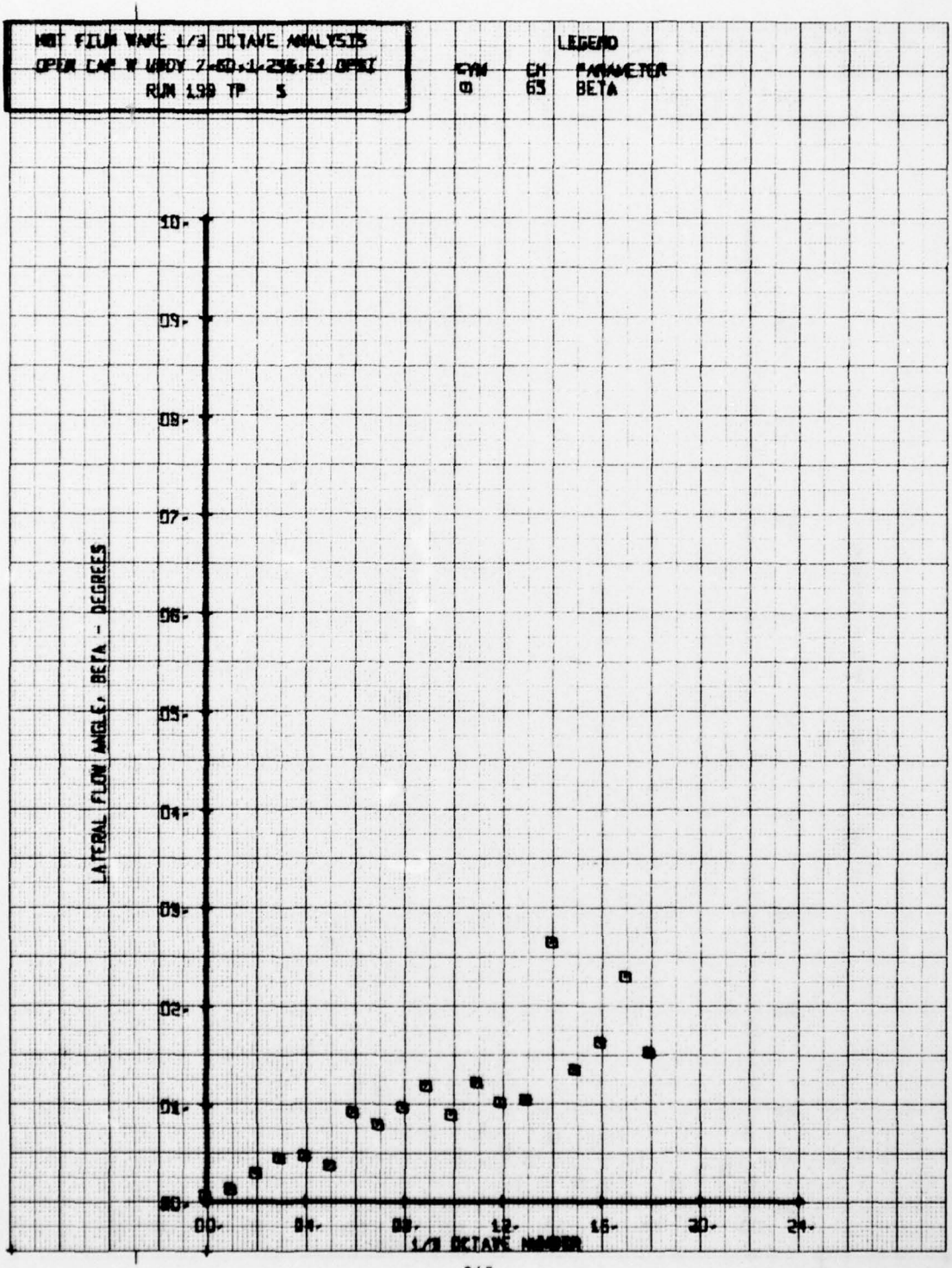

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 7.60,1.25G,E1 OPSI
RUN 198 TP 6
LEGEND
SYM CH PARAMETER
ALPHA
1/3 OCTAVE NUMBER

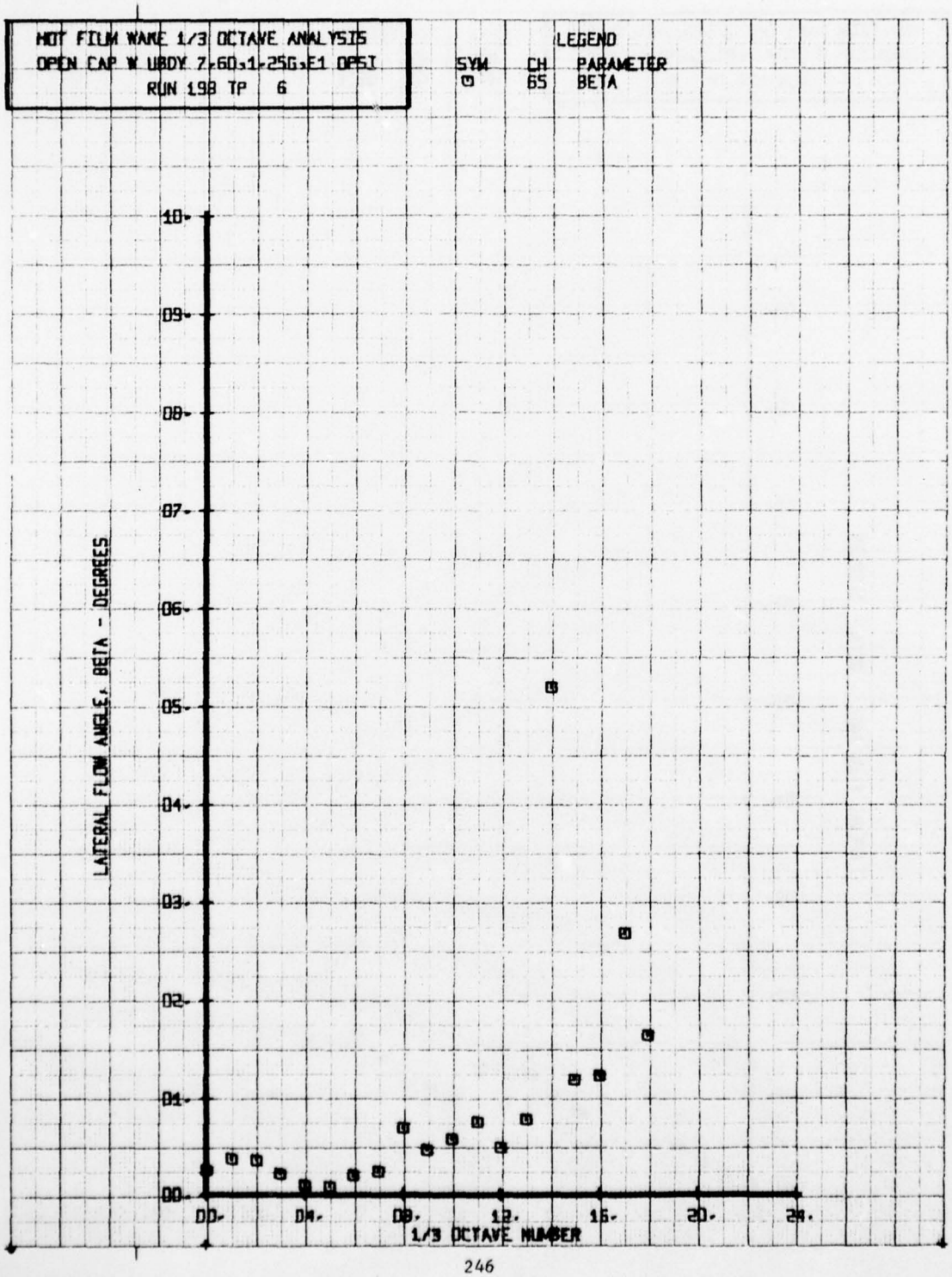

LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE

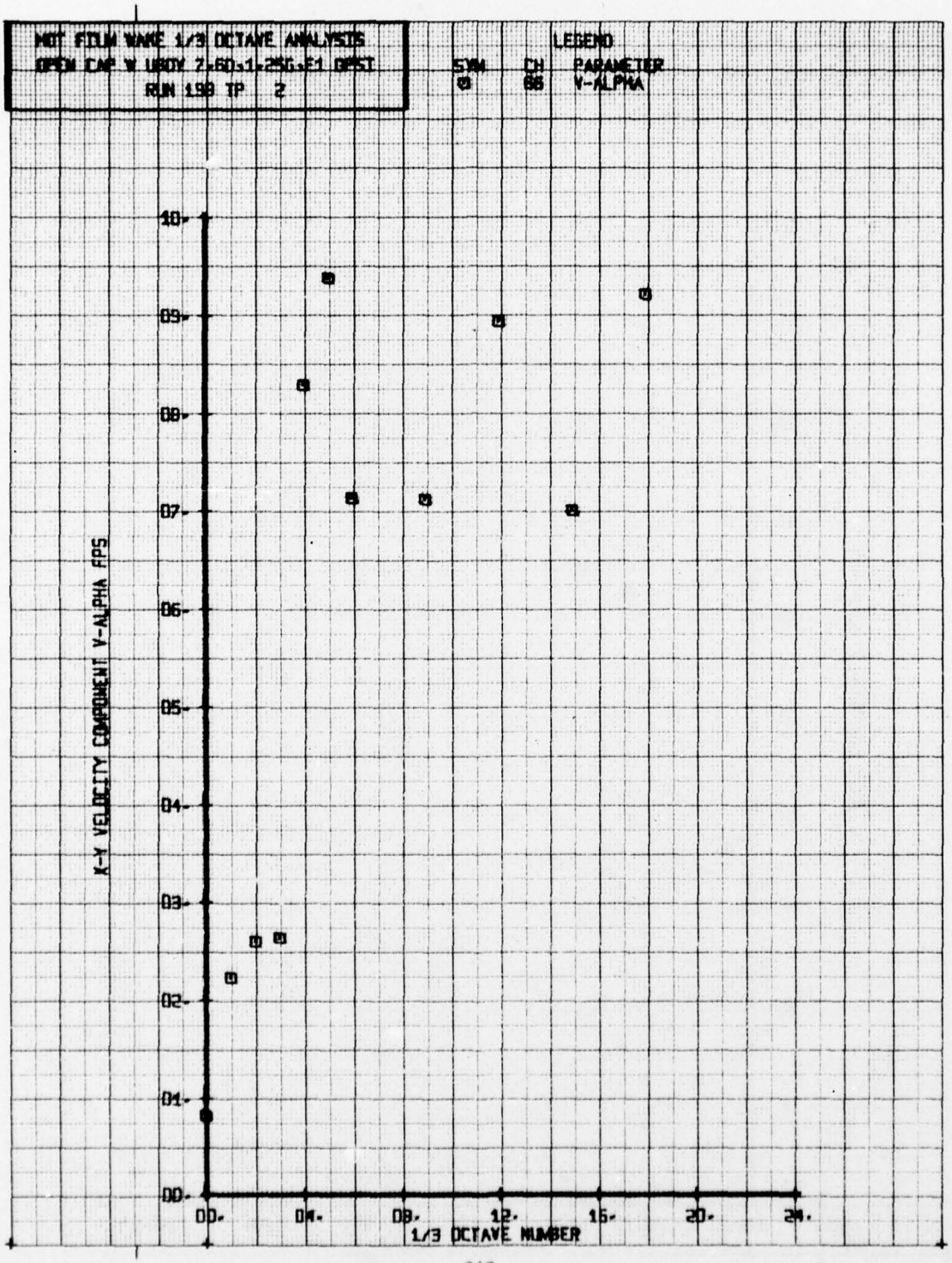

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY Z-60.1-25G.E1 DPSI
RUN 198 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

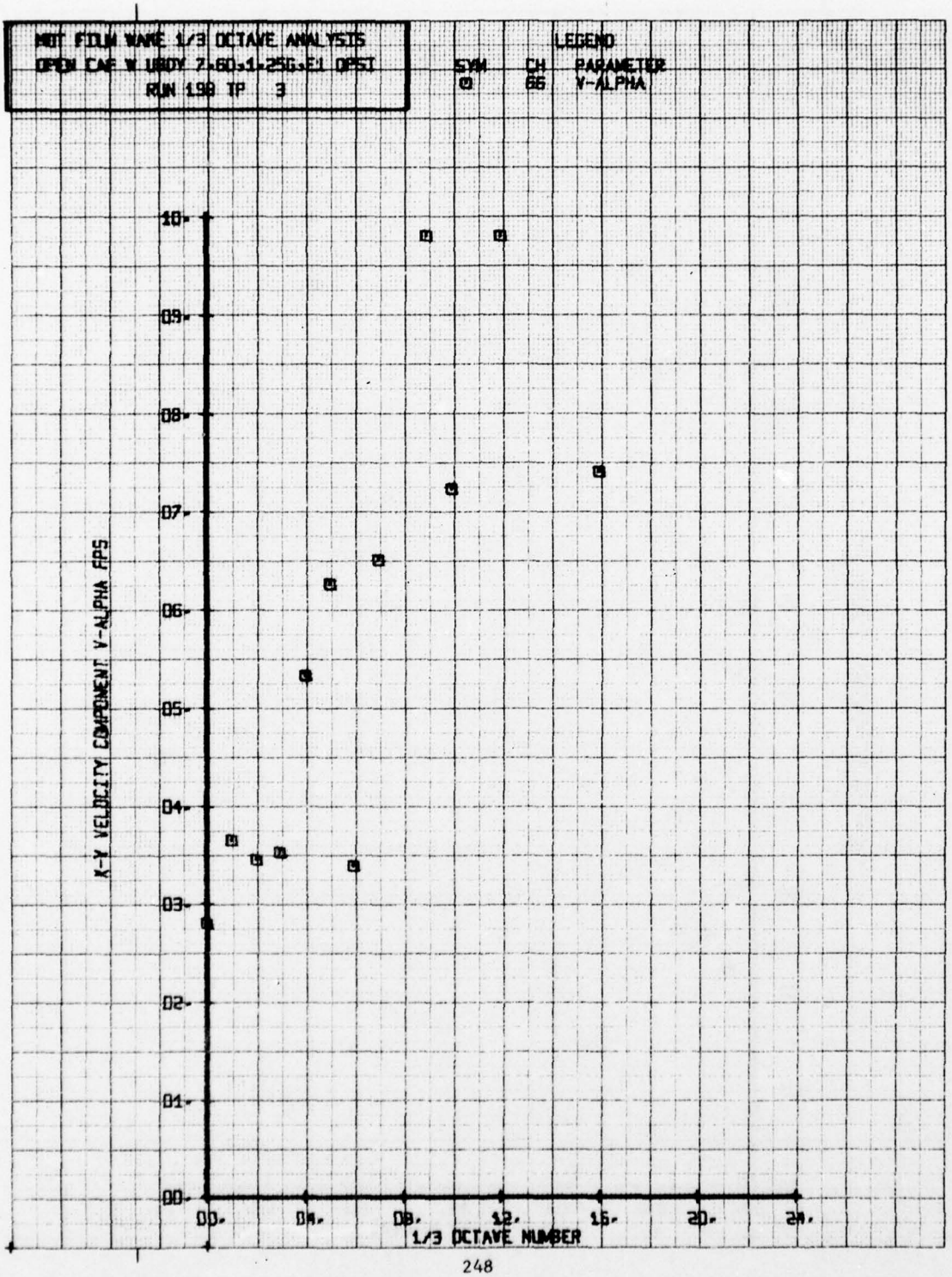


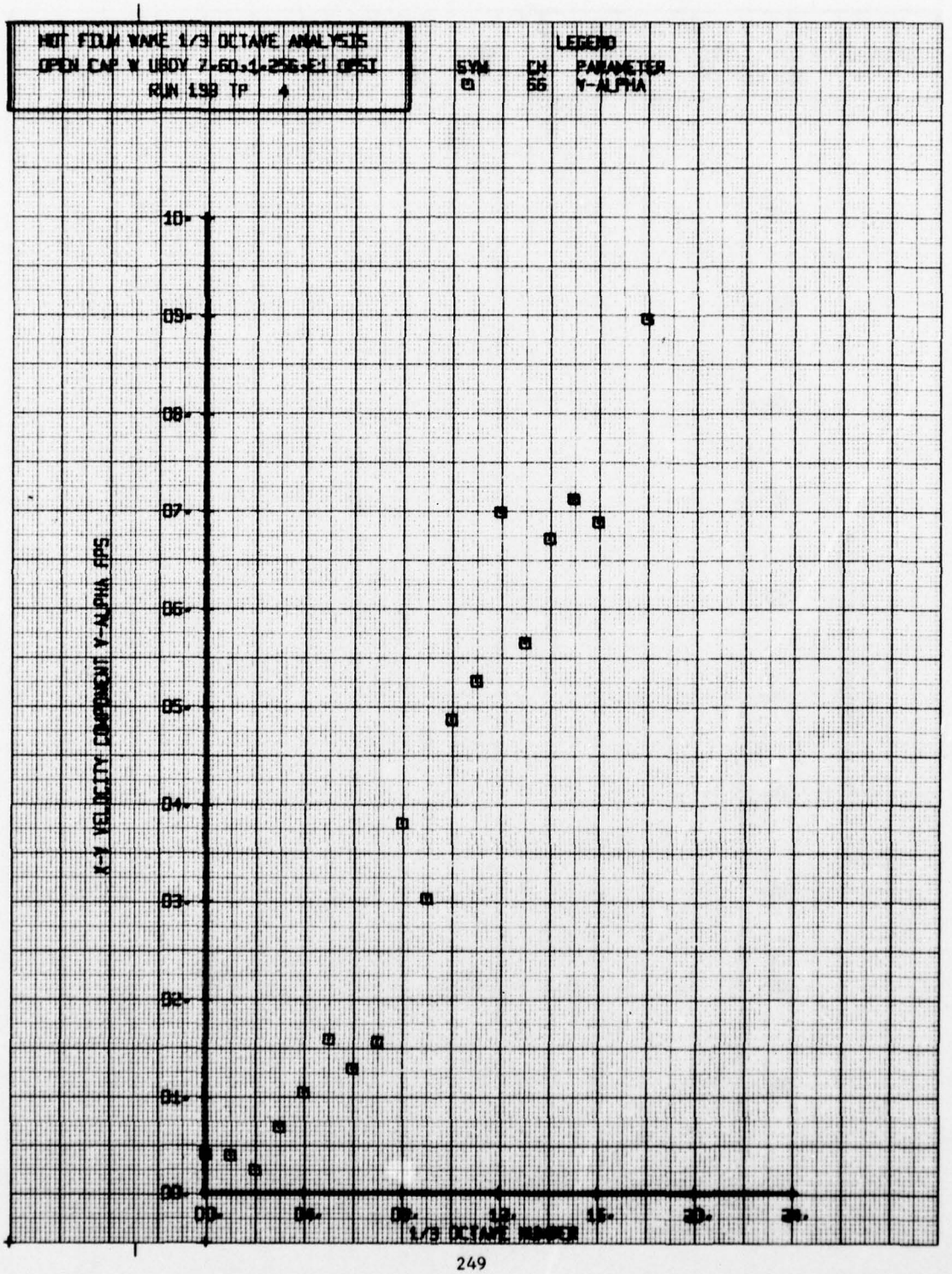
HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60,1.25G,E1 DPSI
RUN 158 TP 4
LEGEND
SYM CM PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

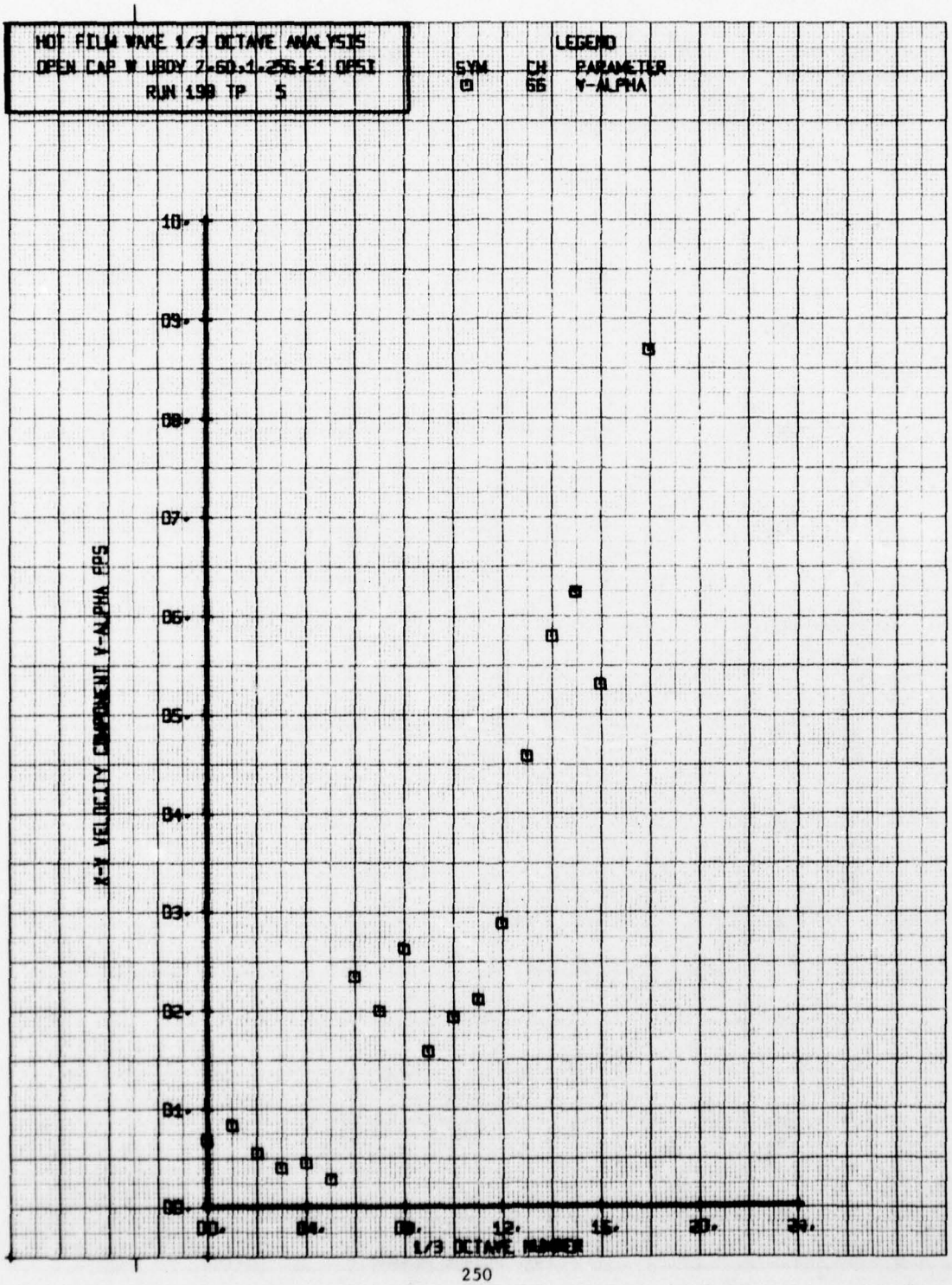

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W HBOY 7-60,1-256,E1 OPRT
RUN 198 TP 5
LEGEND
CYM CM PARAMETER
0 65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

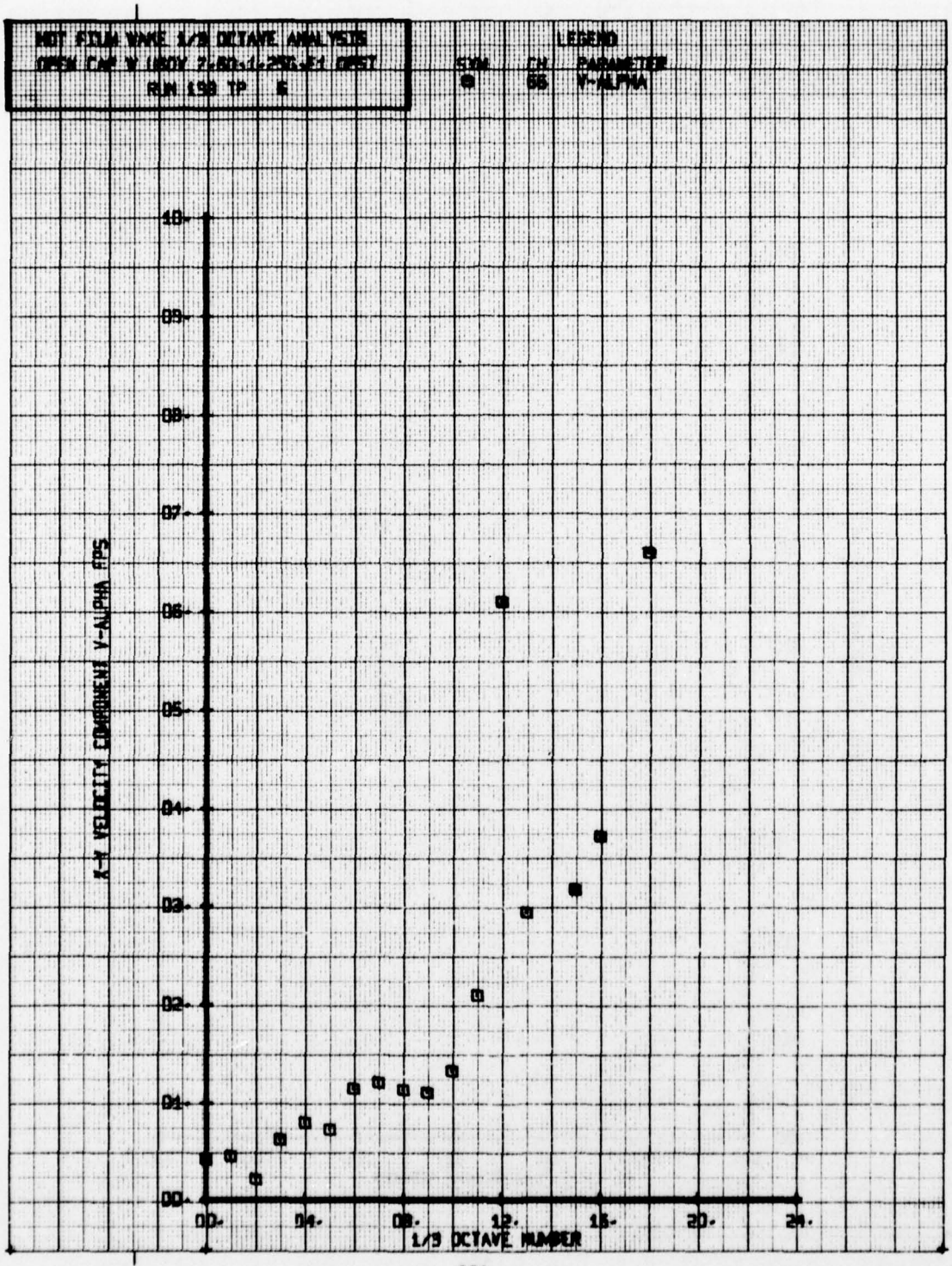

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60,1.25G,E1 DPSI
RUN 198 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

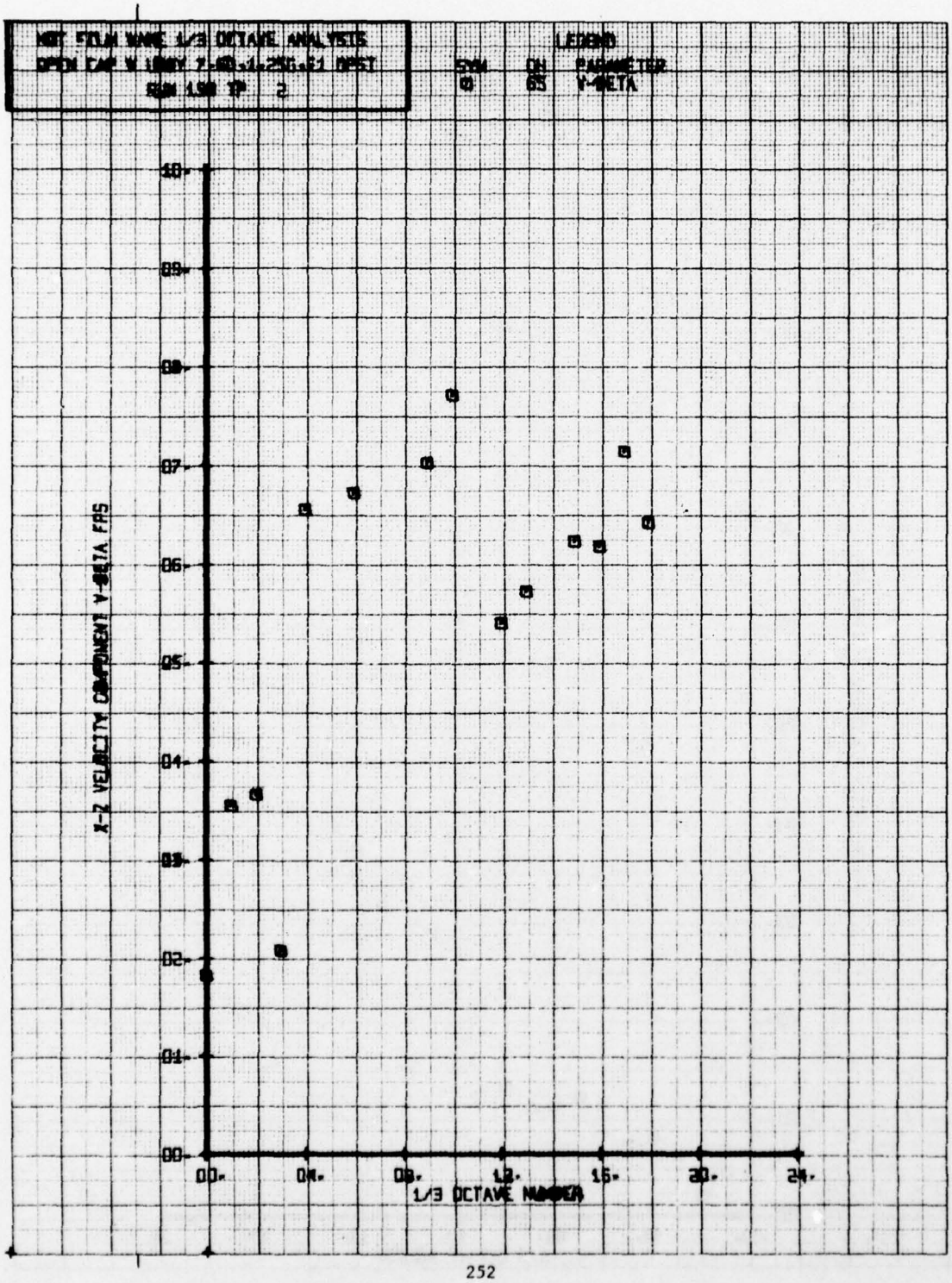

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 7.60,1.250,E1 DPST
RUN 198 TP 2
LEGEND
SYM CH PARAMETER
@ 66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

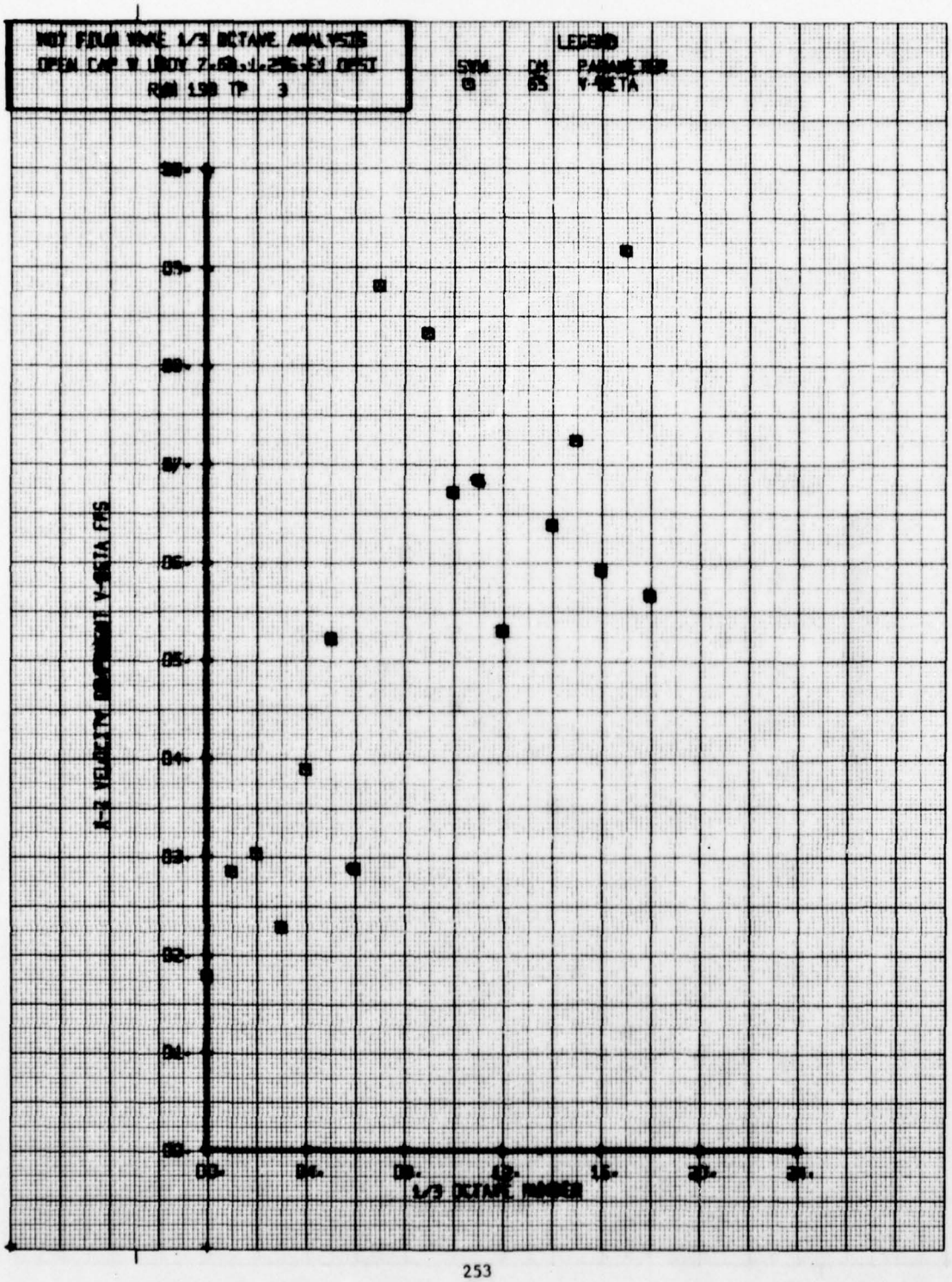

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAV W UBOY 7.60,1.25G,E1 OPSI
RUN 198 TP 3
LEGEND
SYM CH PARAMETER
V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA RPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

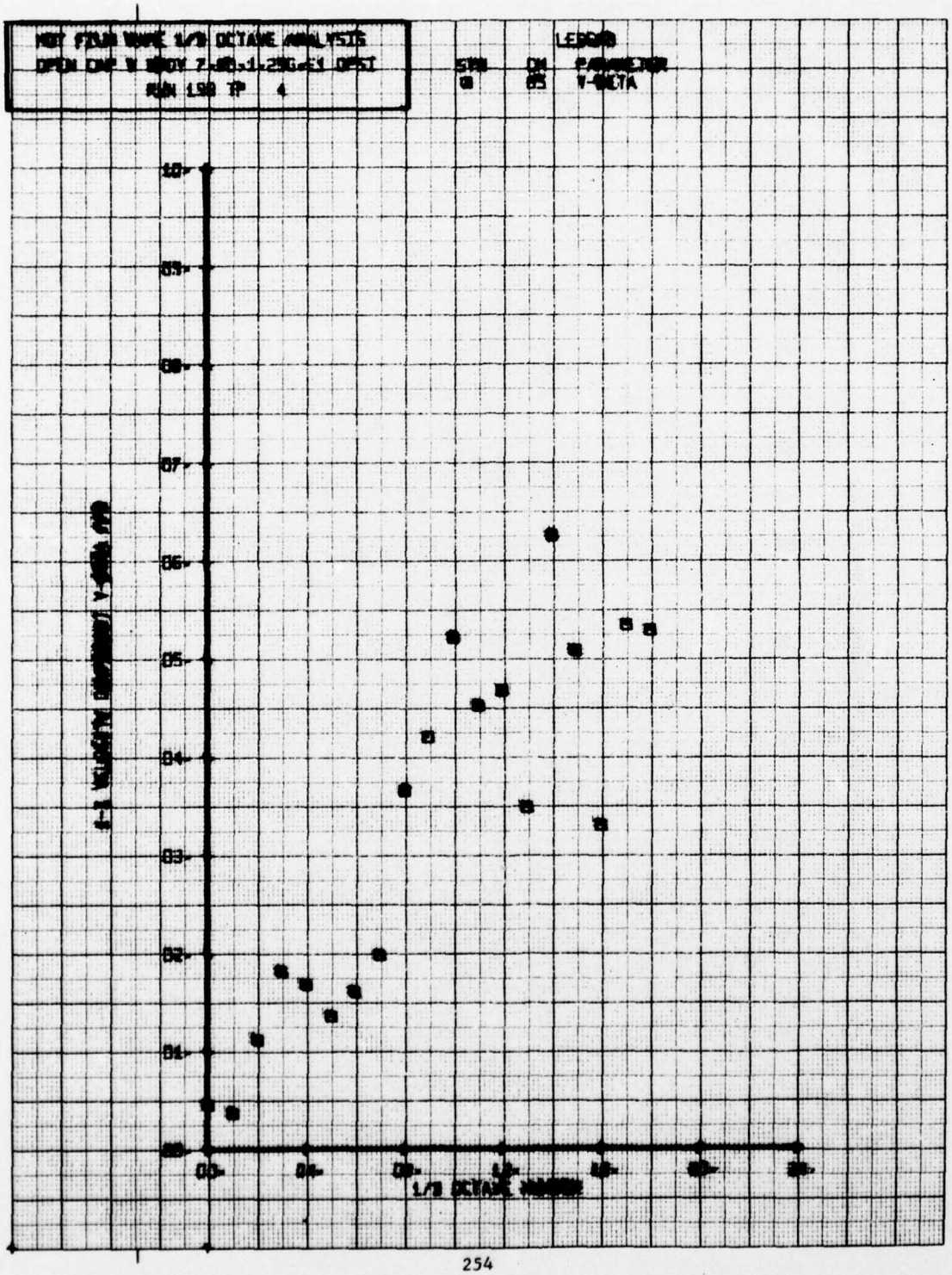

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY Z=60.1=256.E1 OPSI
RUN 198 TP 4
LEGEND
SYM CH PARAMETER
56 Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA RPS
1/3 OCTAVE NUMBER

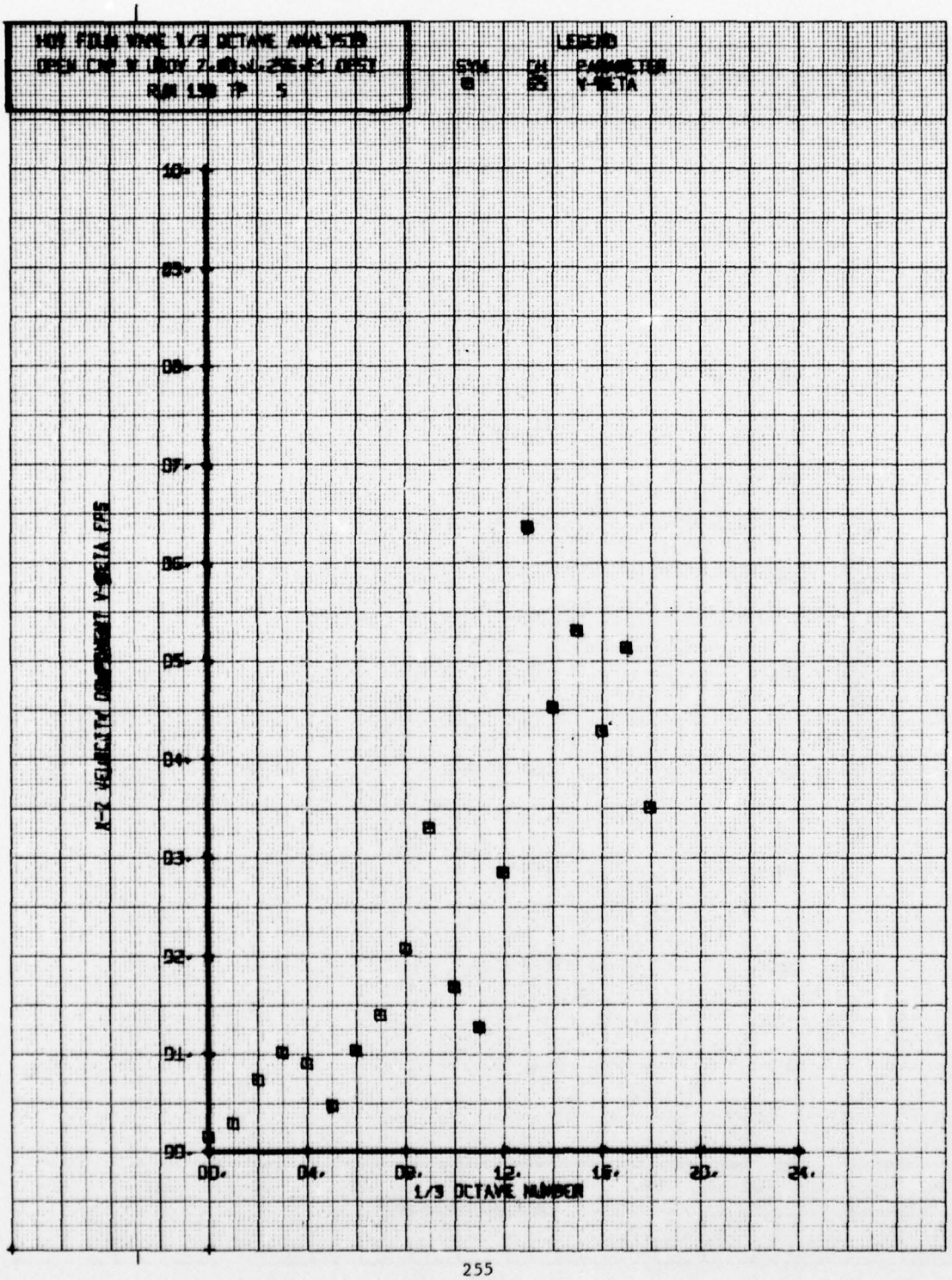

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 7.60.1.256.E1 OPSI
RUN 198 TP 5
LEGEND
SYM CH PARAMETER
66 Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

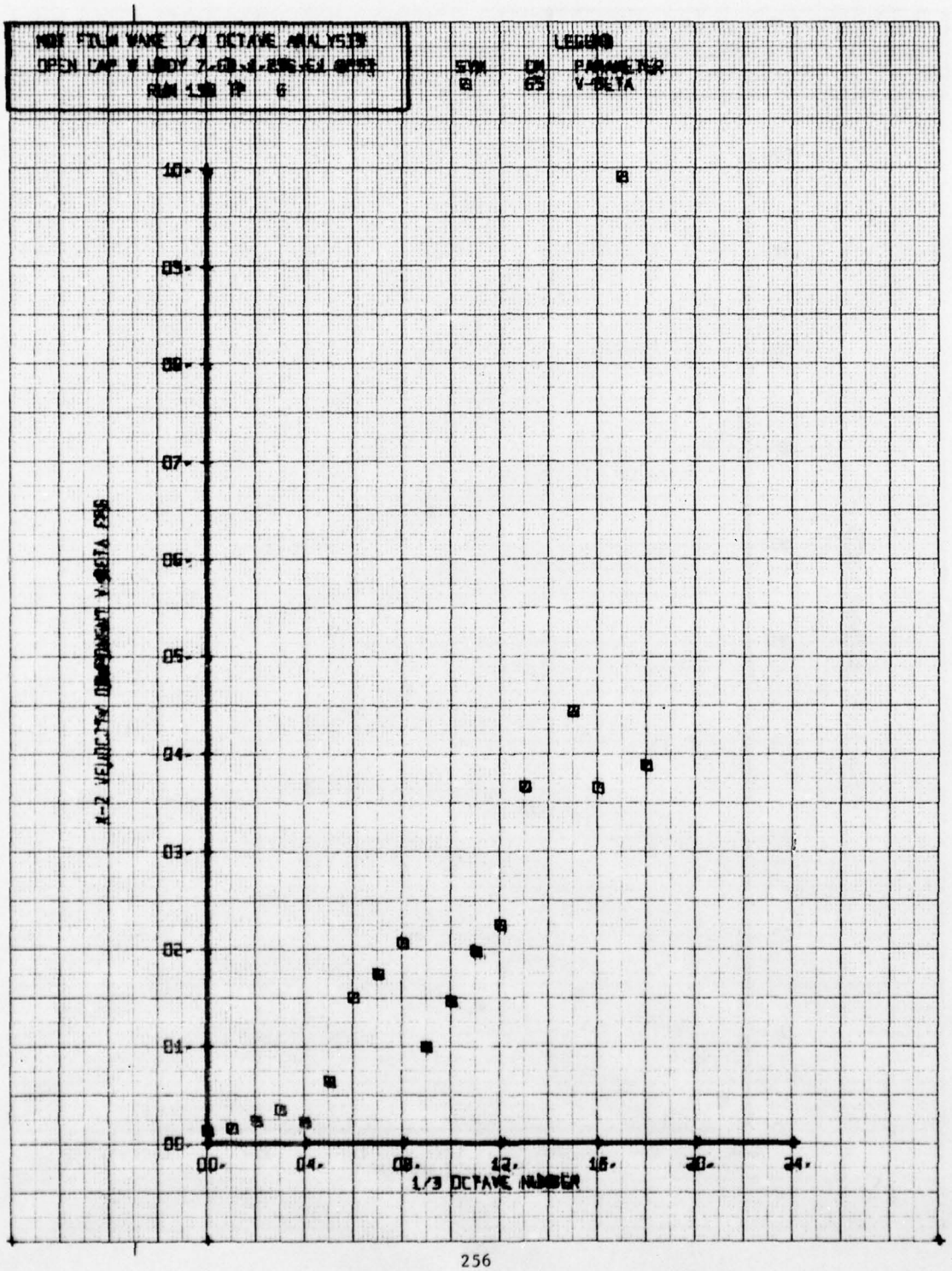

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP V USDV 7.60,1.25G,F1 DPST
RUN 198 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

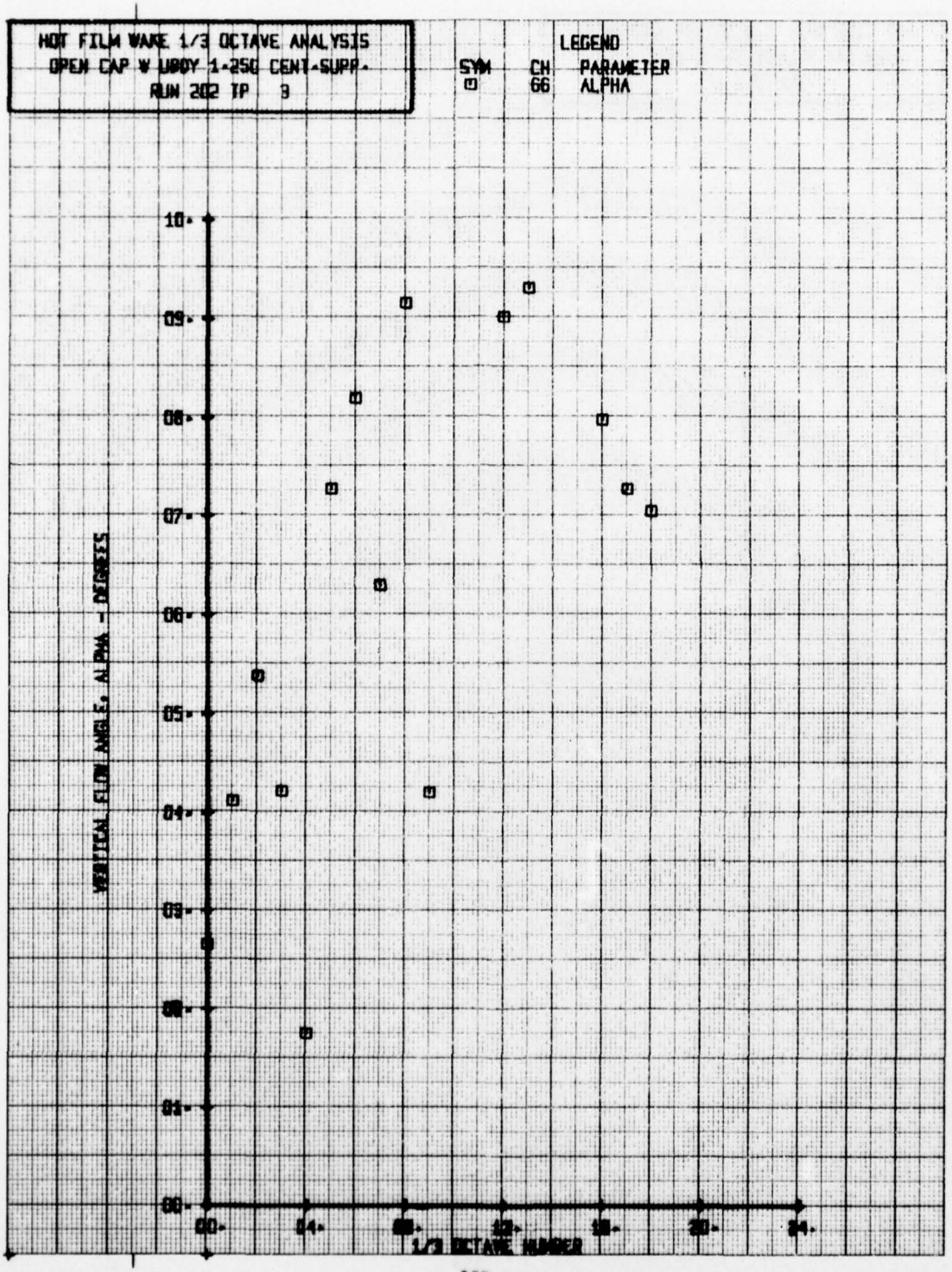

LEGEND
SYM ON PARAMETER
65 Y-DELTA
X-Z VELOCITY COMPONENT Y-DELTA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

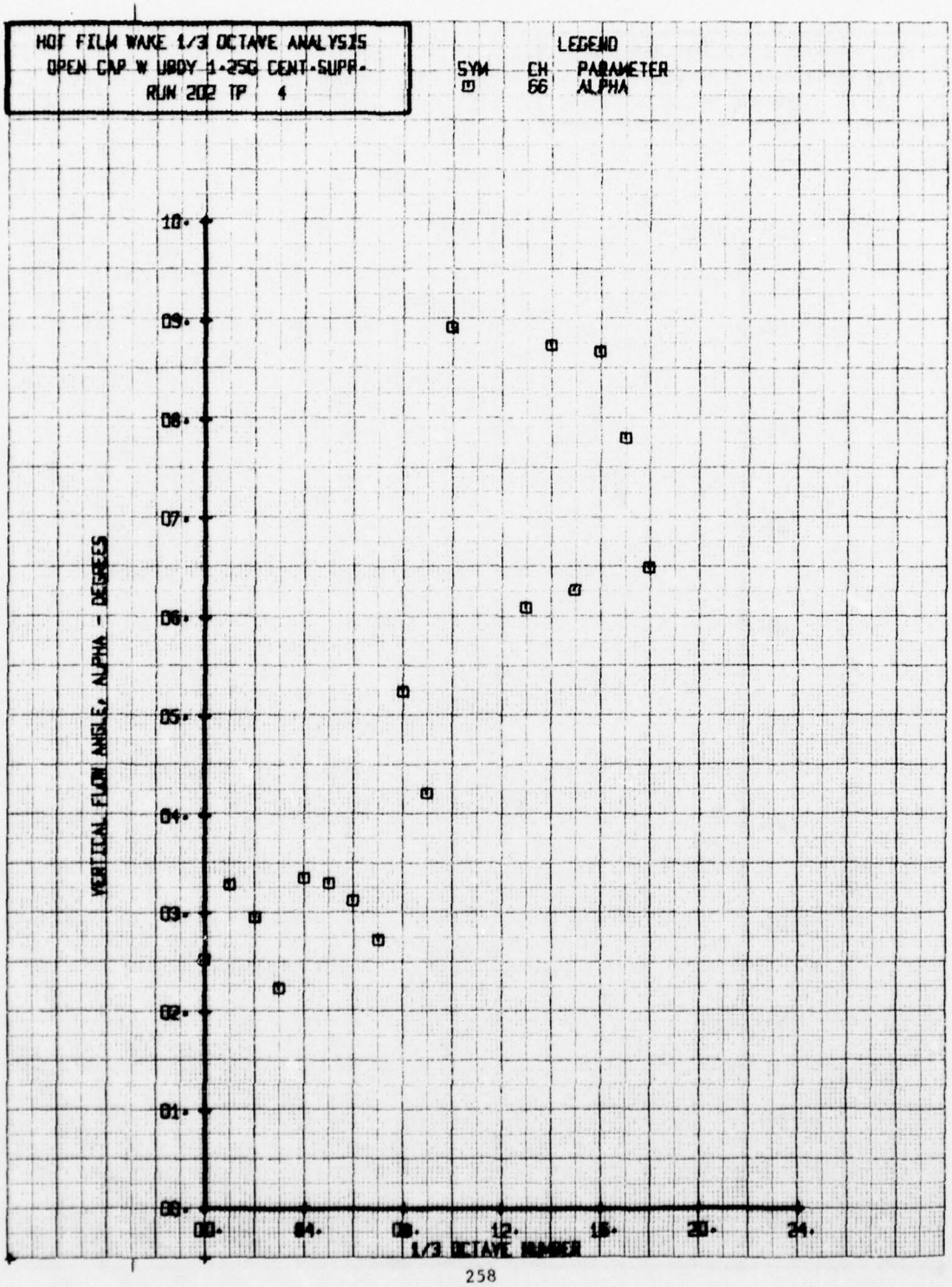

LEGEND
SYM CM PARAMETER
65 V-BETA
X-Z VELOCITY DEPARTMENT V-BETA FPS
1/3 OCTAVE NUMBER

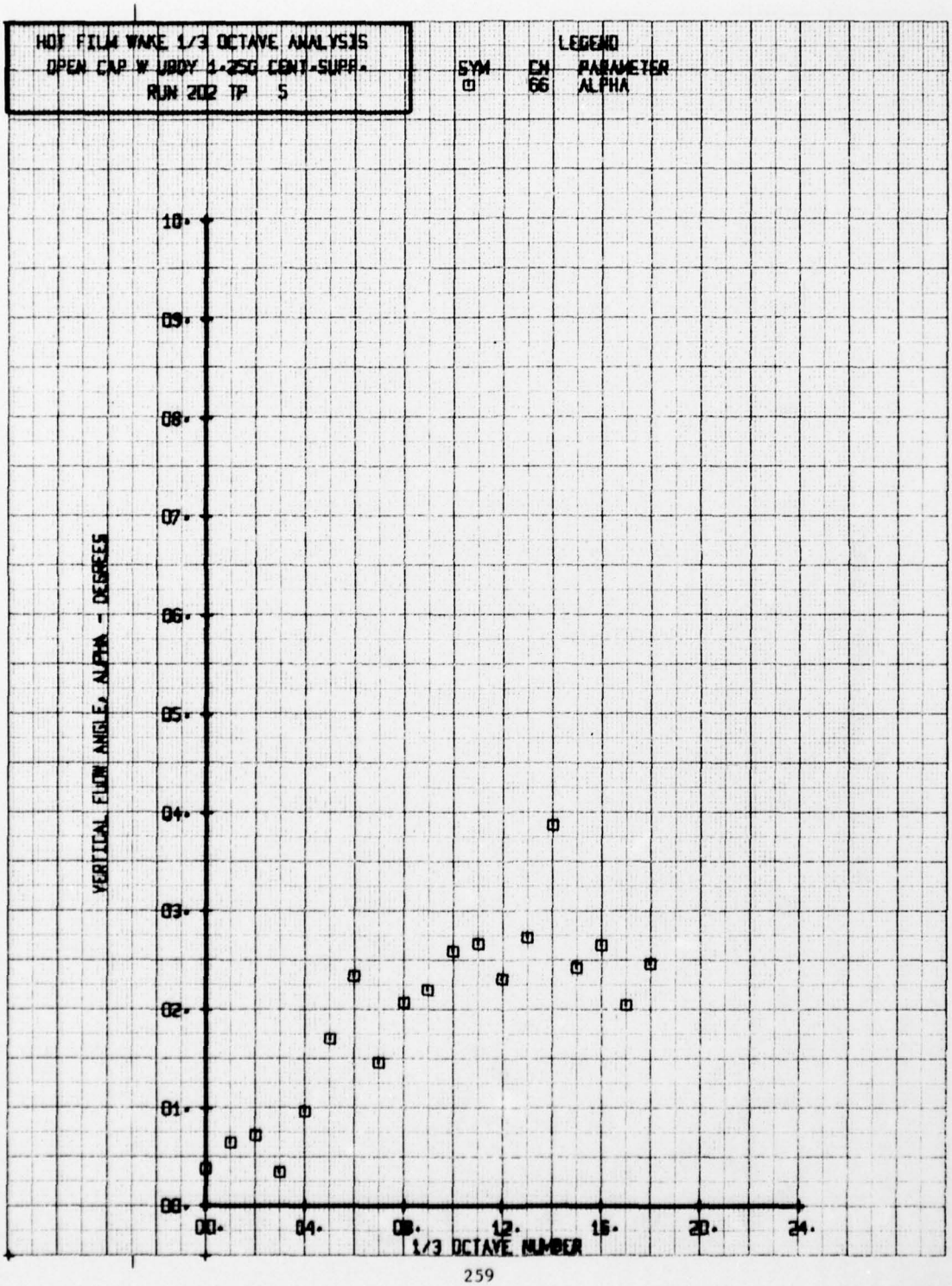

LEGEND
PARAMETER
Y-BETA
1/3 OCTAVE

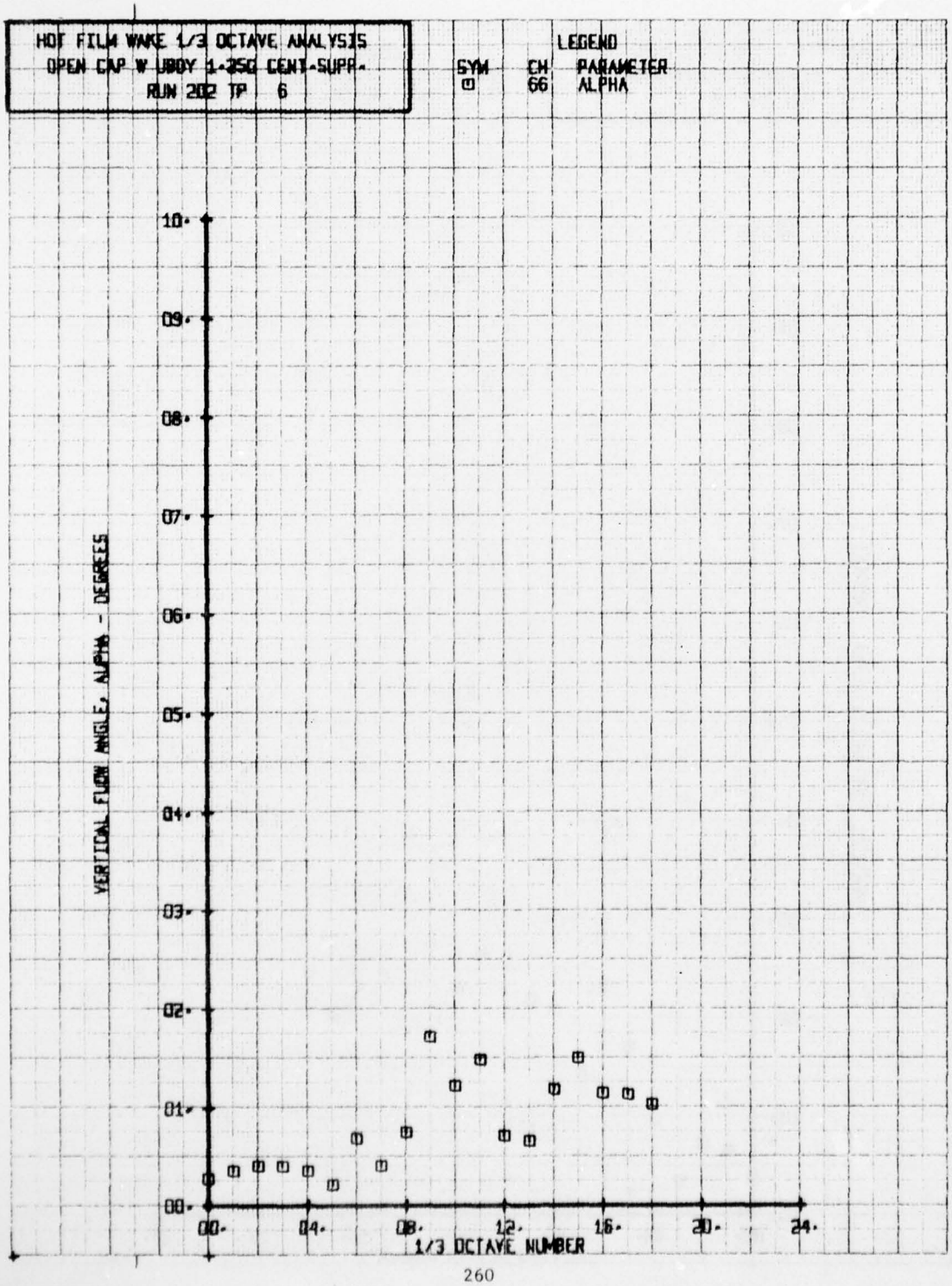

LEGEND
SYM CH PARAMETER
V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

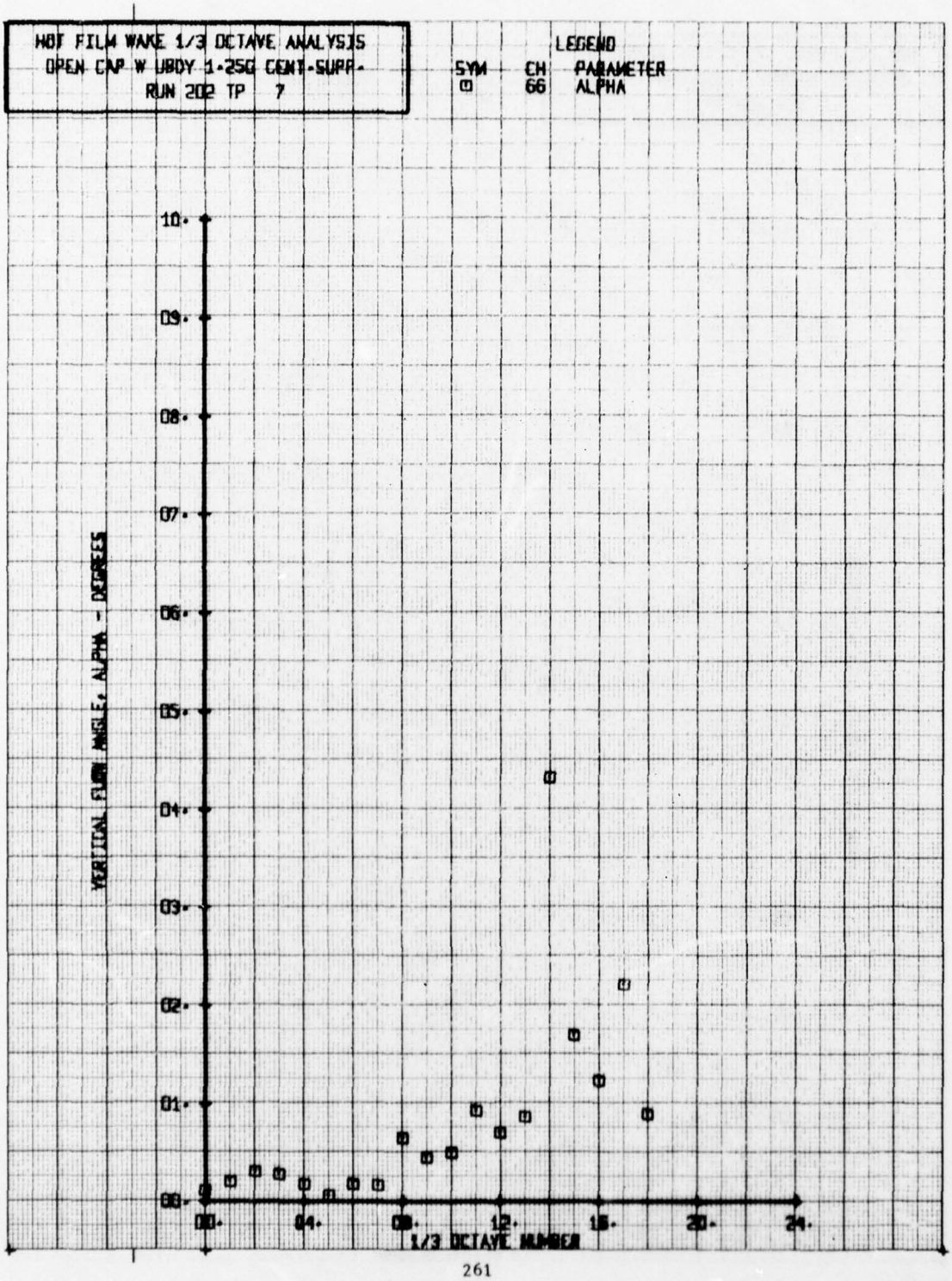

LEGEND
SYM CM PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

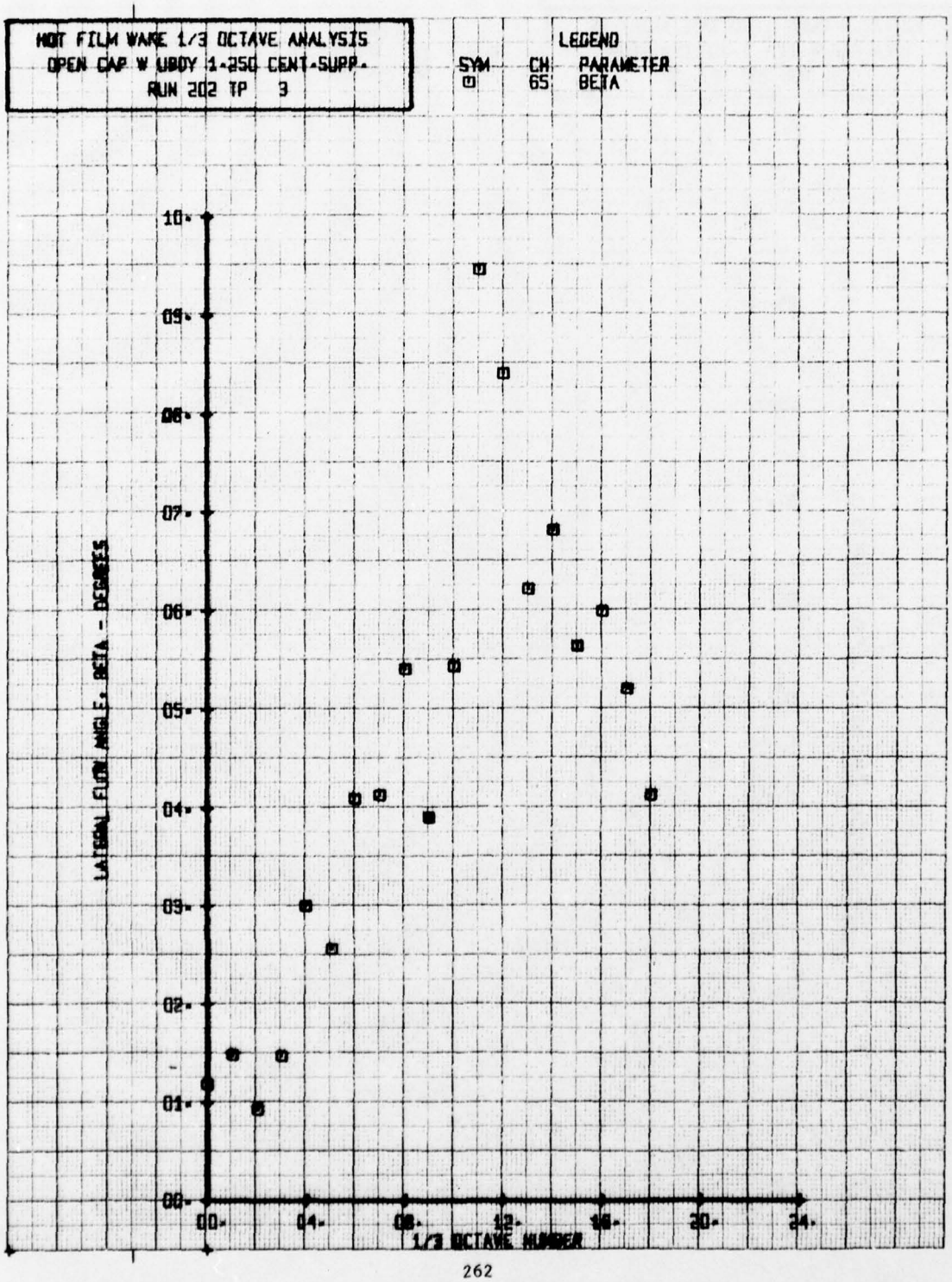

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25Q CENT-SUPP.
RUN 202 TP 8
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

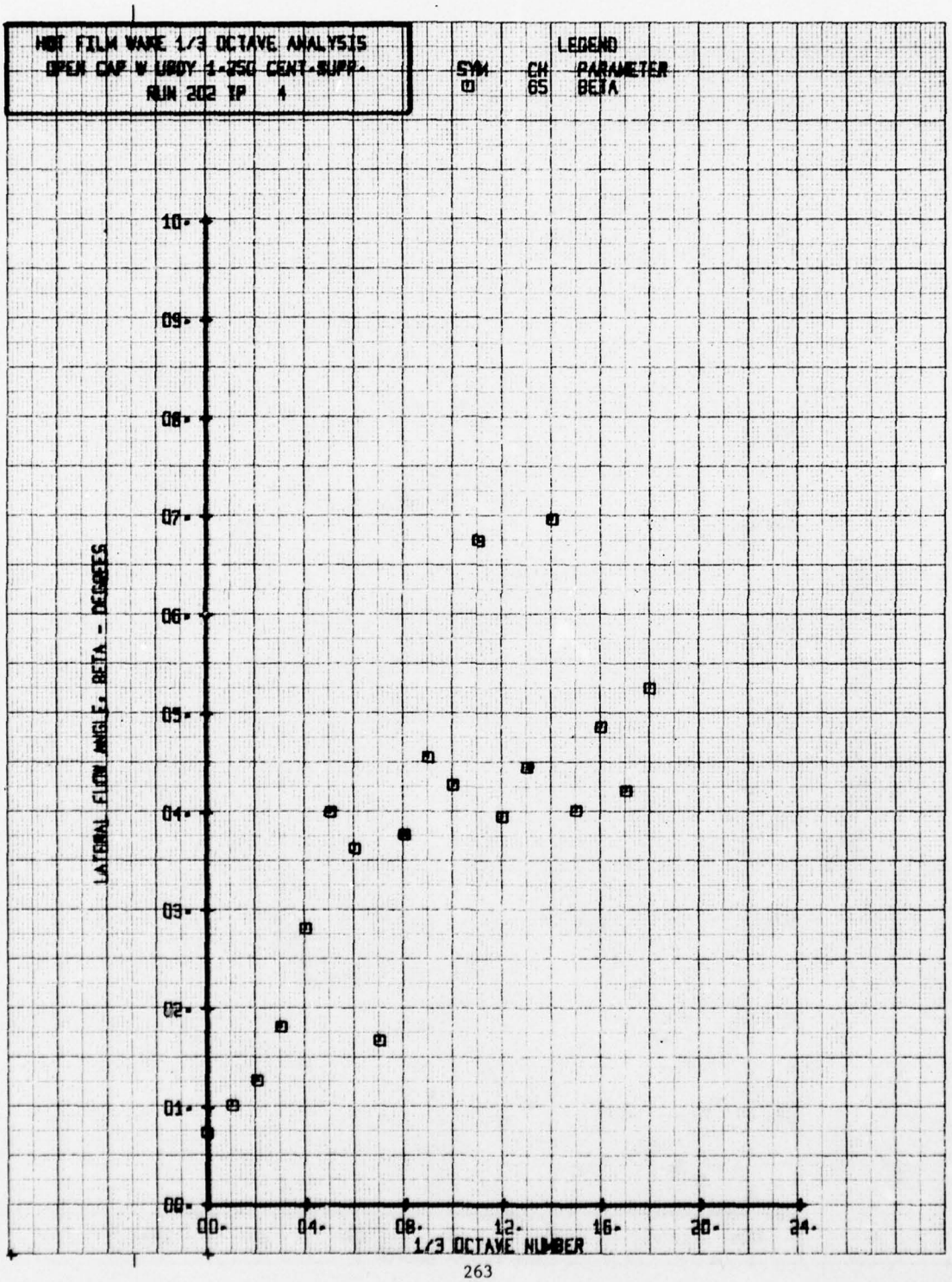

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25G CENT-SUPR-
RUN 202 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

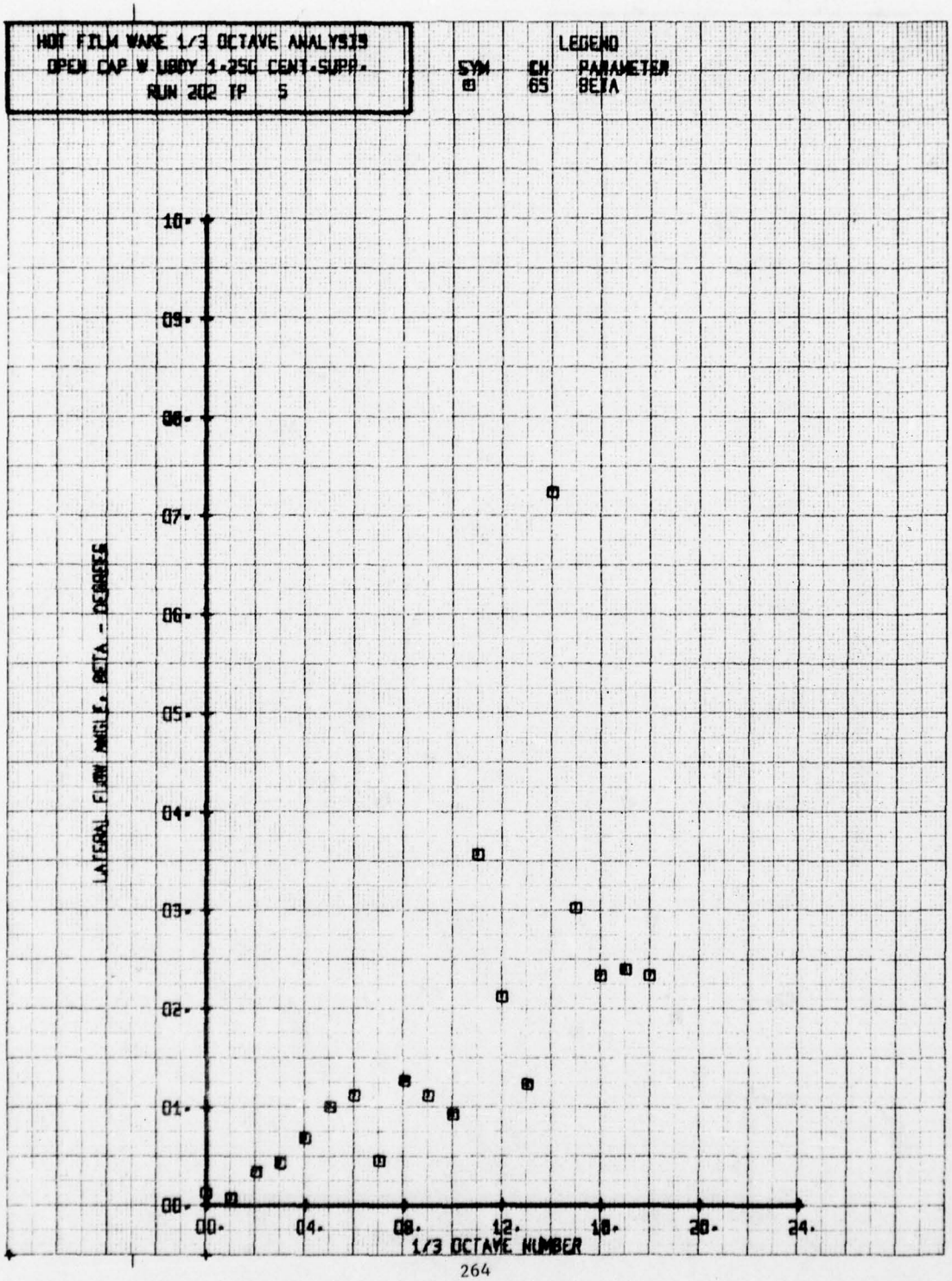

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1.25G CENT-SUPP.
RUN 202 TP 5
LEGEND
SYM EM PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

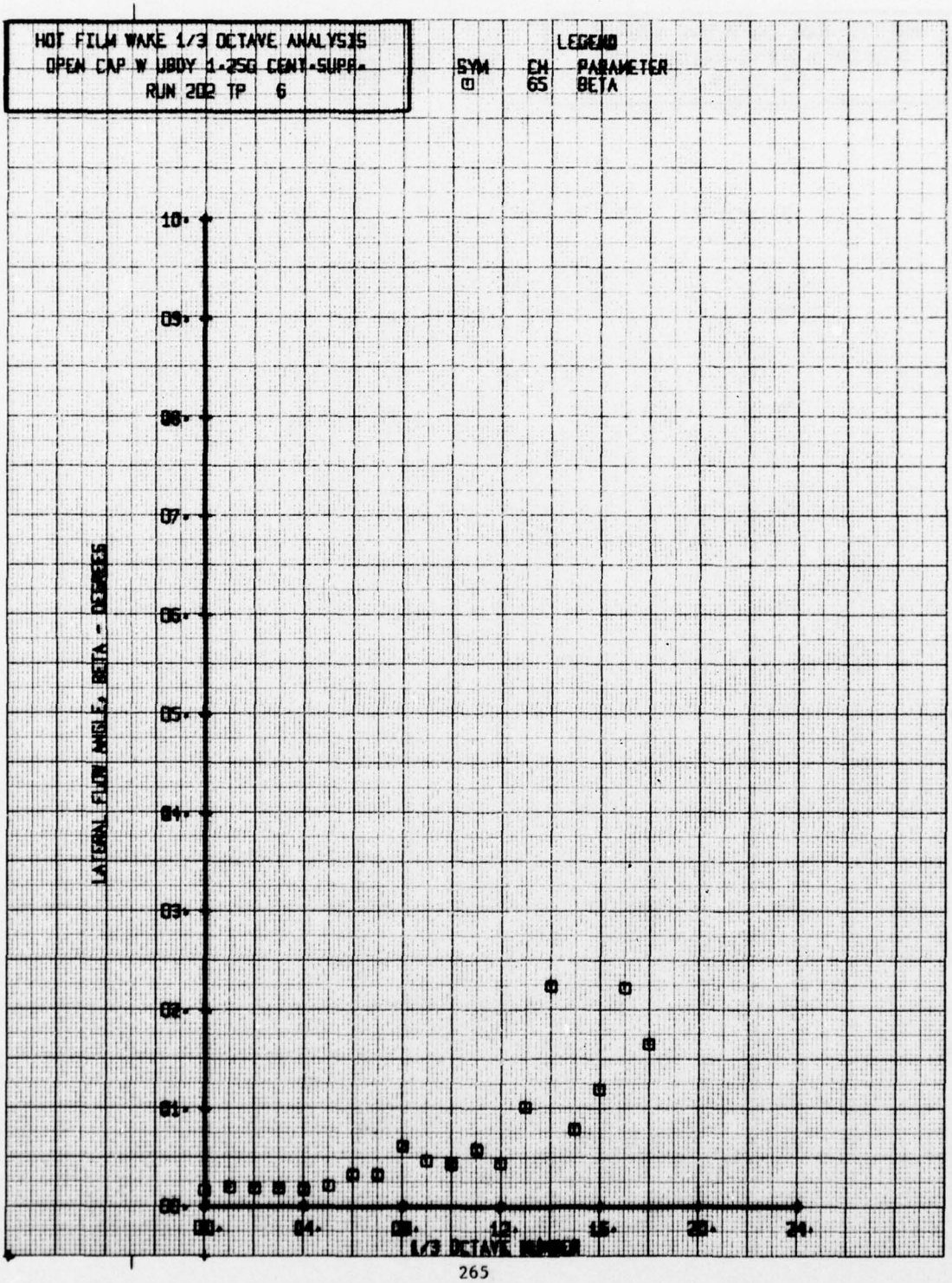

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25G CENT-SUPP.
RUN 202 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

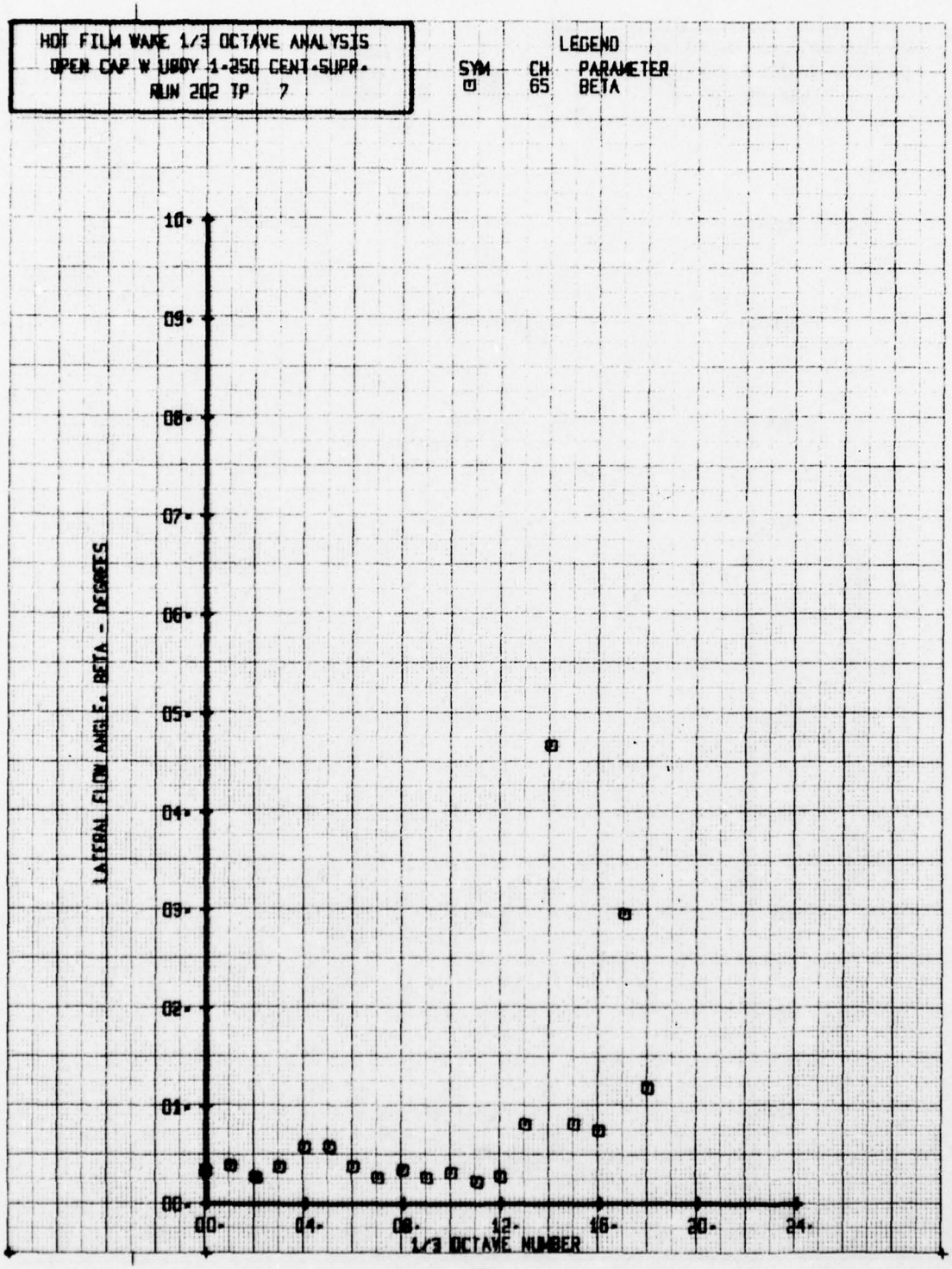

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 1-25D CENT-SUPP-
RUN 202 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

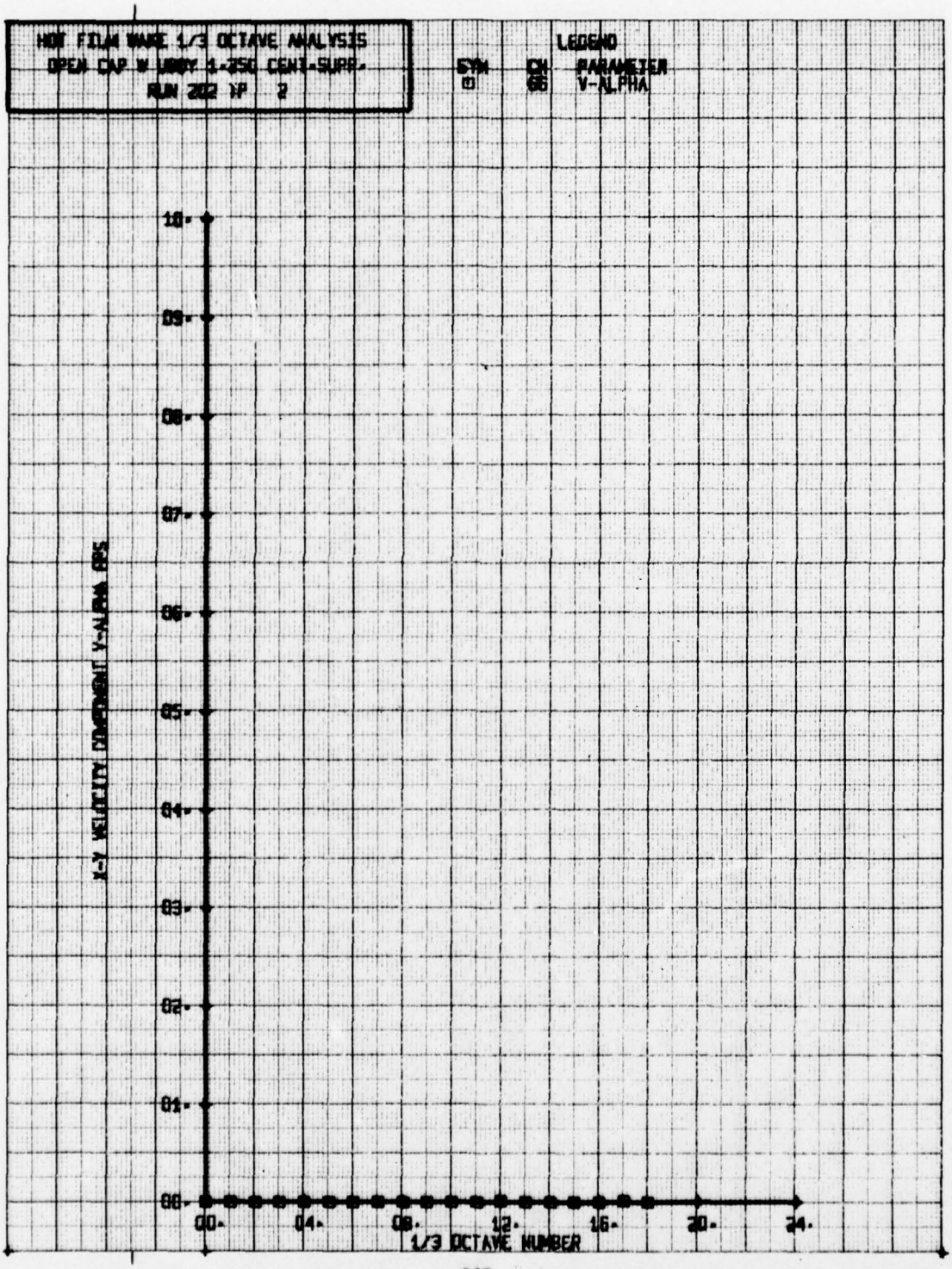

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25D CENT-SUPP.
RUN 202 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

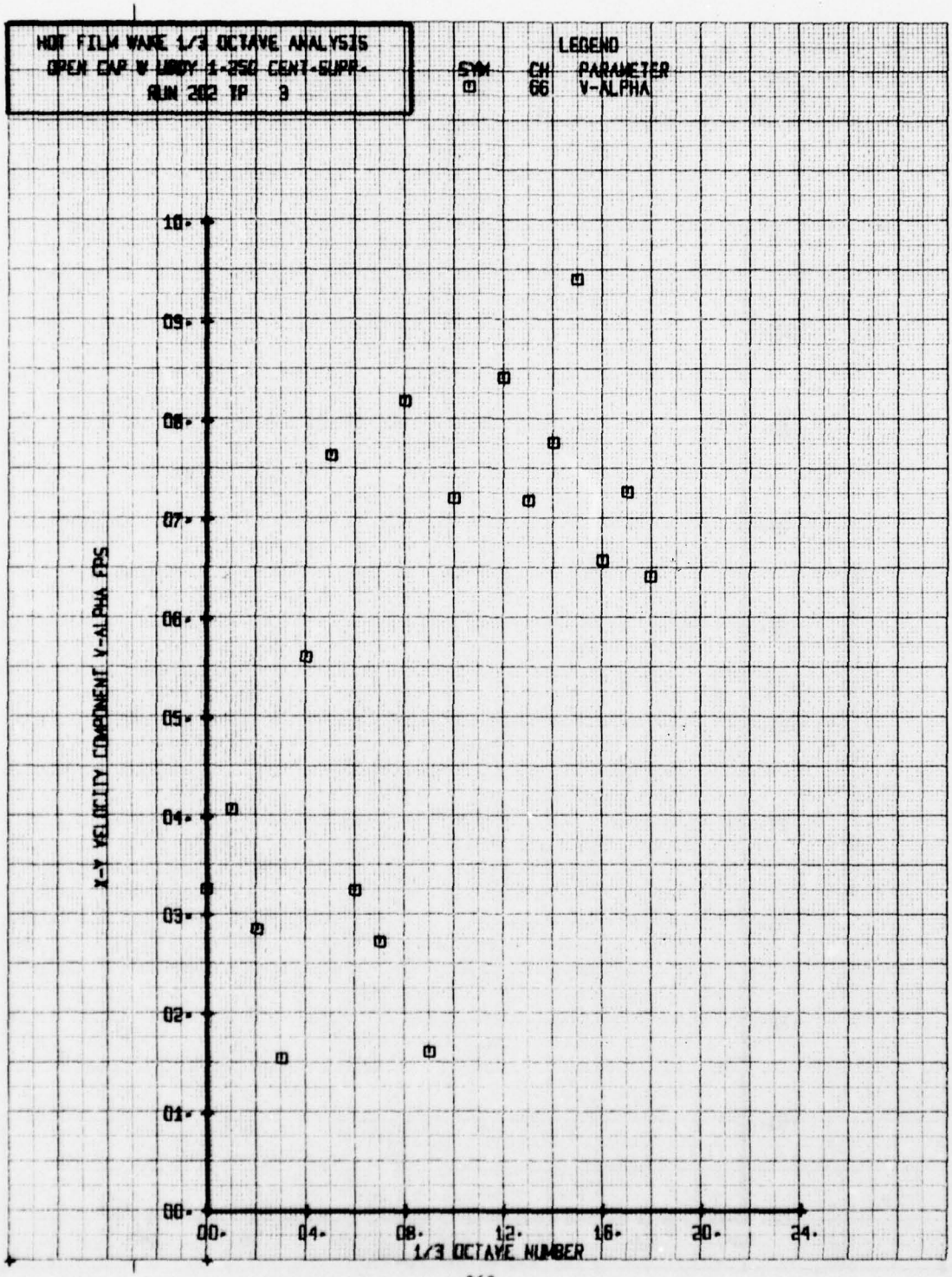

HOT FILM WARE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25Q CENT-SUPP-
RUN 202 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
LATERAL FLOW ANGLE, BETA - DEGREES
00-
04-
08-
12-
16-
20-
24-
1/3 OCTAVE NUMBER

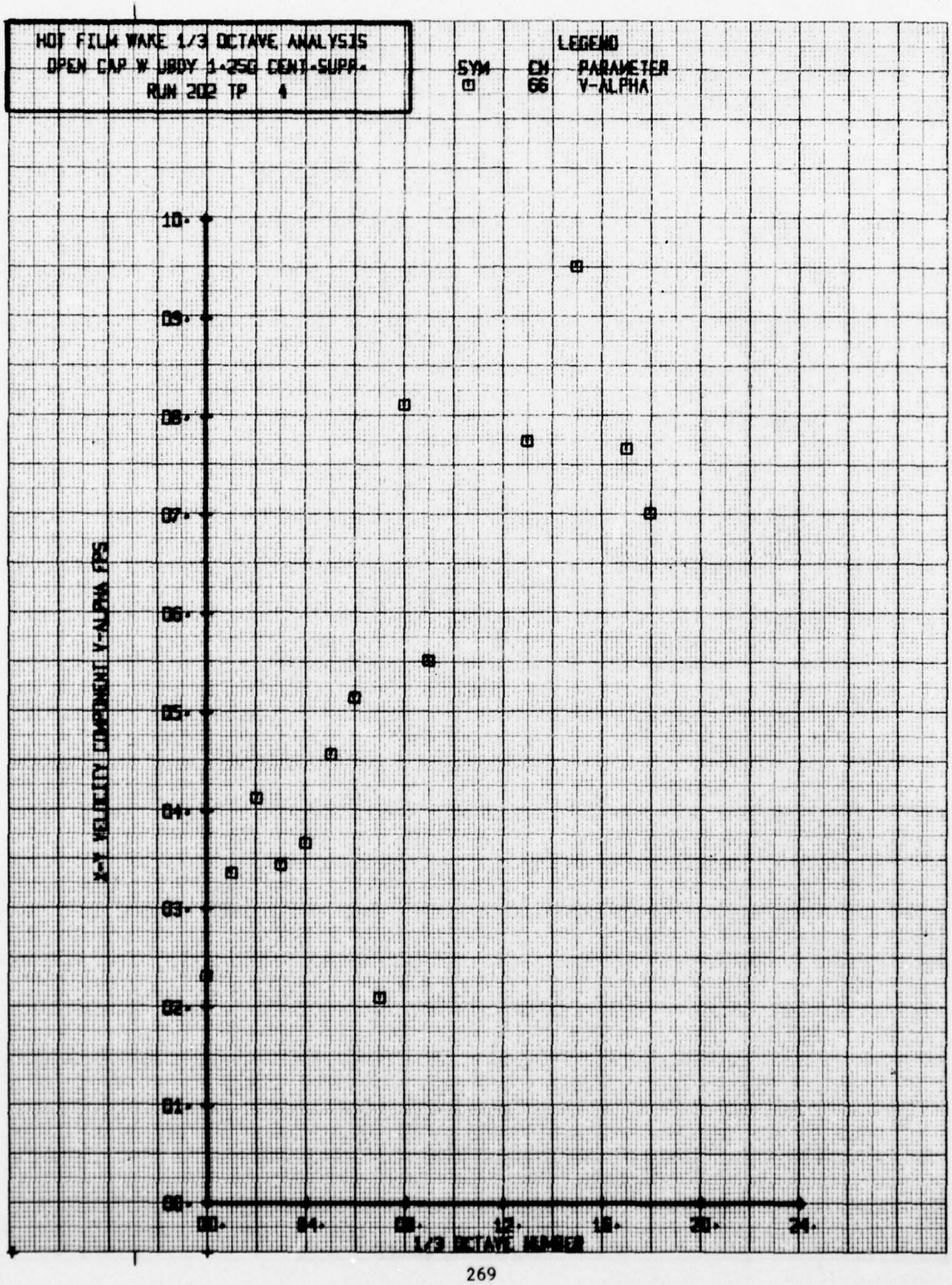

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1.25C CENT.SUPP.
RUN 202 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

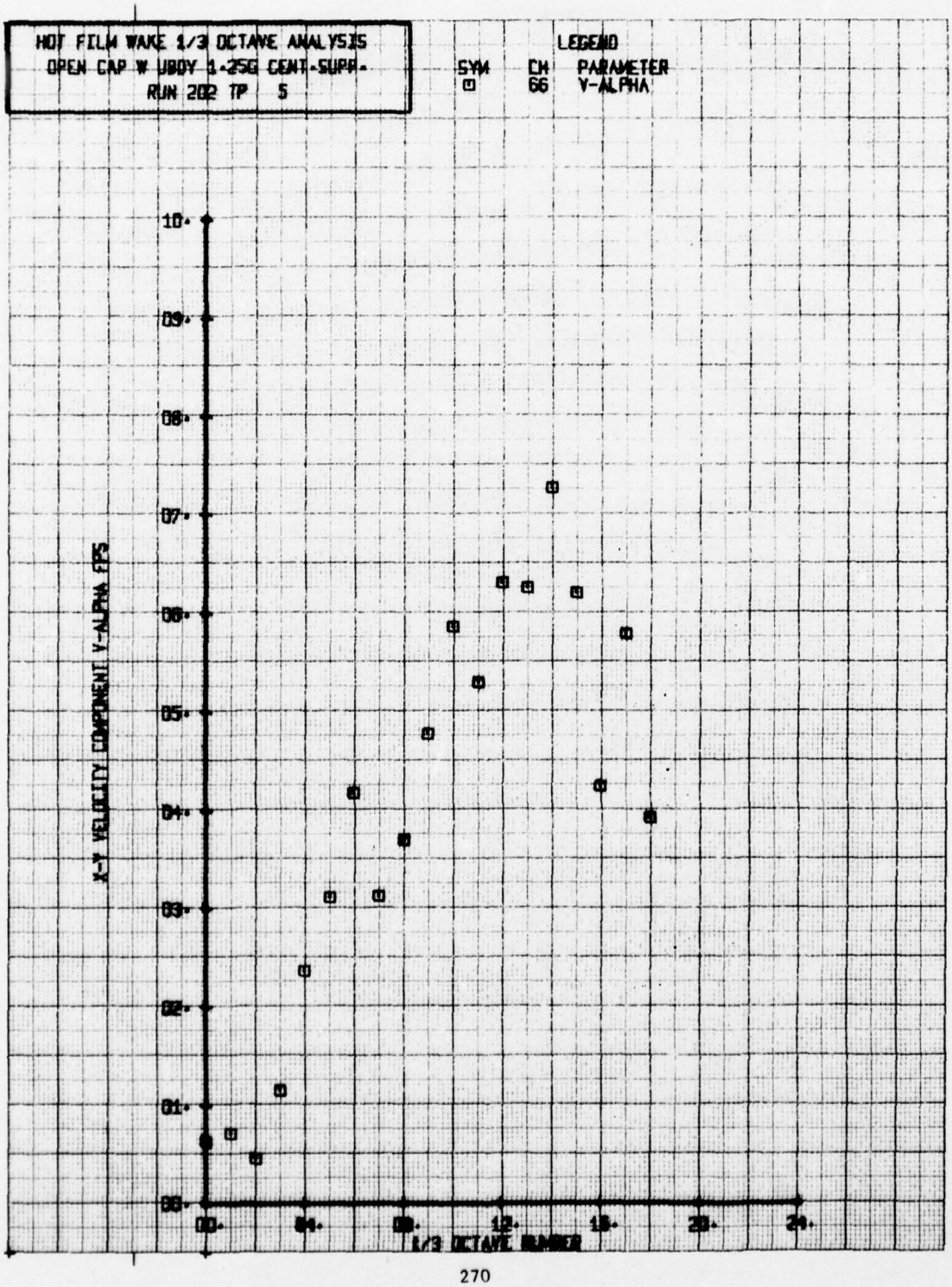

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 1.25G CENT-SUPP-
RUN 202 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
04.
08.
12.
16.
20.
24.
1/3 OCTAVE

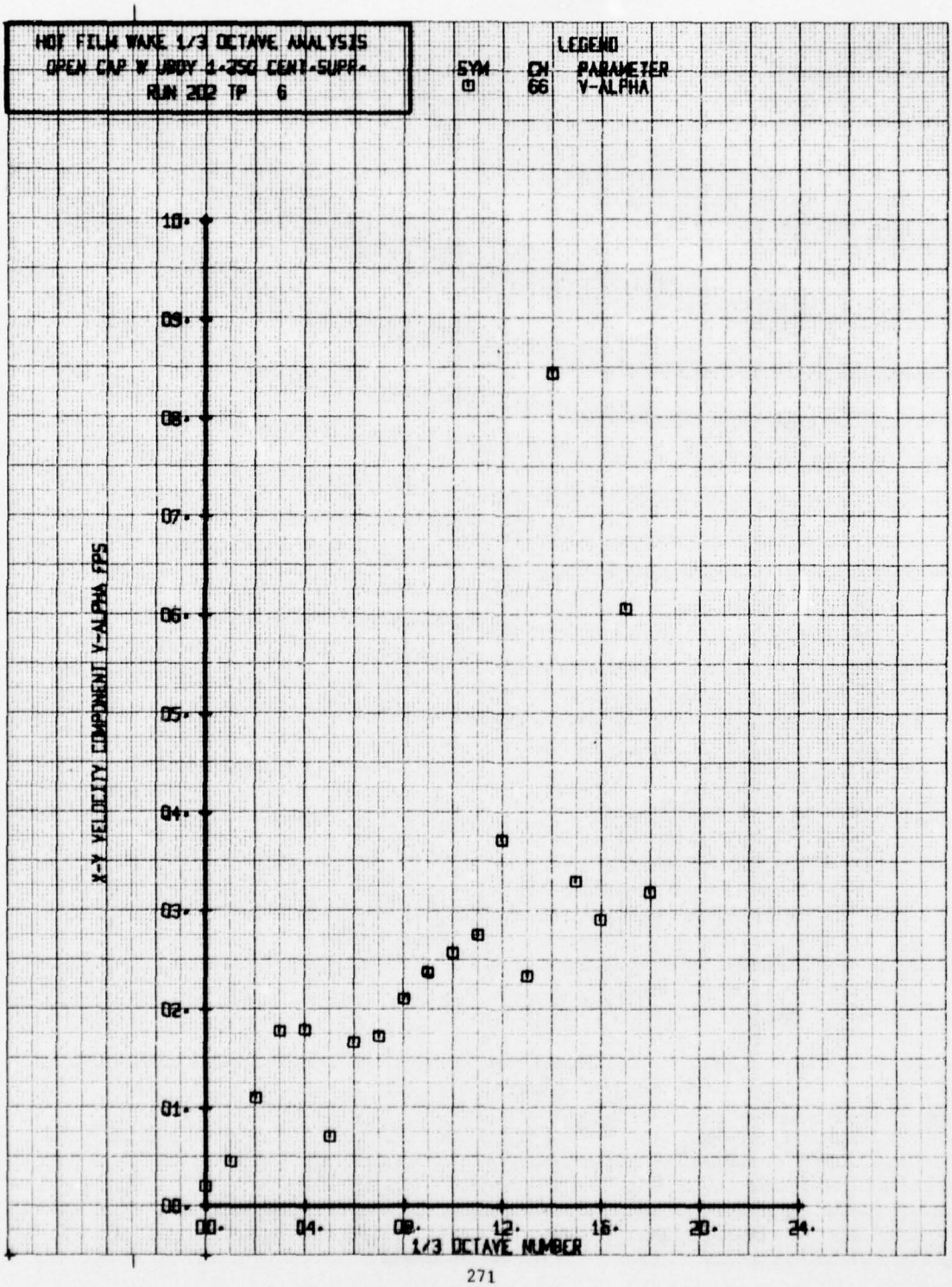

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 1-250 CENT-SUPP.
RUN 202 TP 7
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

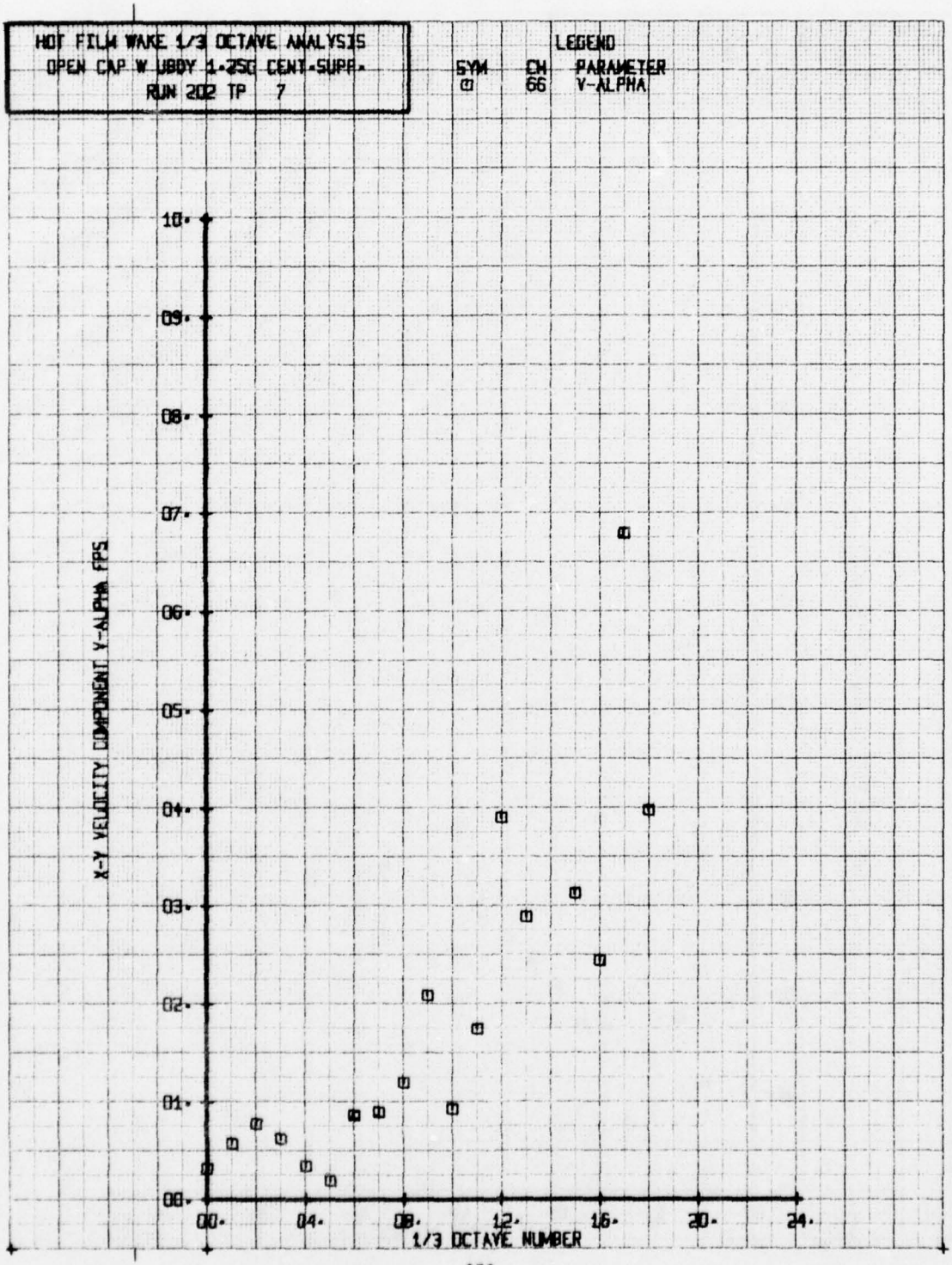

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBBY 1-250 CENT-SUPP-
RUN 202 TP 2
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

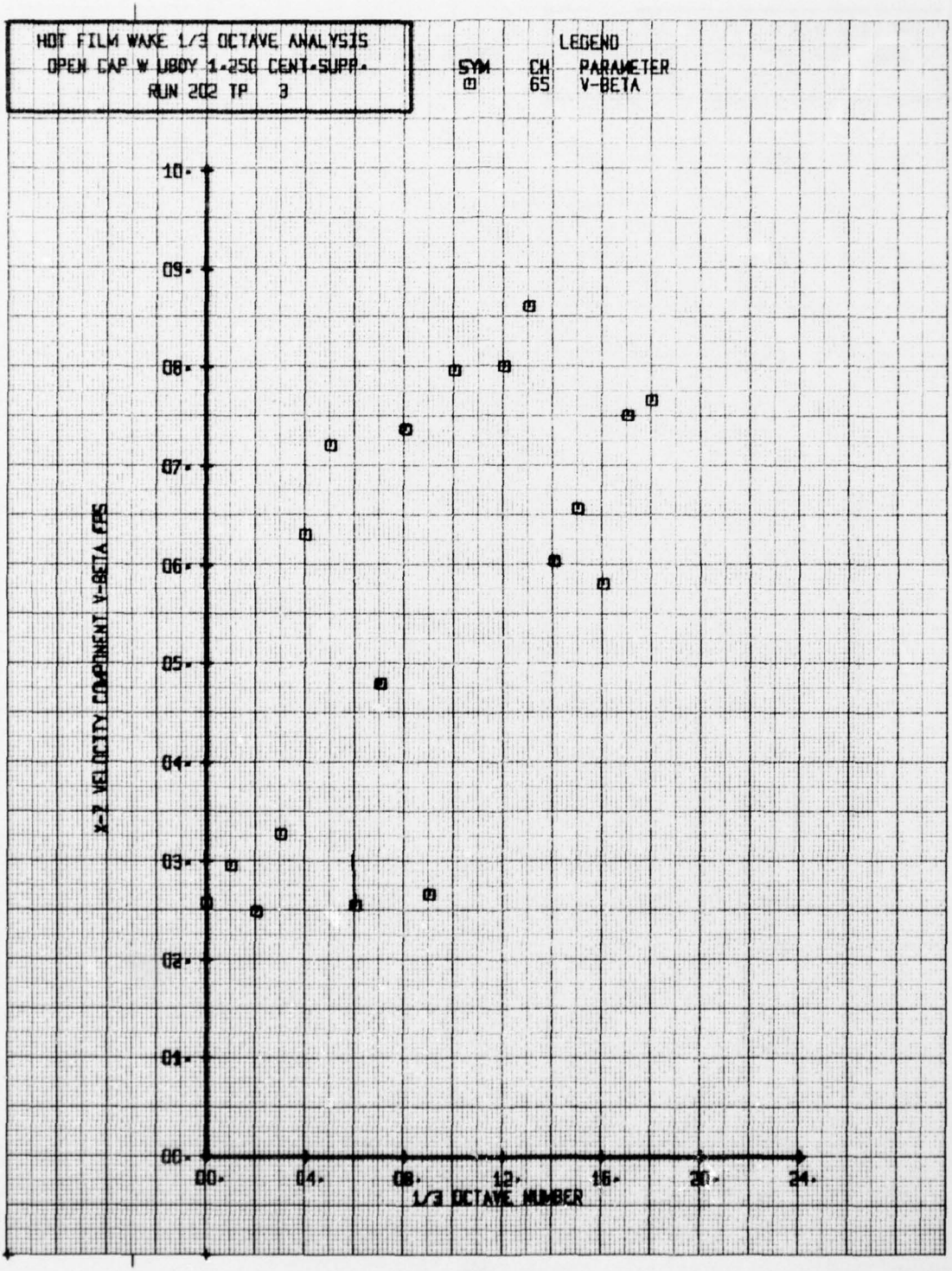

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 1-250 CENT-SUPR.
RUN 202 TP 8
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT Y-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

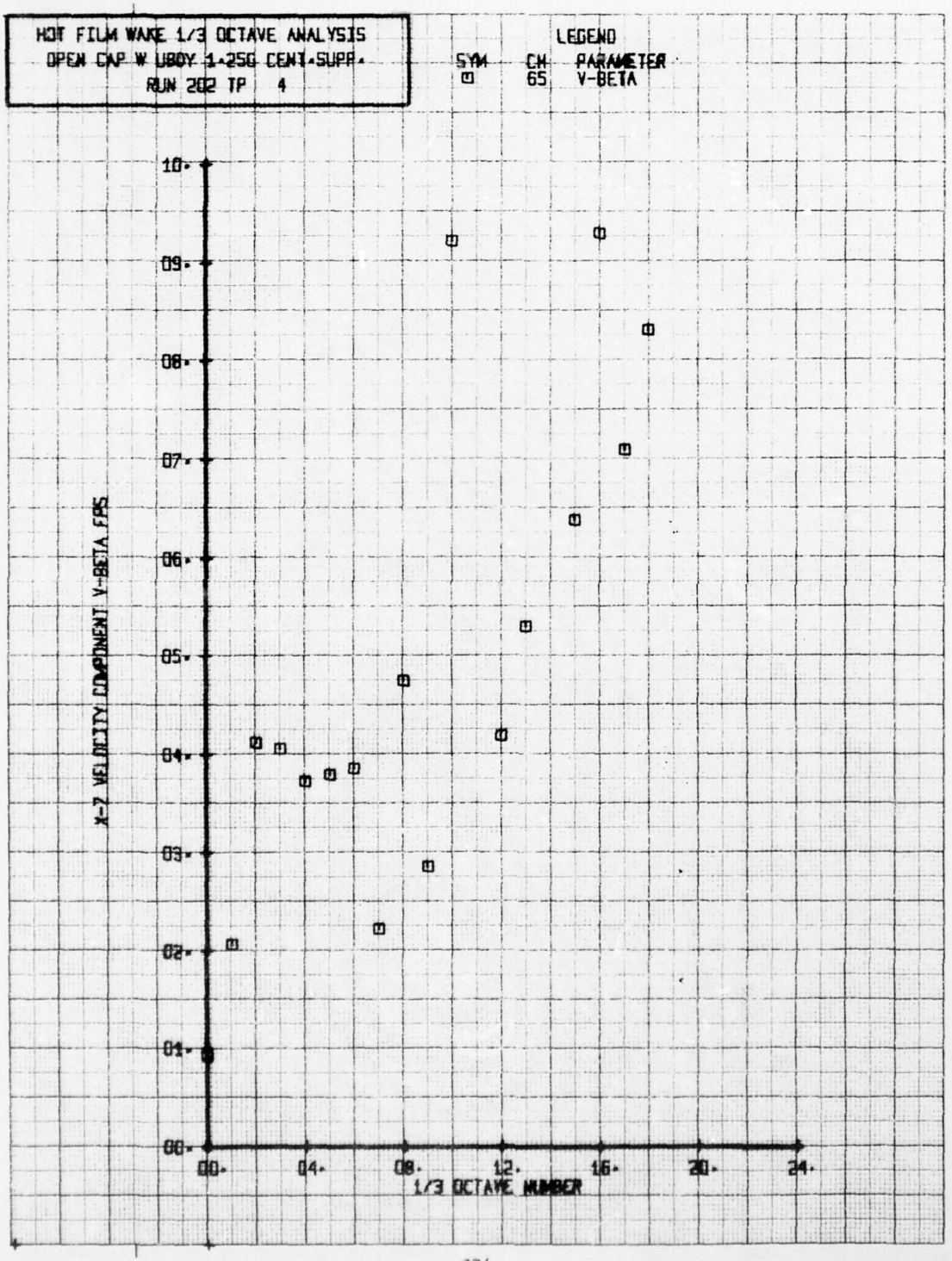

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 1.25D CENT-SUPP.
RUN 202 TP 4
LEGEND
SYM CM PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

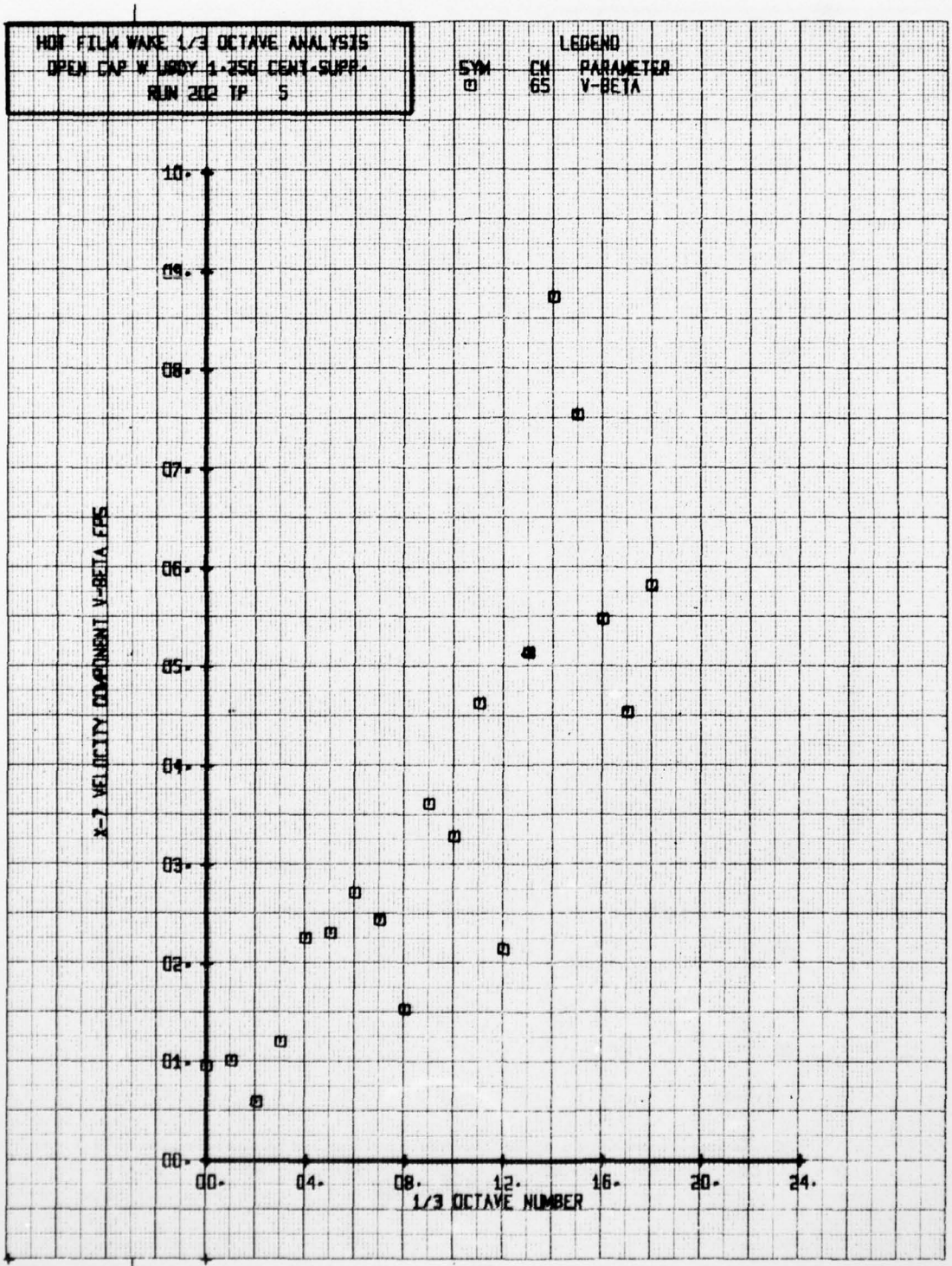

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1.25G CENT-SUPP.
RUN 202 TP 5
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

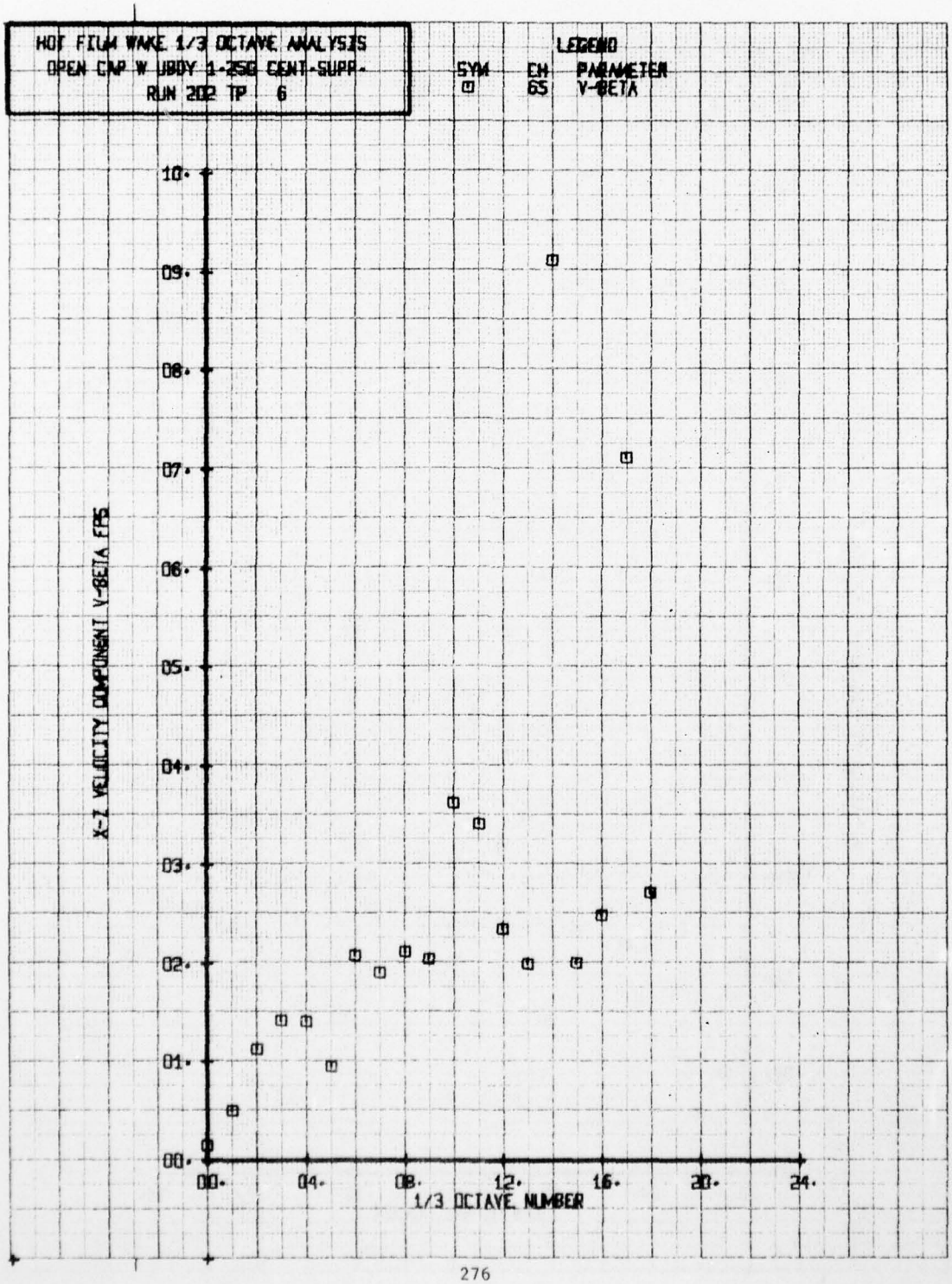

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25Q CENT-SUPR-
RUN 202 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-X VELOCITY COMPONENT V-ALPHA FPS
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER

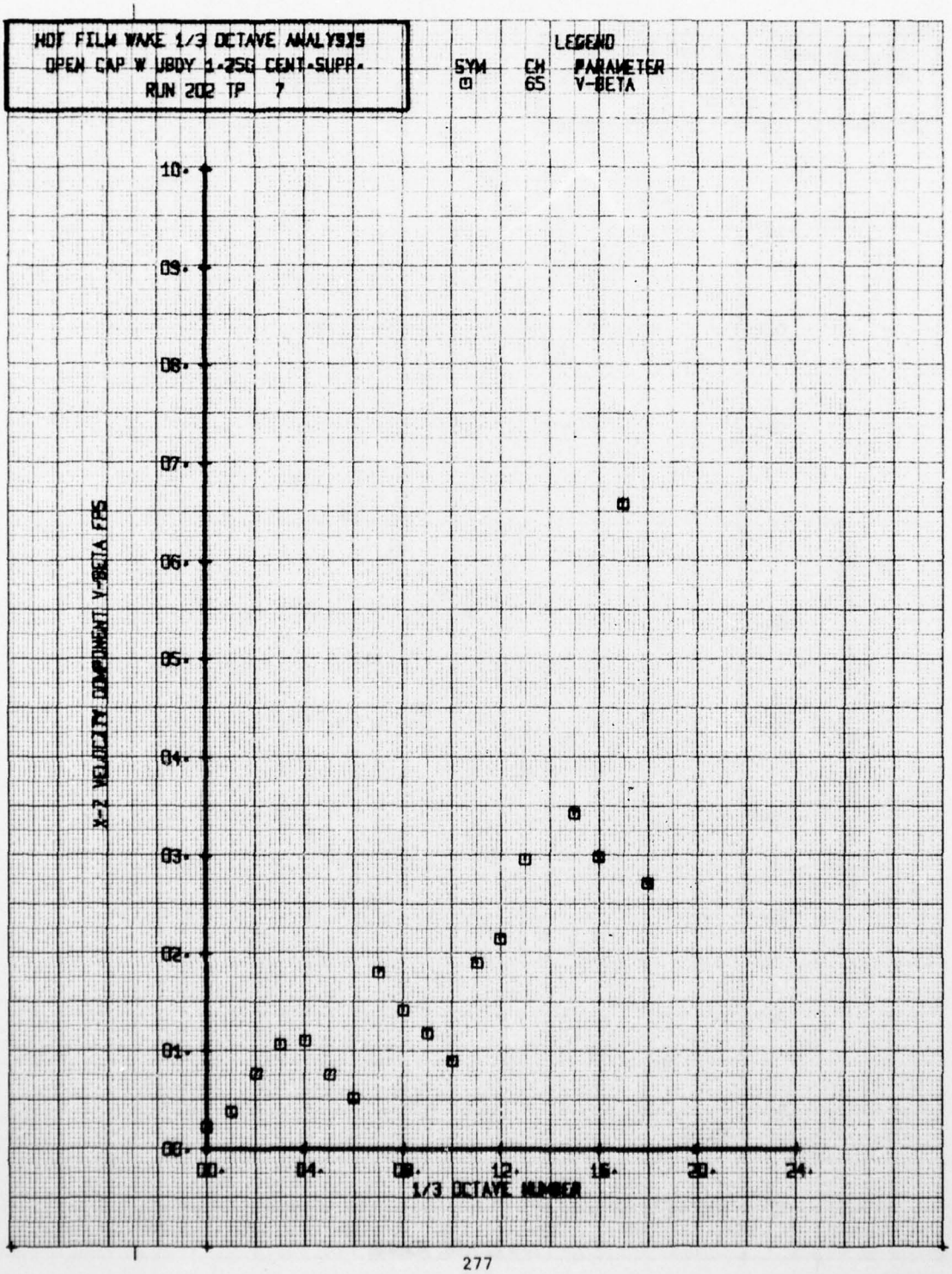

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1.25C CENT-SUPP.
RUN 202 TP 7
LEGEND
SYM CH PARAMETER
66 Y-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT Y-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

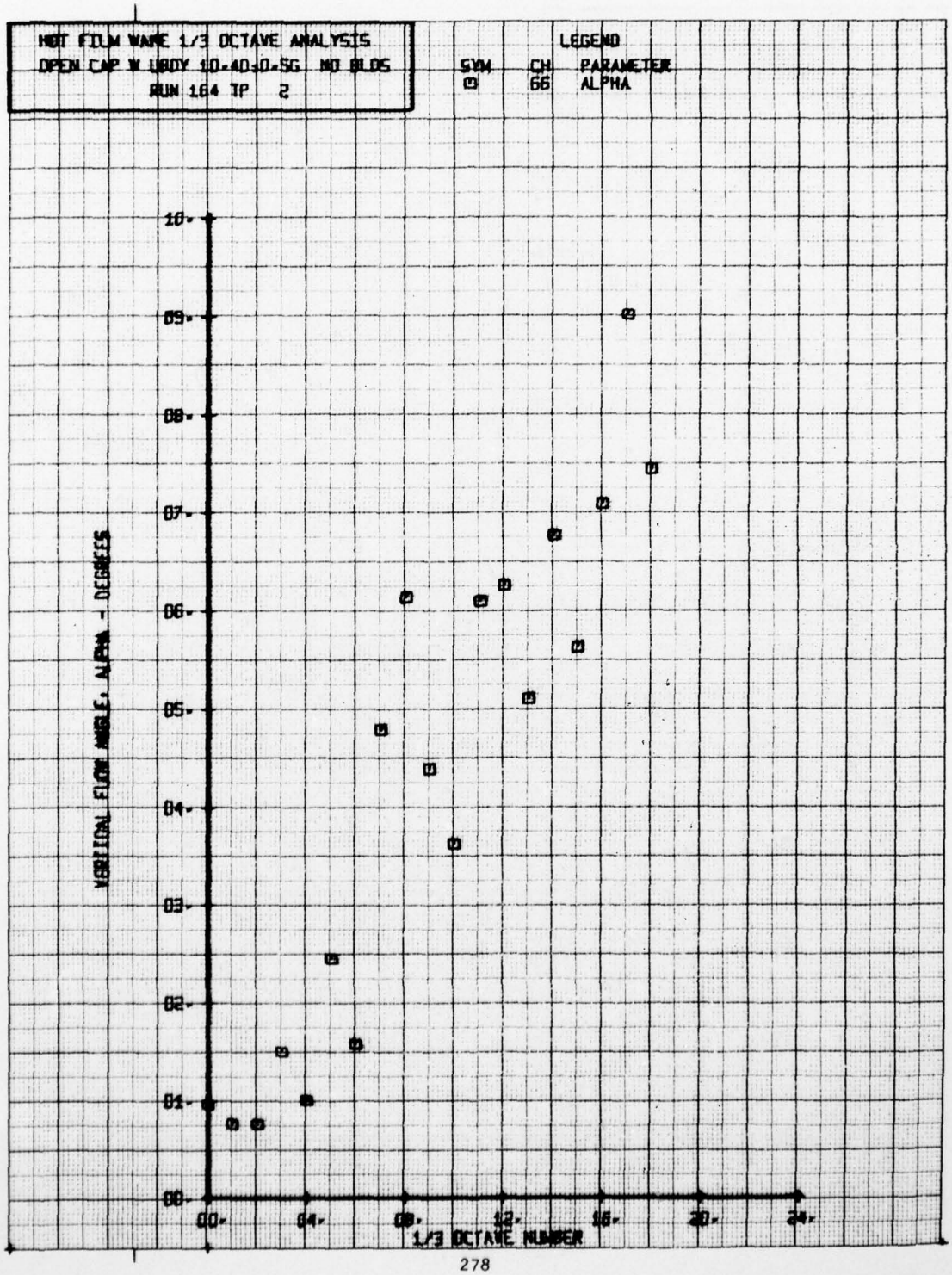

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1-25Q CENT-SUPP.
RUN 202 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER
SEC VELOCITY COMPONENT V-BETA CFS

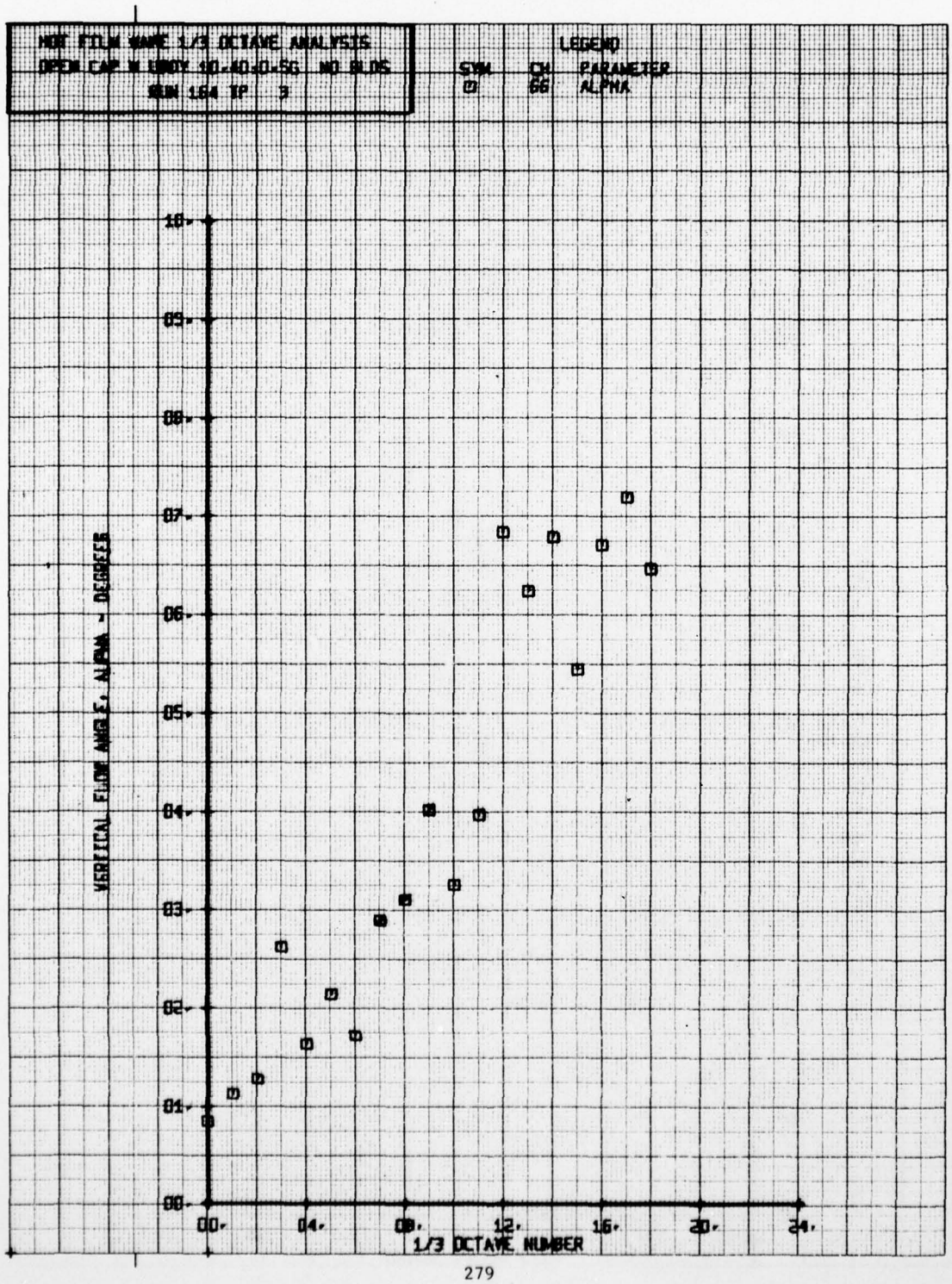

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1.25G CENT.SUPP.
RUN 202 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Z VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

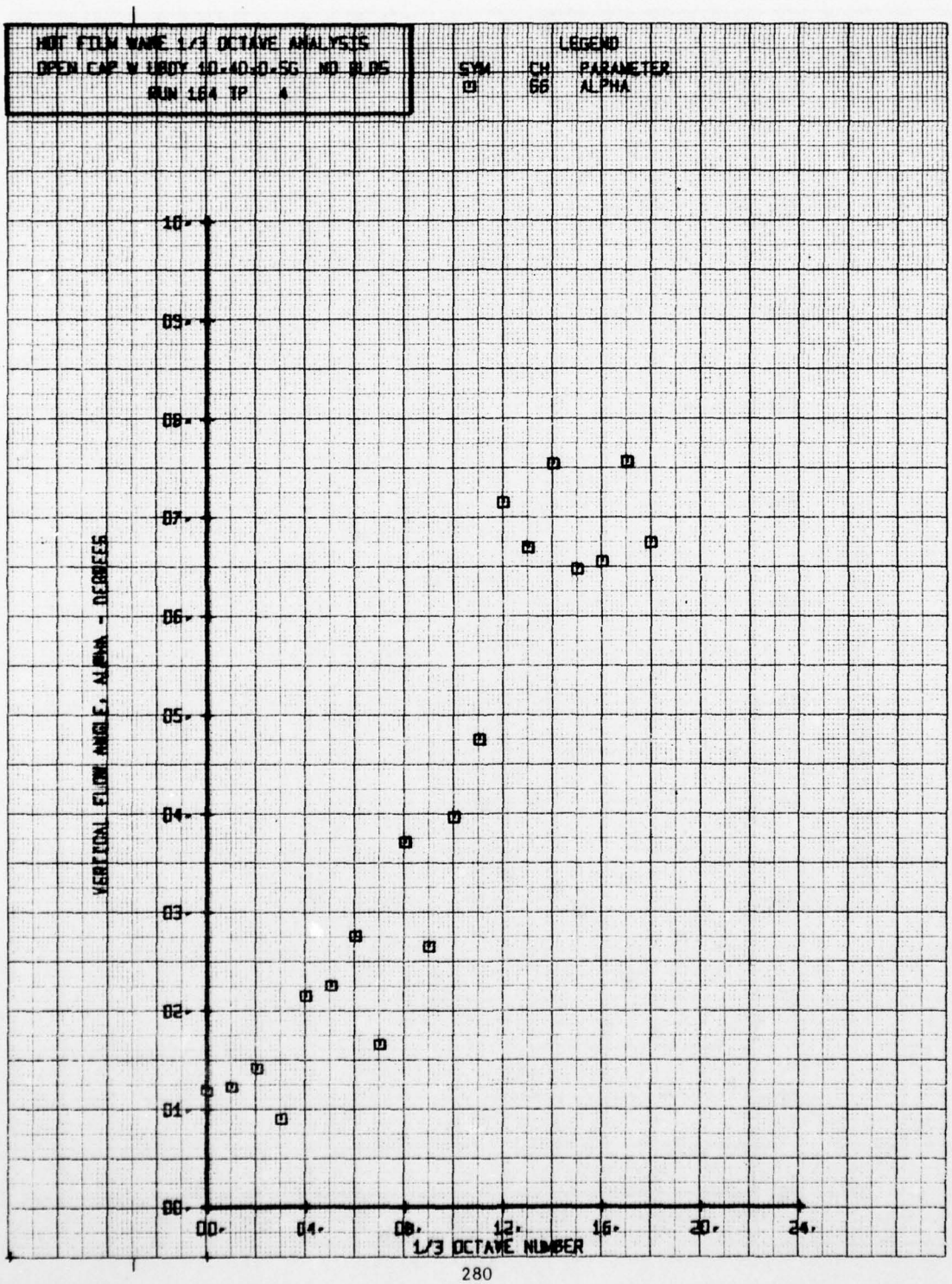

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 1-25Q CENT-SUPP-
RUN 202 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
X-Z VELOCITY COMPONENT V-BETA/FPS
00- 04- 08- 12- 16- 20- 24-
1/3 OCTAVE NUMBER

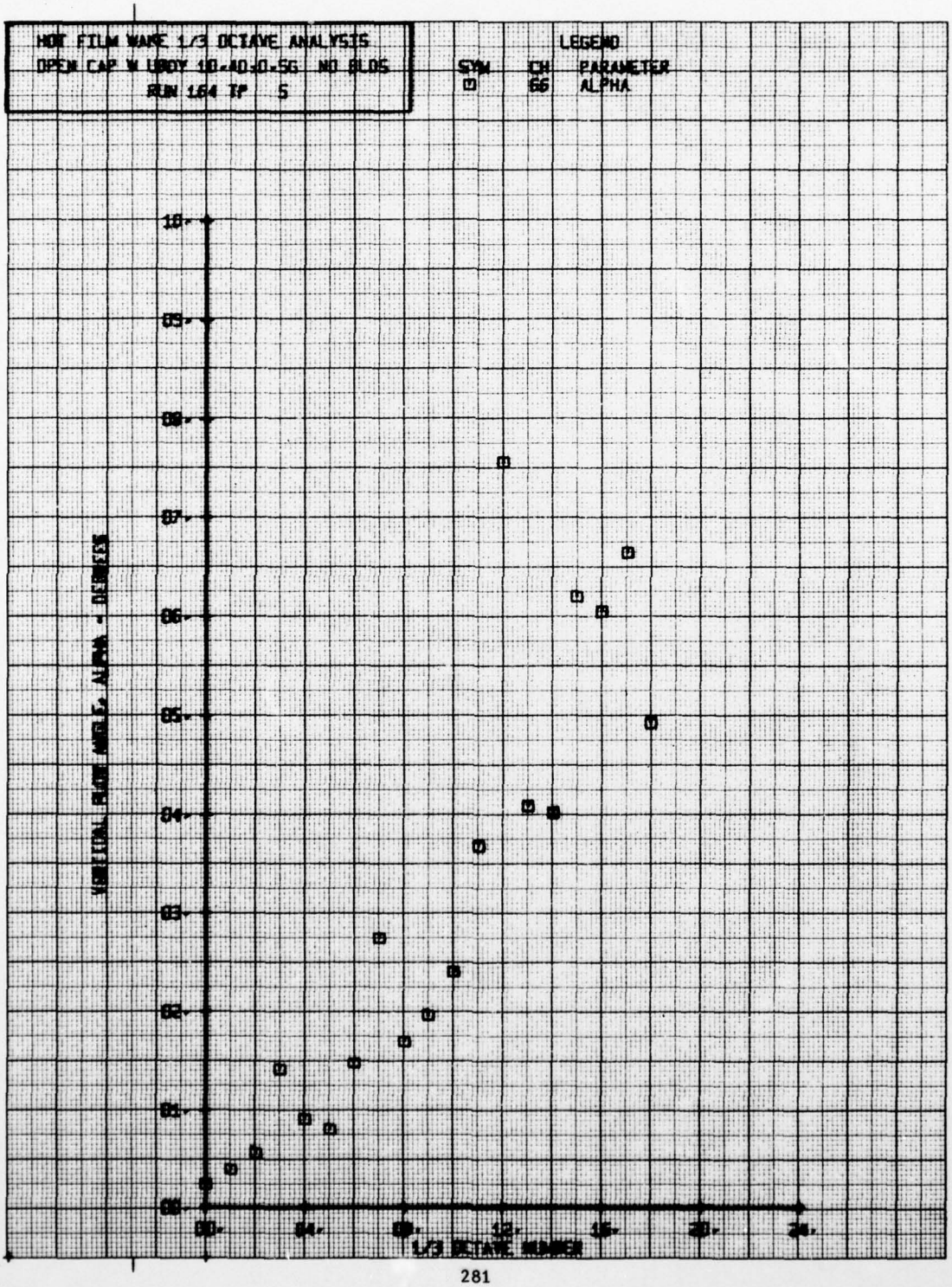

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CNP W UBDY 1-25G CENT-SUPP-
RUN 202 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

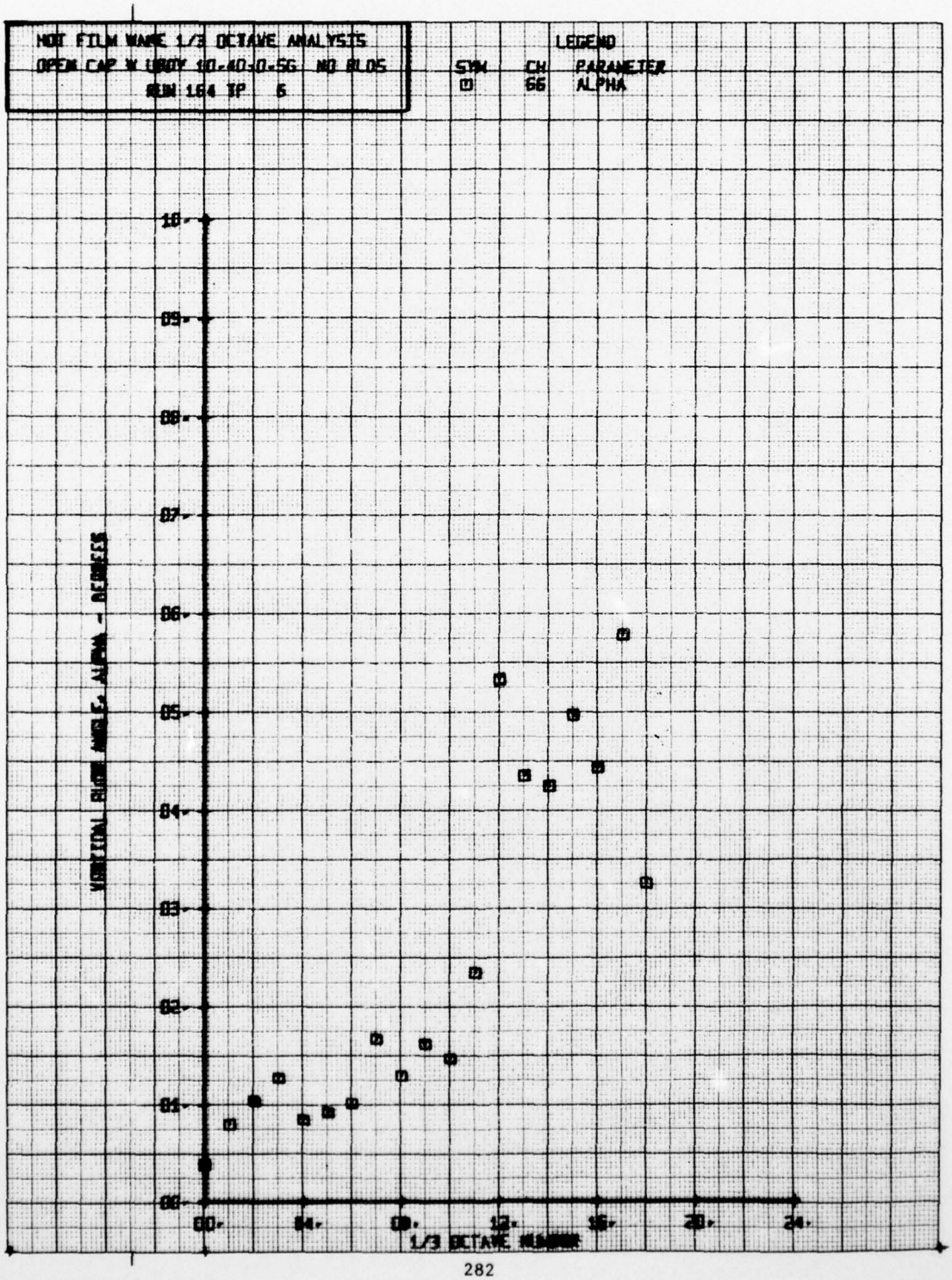

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 1.25G CENT.SUPP.
RUN 202 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
X-2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

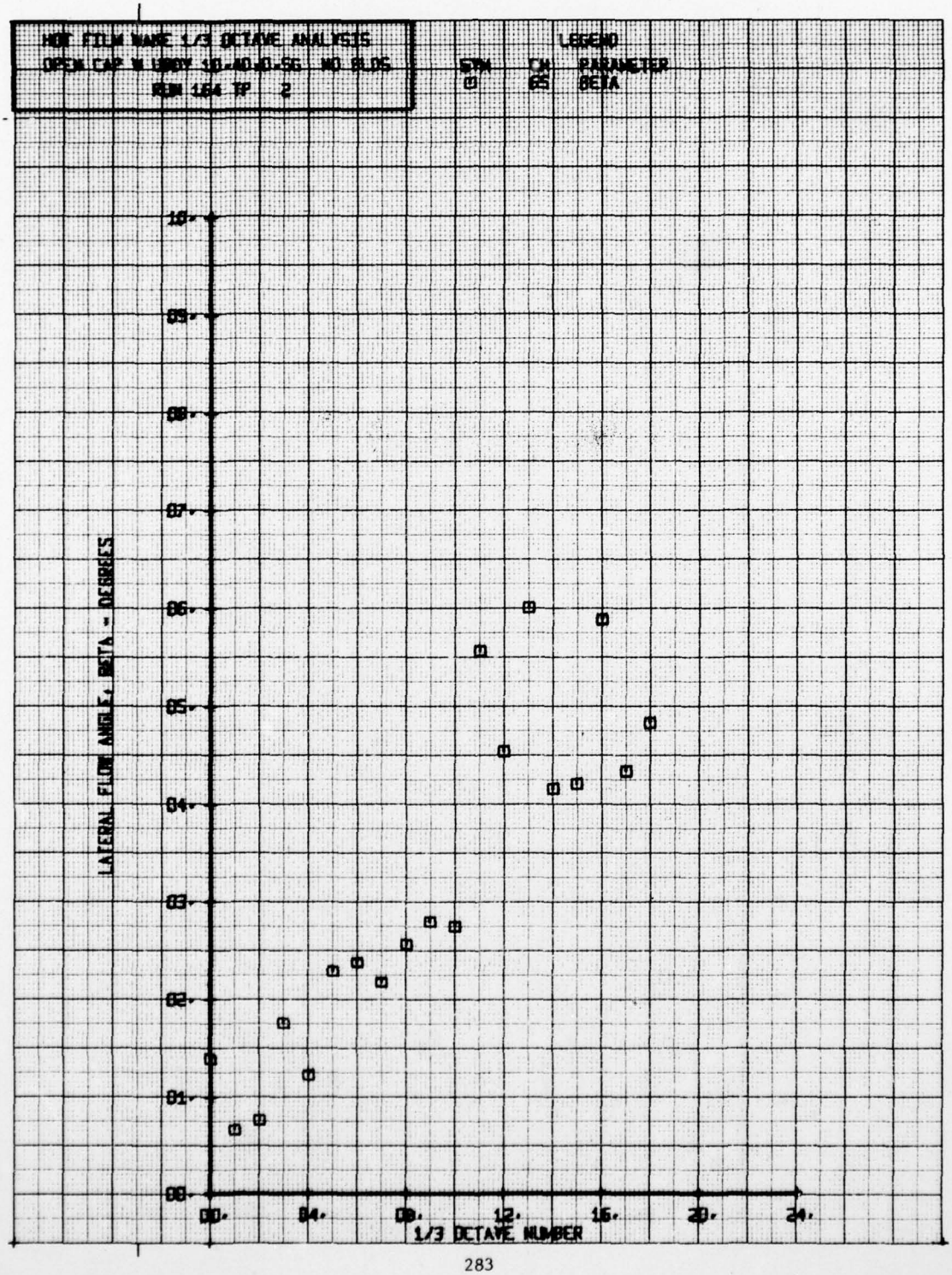

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W USOY 10-40-0-5G NO BLDS
RUN 164 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
10
09
08
07
06
05
04
03
02
01
00
00
04
08
12
16
20
24

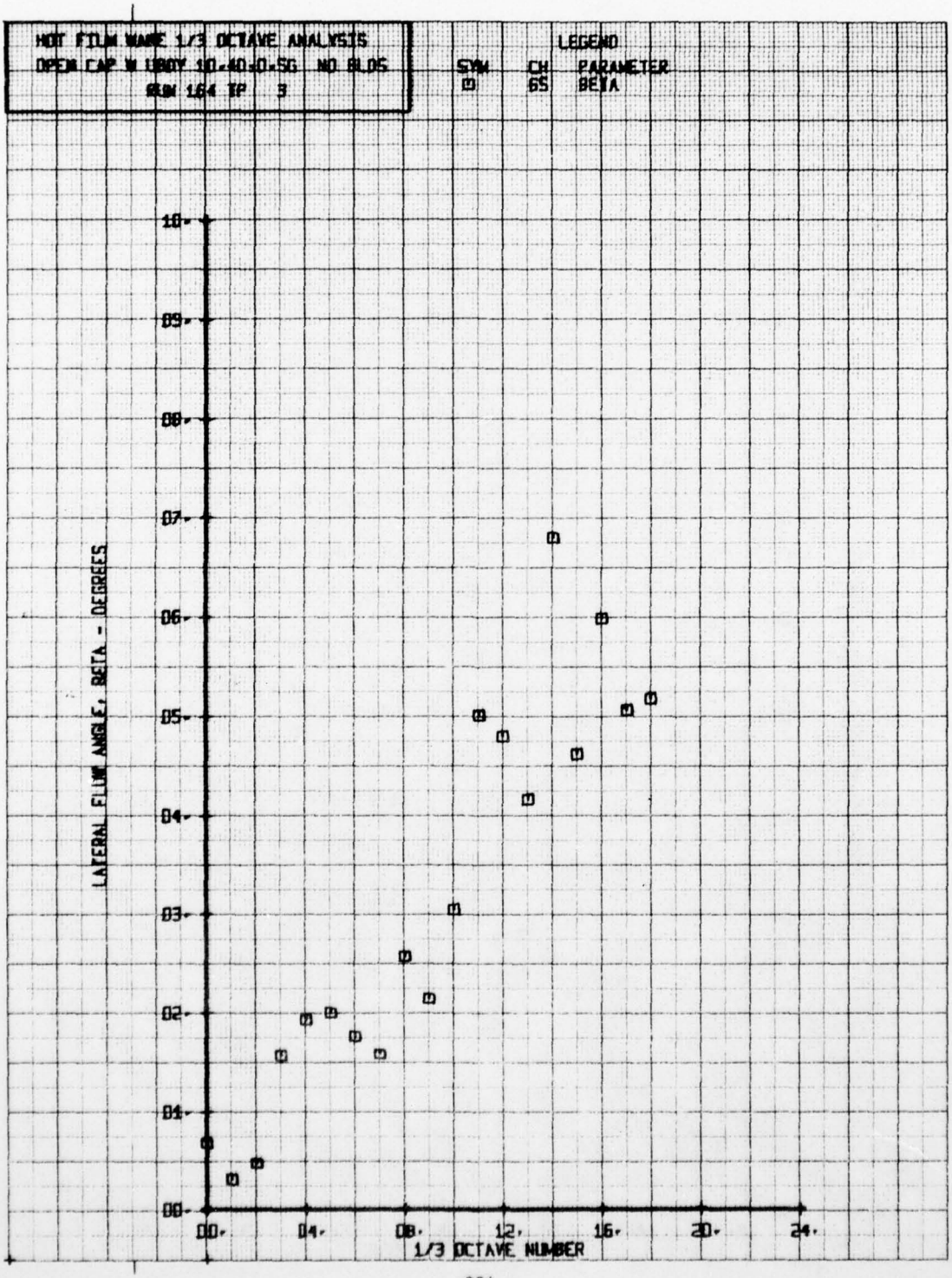

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-0-SG NO BLDG
RUN 164 TP 3
LEGEND
SYM CH PARAMETER
GG ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

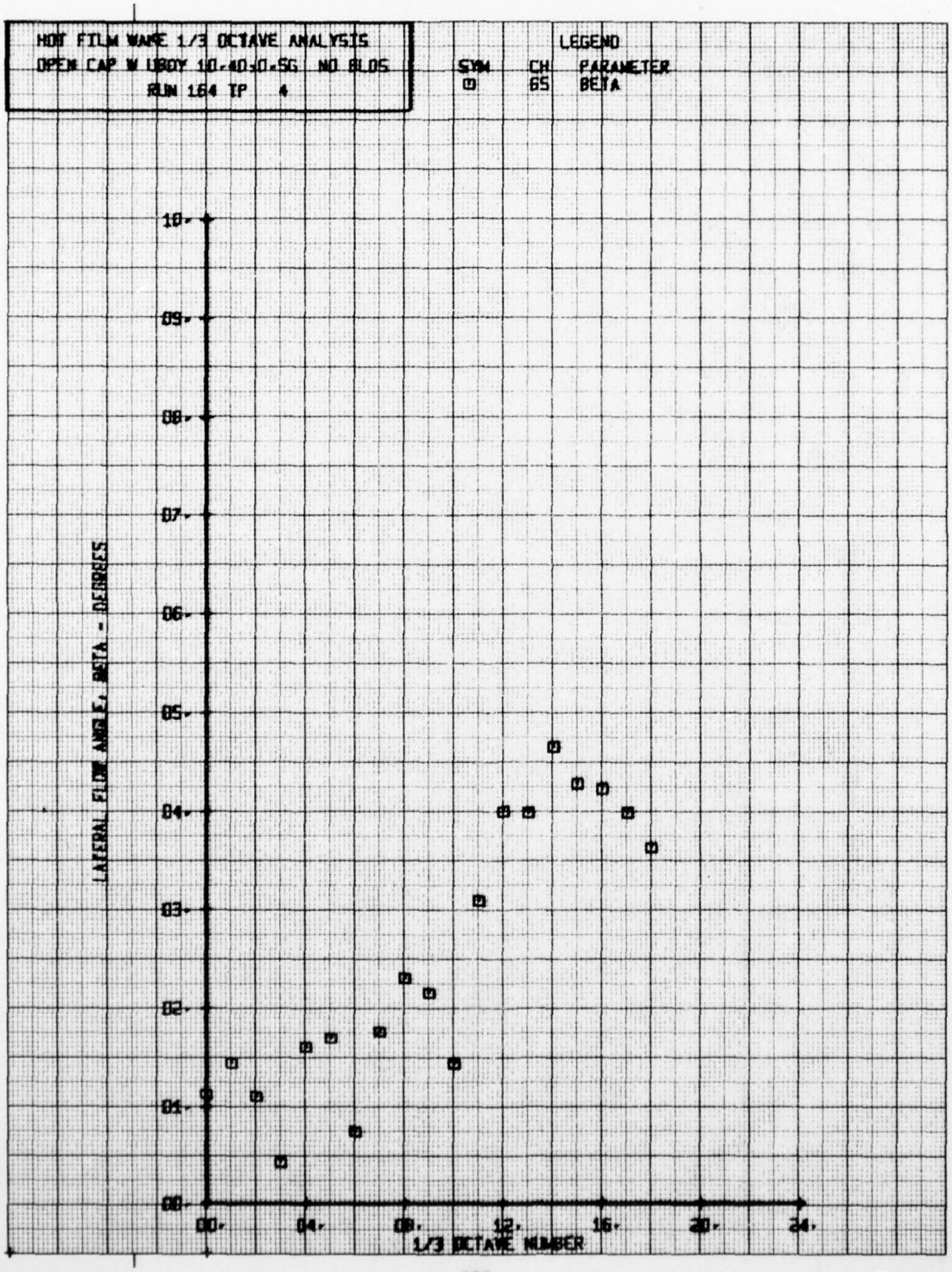

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-0-SG NO BLDS
RUN 164 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

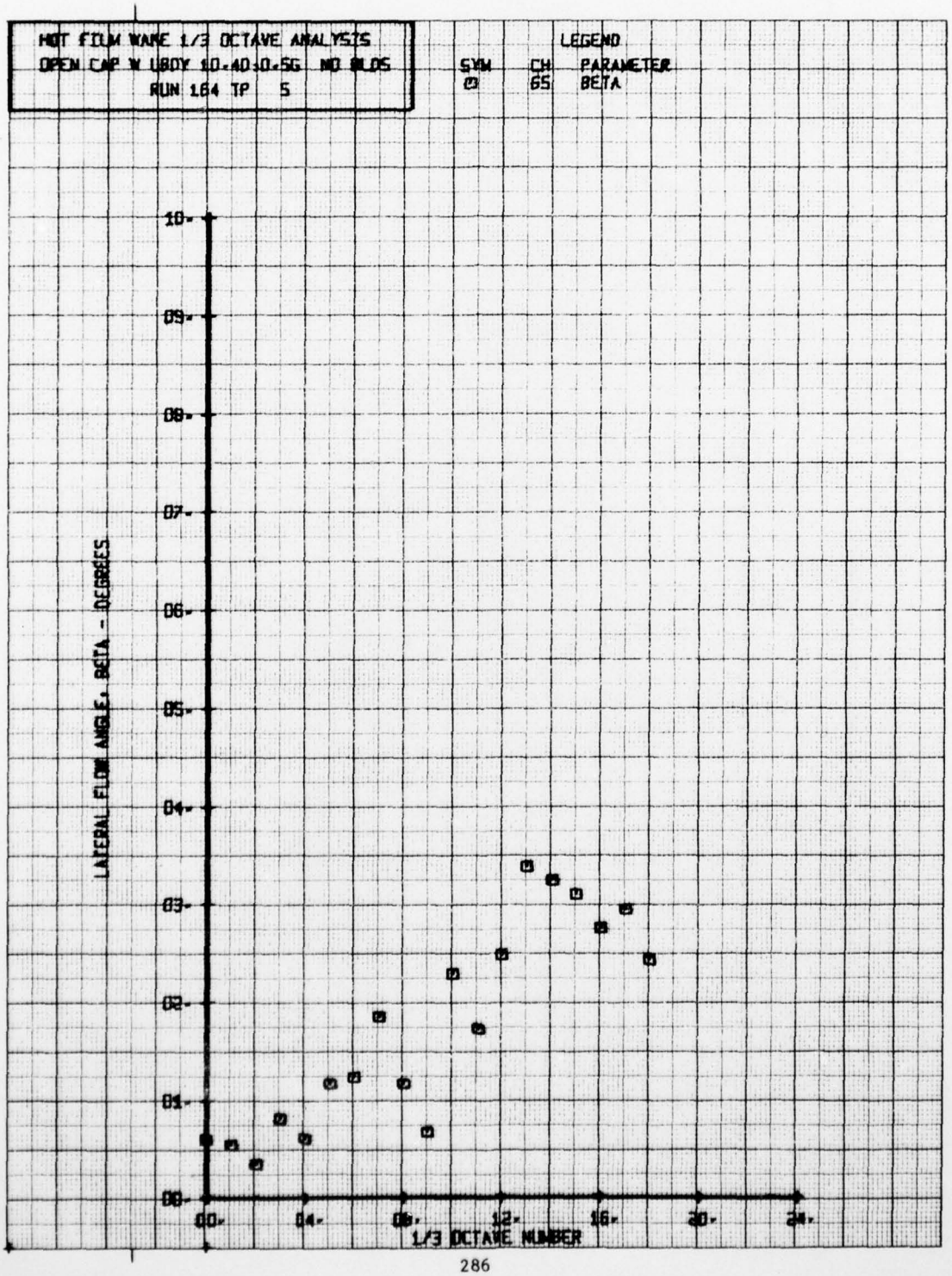

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBODY 10-40-0-5G NO BLDS
RUN 164 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

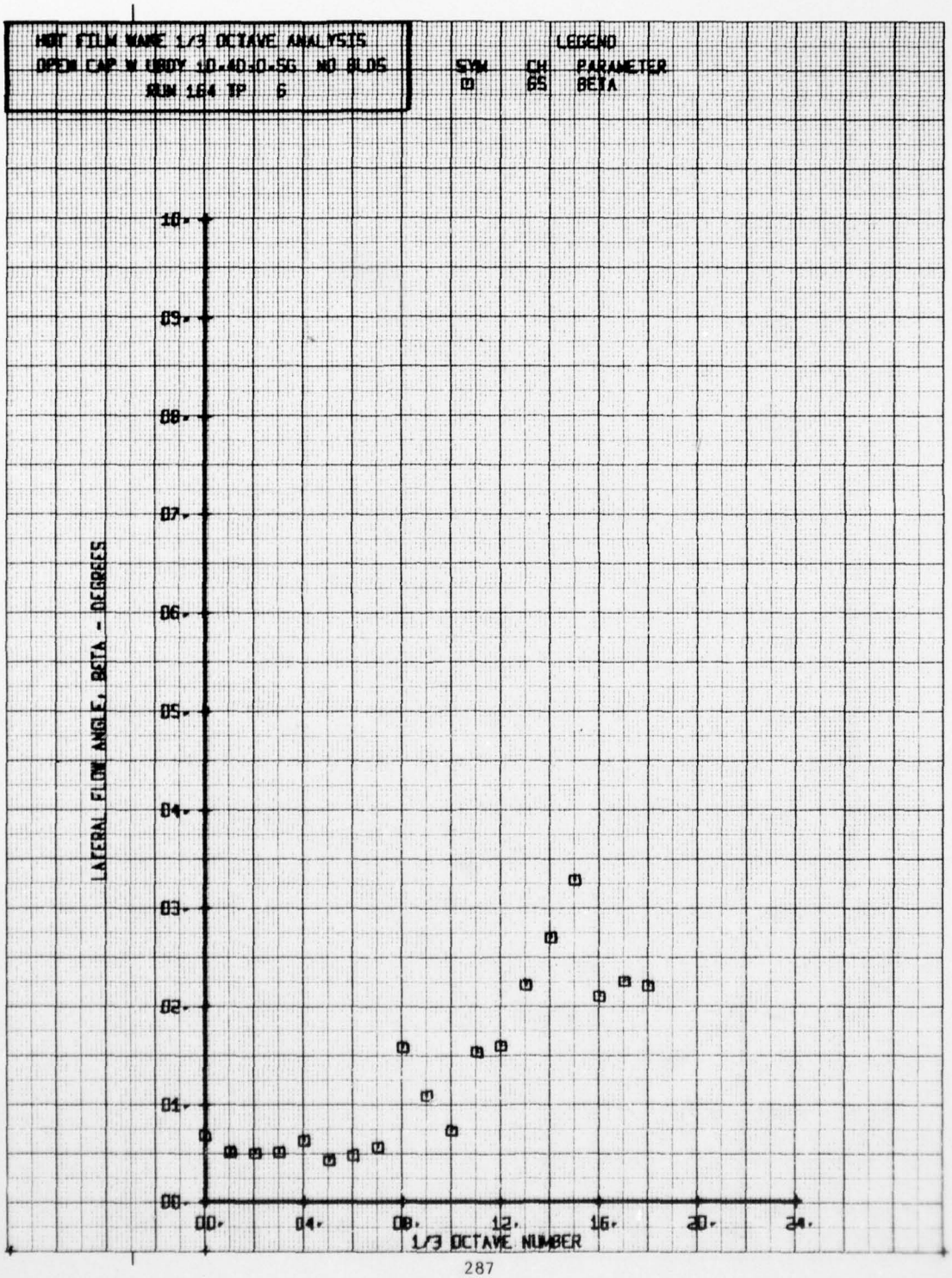

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LEDGY 10-40-0-5G NO BLOS
RUN 164 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LOBBY 10-40-0-56 NO BLDG
RUN 164 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBODY 10.40.0.5G NO BLDS
RUN 164 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

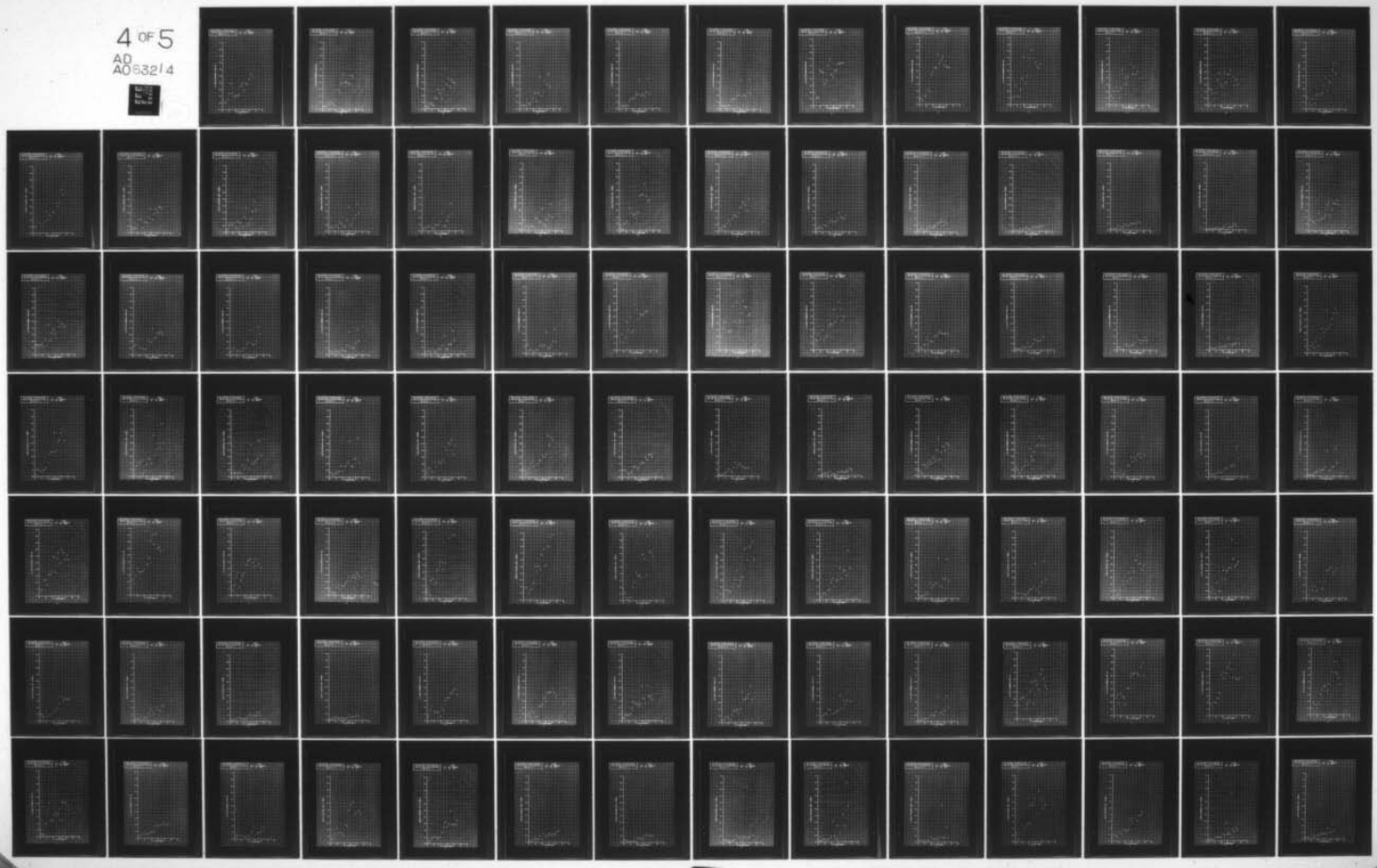

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.0.5G NO BLOS
RUN 164 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

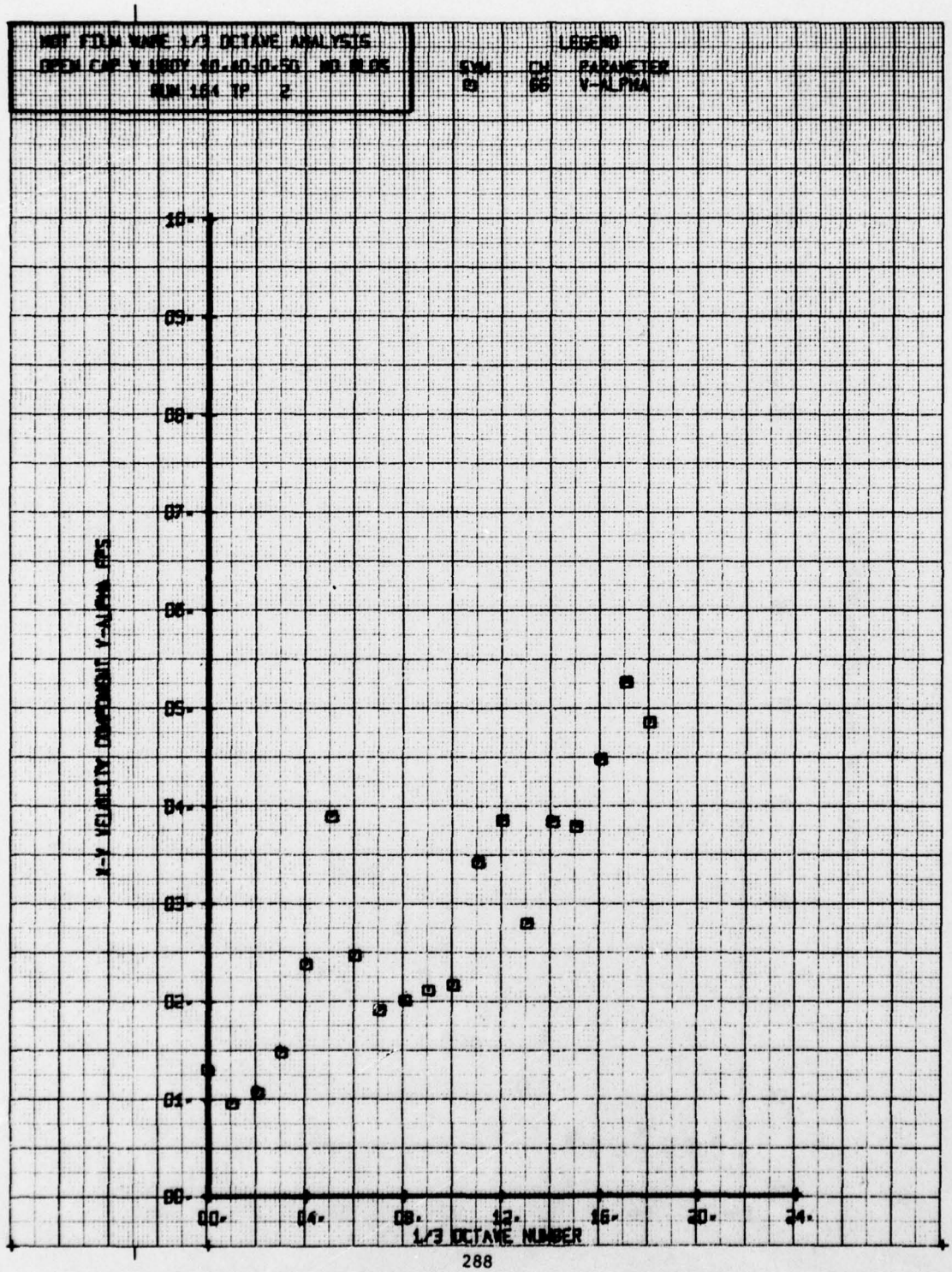

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-0-5G NO BLOS
RUN 164 TP 5
LEGEND
SYM CH PARAMETER
0 65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

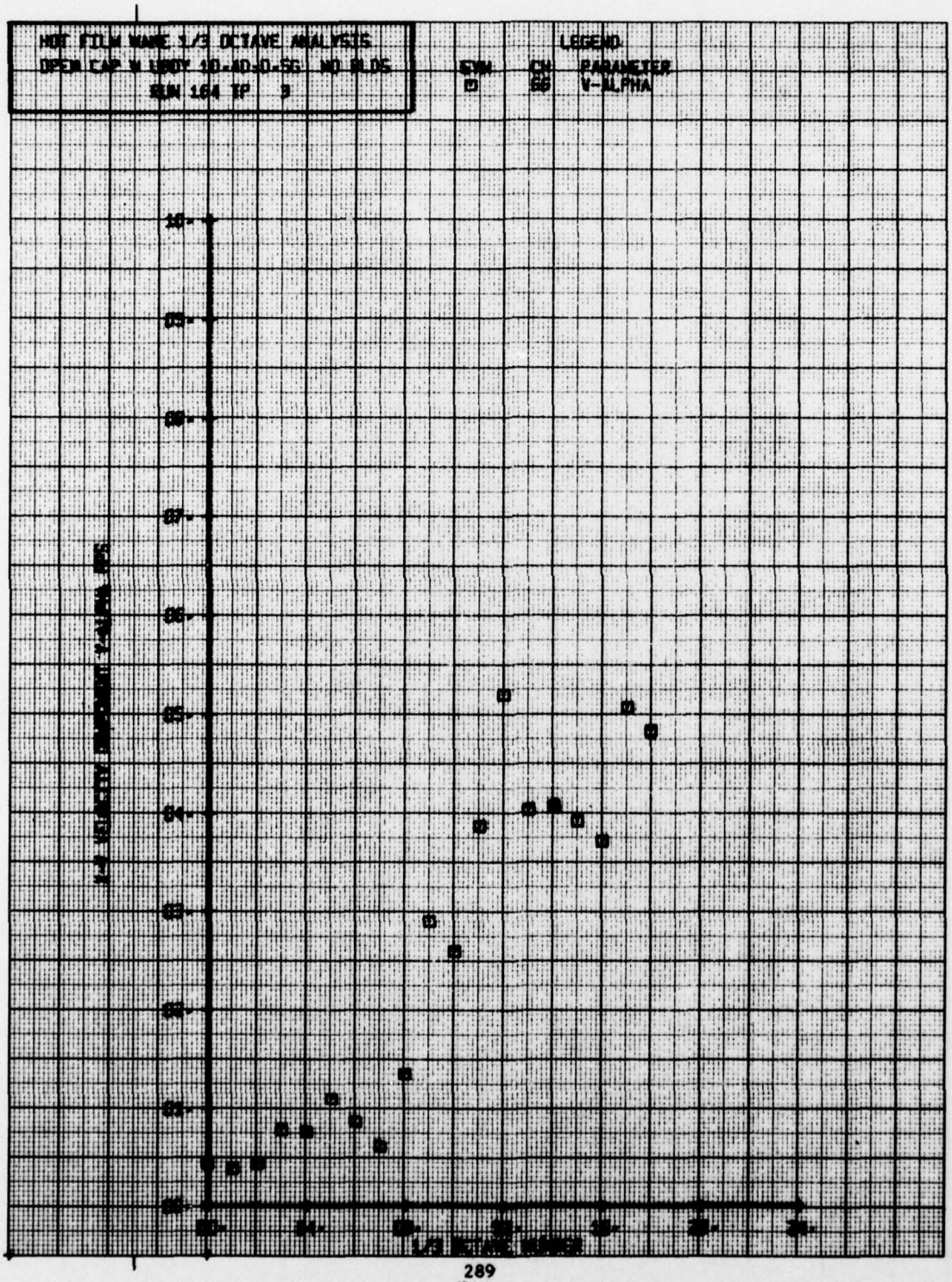

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40-0.56 NO BLDS
RUN 164 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

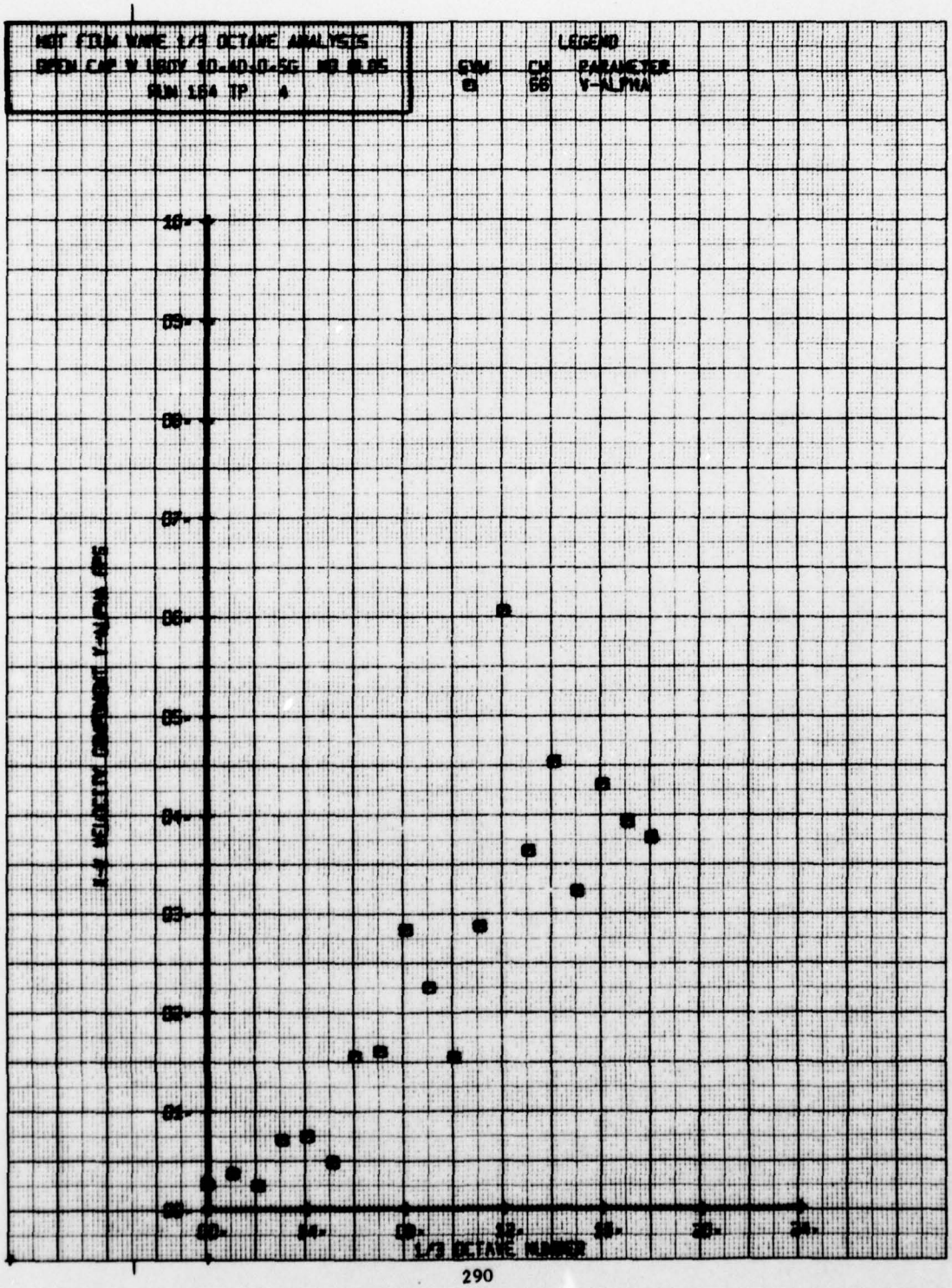
AD-A063 214 BOEING VERTOL CO PHILADELPHIA PA F/G 1/3
INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFI--ETC(U)
SEP 78 P F SHERIDAN DAAJ02-77-C-0020
UNCLASSIFIED USARTL-TR-78-23D NL

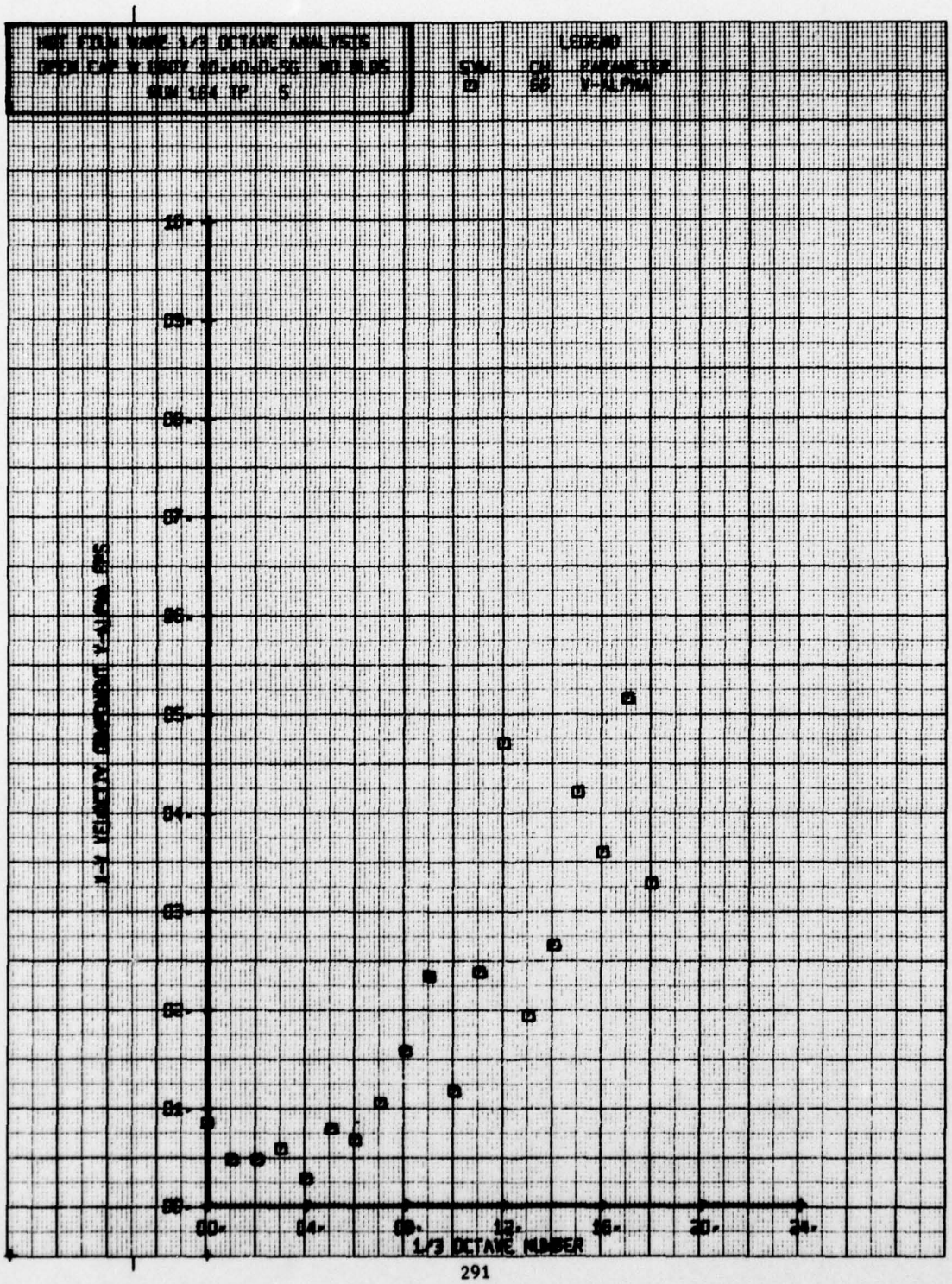
4 OF 5
AD
A063214

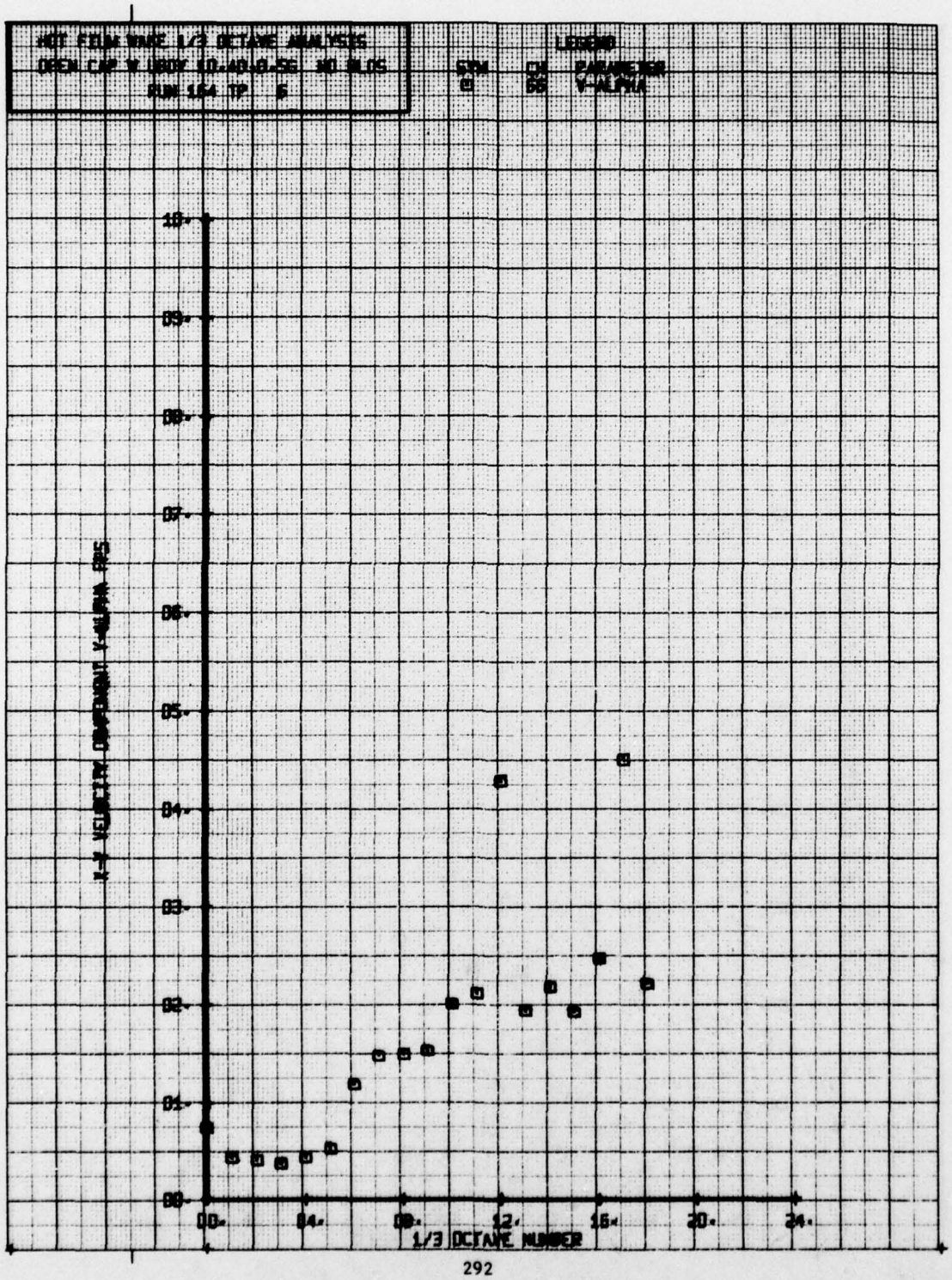


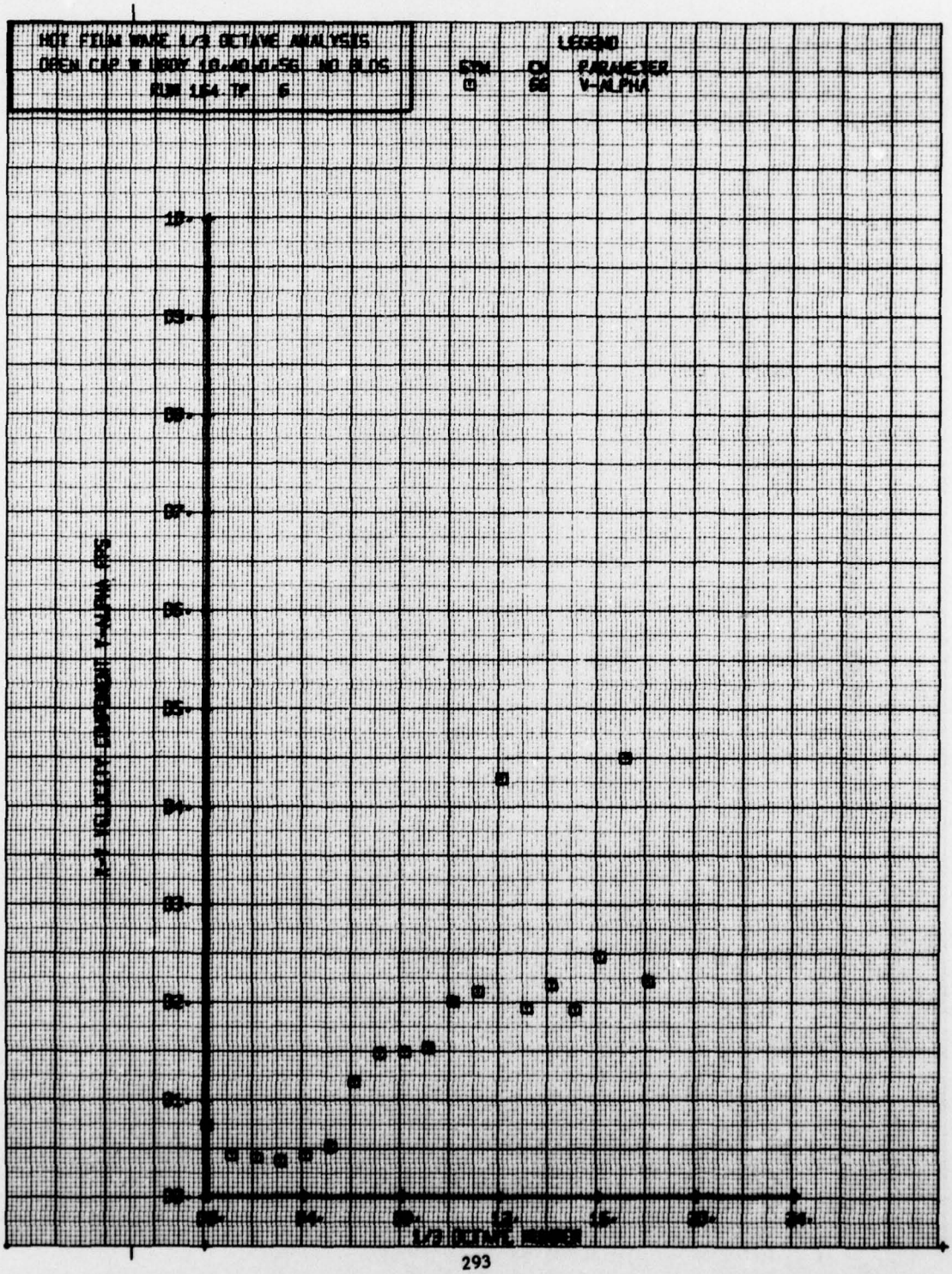

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10-40-0-50 NO BLDG
RUN 164 TP 2
LEGEND
SYM CH PARAMETER
U V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
U-V VELOCITY COMPONENT V-ALPHA RMS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

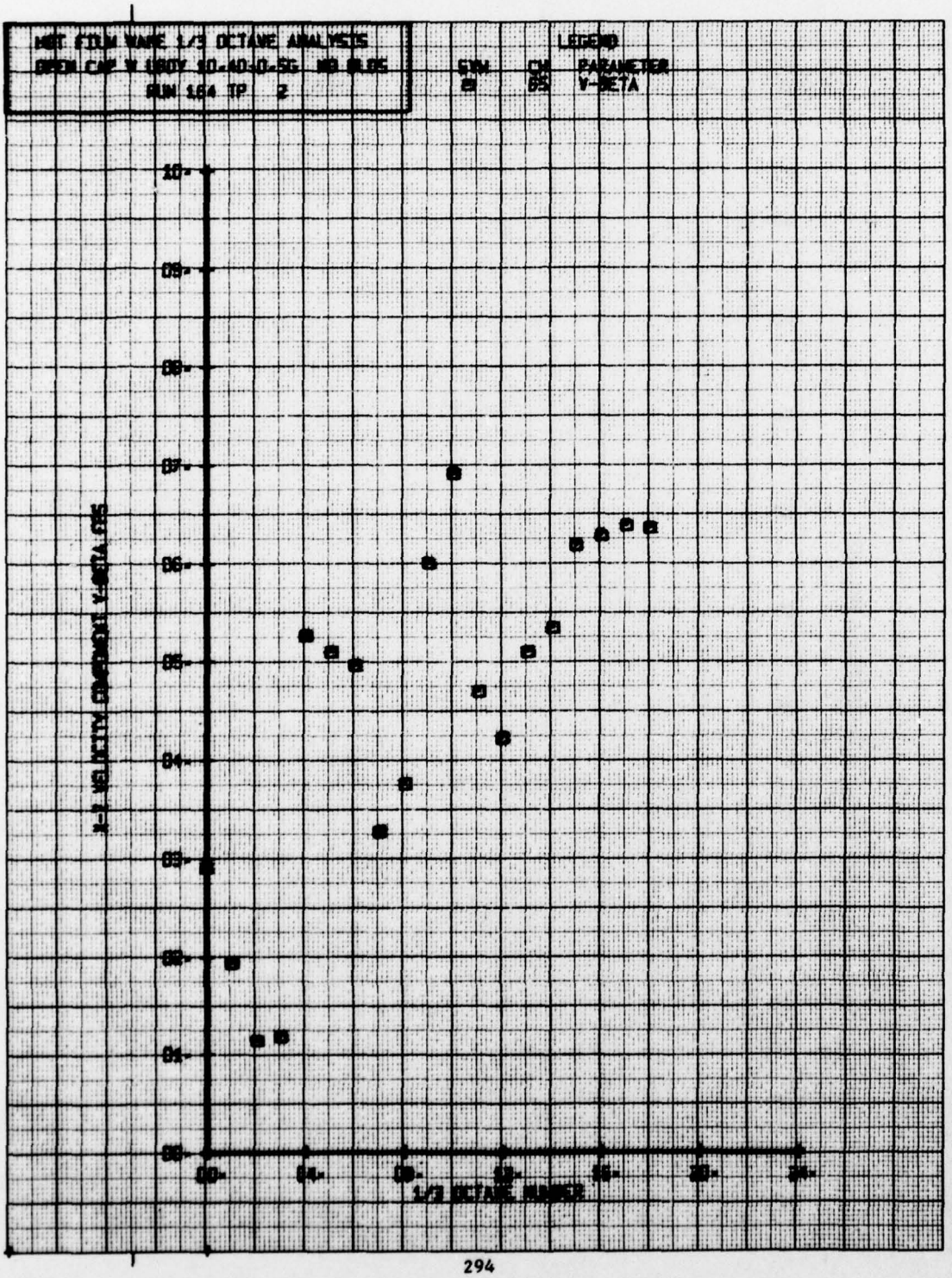

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBODY 10-40-0-SG NO BLDS
RUN 164 TP 3
LEGEND
SYM CH PARAMETER
D SG V-ALPHA

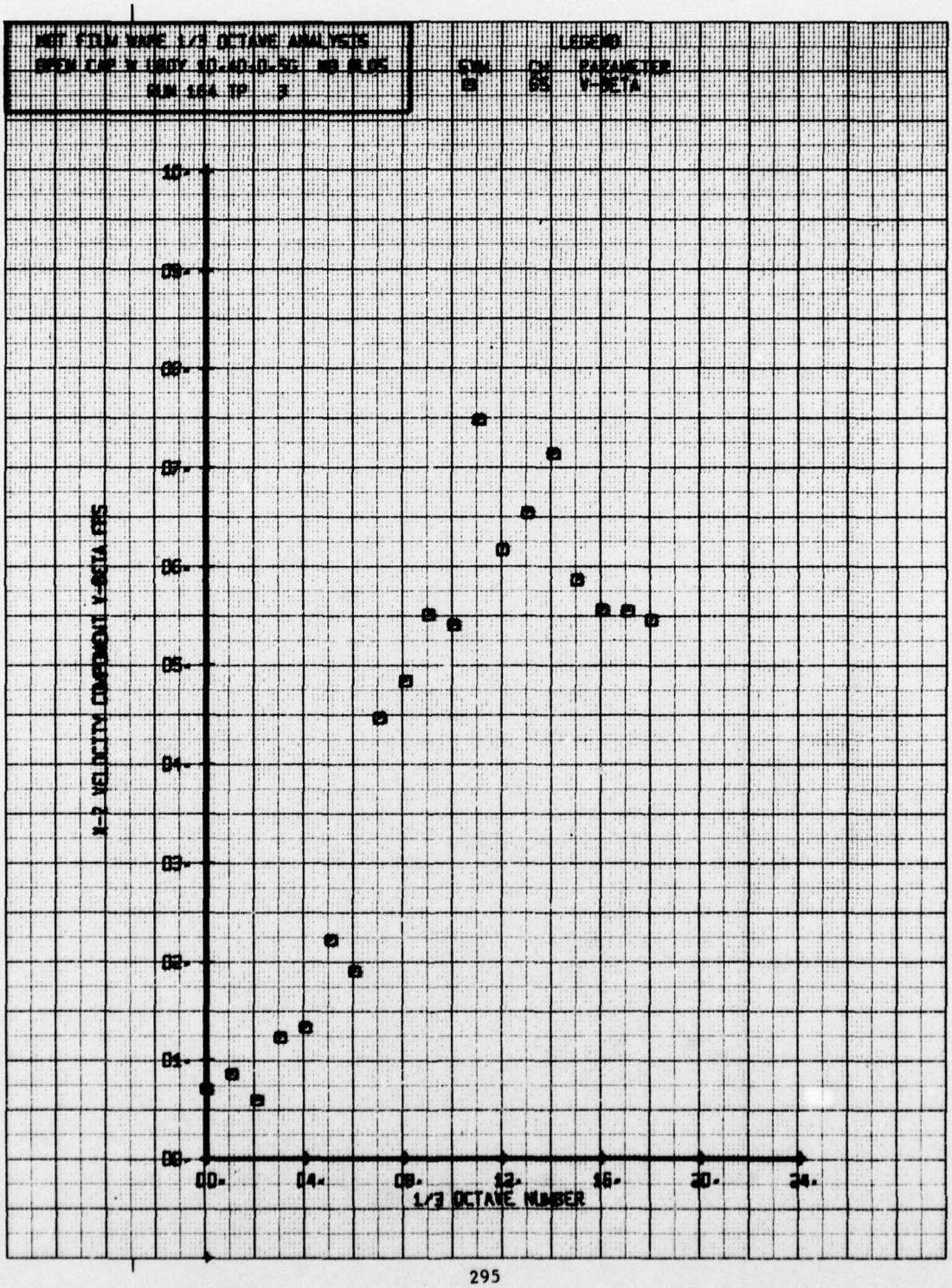

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-0-5G
RUN 164 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
1/3 OCTAVE NUMBER

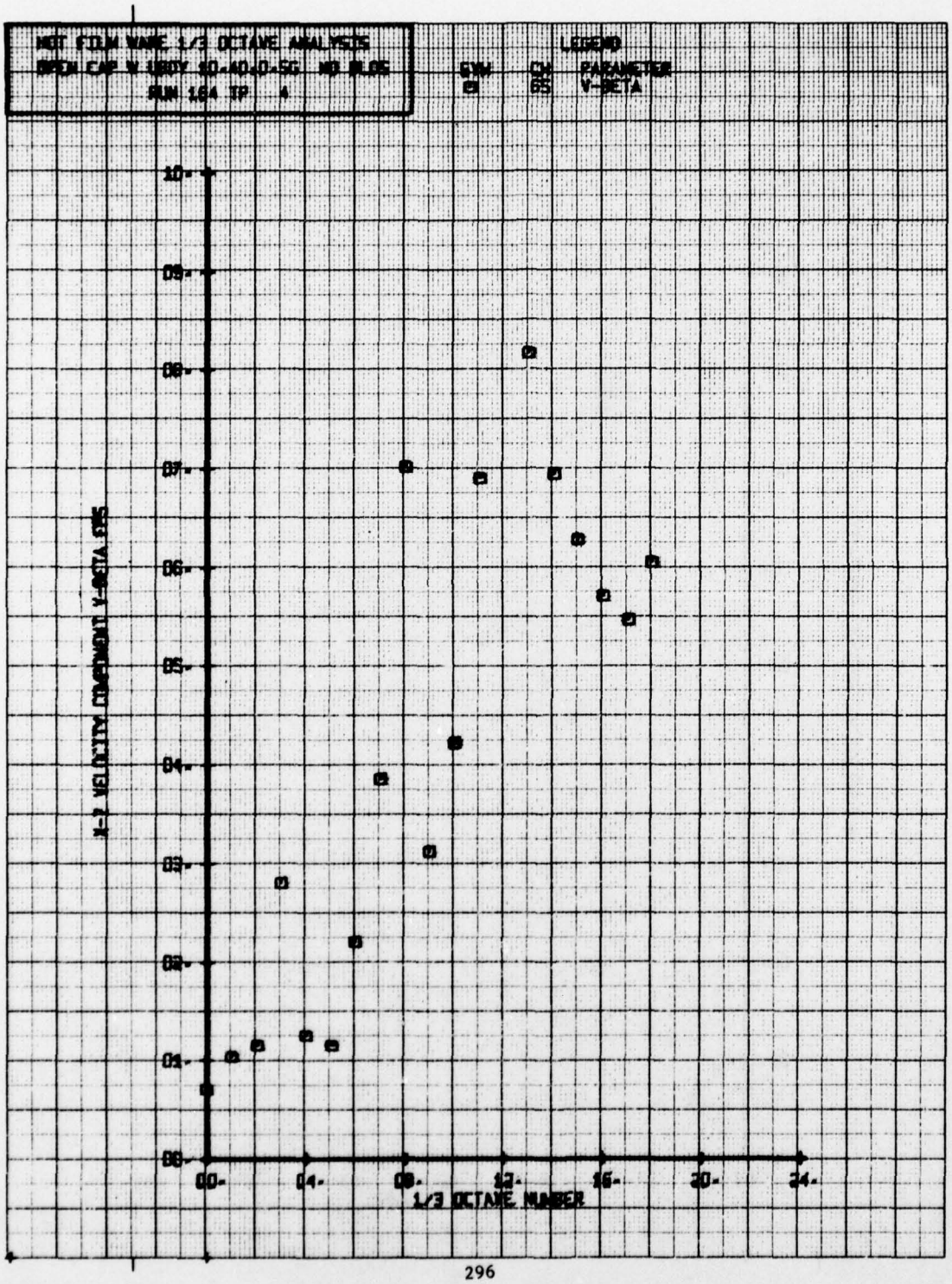

LEGEND
SYM CH PARAMETER
V-ALPHA
1/3 OCTAVE NUMBER

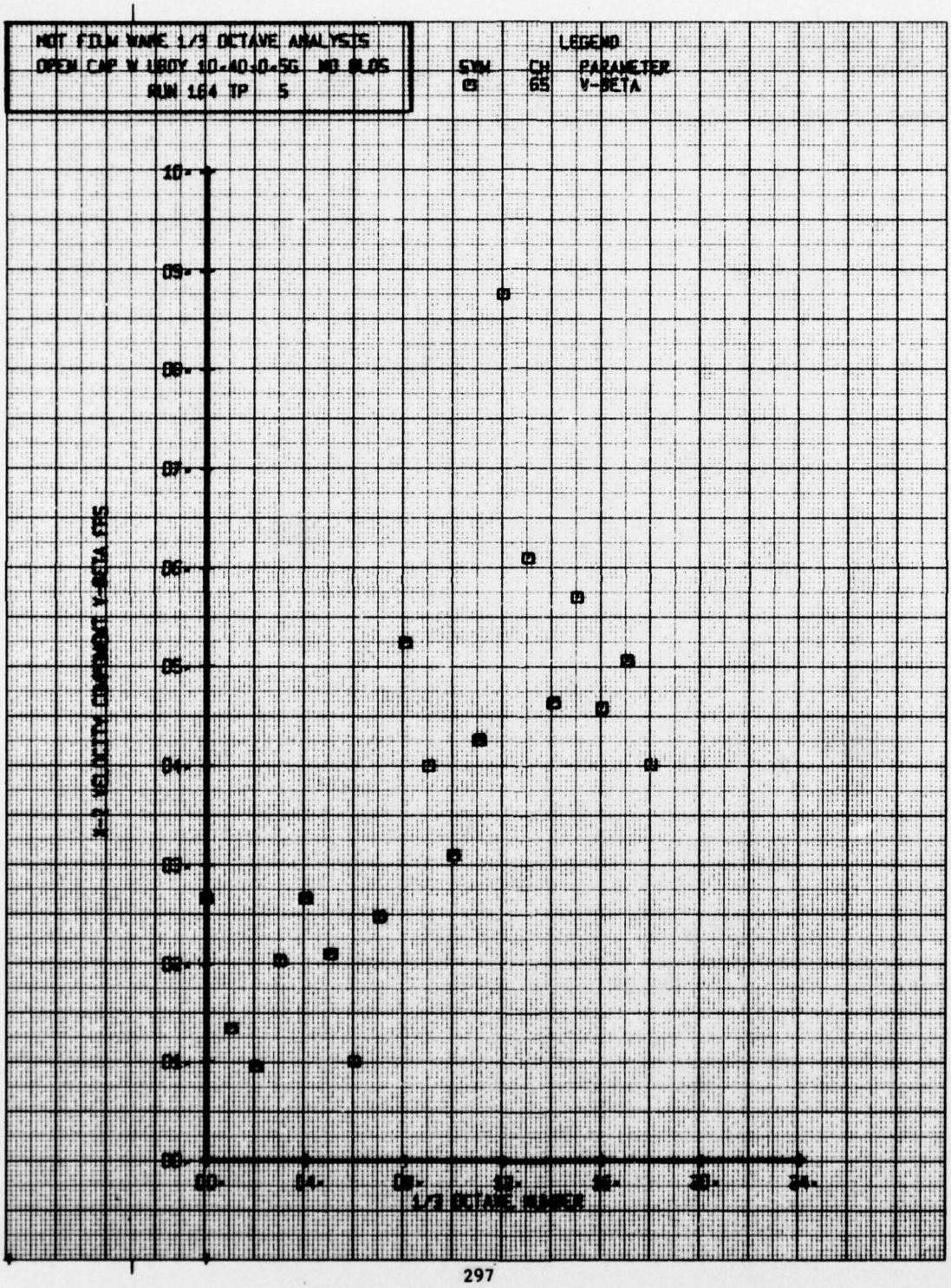

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.0.56 NO BLDS
RUN 164 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

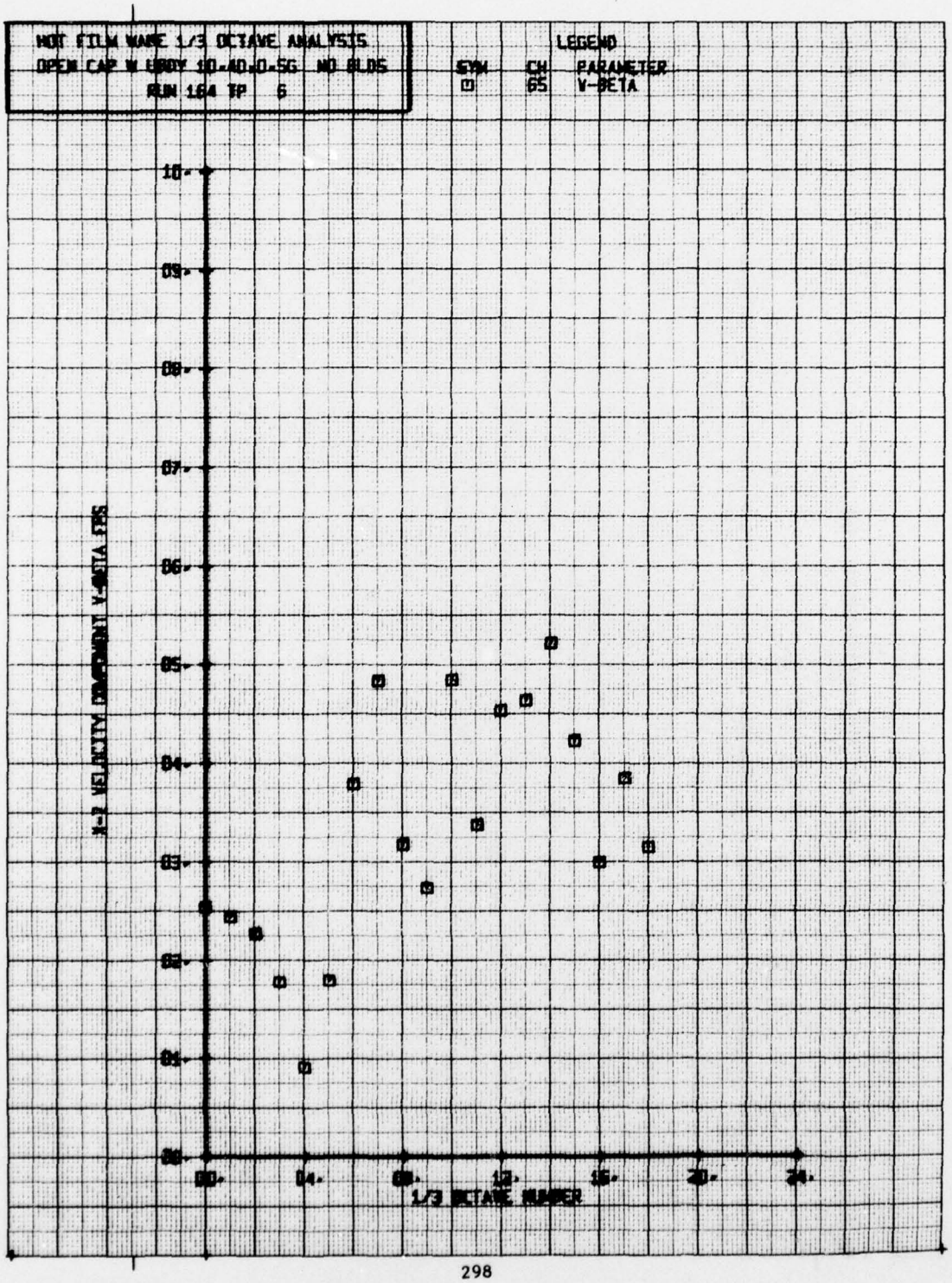

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.0.56 NO BLDS
RUN 164 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
1/3 OCTAVE NUMBER

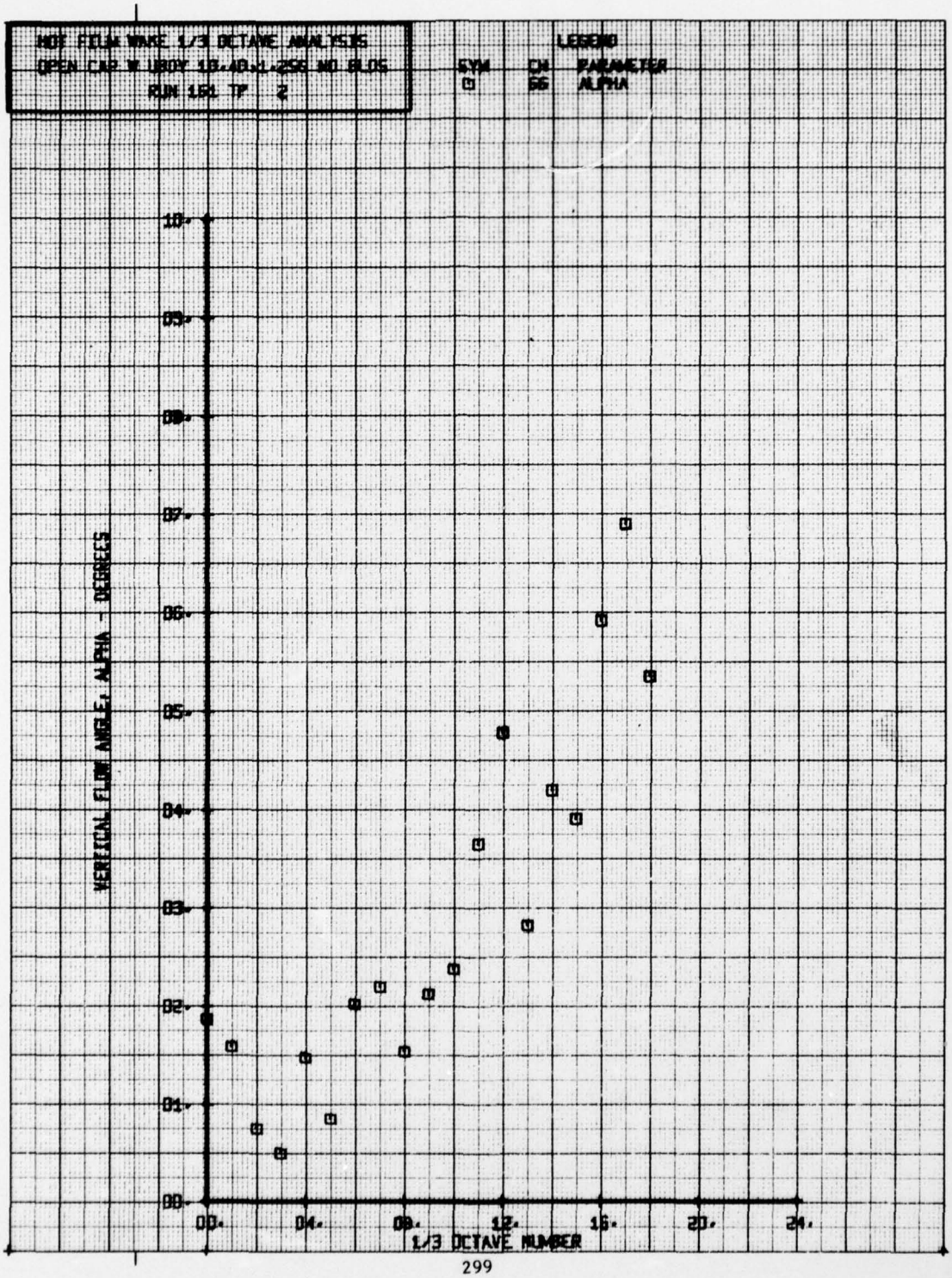

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-0-5G NO BLDS
RUN 164 TP 2
LEGEND
SYM CH PARAMETER
85 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

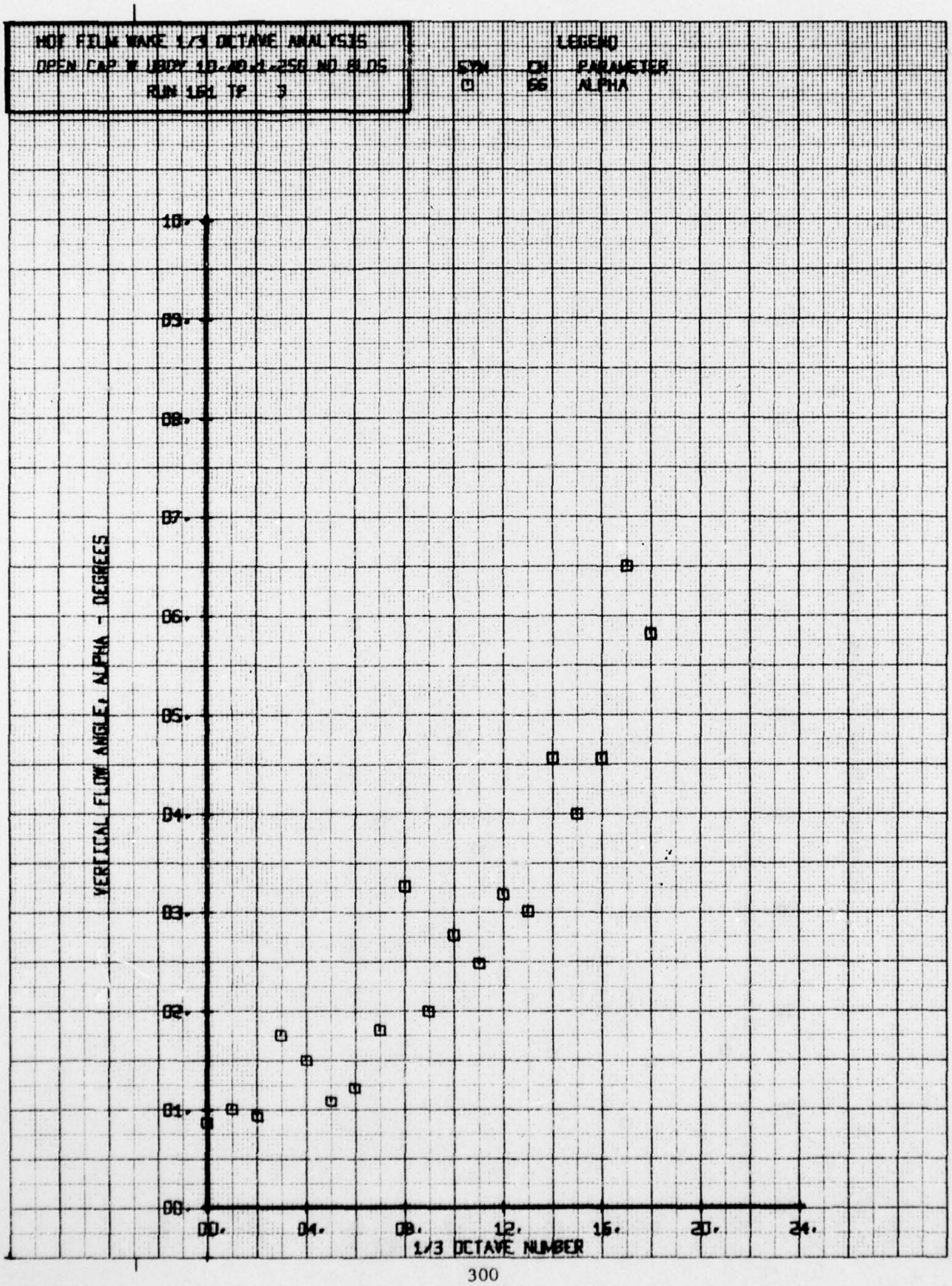

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
RUN 164 TP 3
LEGEND
SYM CH PARAMETER
02 V-BETA
10
09
08
07
06
05
04
03
02
01
00
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER
K-2 VELOCITY COMPONENT V-BETA SES

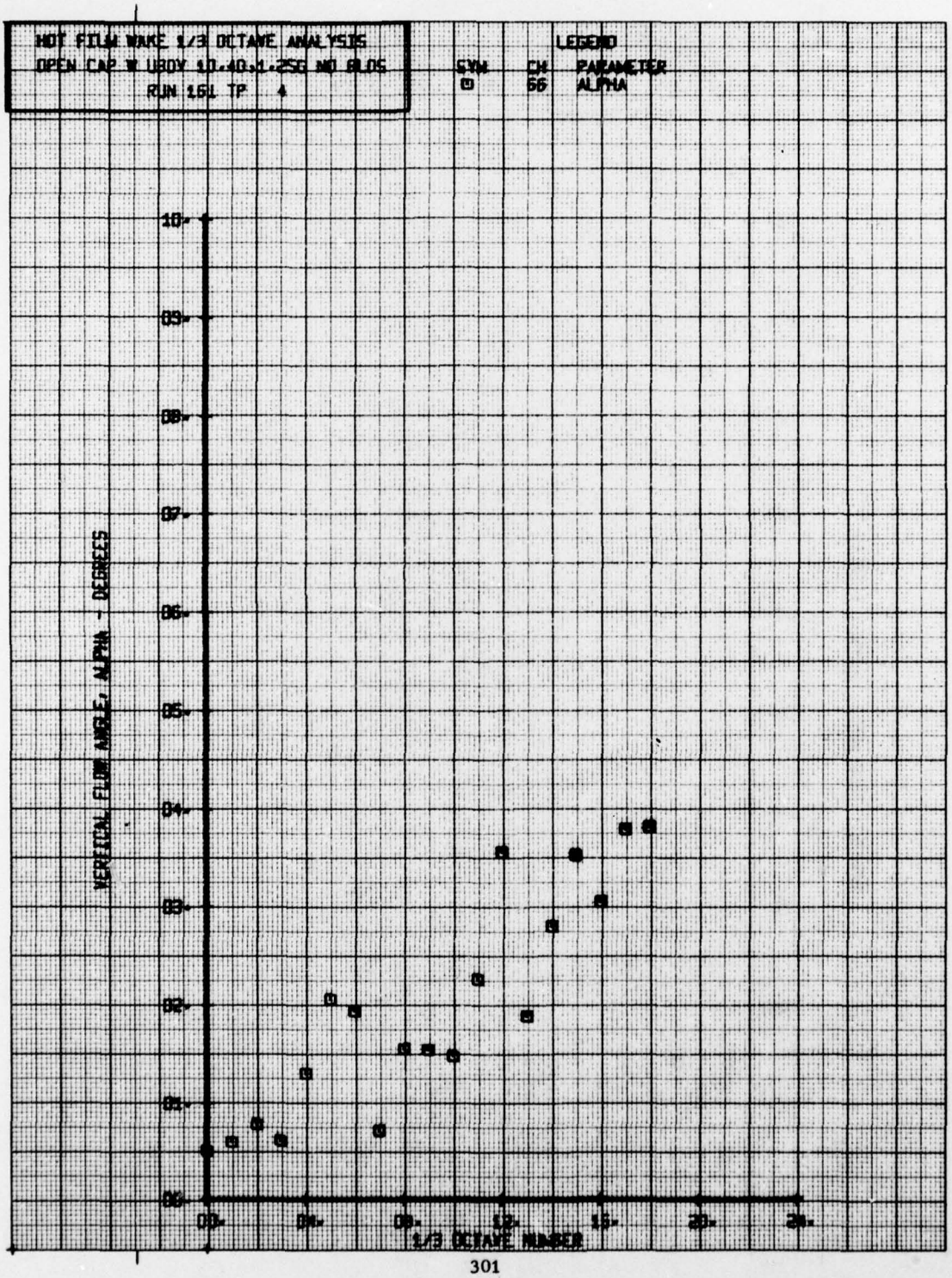

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10-40.0-5G NO BLOS
RUN 164 TP 4
LEGEND
GYW CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00-
04-
08-
12-
16-
20-
24-
01-
02-
03-
04-
05-
06-
07-
08-
09-
10-

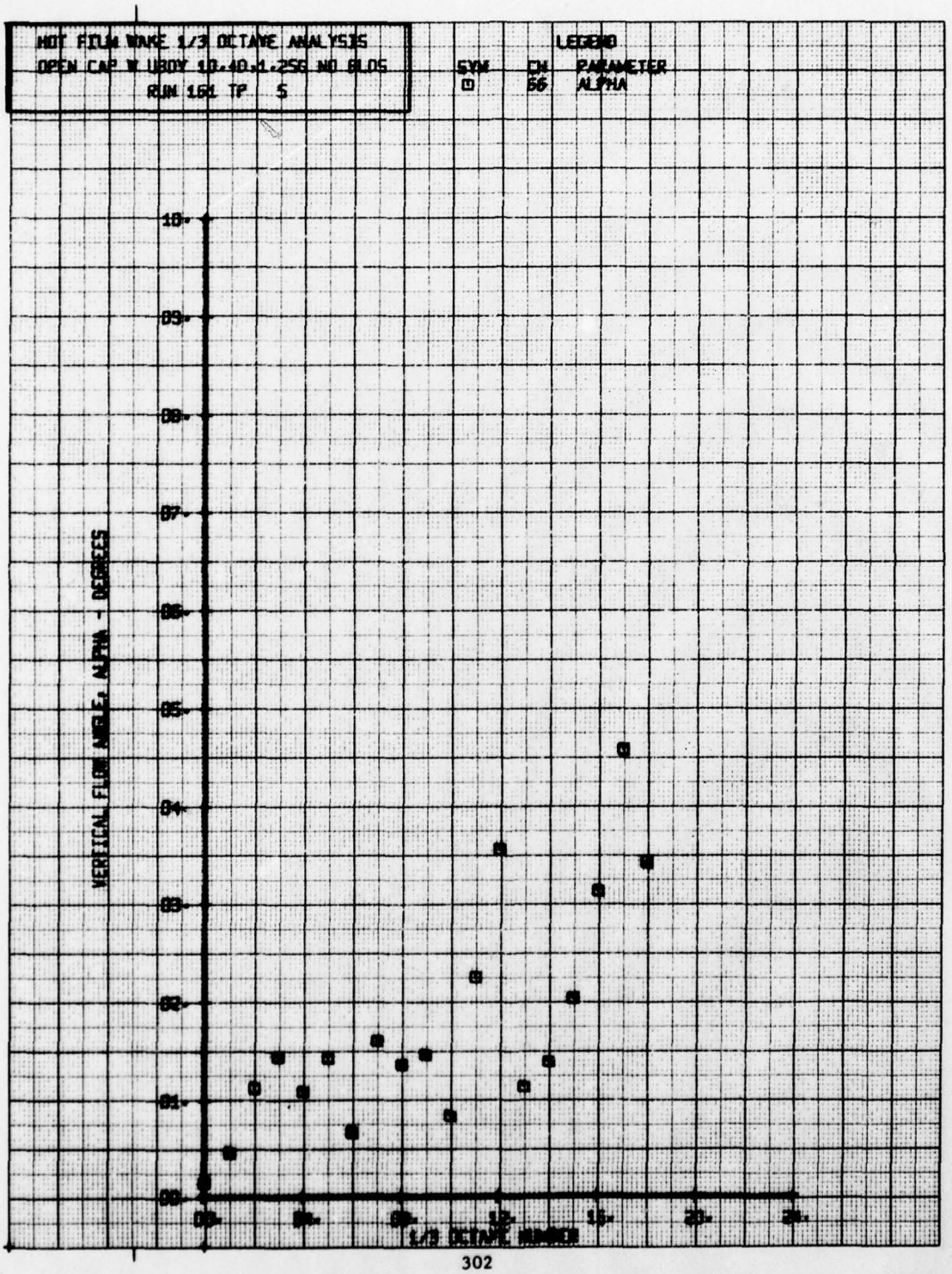

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-0-5G NO BLDS
RUN 164 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
04-
08-
12-
16-
20-
24-
1/3 OCTAVE NUMBER

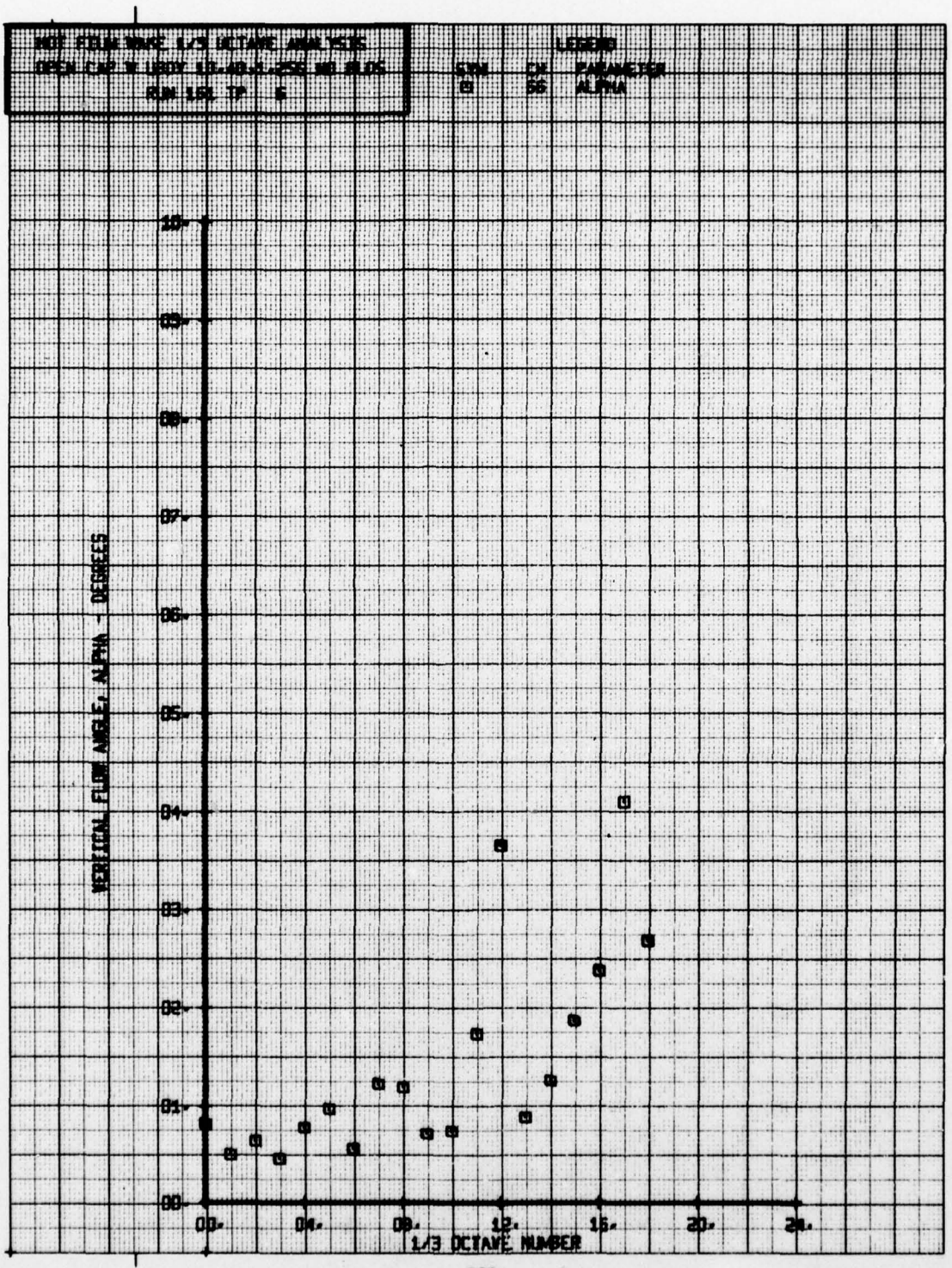

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.0.5G NO BLDS
RUN 164 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

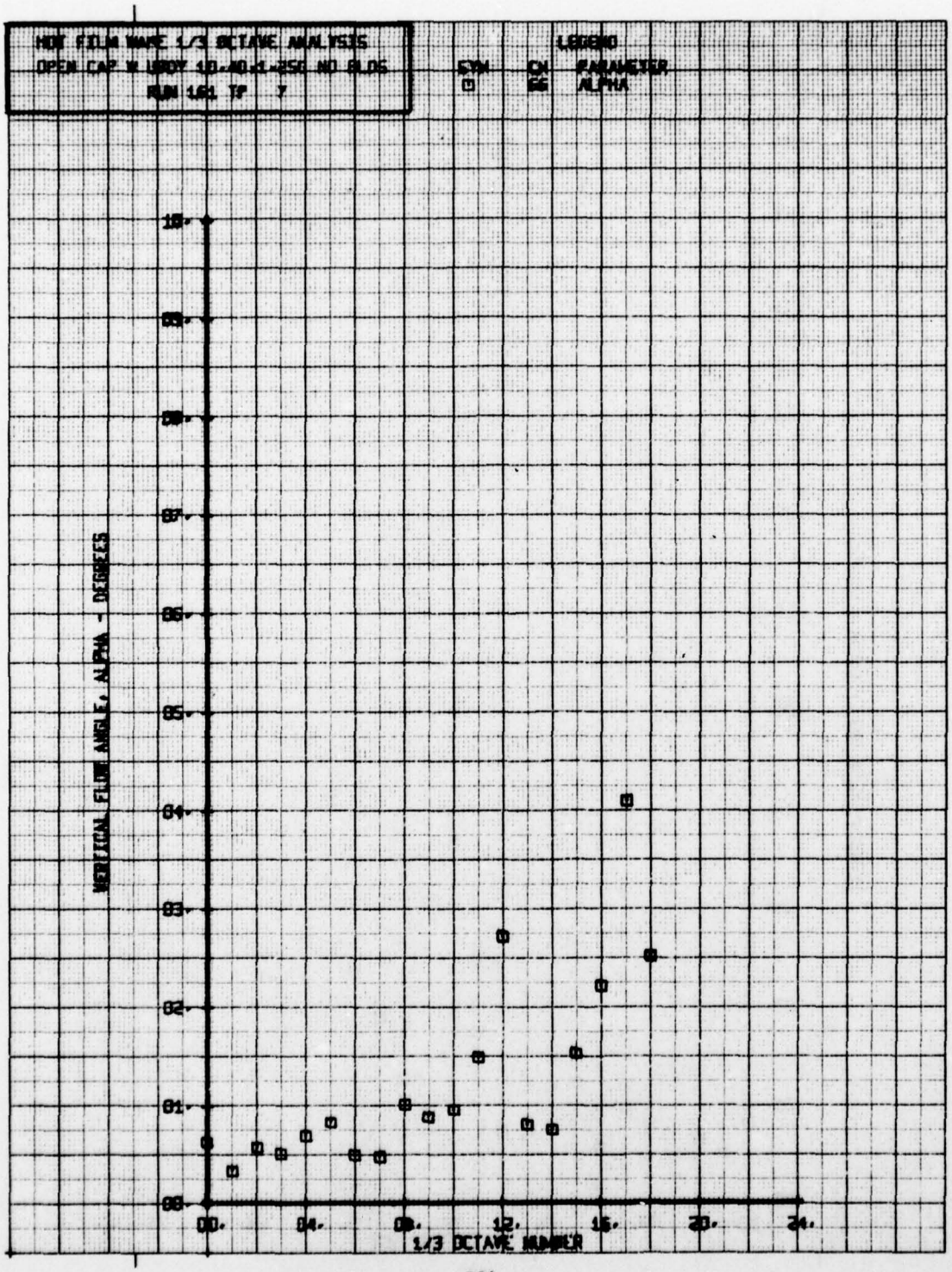

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40x1.256 NO BLOS
RUN 161 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

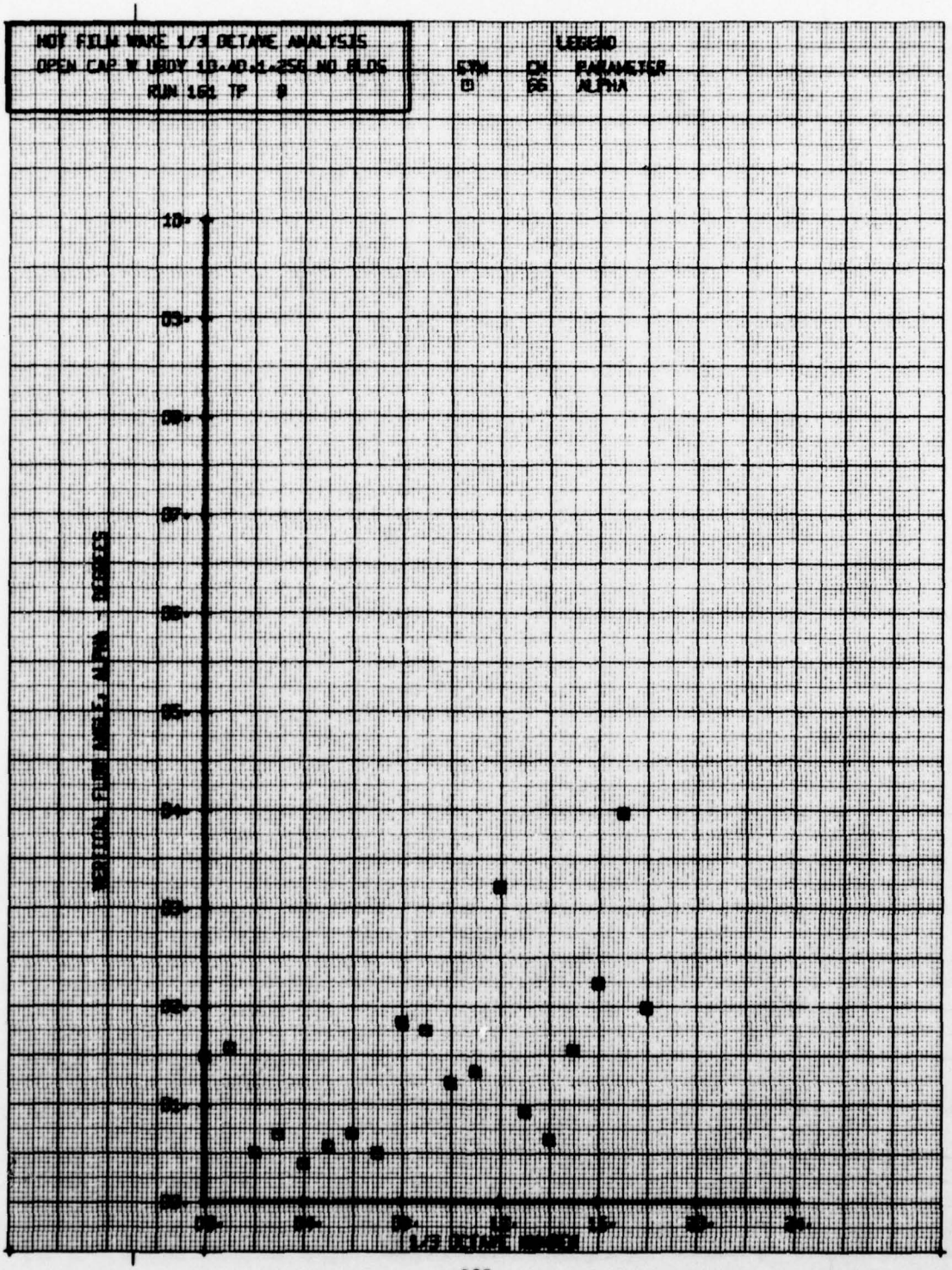

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10.-AD.1.-25R NO BLDS
RUN 161 TP 3
LEGEND
SYM ID PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

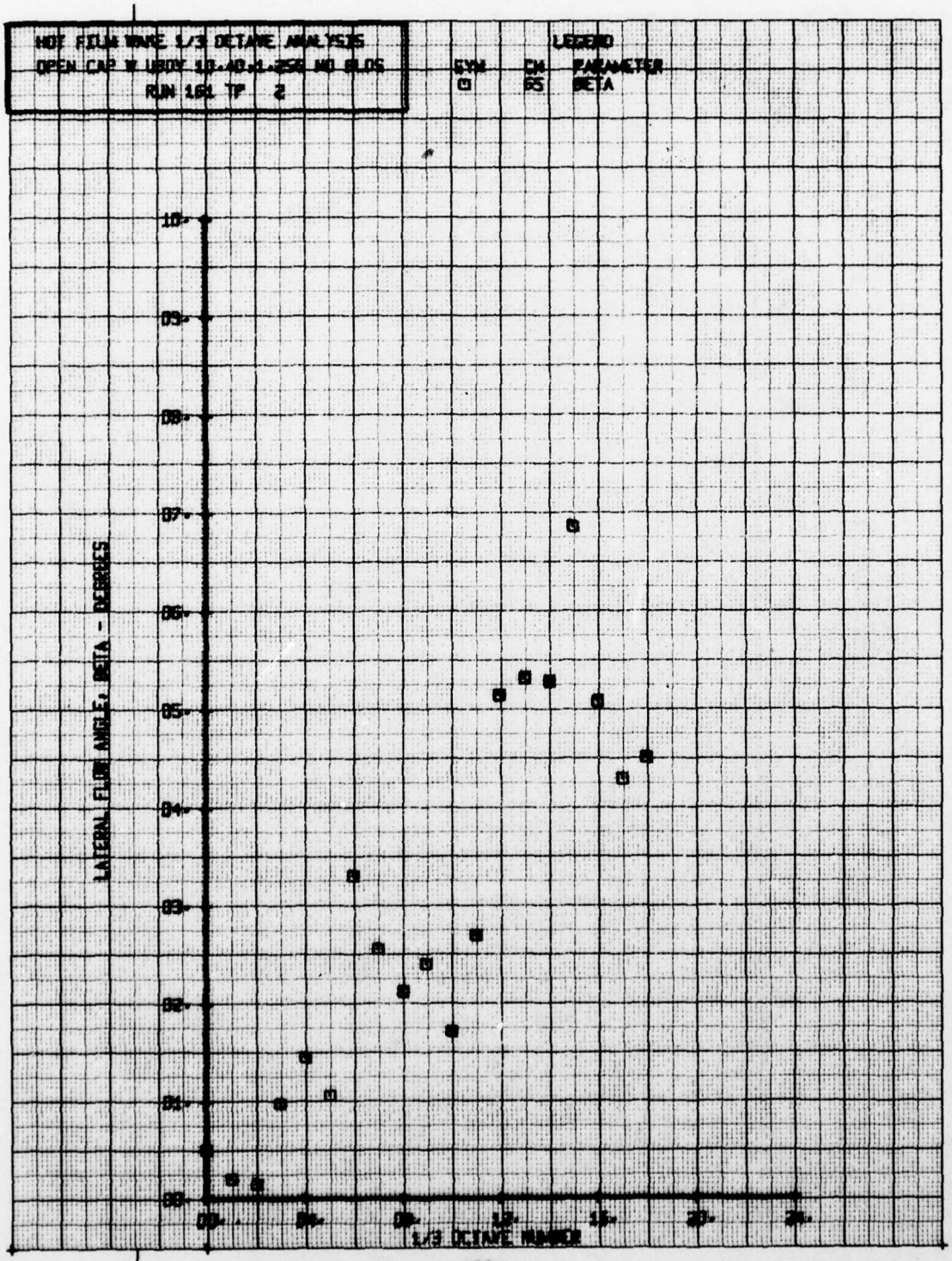

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.25G NO RUDS
RUN 161 TP 4
LEGEND
SYM CH PARAMETER
56 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

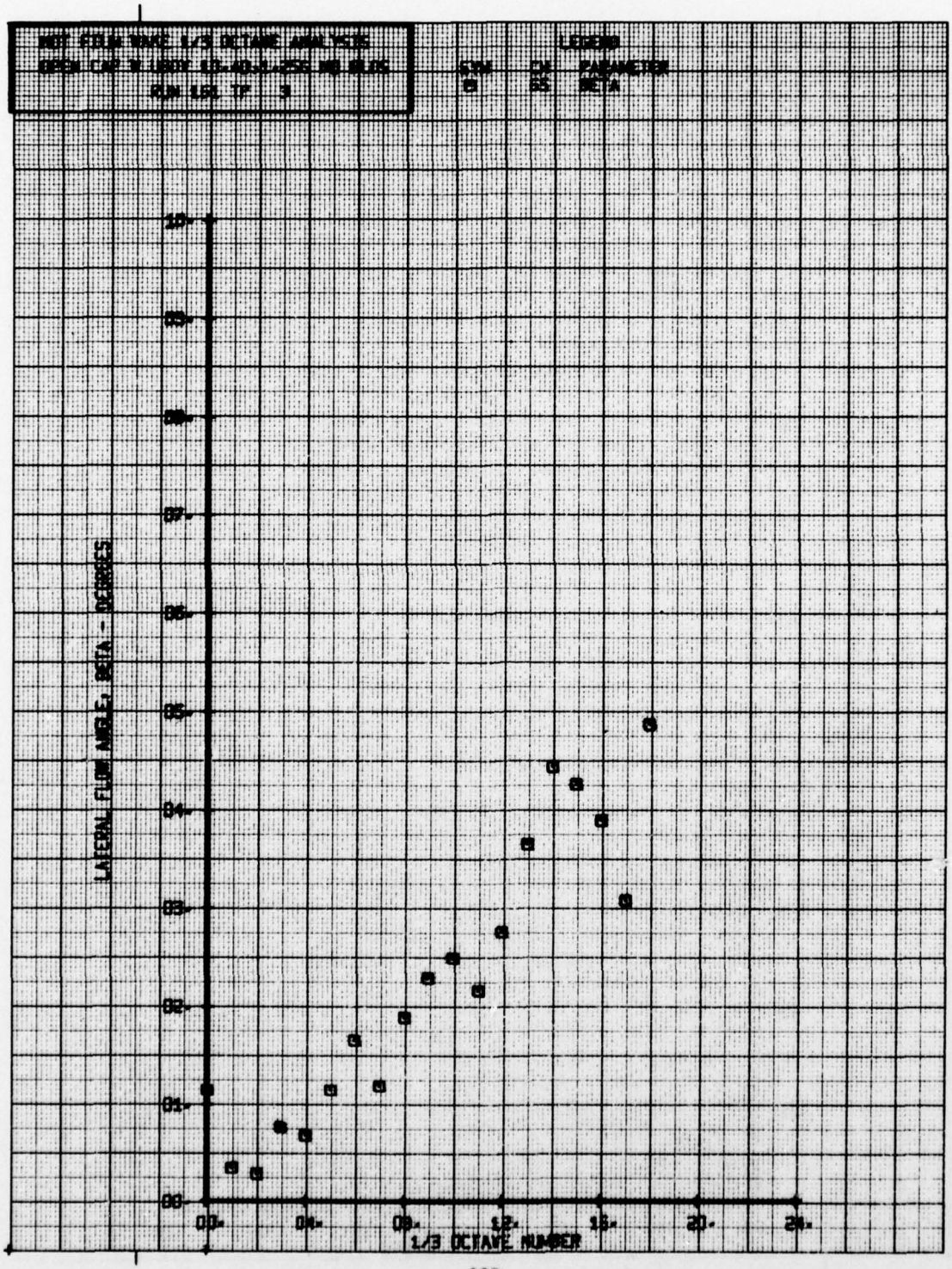

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.256 NO BLOS
RUN 161 TP 5
LEGEND
SYM CH PARAMETER
56 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

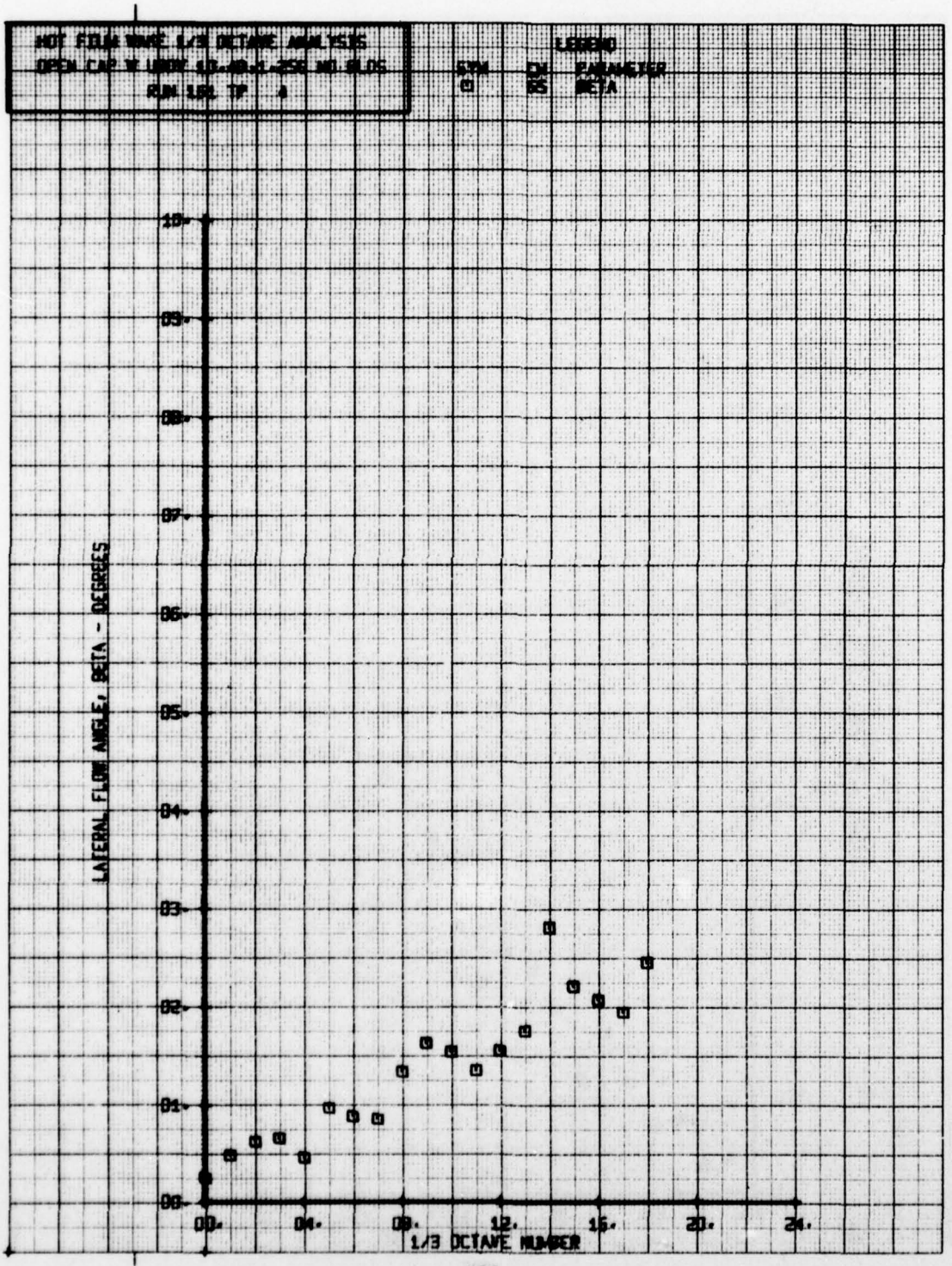

LEGEND
SYM CM PARAMETER
56 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
00
01
02
03
04
05
06
07
08
09
10

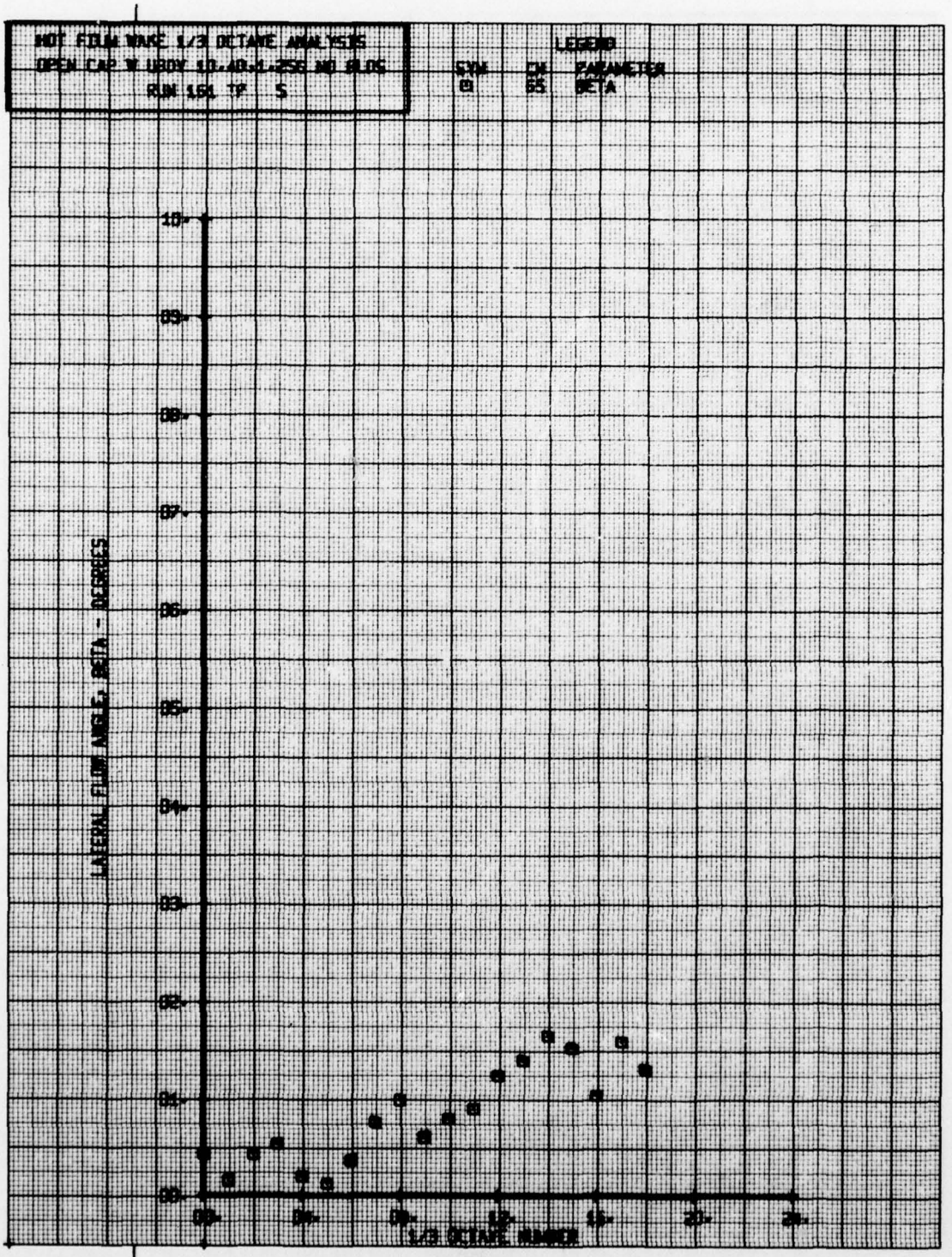

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-40-1-250 NO BLDG
RUN 161 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

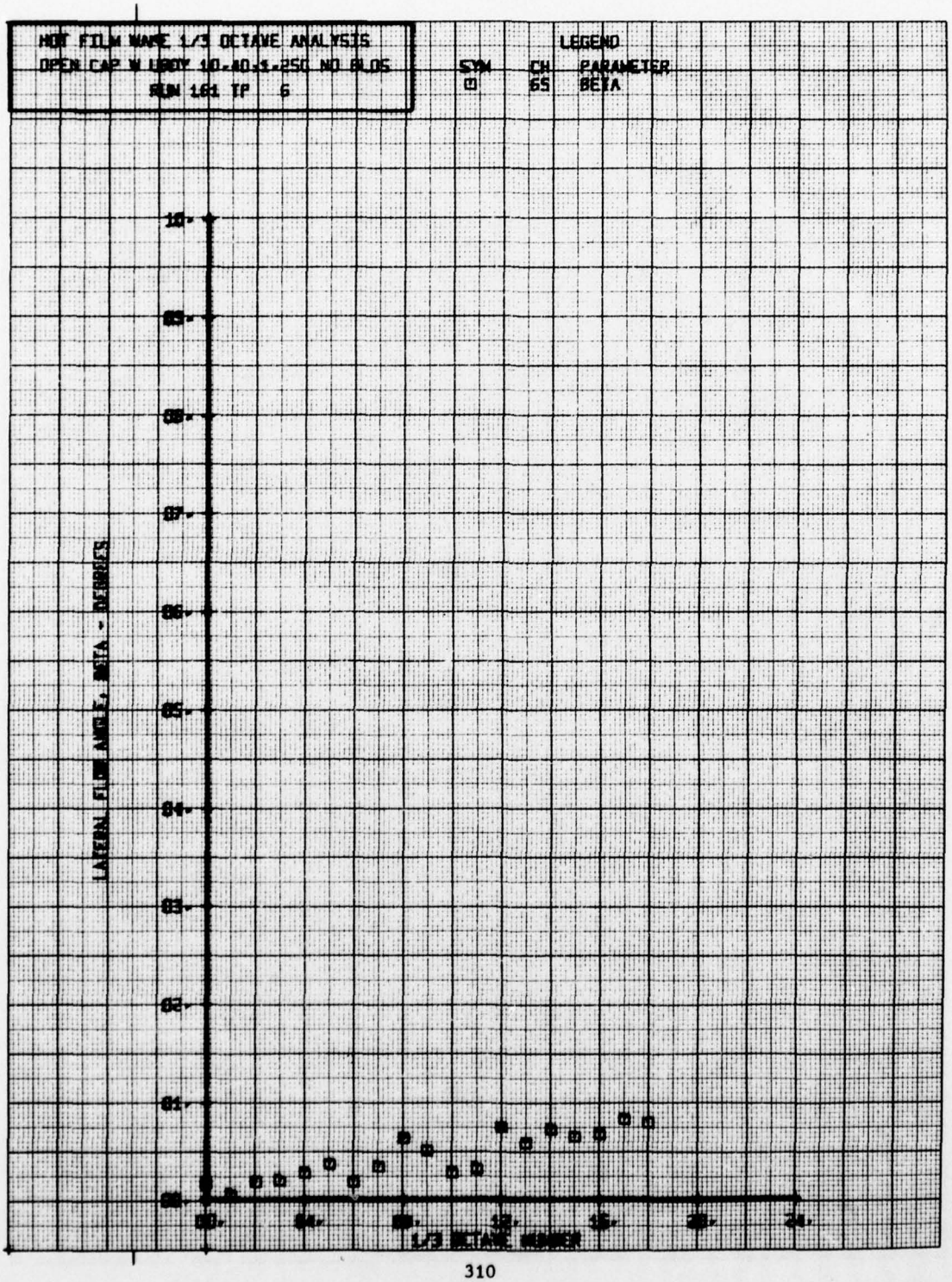

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.1.256 NO BLDS
RUN 161 TP 8
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

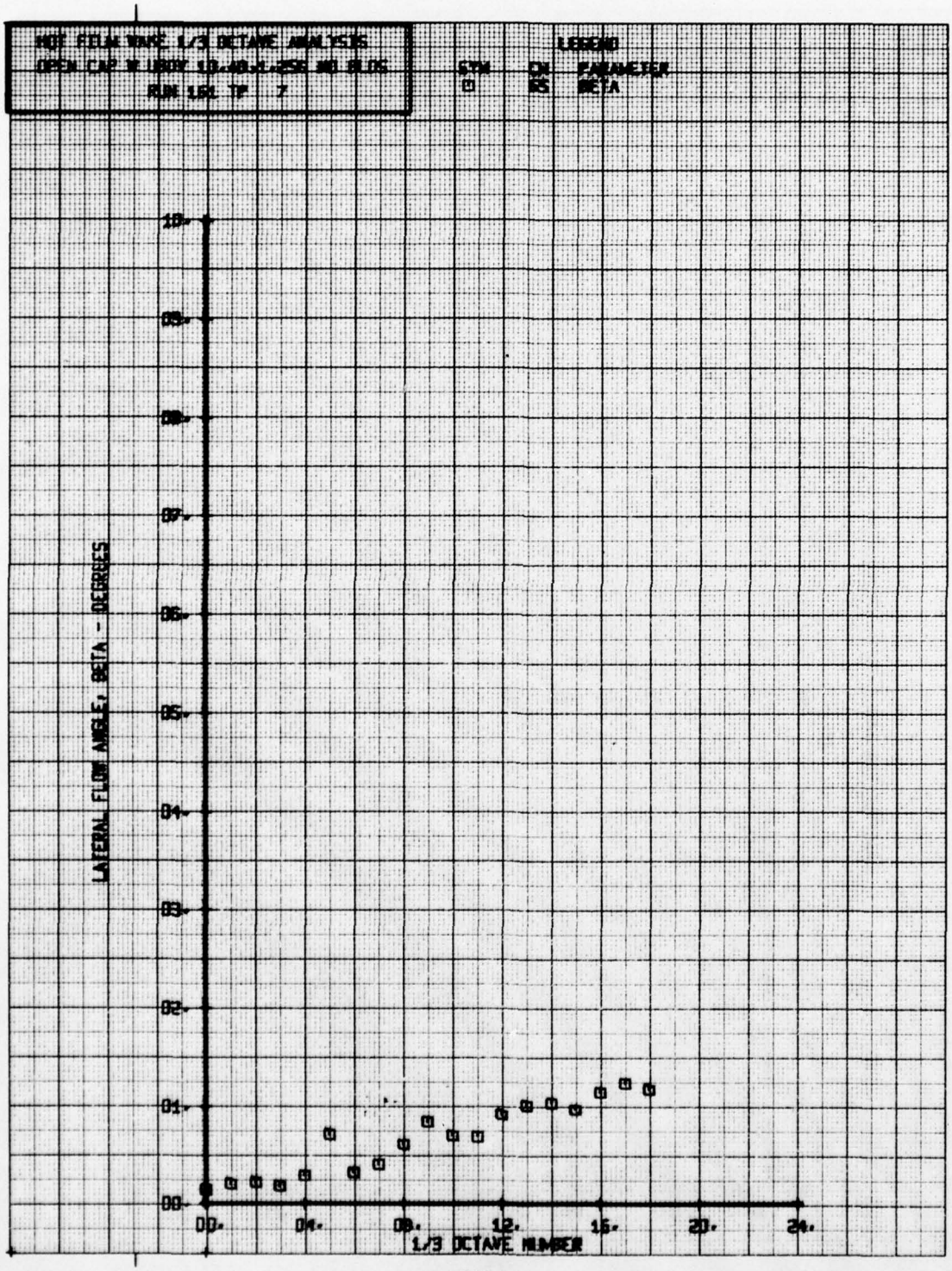

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBODY 10.40.1.256 NO BLOS
RUN 161 TP 2
LEGEND
SYM CH PARAMETER
FS BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

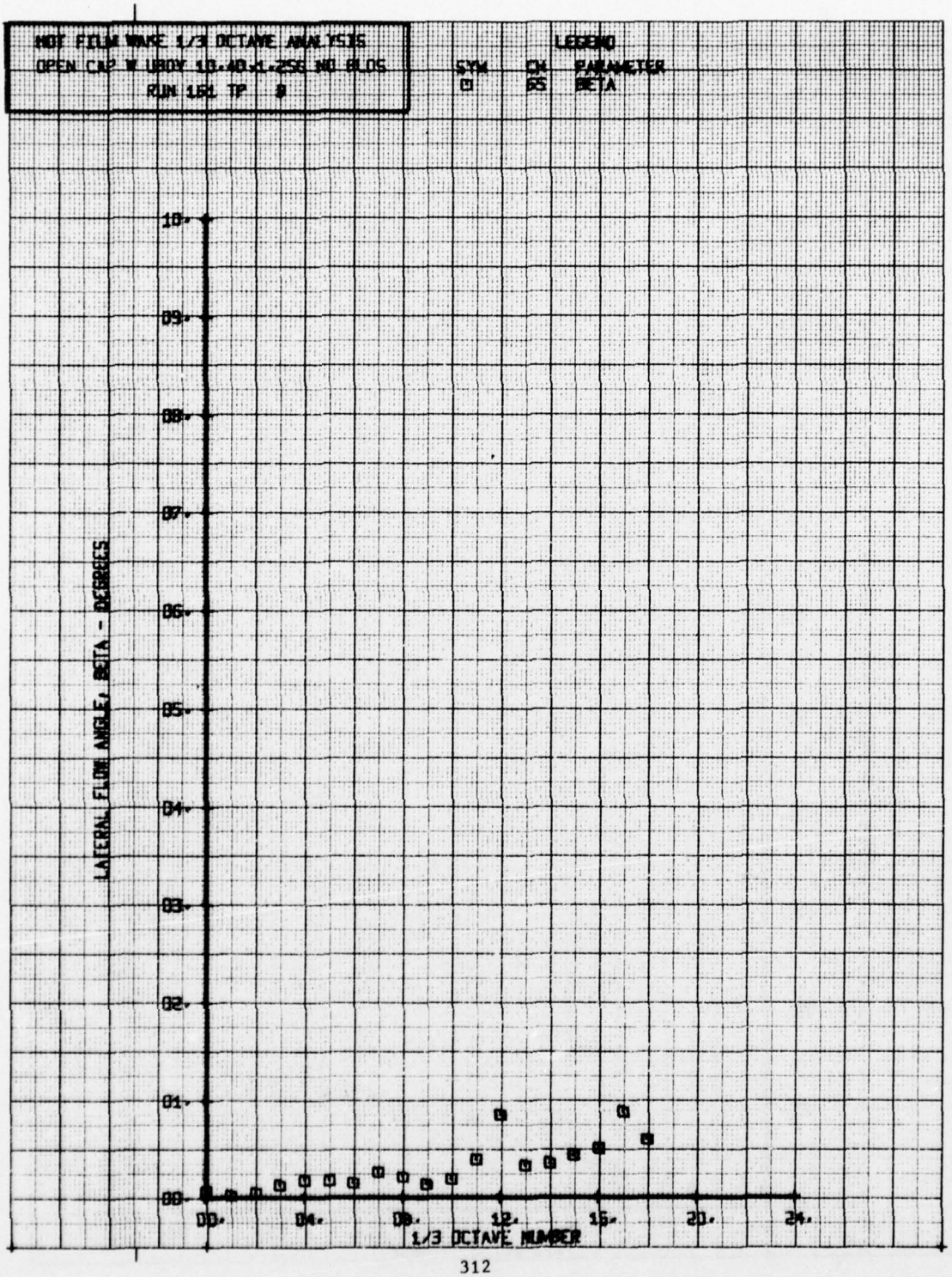

LEGEND
SYM DK PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

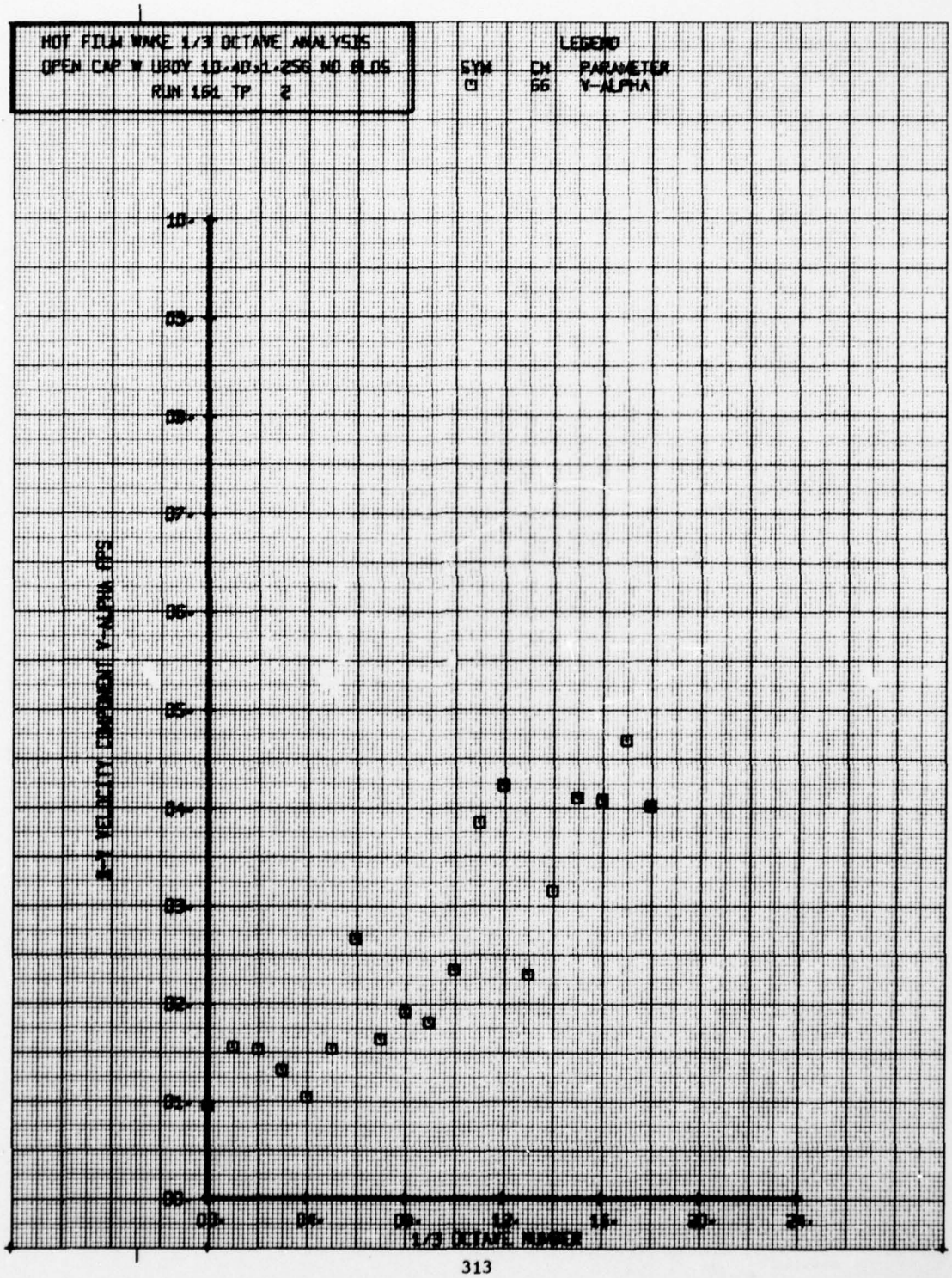

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-40-1-256 NO BLDS
RUN 151 TP 4
LEGEND
SYM CH PARAMETER
BS BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

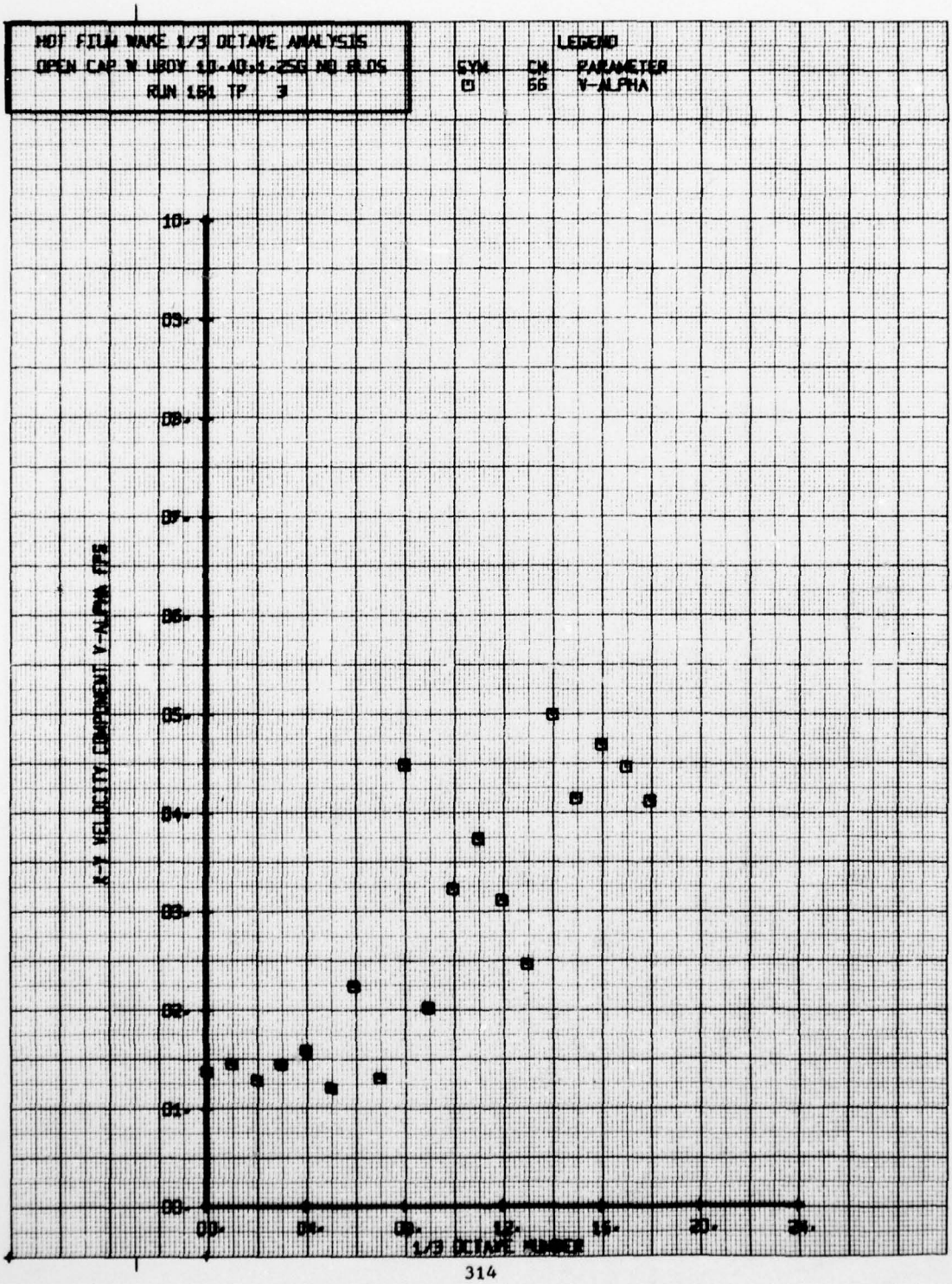

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40,1.256 NO BLDG
RUN 161 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

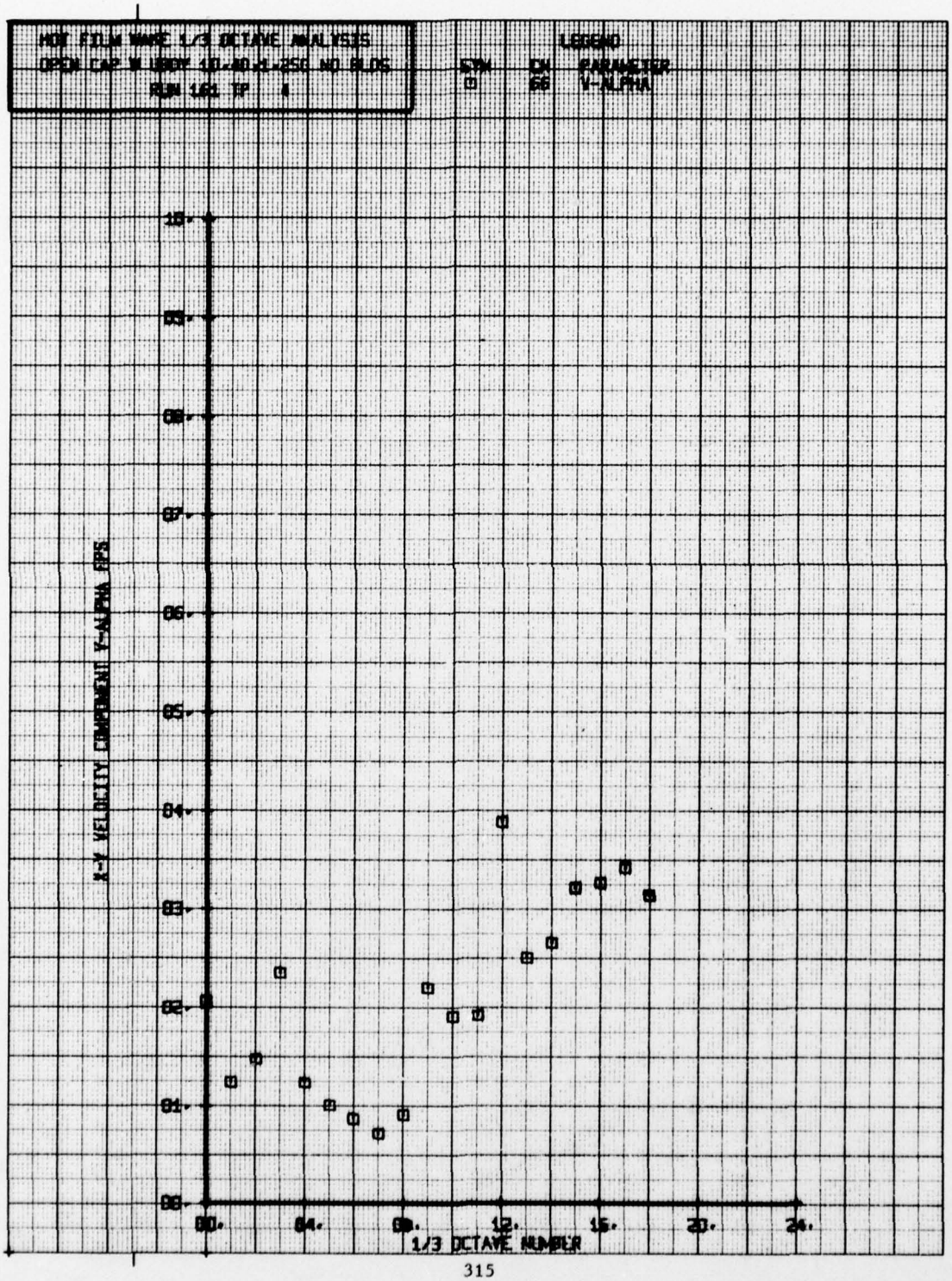

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-1-25Q NO BLOS
RUN 161 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

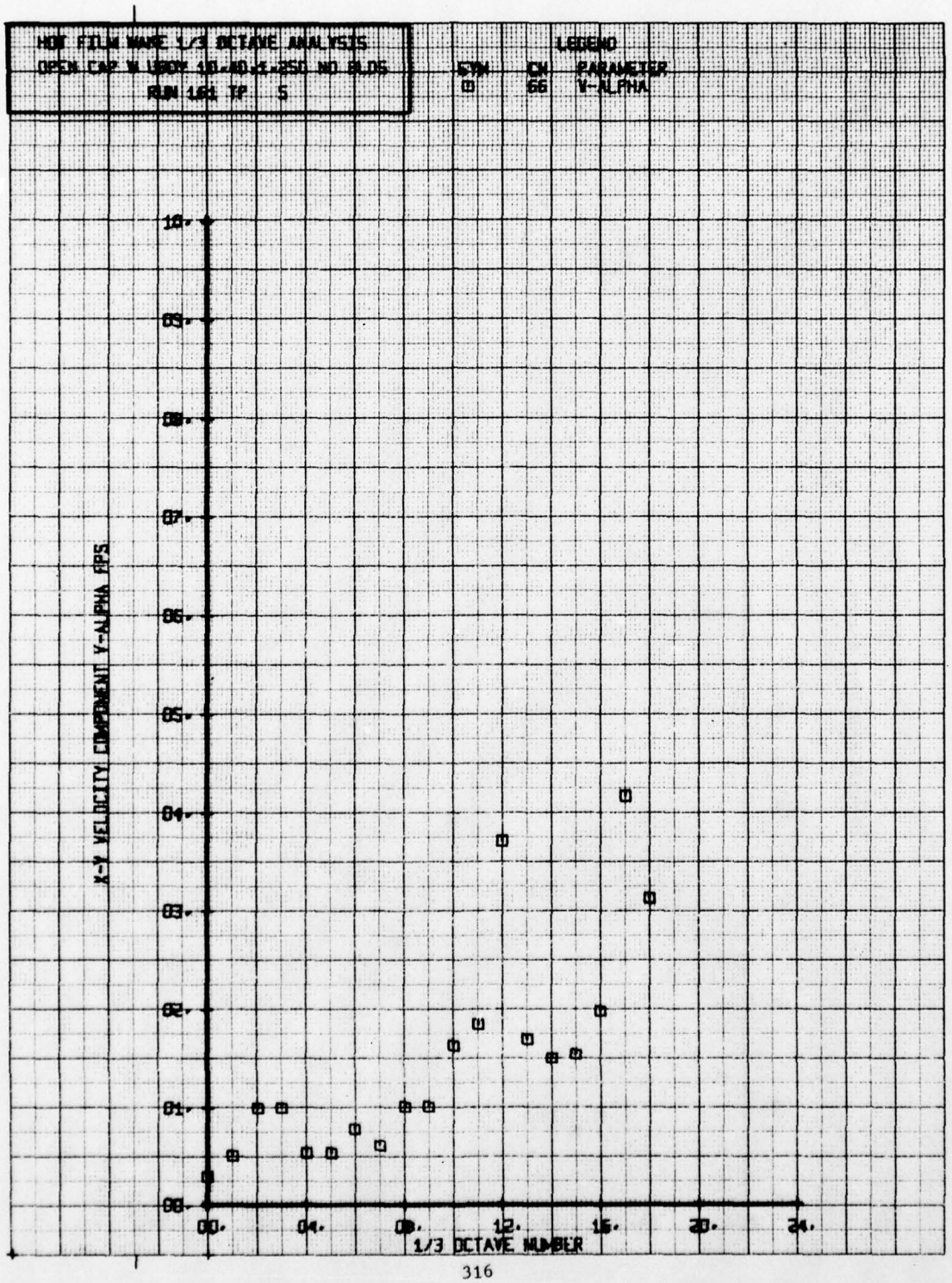

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.256 NO BLDG
RUN 161 TP 7
LEGEND
SYM CH PARAMETER
BS BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

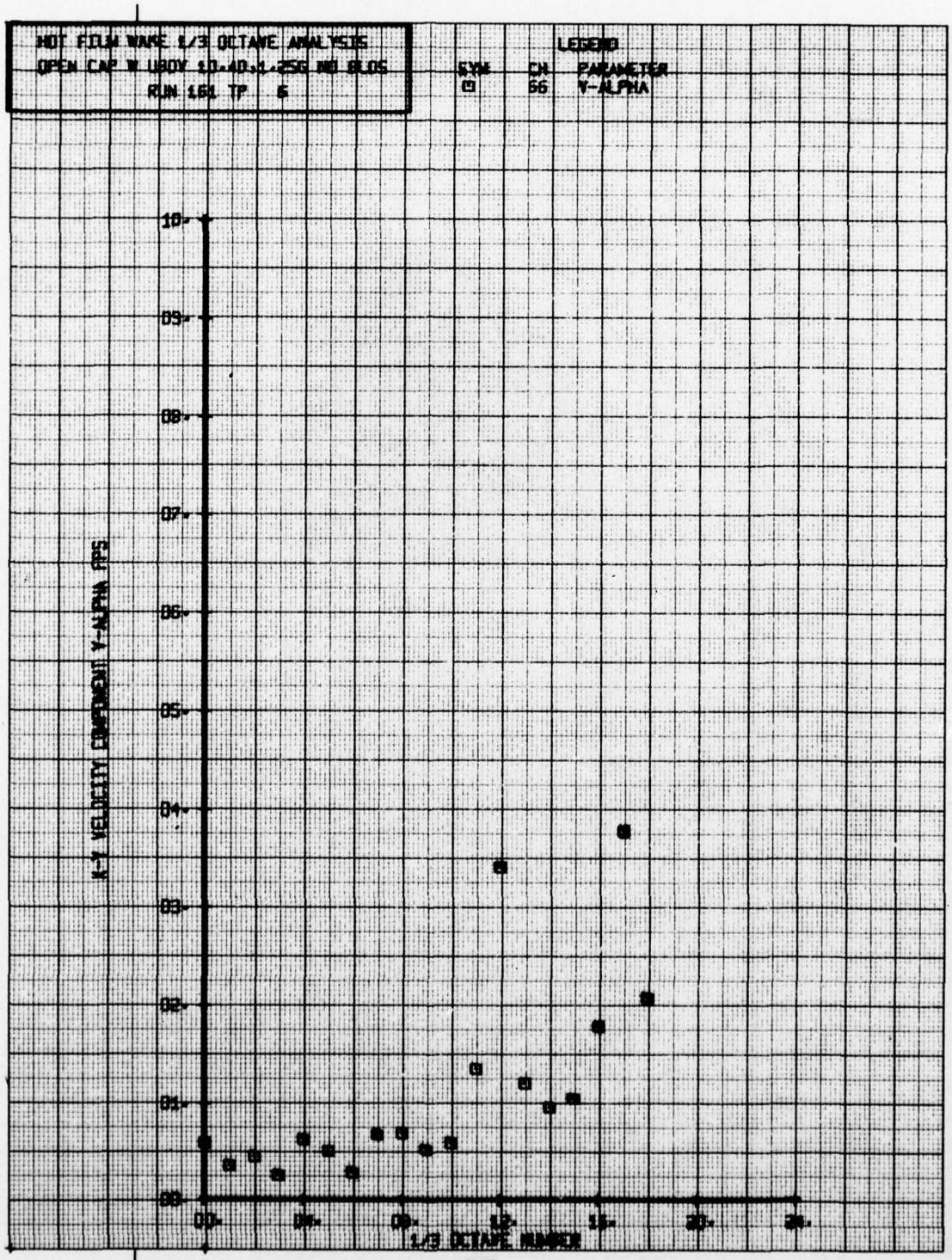

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40-1.25G NO BLOS
RUN 161 TP 8
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

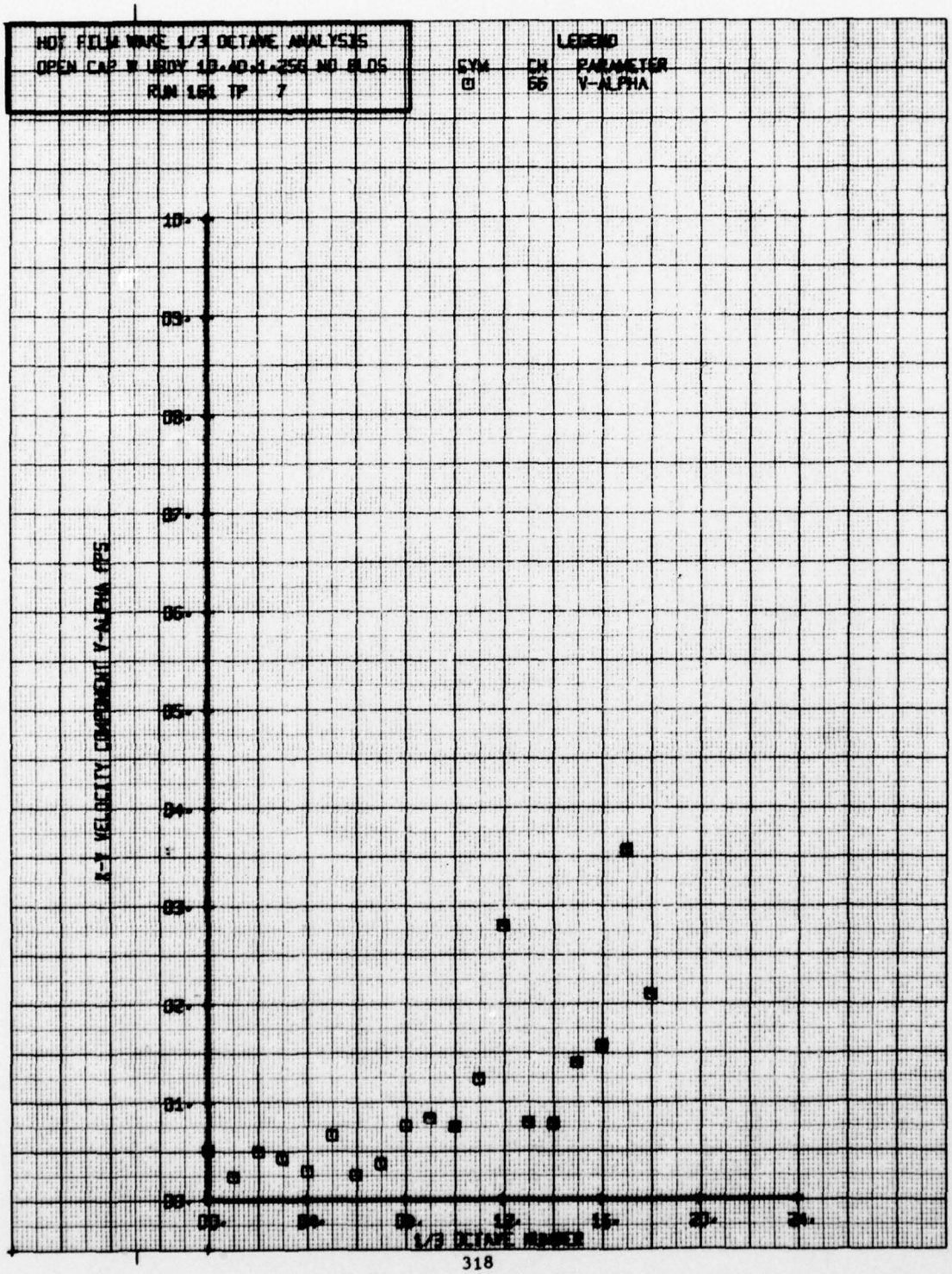

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.256 NO BLOS
RUN 161 TP 2
LEGEND
SYM CH PARAMETER
66 Y-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

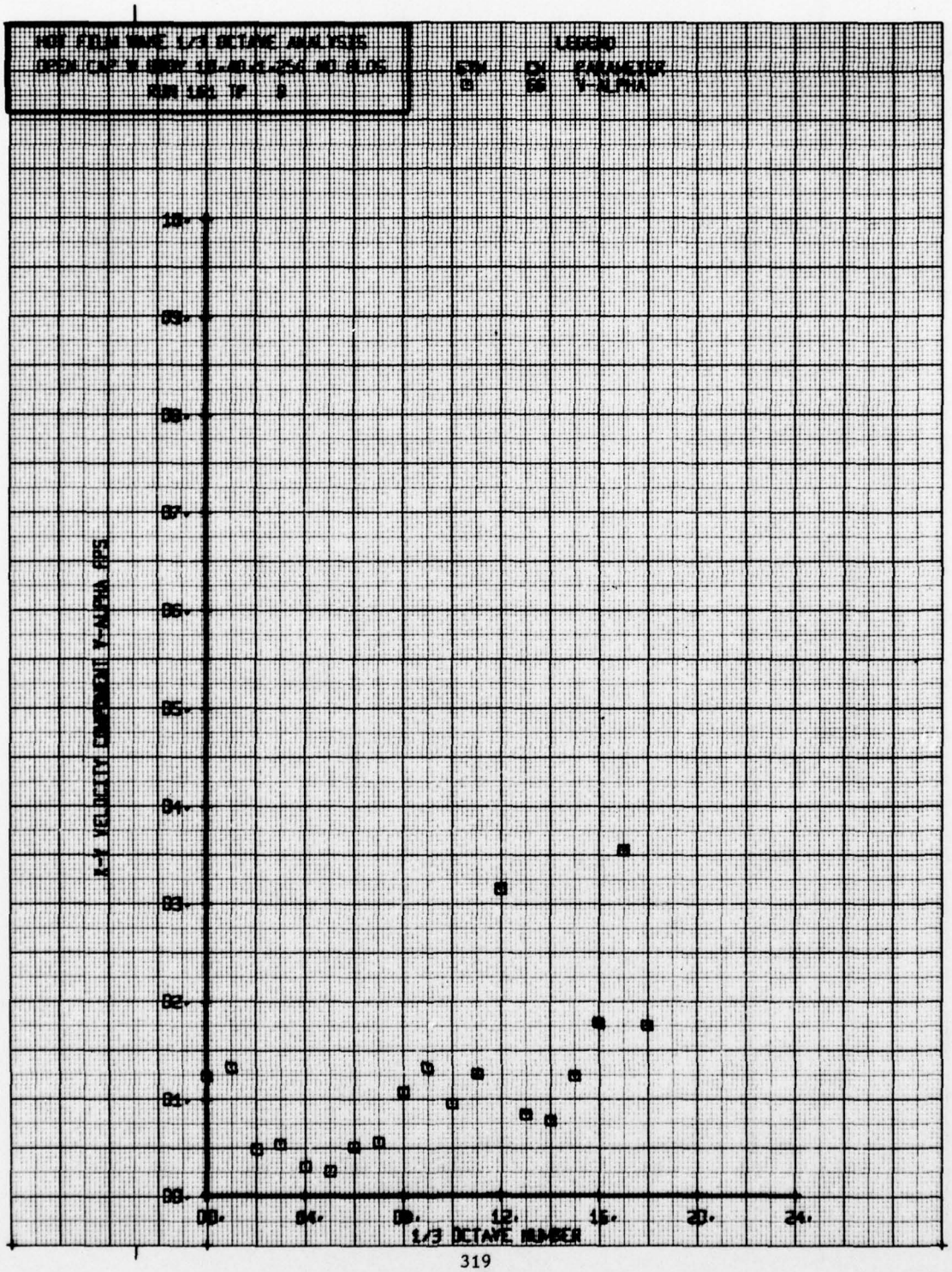

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-1.25G NO BLOS
RUN 154 TP 3
LEGEND
SYM CH PARAMETER
□ 56 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

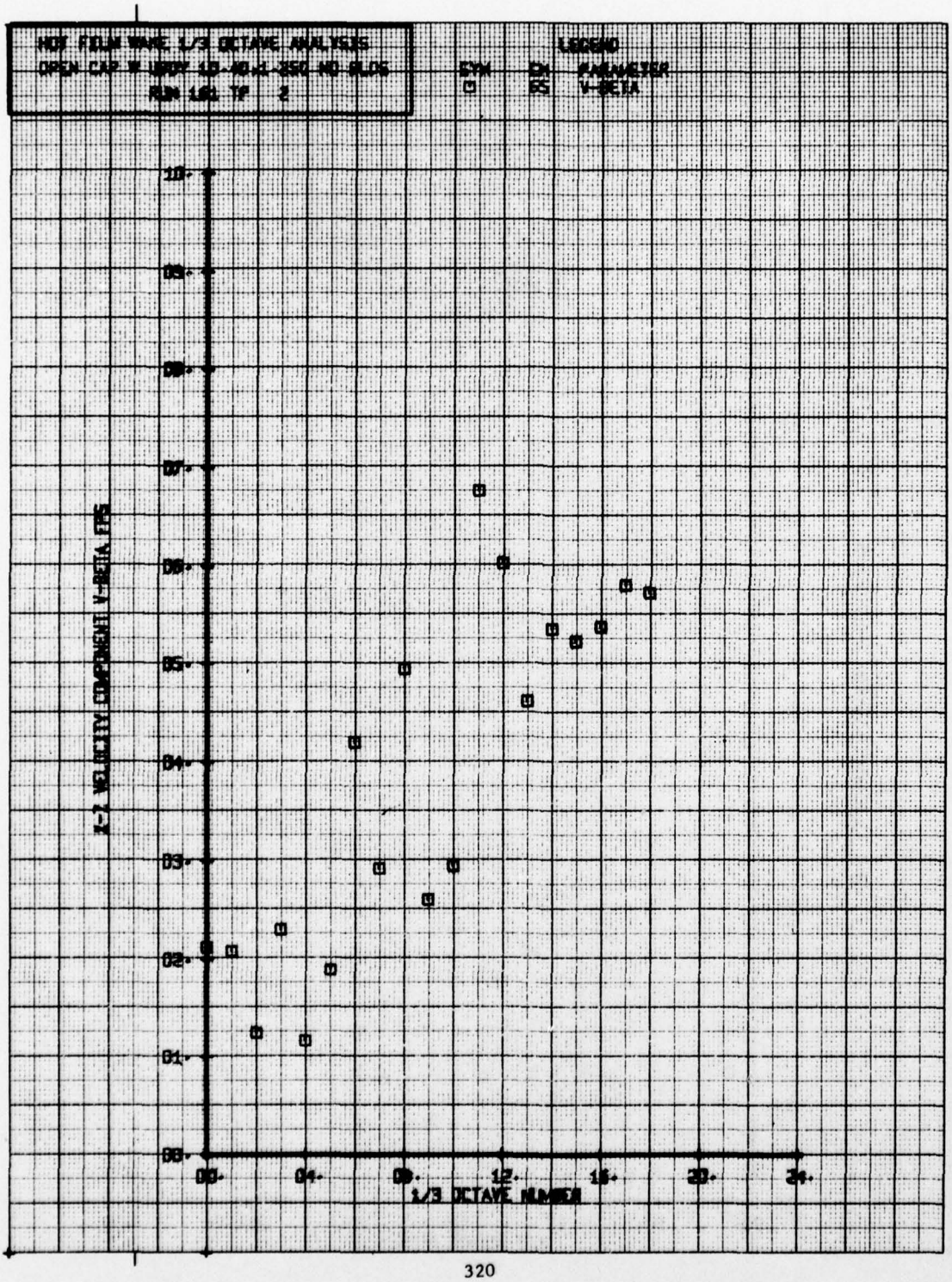

HDR FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.1.250 NO BLDS
RUN 161 TP 4
LEGEND
SYM DM PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

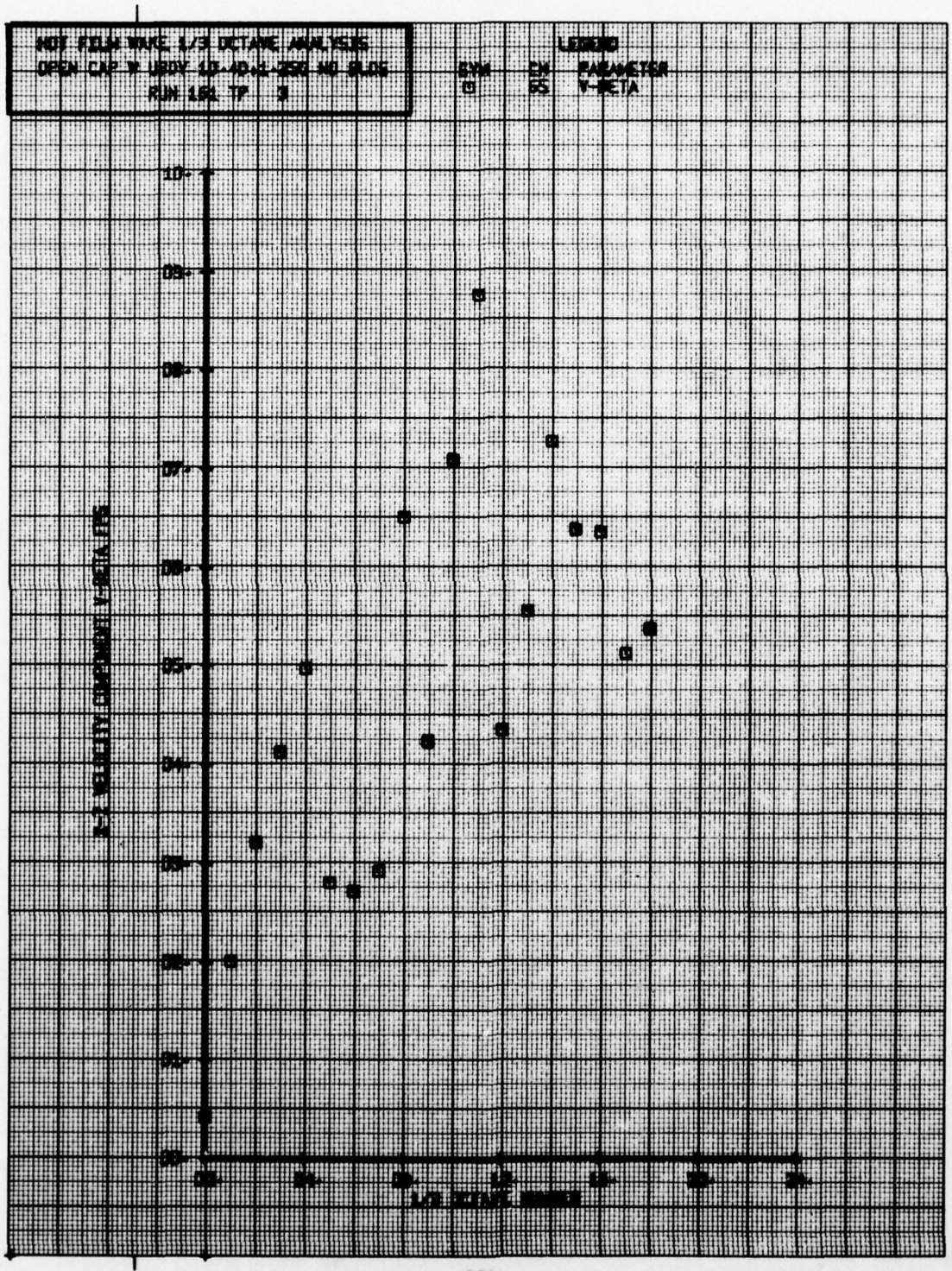

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10-40,1-250 NO BLDS
RUN 161 TP 5
LEGEND
SYM IDN PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.

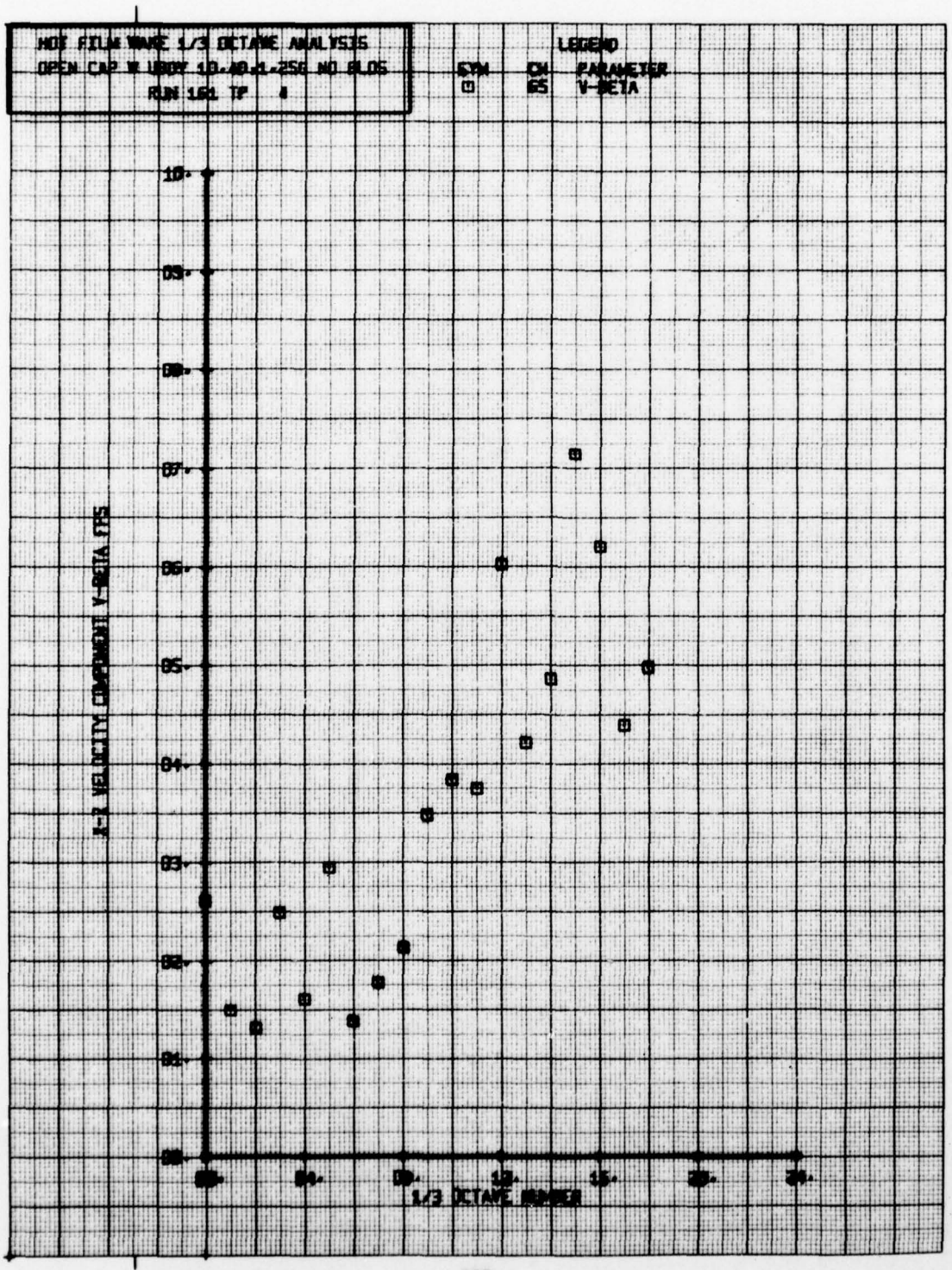

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.25G NO BLOS
RUN 161 TP 6
LEGEND
SYM CH PARAMETER
6 Y-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT Y-ALPHA FPS
00.
06.
09.
12.
15.
20.
30.
1/3 OCTAVE NUMBER

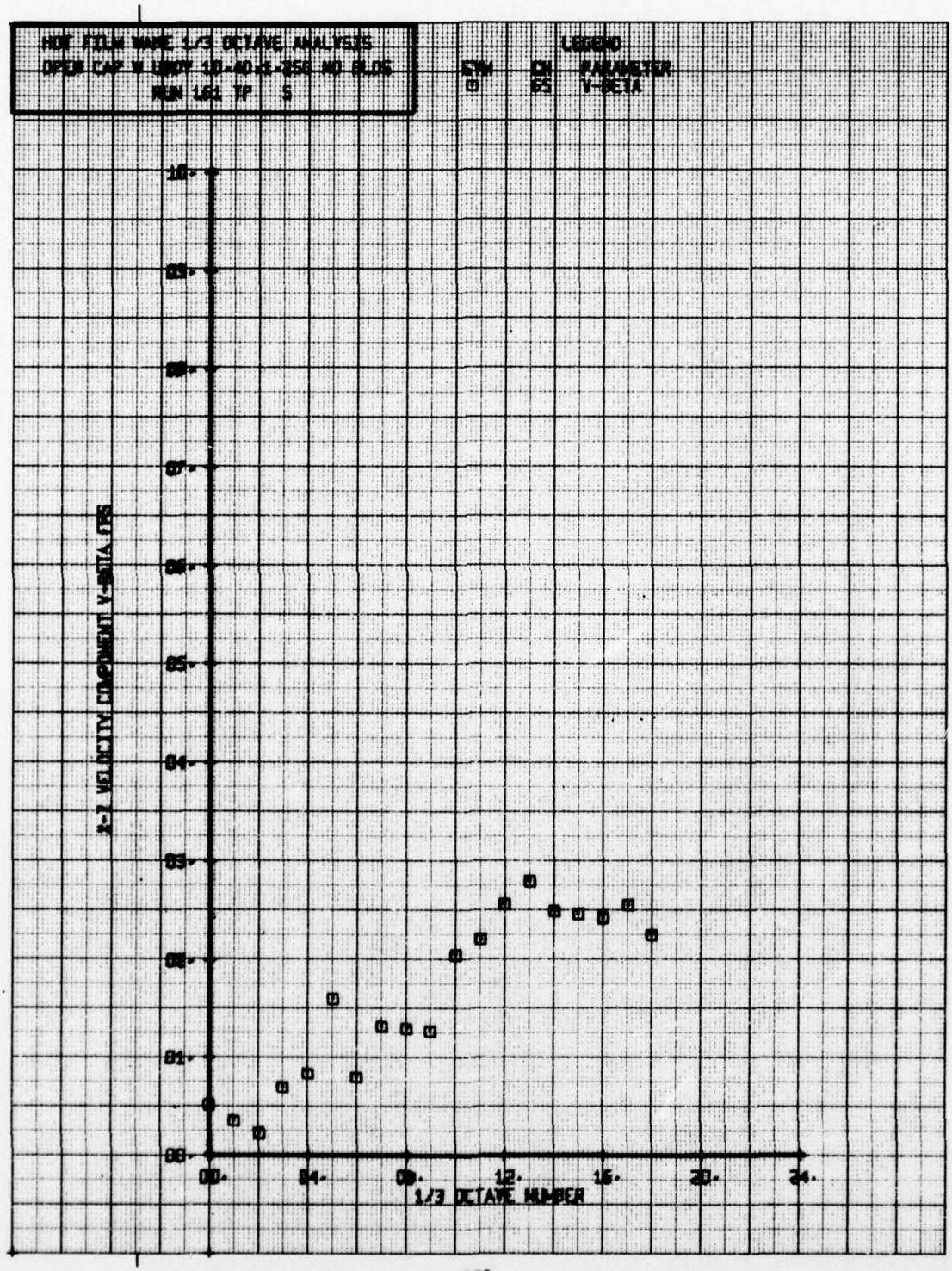

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 18.40,1.25G NO BLOS
RUN 161 TP 7
LEGEND
SYM CH PARAMETER
0 66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
05.
10.
15.
20.
25.
1/3 OCTAVE NUMBER

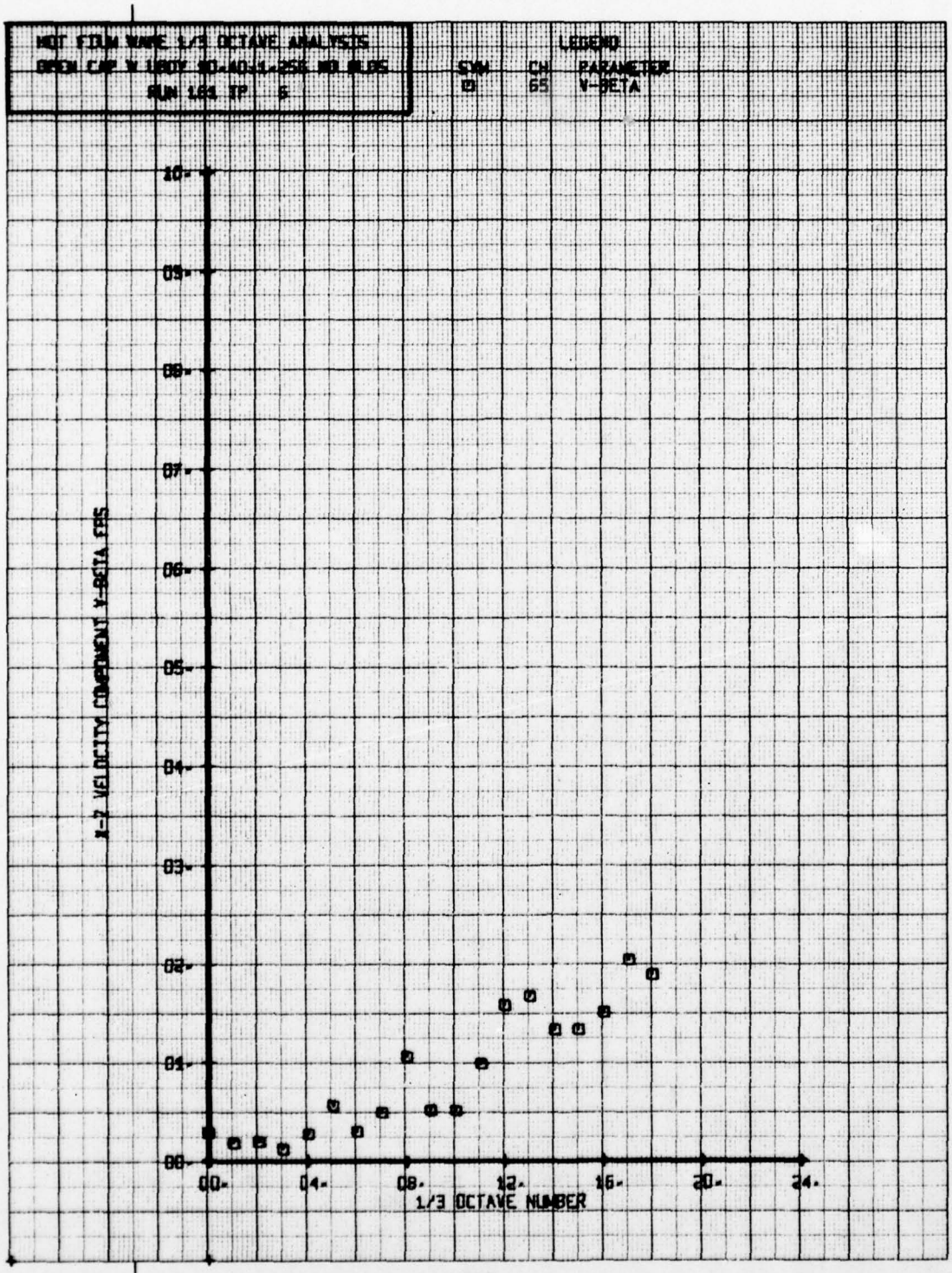

LEGEND
PARAMETER
V-ALPHA
1/3 OCTAVE NUMBER

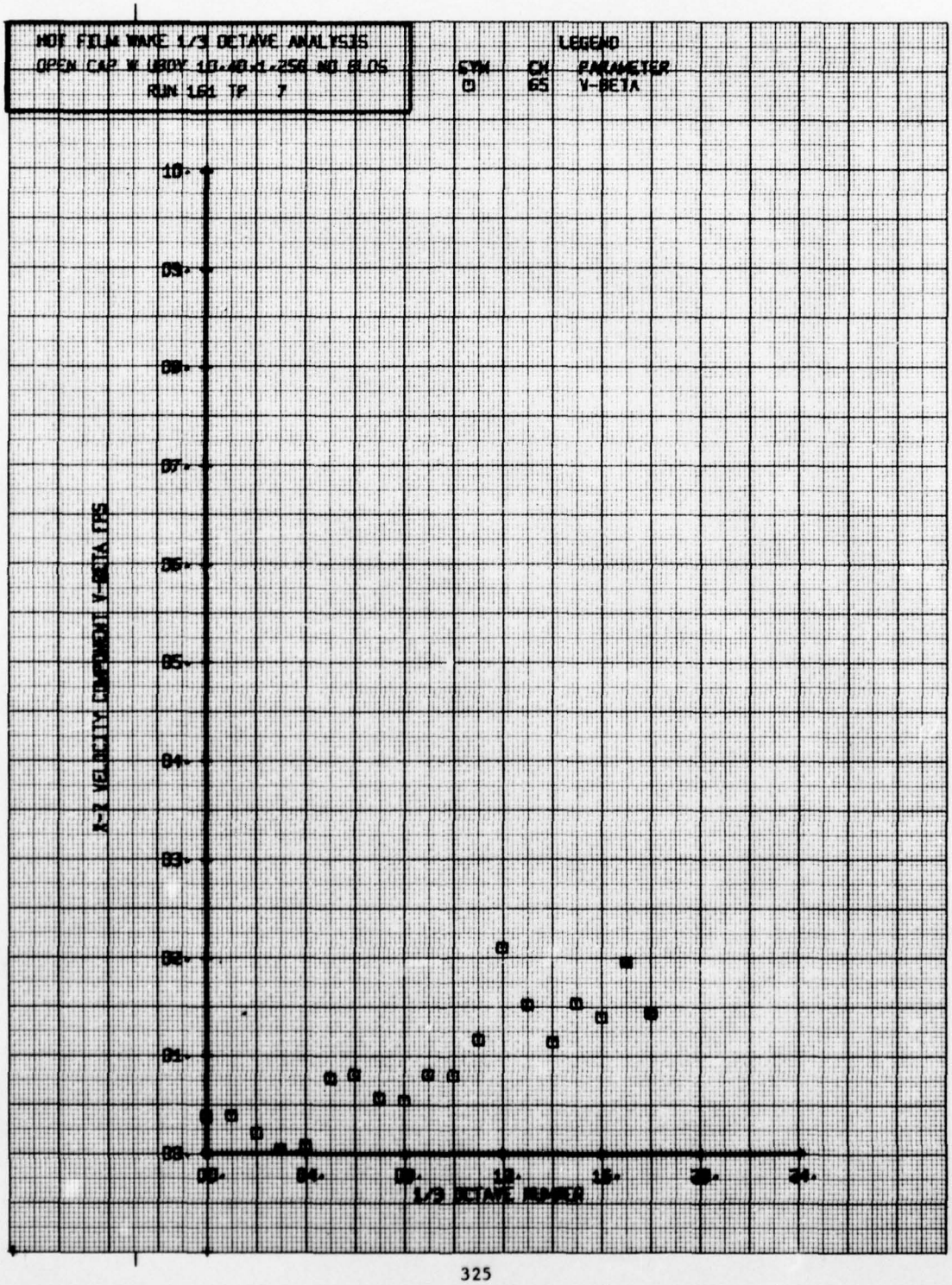

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-40 x1-250 NO BLDS
RUN 161 TP 2
LEGEND
SYM CH PARAMETER
65 V-BETA
Z-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

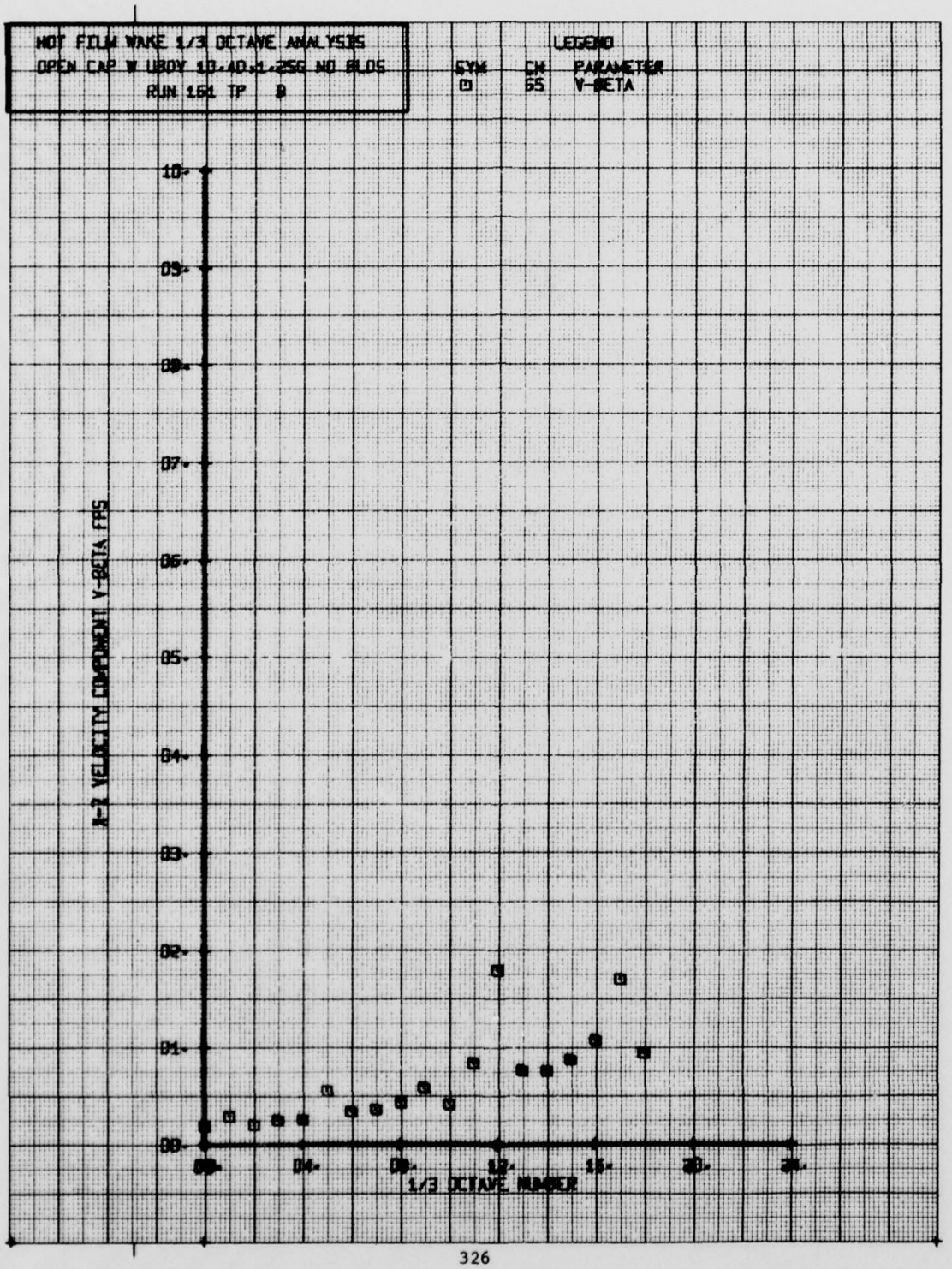

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP V UBDY 10-40-1-250 NO BLDS
RUN 161 TP 3
LEGEND
SYM CM PARAMETER
GS V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

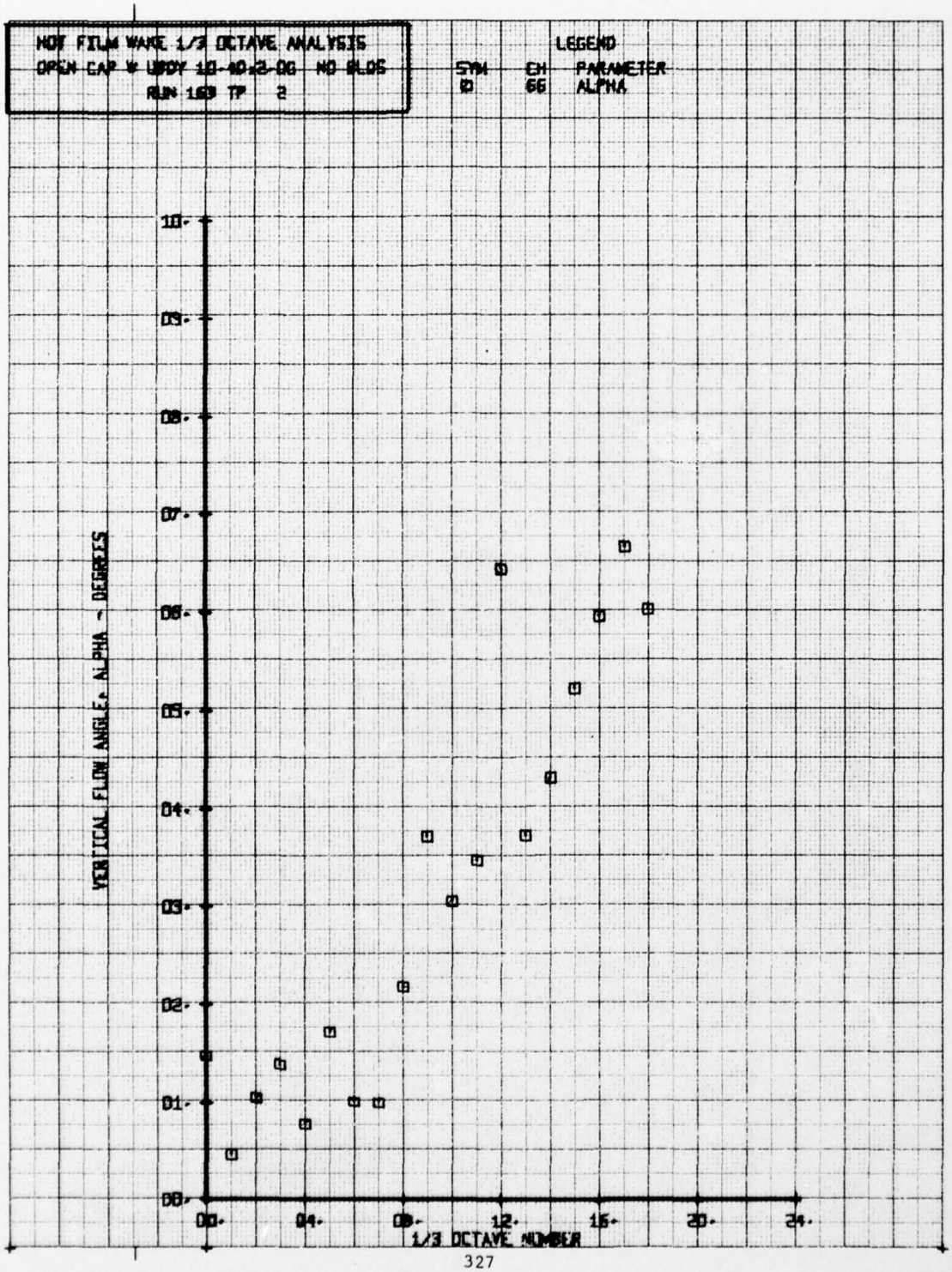

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOT 10.40.1.256 NO BLOS
RUN 160 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
J-2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

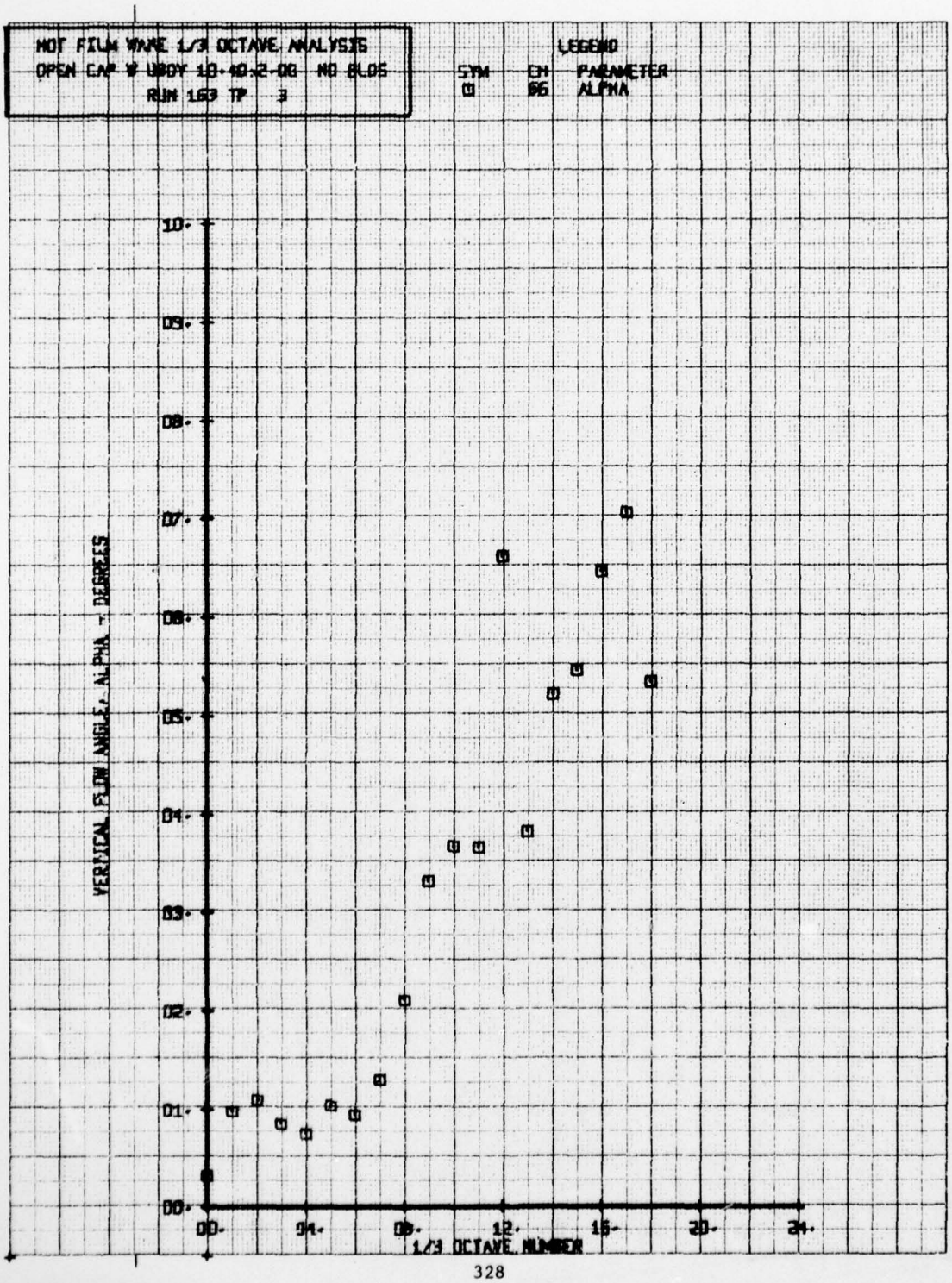

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-40-1-256 NO BLDG
RUN 161 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

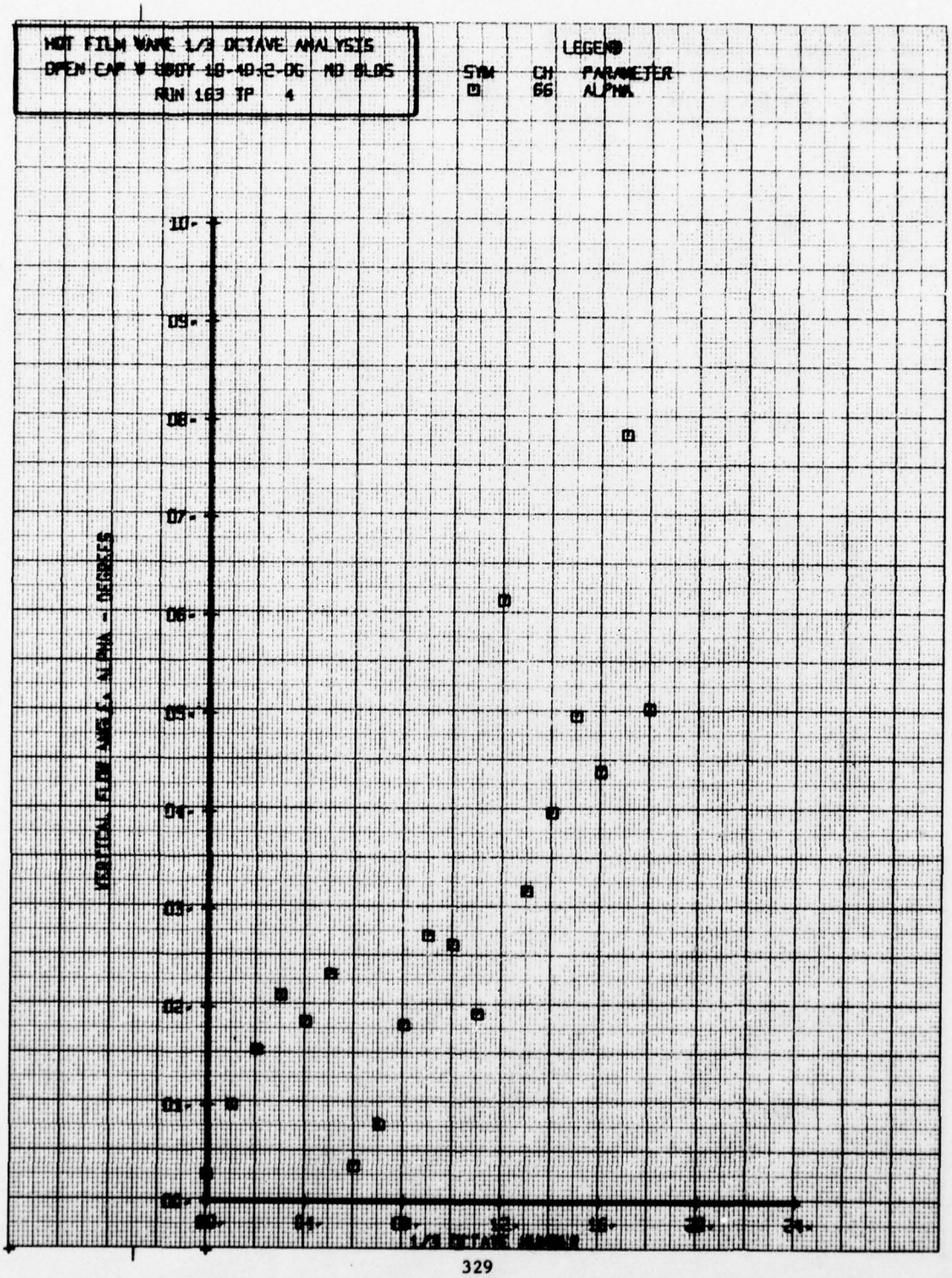

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
RUN 184 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER

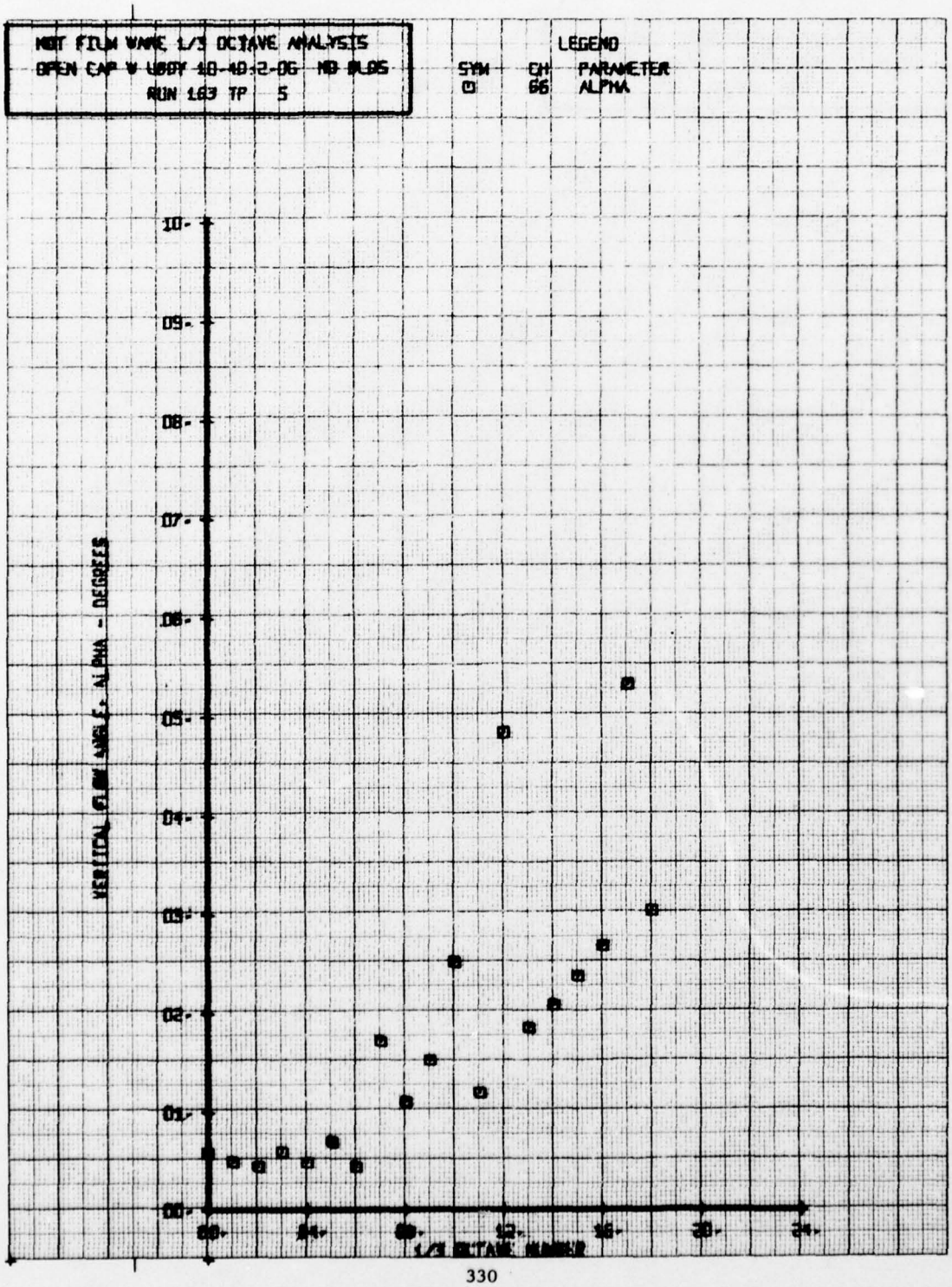

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.25R NO BLOS
RUN 161 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
A-2 VELOCITY COMPONENT V-BETA,FPS
1/3 OCTAVE NUMBER

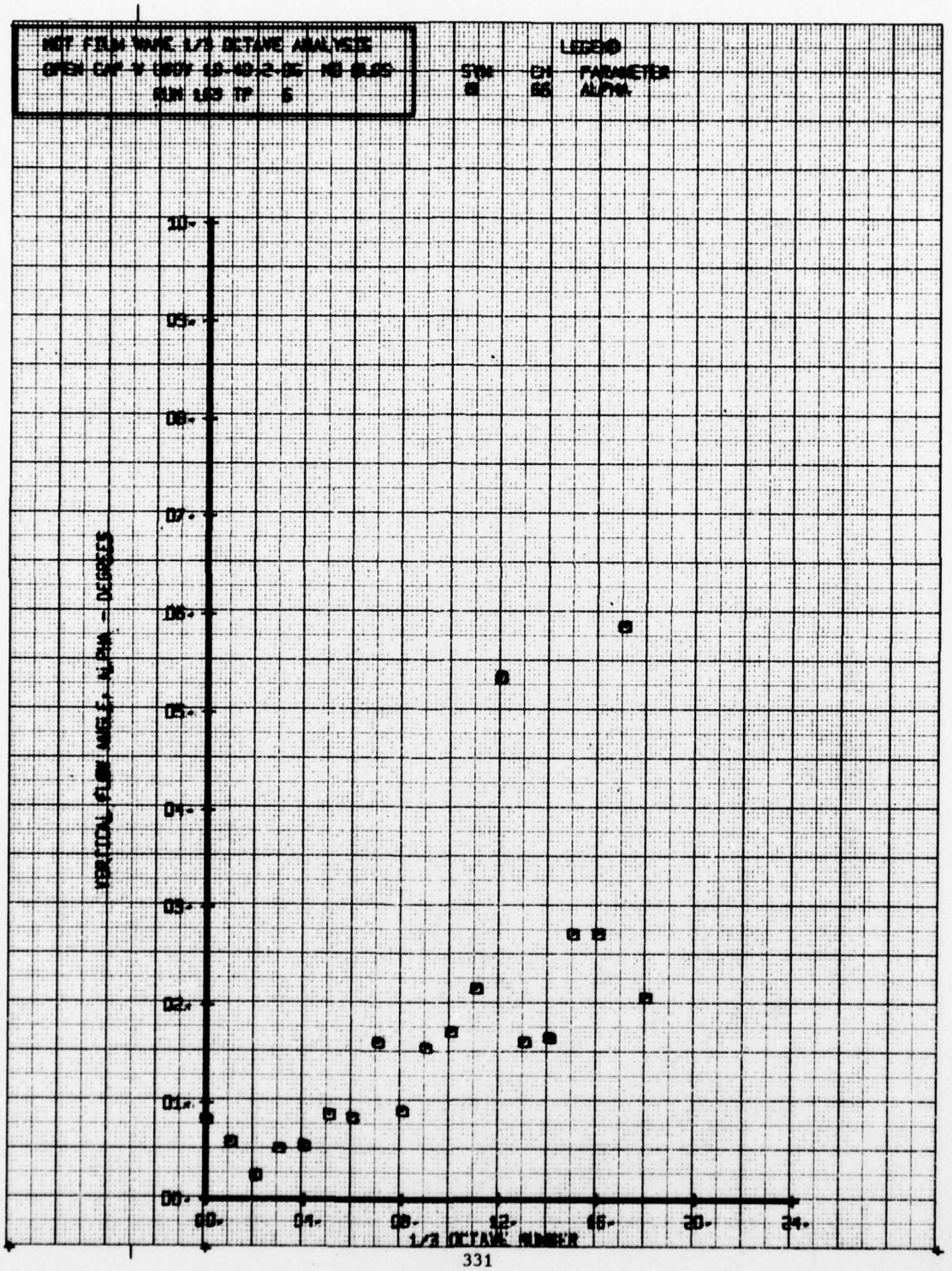

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.4D,1.25G NO BLOS
RUN 161 TP 9
LEGEND
SYM CM PARAMETER
□ 65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-1 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10-40.2-06 NO BLDS
RUN 169 TP 2
LEGEND
SYM CH PARAMETER
0 66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

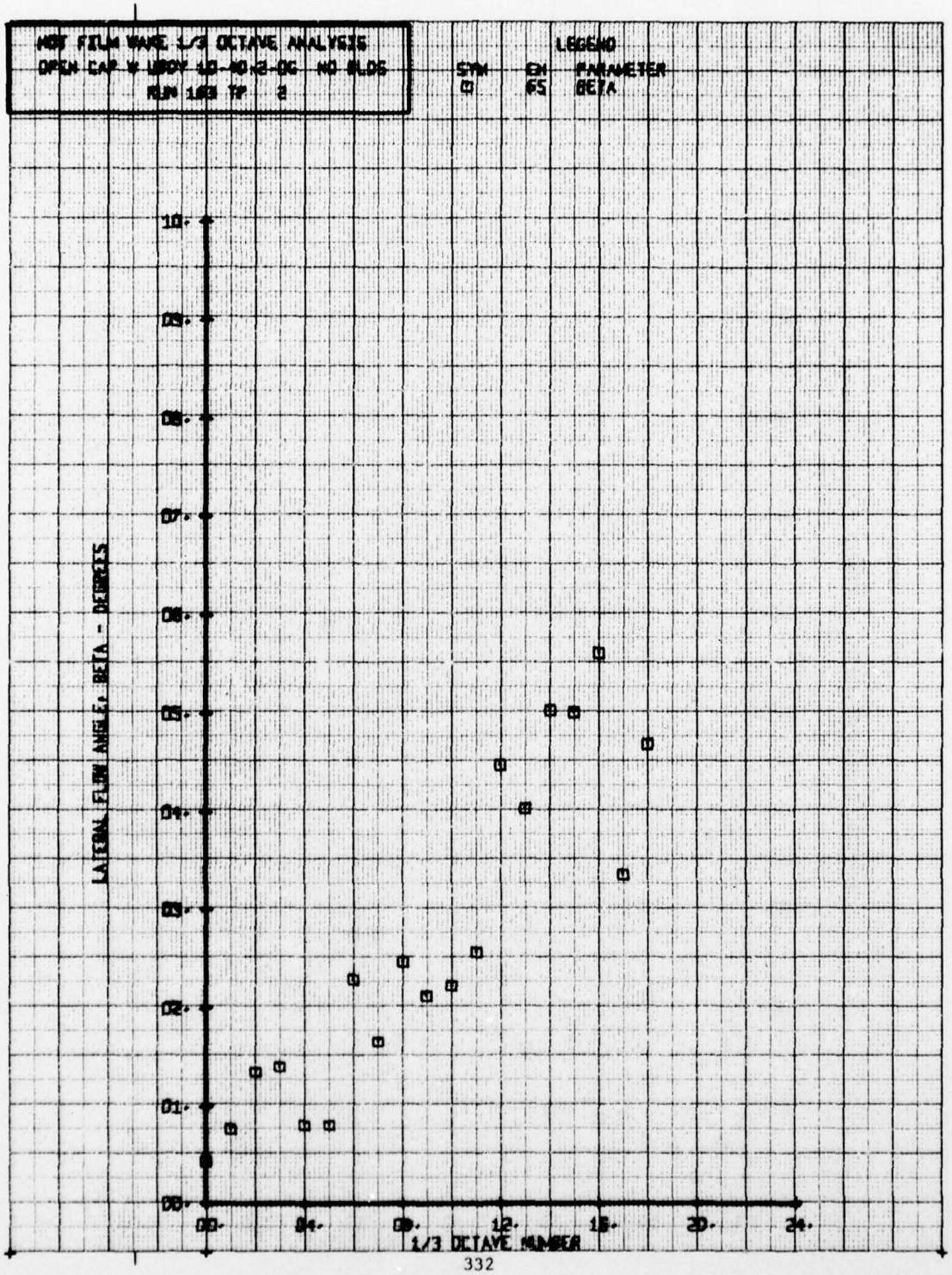

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 18-40-2-08 NO BLDS
RUN 163 TP 3
LEGEND
SYM EM PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

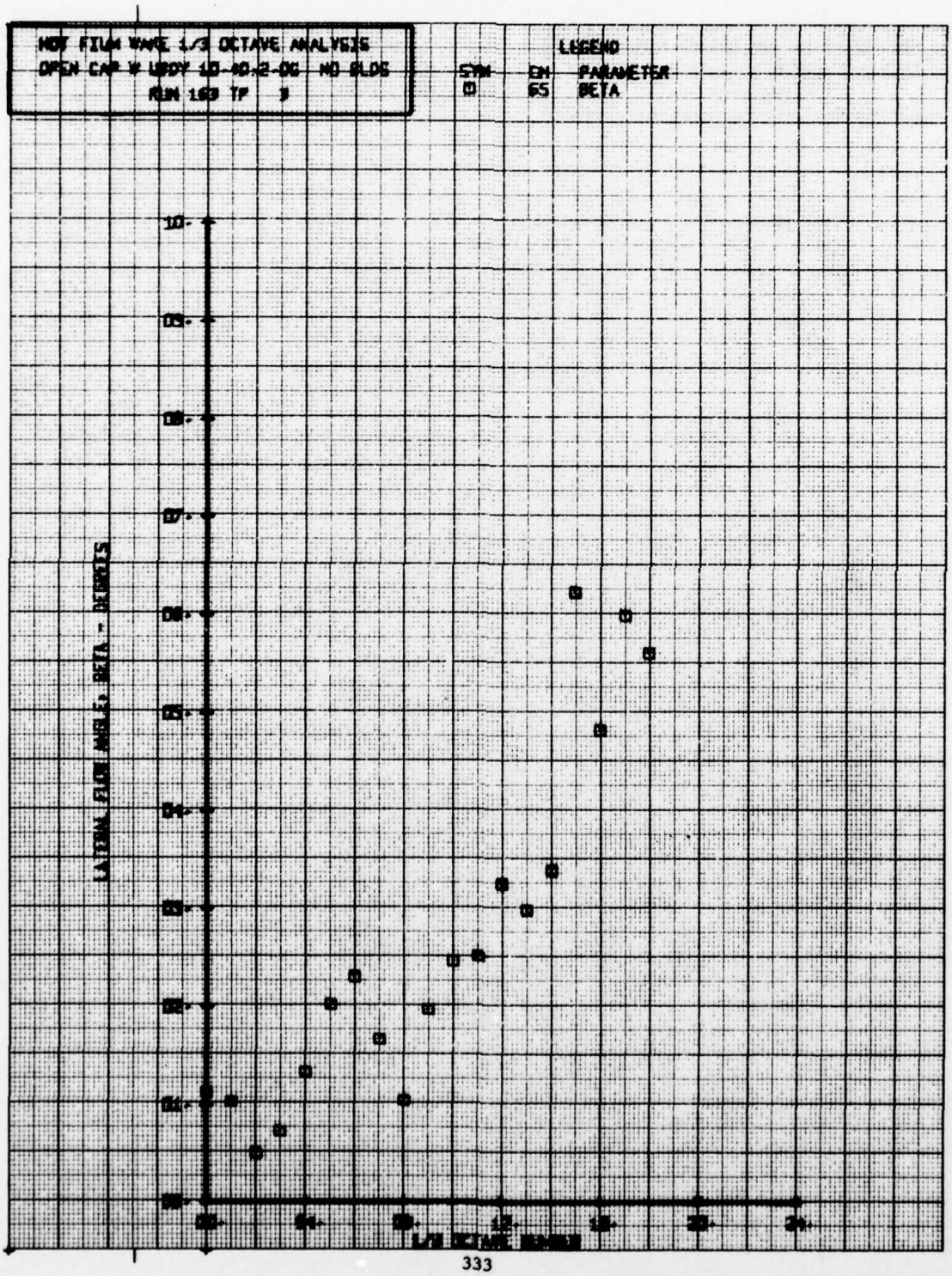

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 18-40-2-DG NO BLDS
RUN 163 TP 4
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
10
09
08
07
06
05
04
03
02
01
00

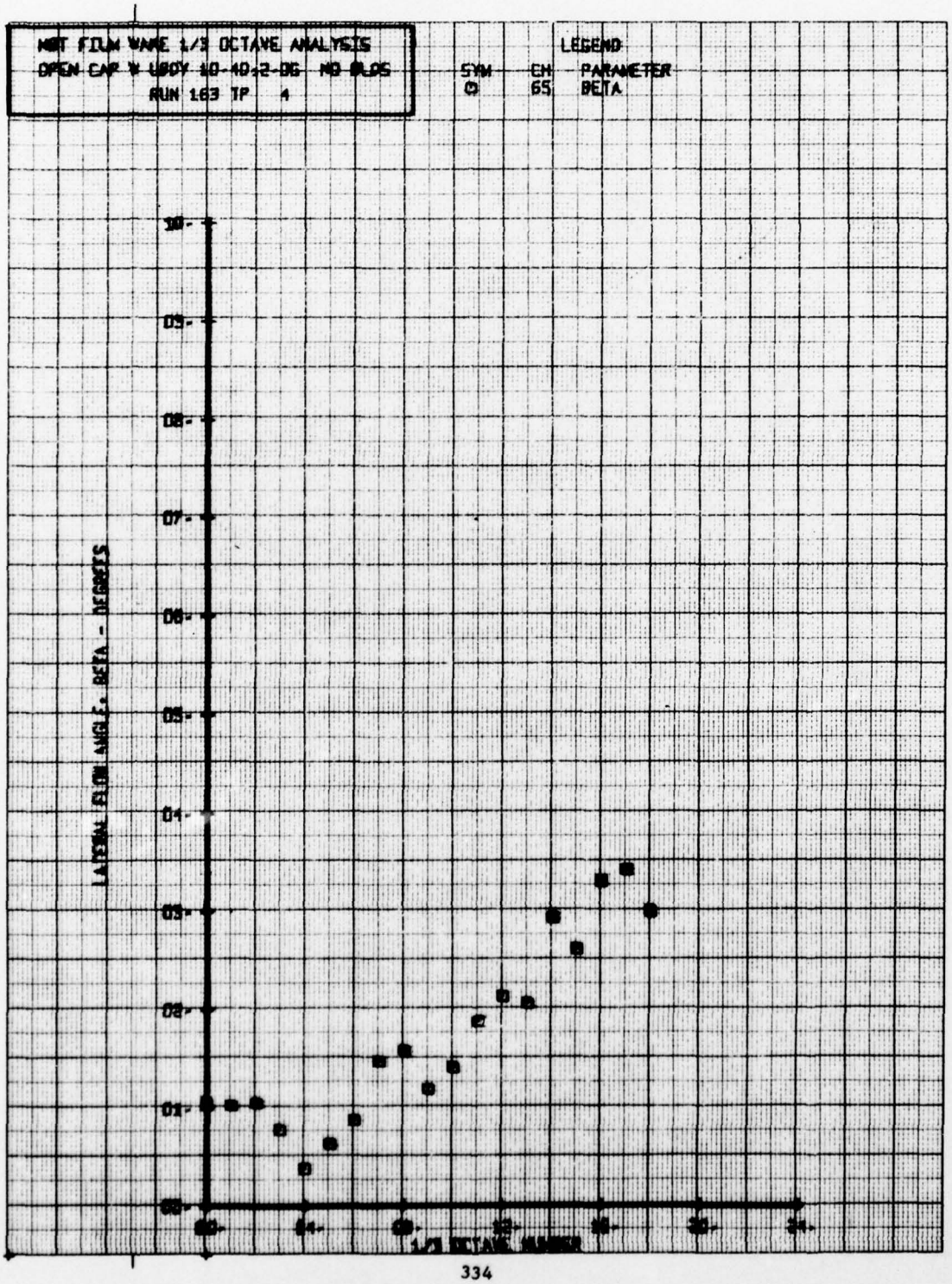

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP V UBDY 40-40-2-06 NB BLDS
RUN 103 TP 5
LEGEND
SYM CH PARAMETER
06 ALPHA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

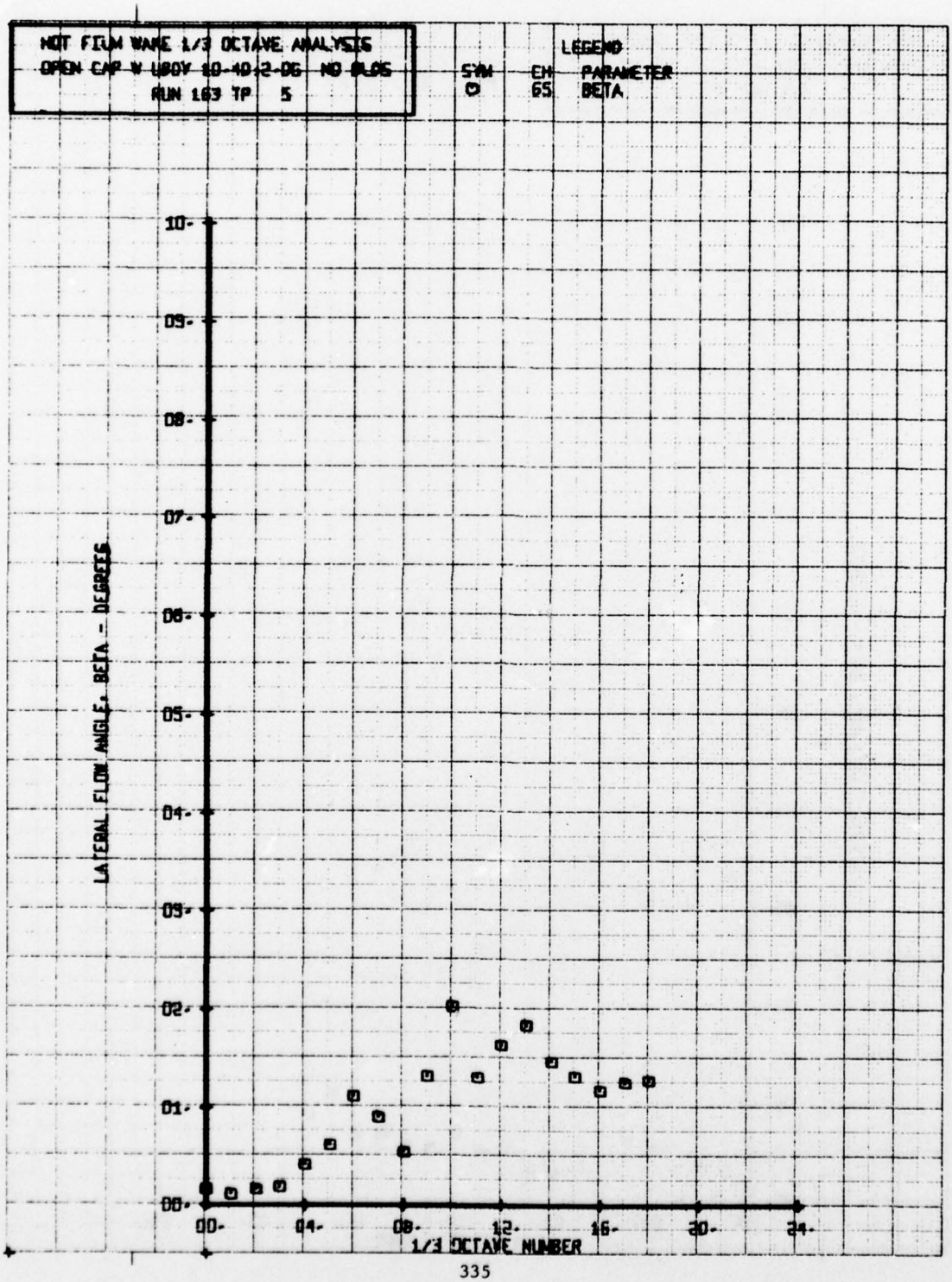


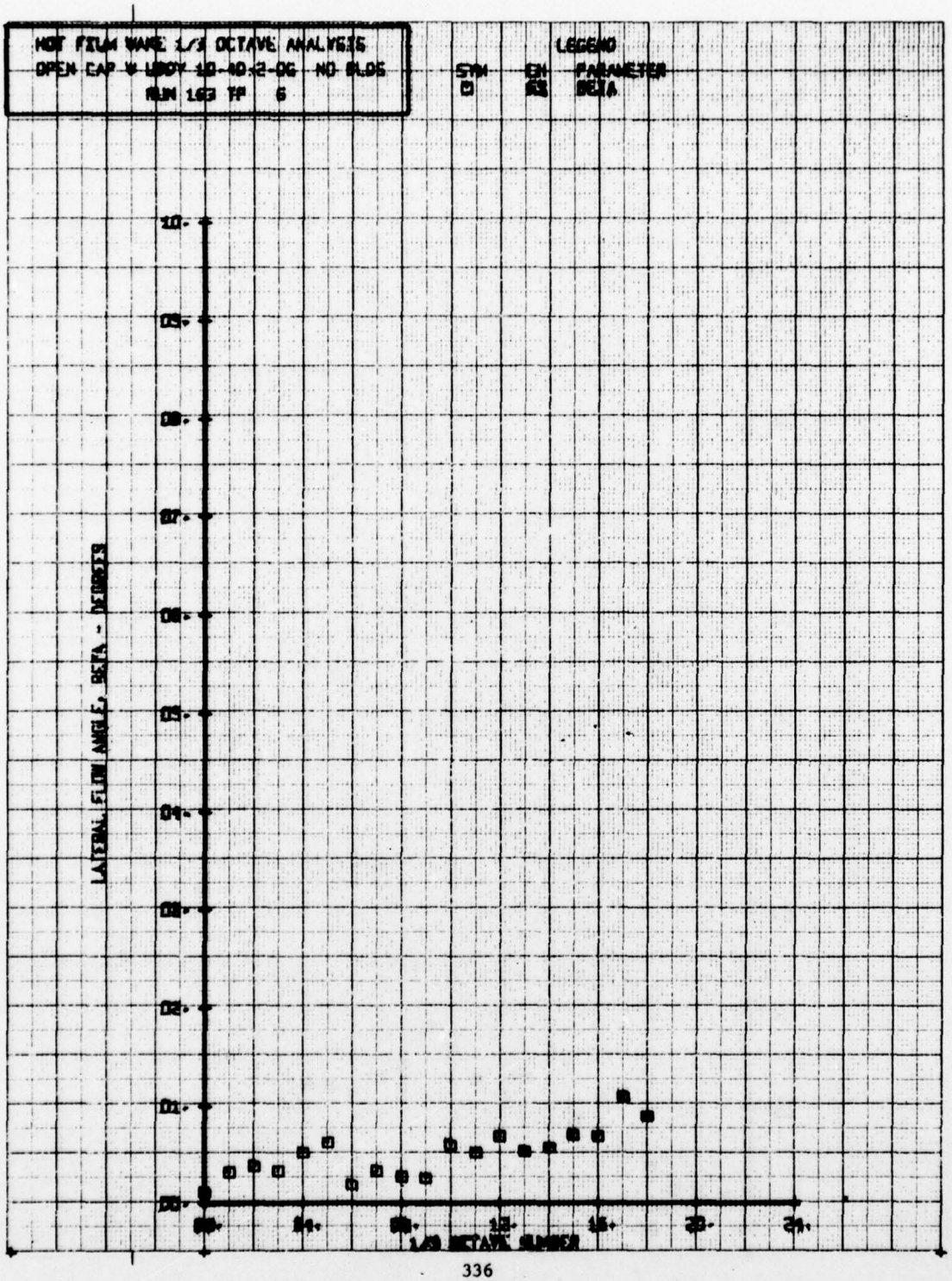
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

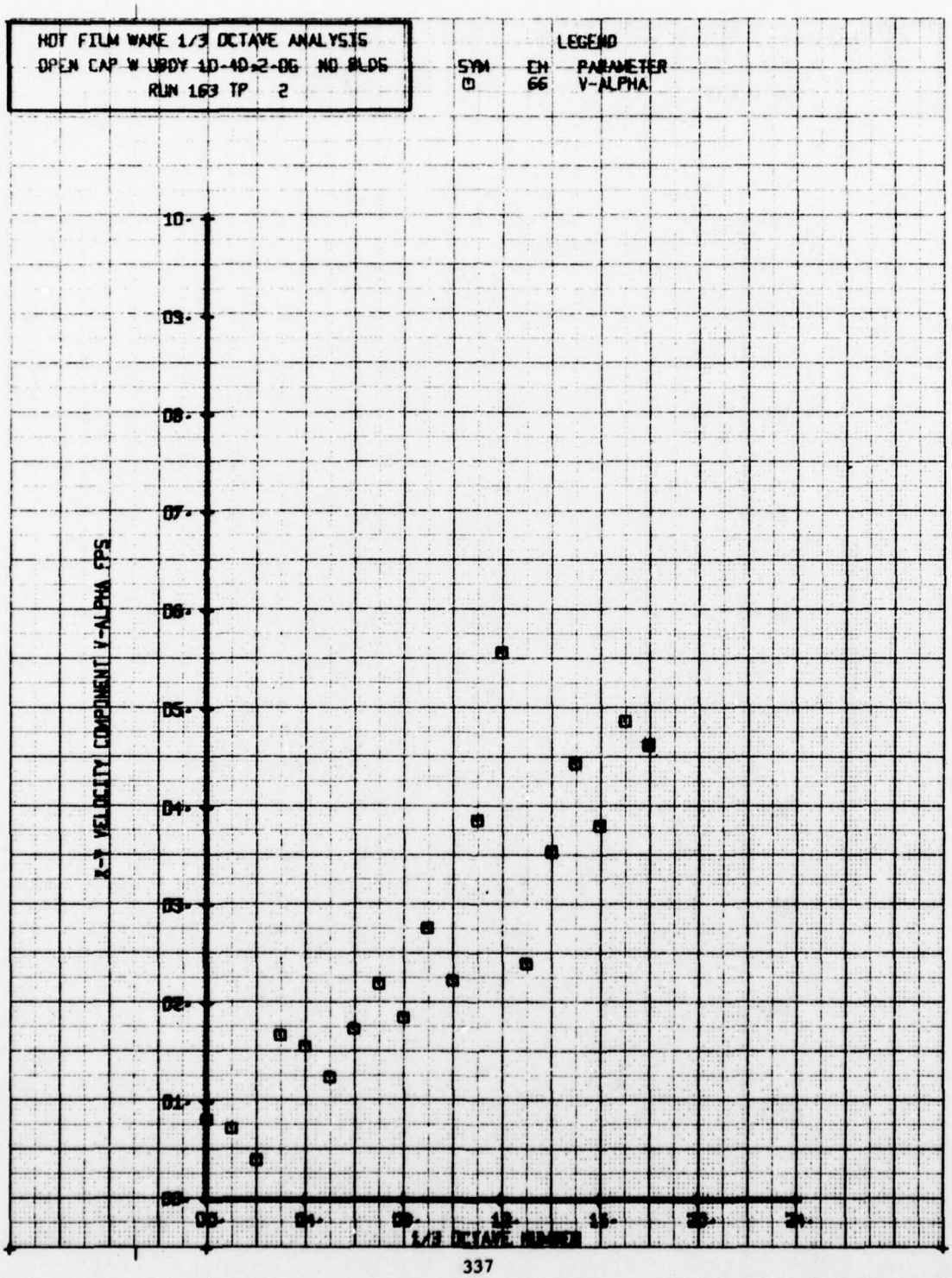

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOV 10-40x2-DC NO BLDS
RUN 163 TP 2
LEGEND
SYM EN PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
00.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.
00.
04.
08.
12.
16.
20.
24.

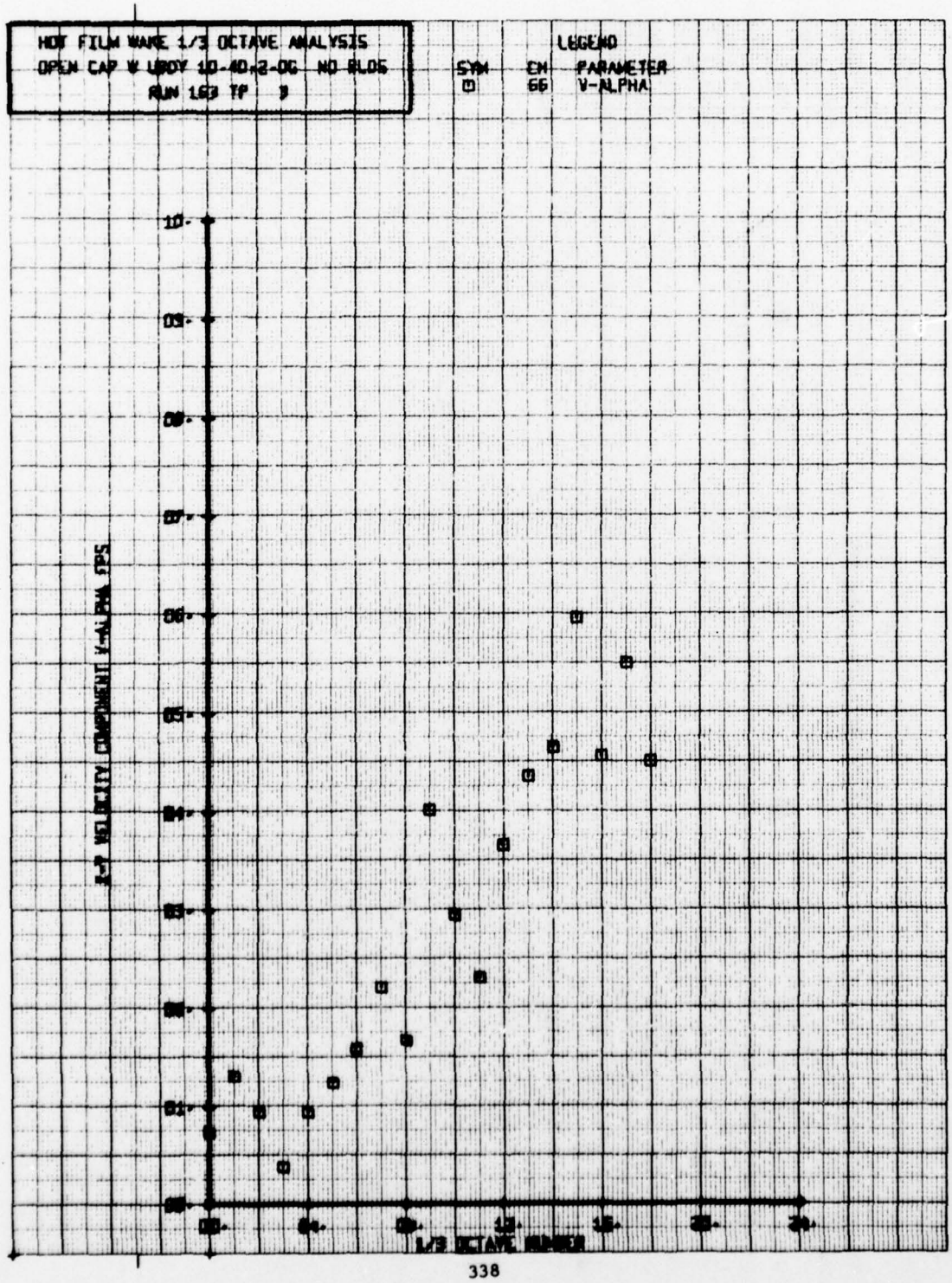

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBODY 10-40.2-DG NO GLDS
RUN 169 TP 3
LEGEND
SYM EM PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE BANDS

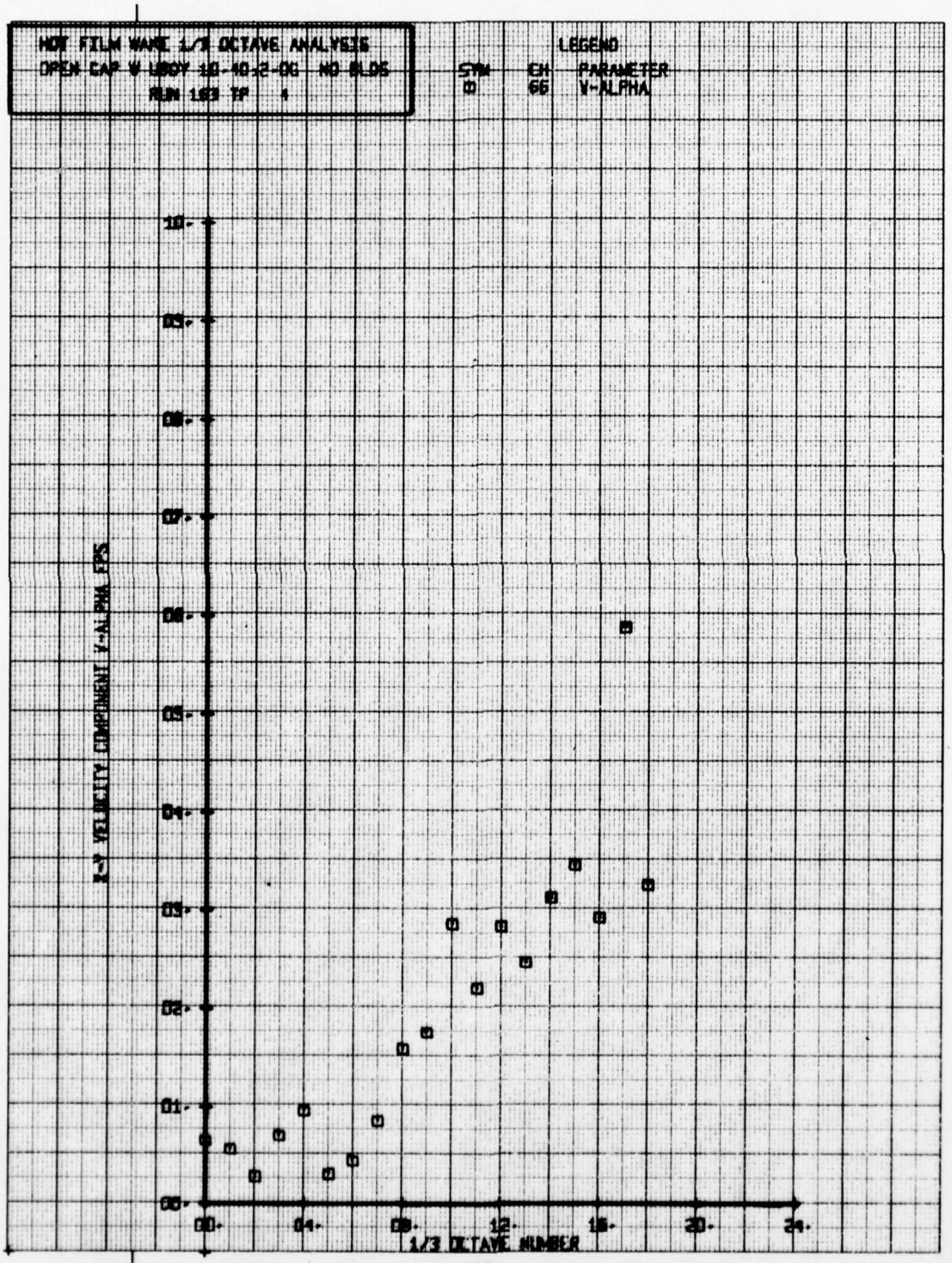

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10-40-2-DG MD BLDS
RUN 163 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10
09
08
07
06
05
04
03
02
01
00

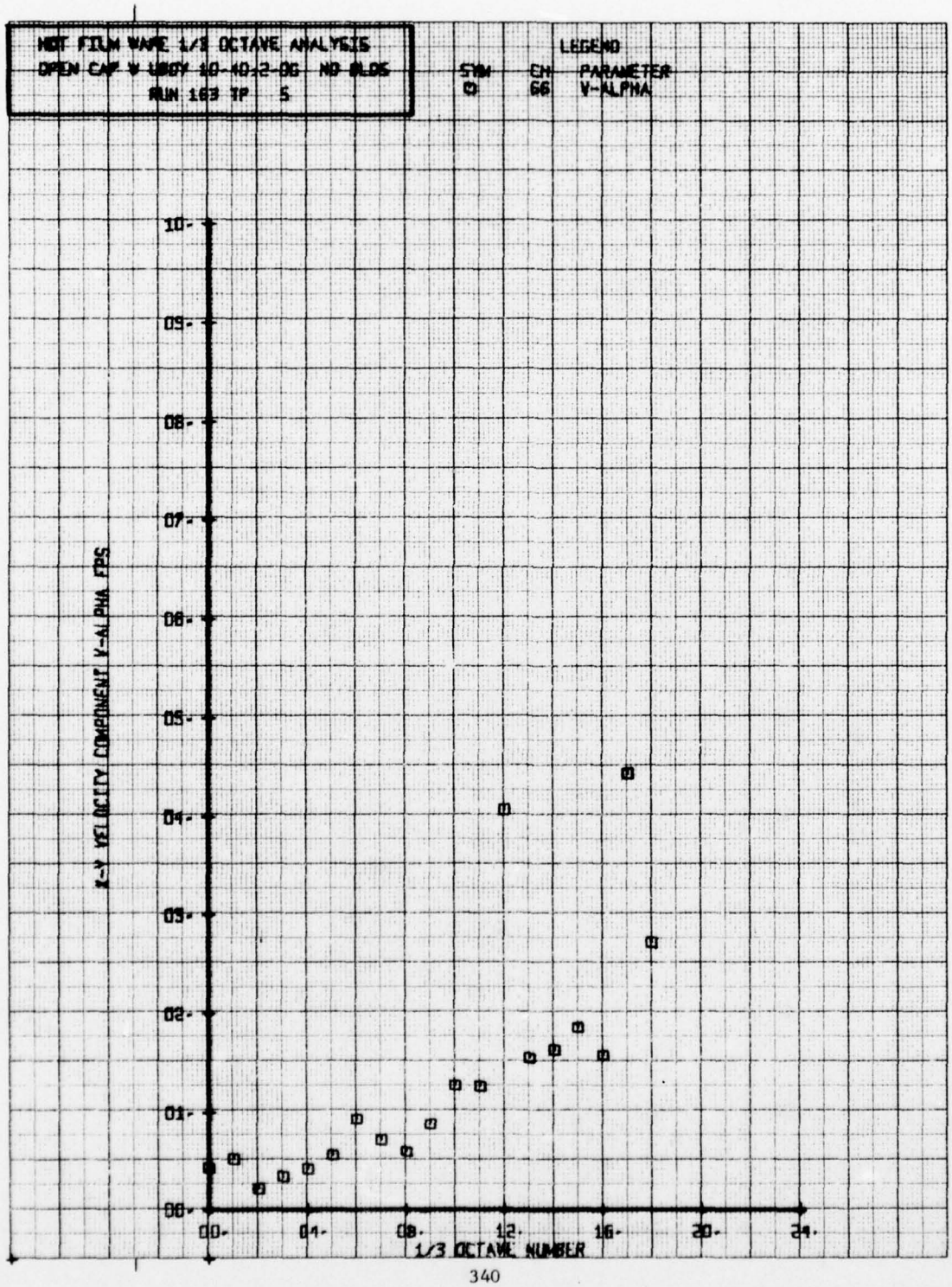

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-2-DG NO BLOS
RUN 163 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

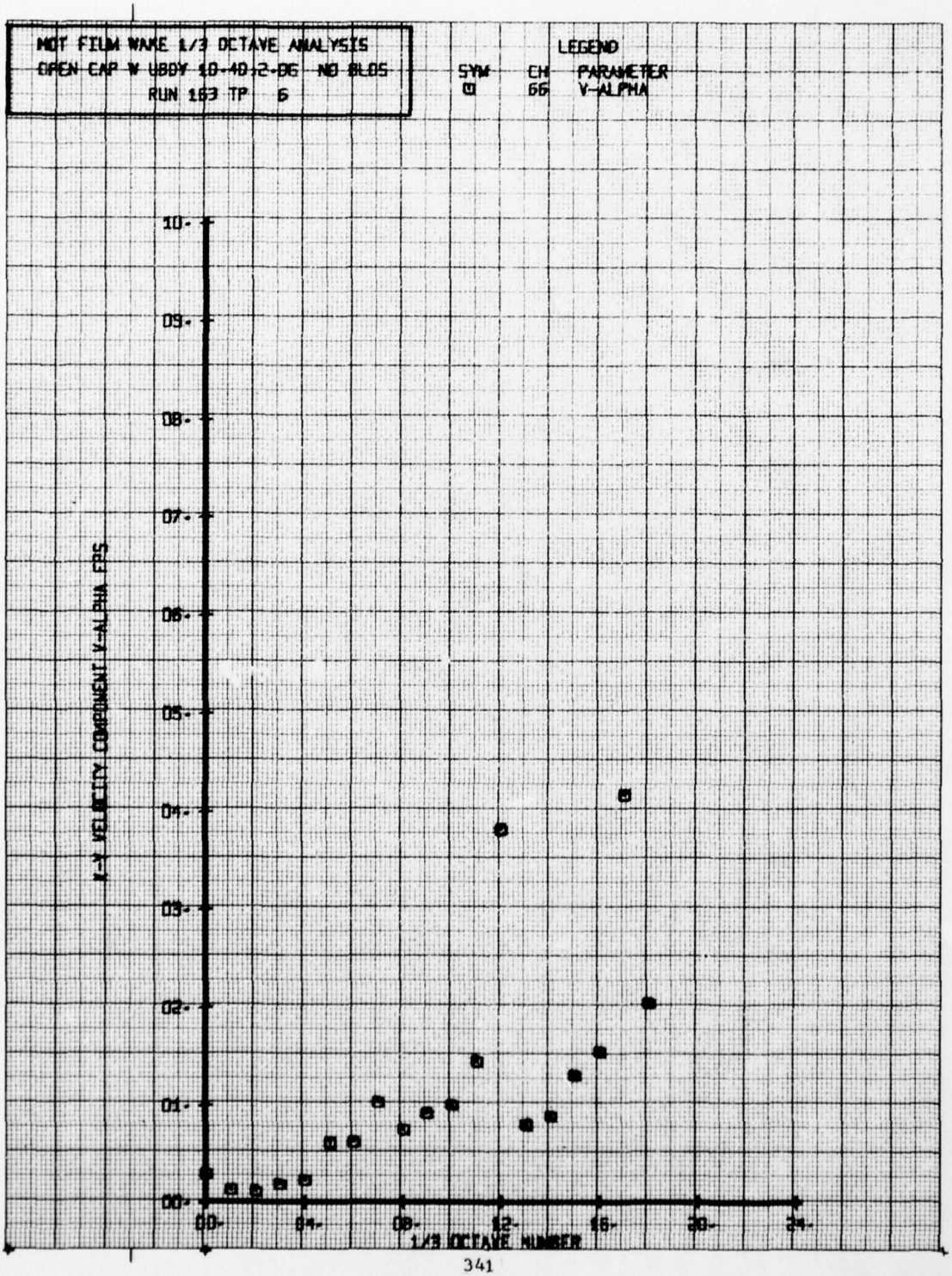

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBODY 10-40-2-DG NO BLDS
RUN 163 TP 6
LEGEND
SYM EN PARAMETER
D BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

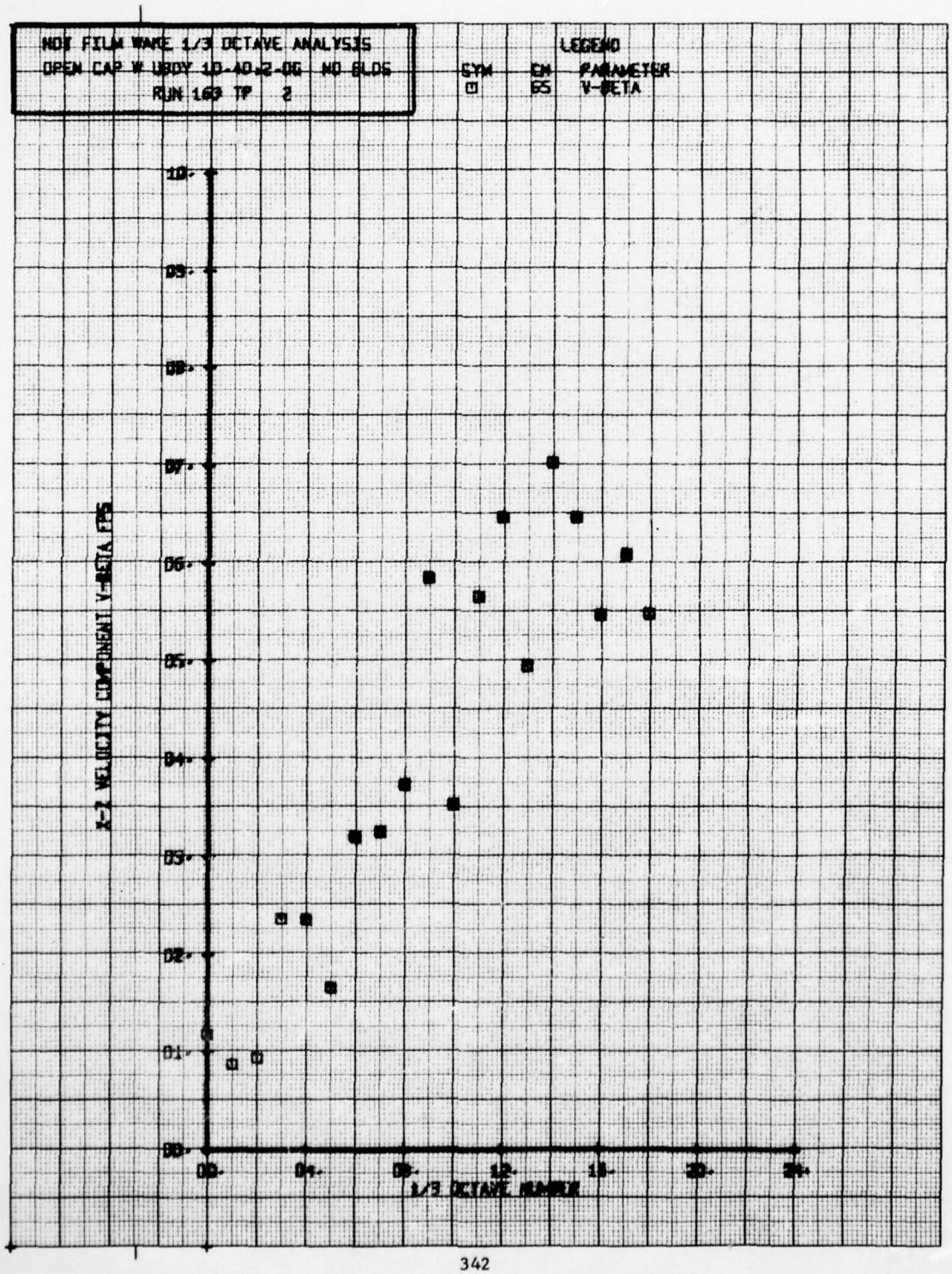

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10-40-2-06 NO BLDG
RUN 163 TP 2
LEGEND
SYM EM PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

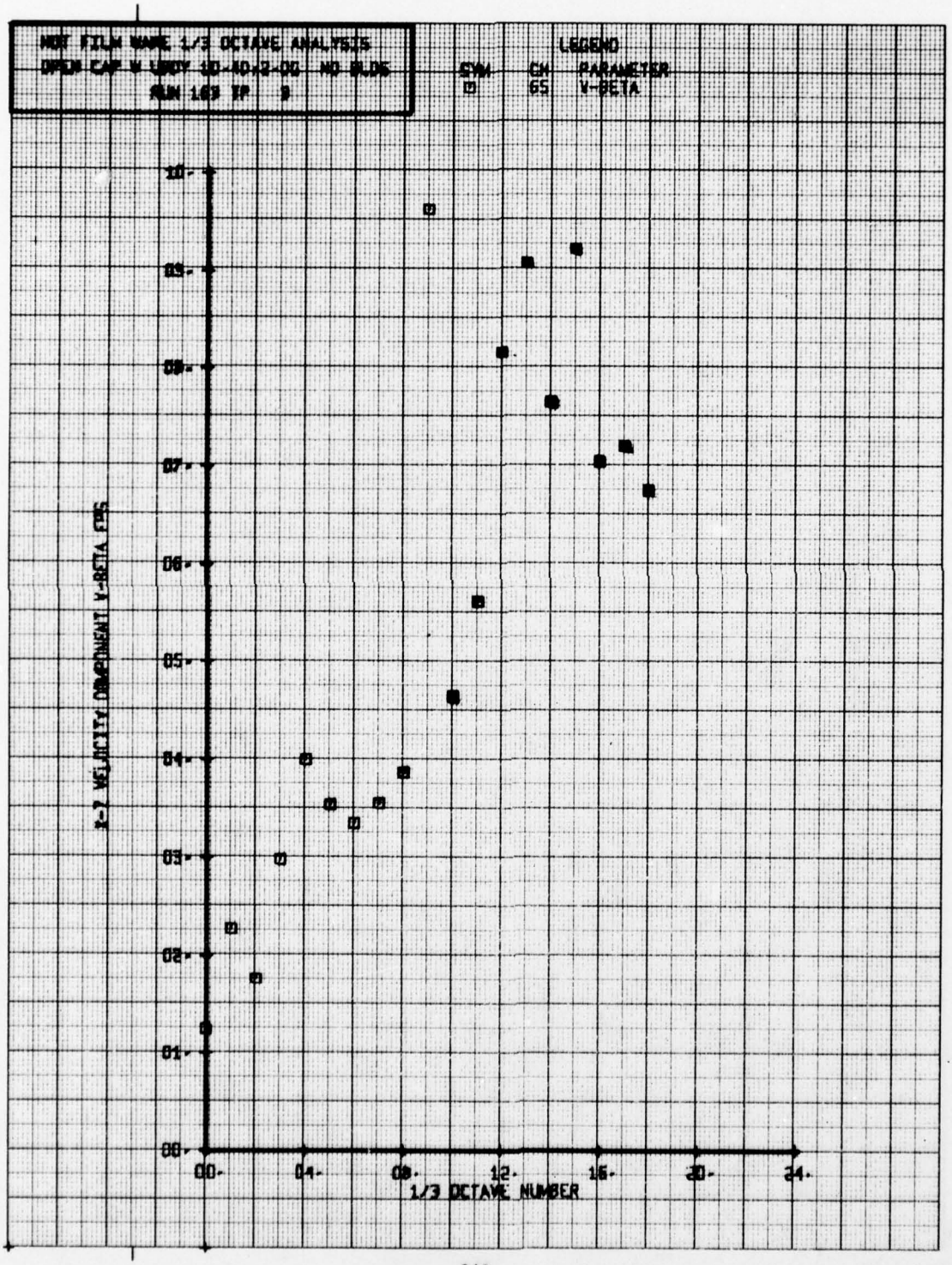

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-2-OG NO BLOS
RUN 163 TP 9
LEGEND
SYM CM PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
1/3 OCTAVE BANDS

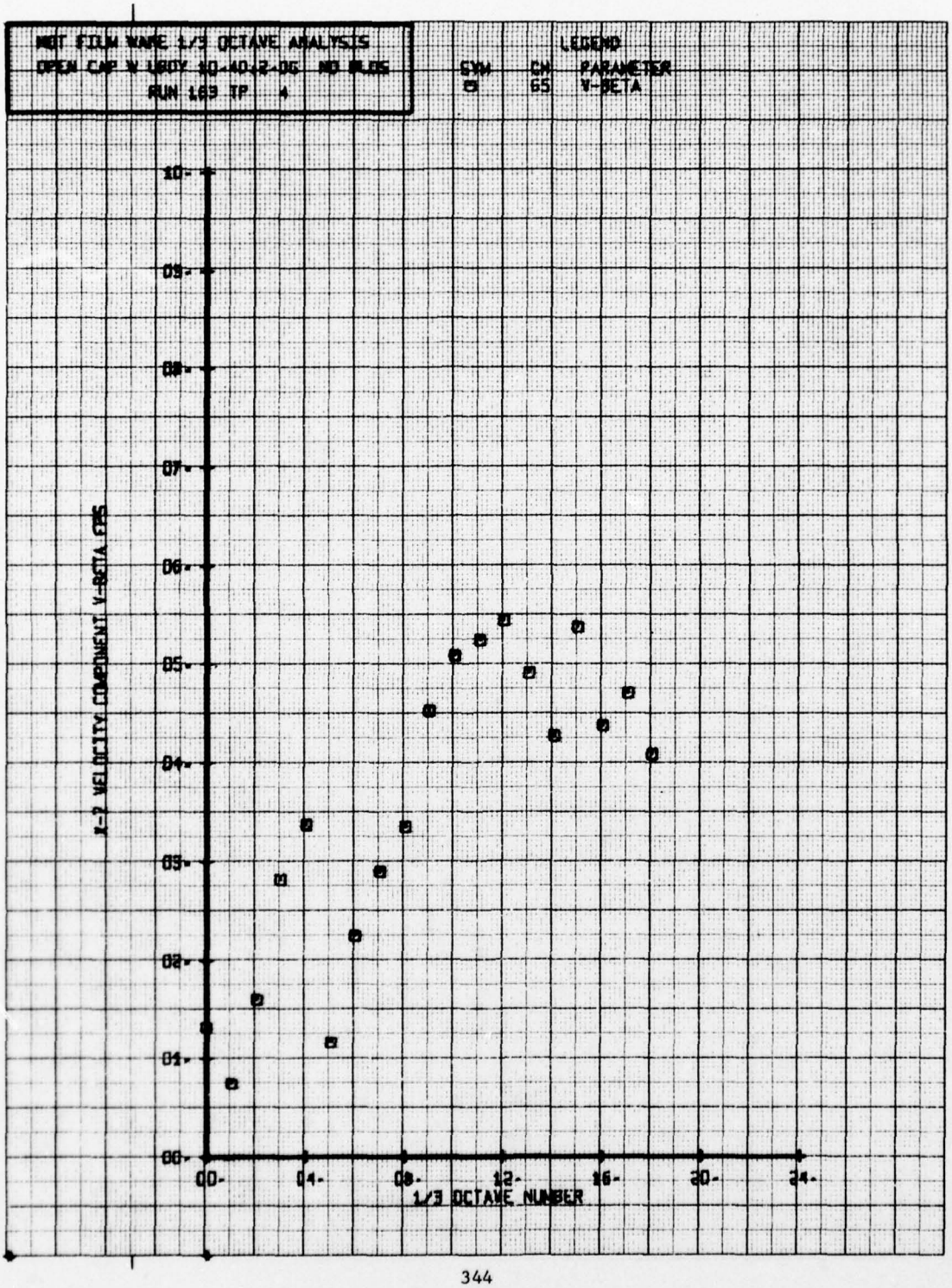

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBOY 10-10.2-DG NO BLDS
RUN 183 TP 4
LEGEND
SYM CH PARAMETER
0 66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
R-V VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

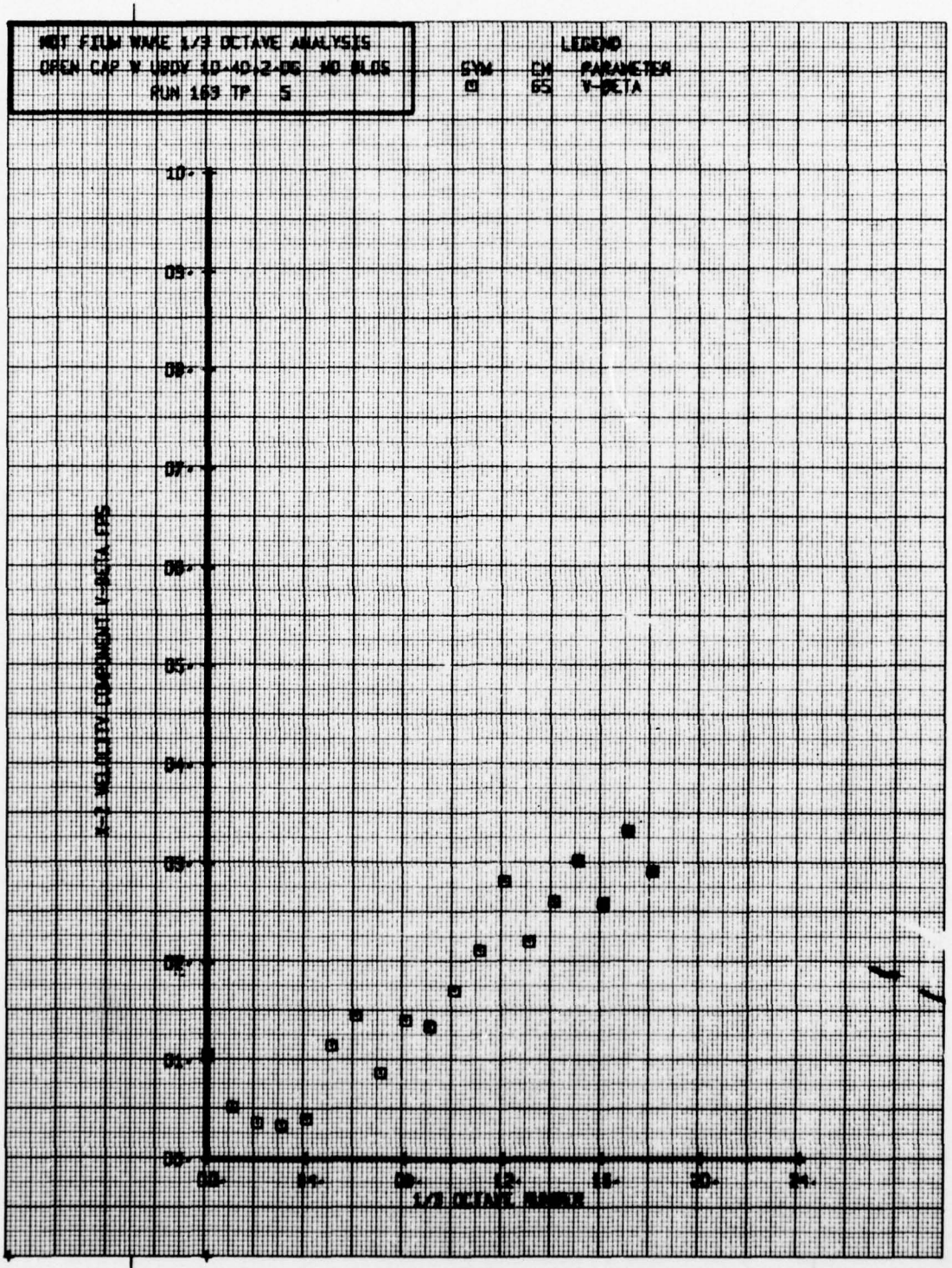

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP V UBOY 10-10-2-DG NO BLDS
RUN 163 TP 5
LEGEND
SYM CH PARAMETER
0 66 V-ALPHA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
X-Y VELOCITY COMPONENT V-ALPHA FPS
00-
04-
08-
12-
16-
20-
24-
1/3 OCTAVE NUMBER

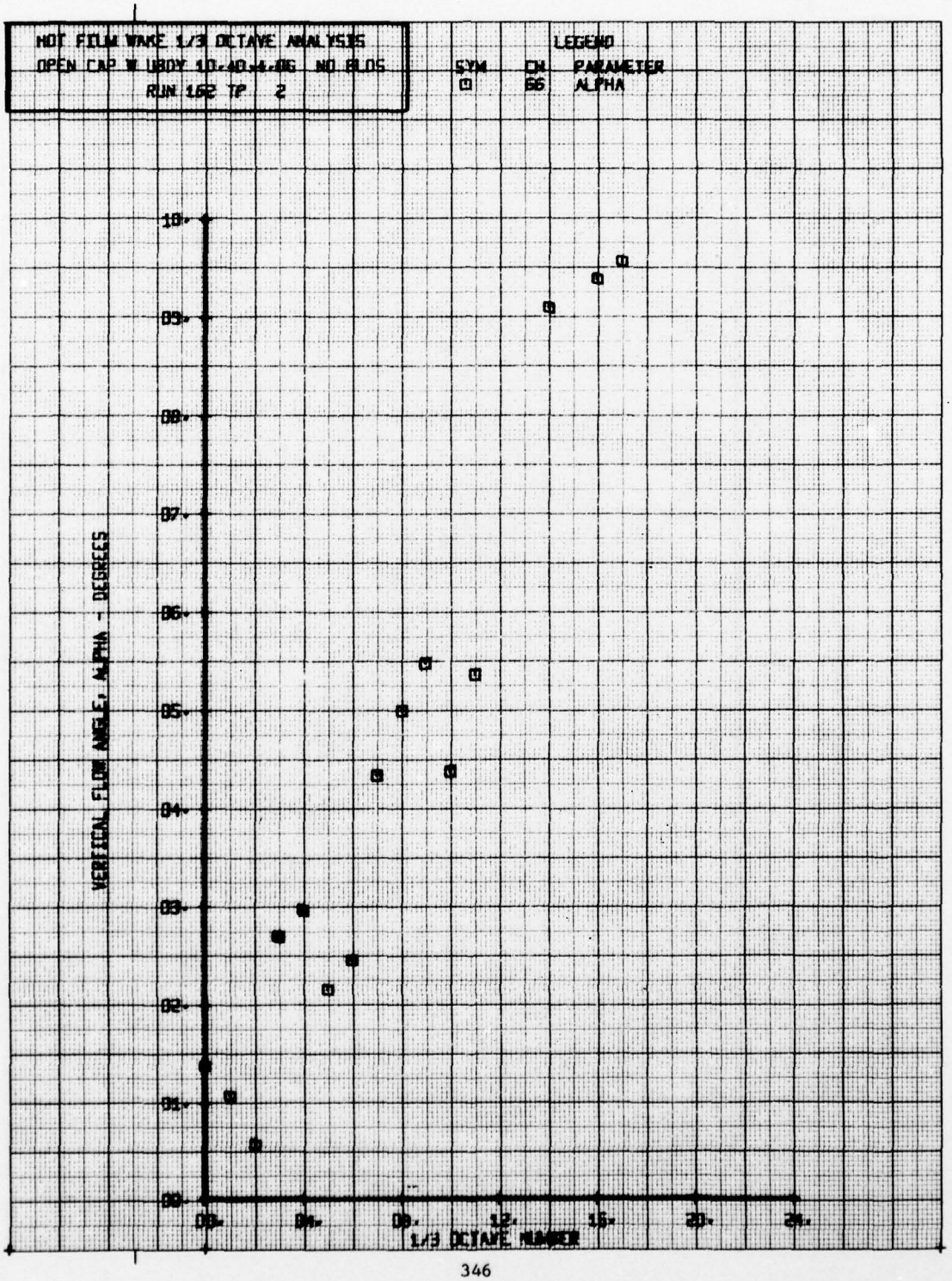

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10-40.2-DG NO BLOS
RUN 163 TP 6
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
N-V VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

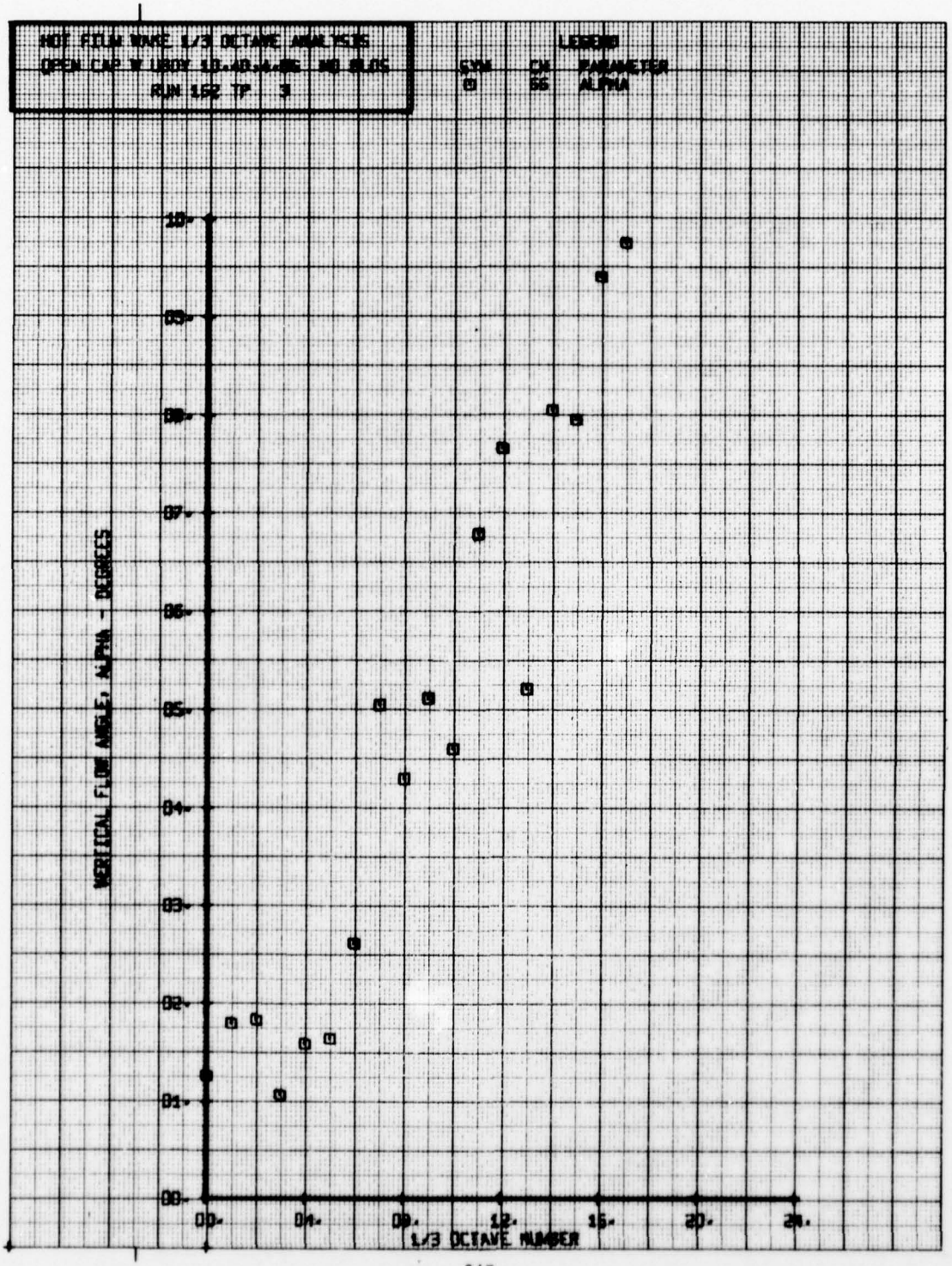

HDF FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP # UBDY 10-A0.2-0G NO BLOS
RUN 169 TP 2
LEGEND
SYM CM PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

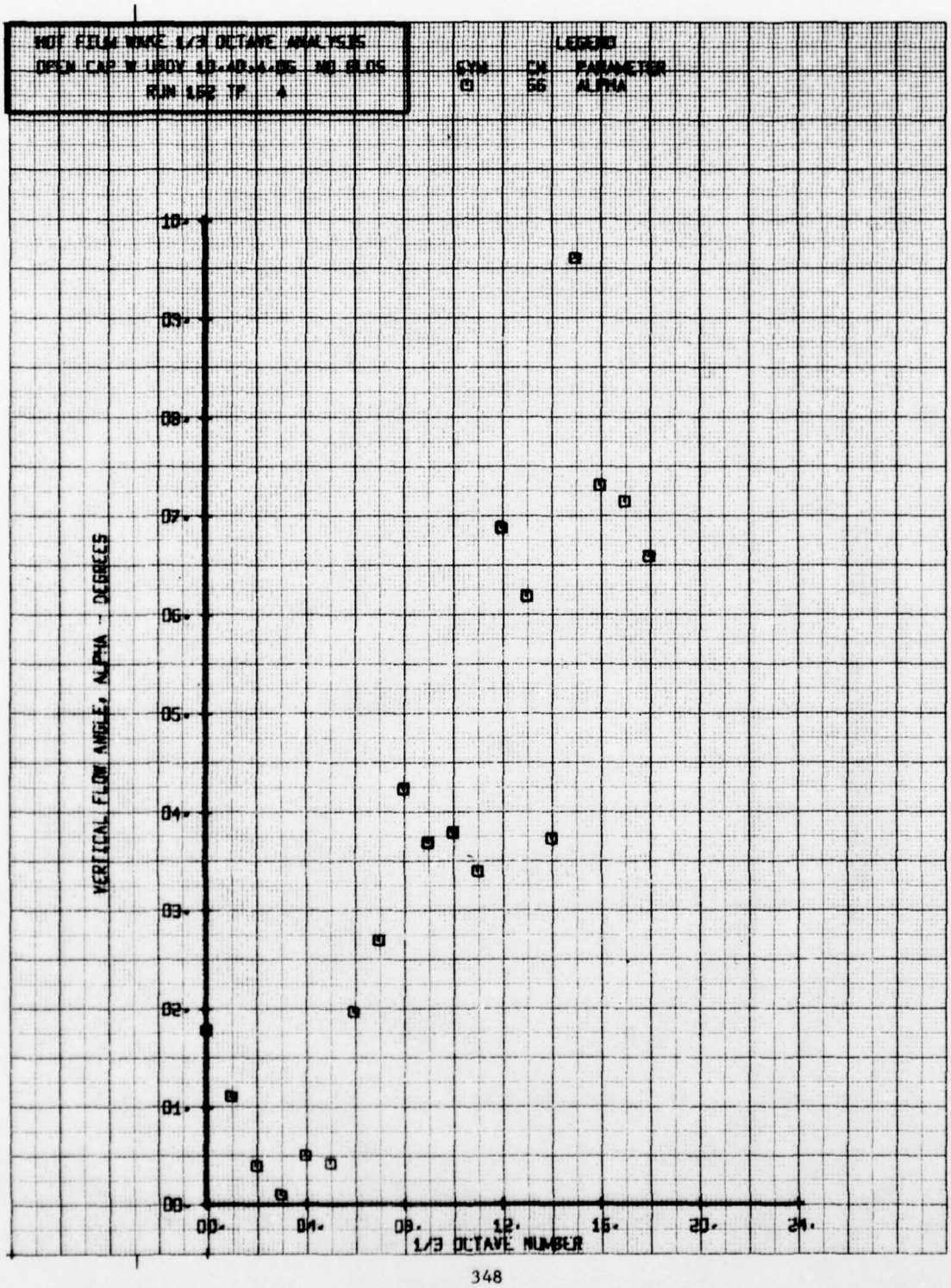

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-40-2-00 NO BLDG
RUN 163 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
10
09
08
07
06
05
04
03
02
01
00
X-2 VELOCITY COMPONENT V-BETA FPS
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER

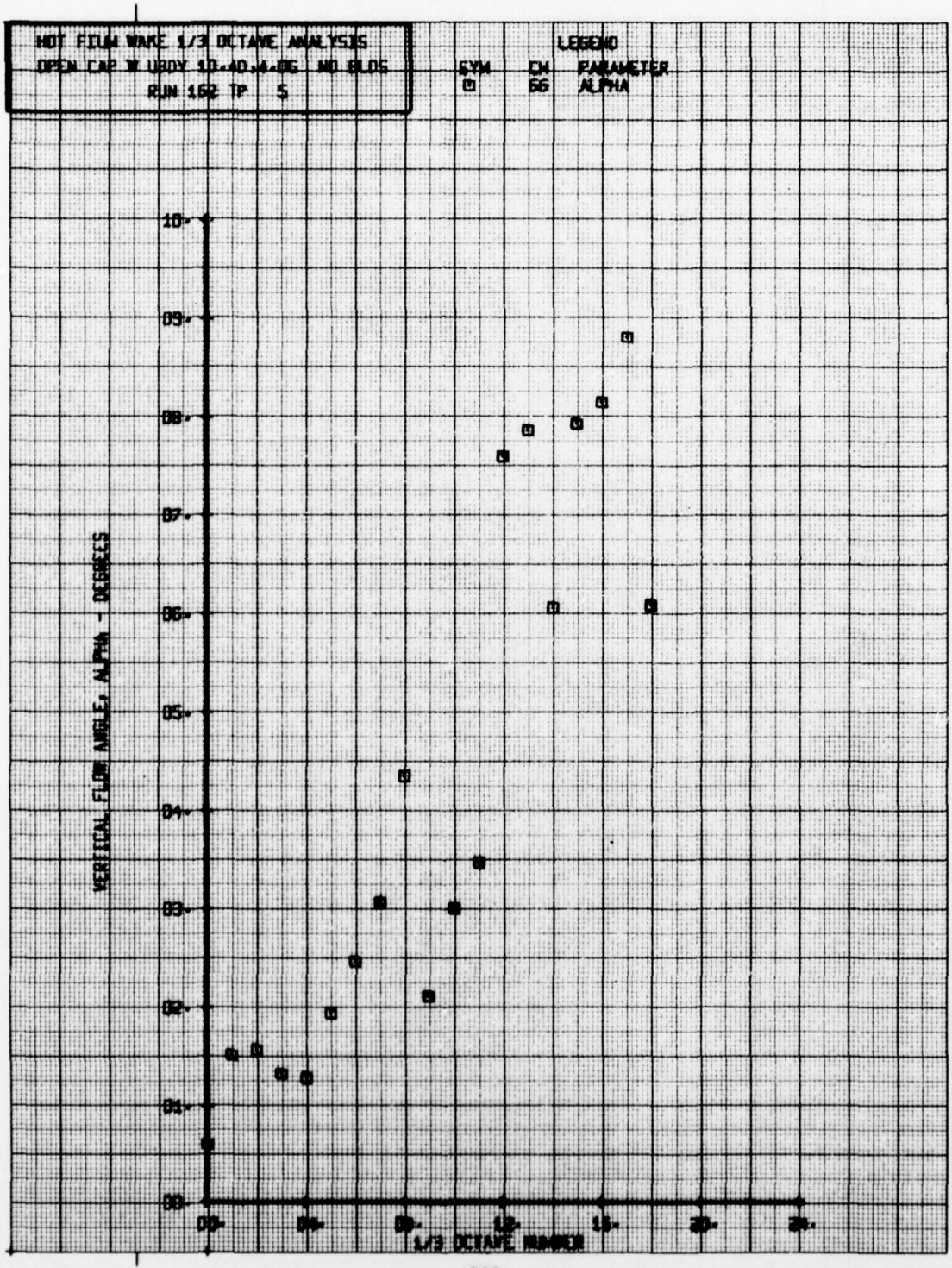

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBOY 10-40-2-DG NO BLDS
RUN 169 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
10-
09-
08-
07-
06-
05-
04-
03-
02-
01-
00-
00-
04-
08-
12-
16-
20-
24-
1/3 OCTAVE NUMBER
U-2 VELOCITY COMPONENT V-BETA-FPS

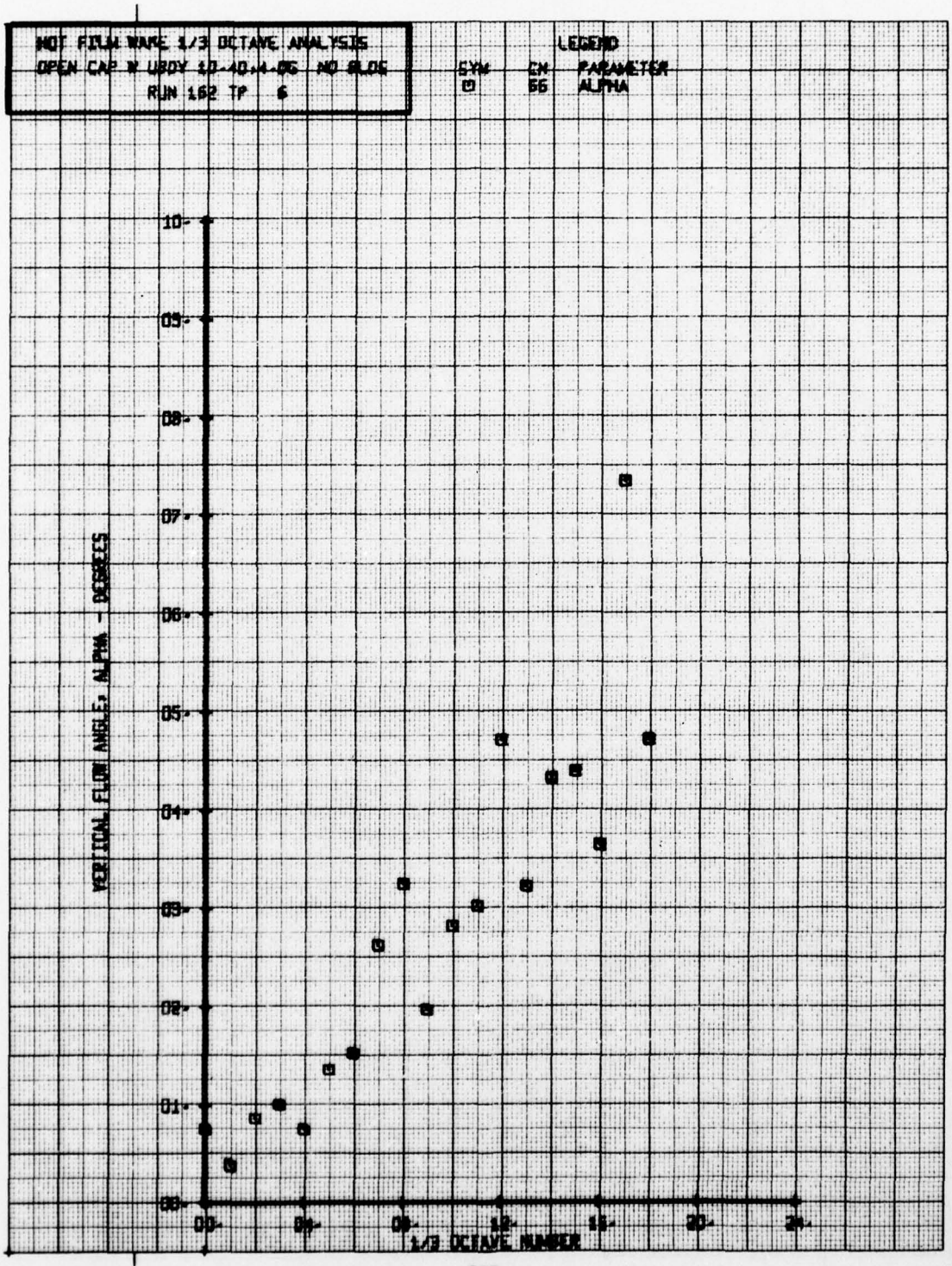

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDV 10-40-2-DG NO BLOS
RUN 169 TP 5
LEGEND
SYM CM PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER

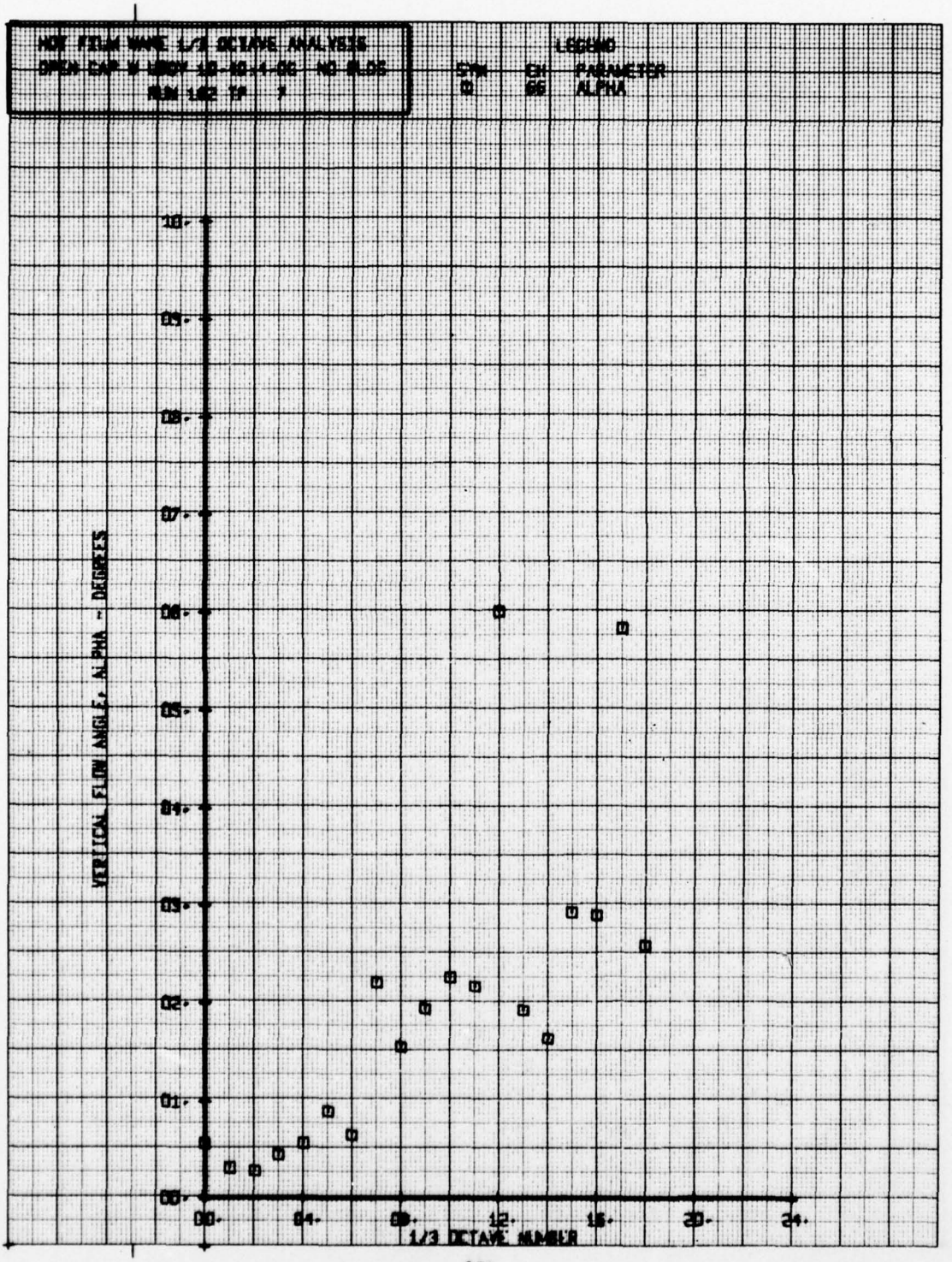

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.0G NO BLDS
RUN 162 TP 2
LEGEND
SYM CH PARAMETER
96 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
08.
09.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

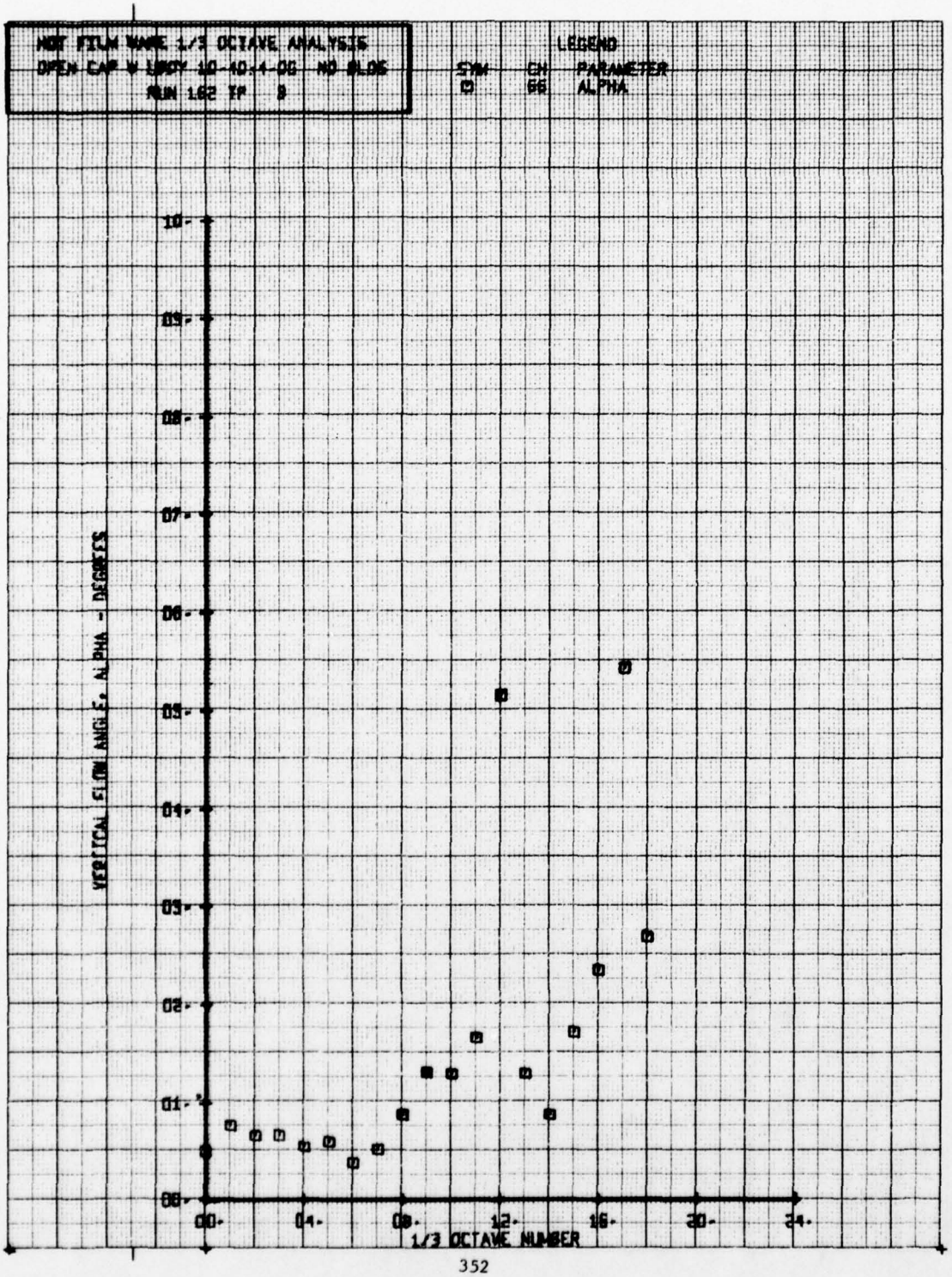

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.4.86 NO BLDS
RUN 162 TP 3
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

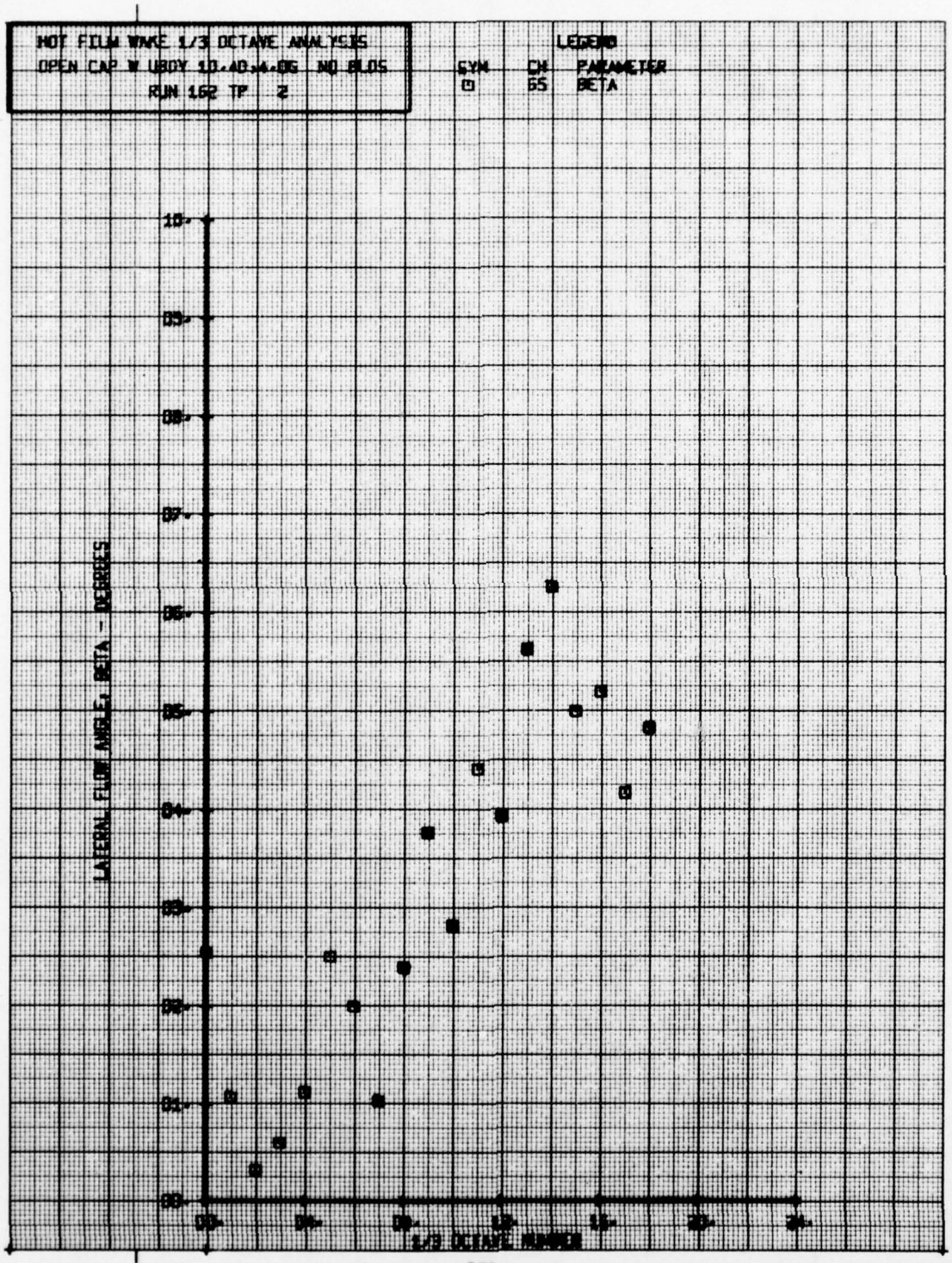

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.4.06 NO BLDS
RUN 162 TP 4
LEGEND
SYM CH PARAMETER
56 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

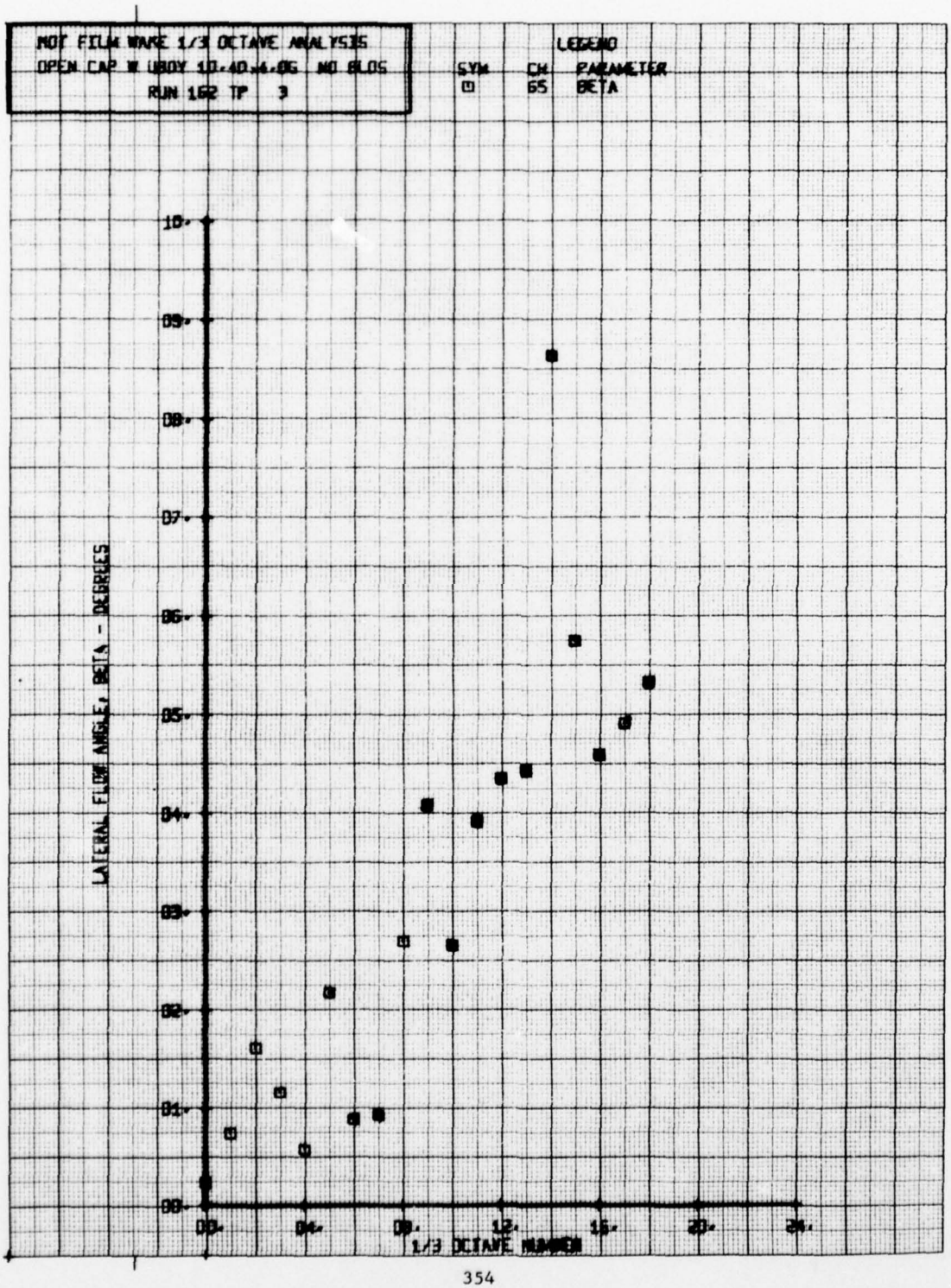

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.06 NO BLOS
RUN 162 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
05.
10.
15.
20.
25.
1/3 OCTAVE NUMBER

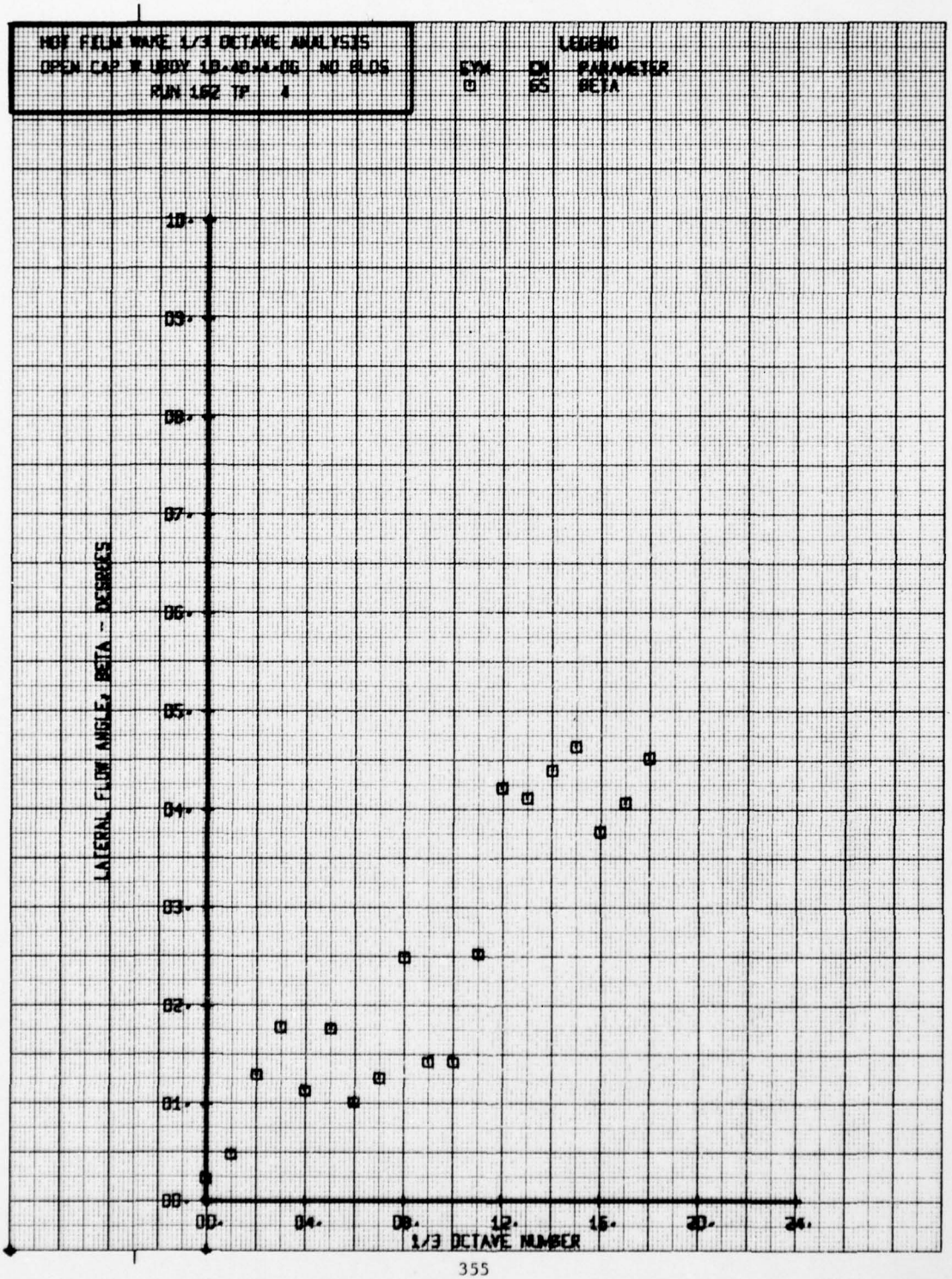

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10-40.4-06 NO BLOS
RUN 162 TP 6
LEGEND
SYM CN PARAMETER
66 ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 06. 08. 12. 18. 20. 24.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

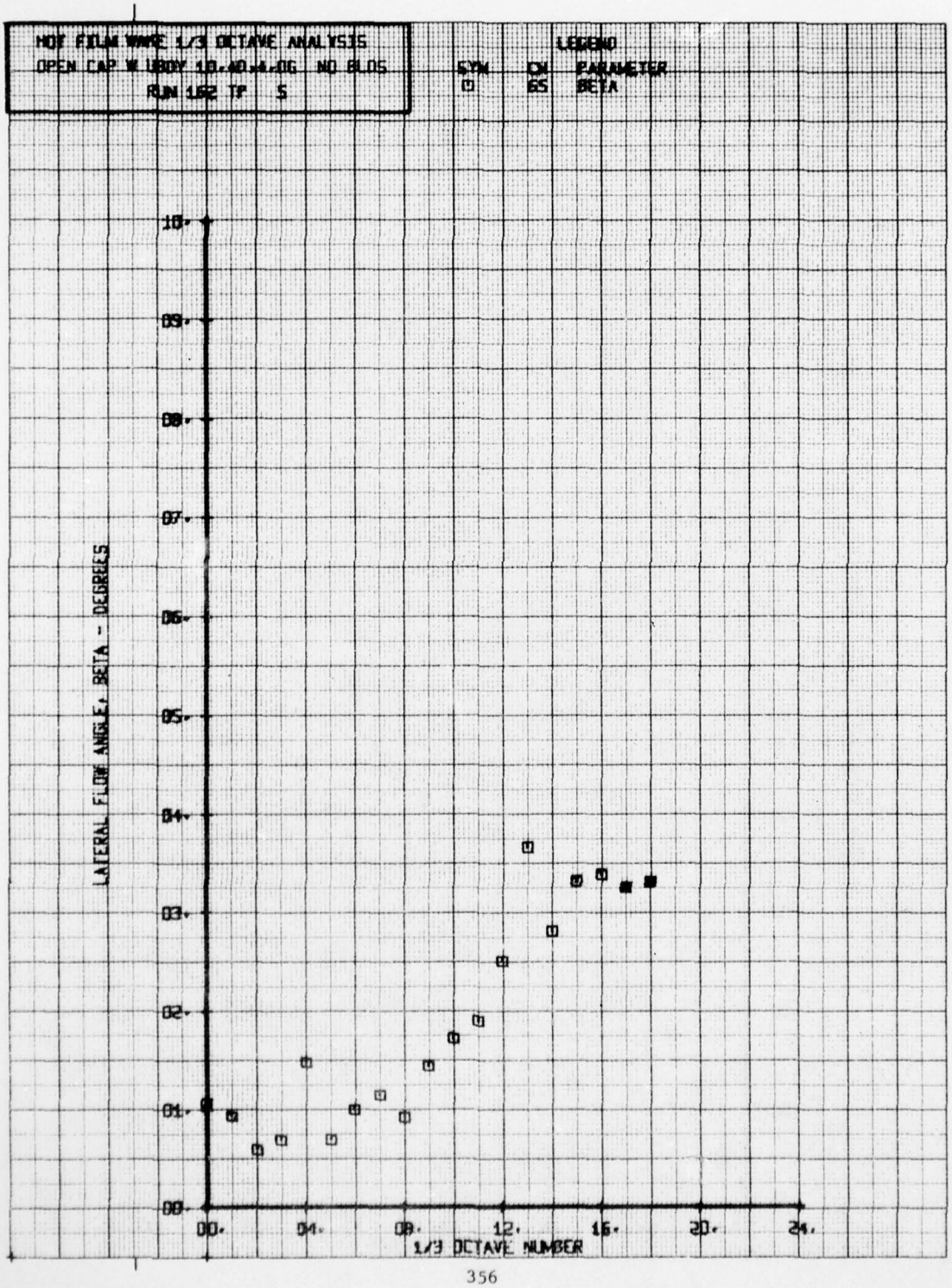

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-10-4-06 NO BLDS
RUN 102 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

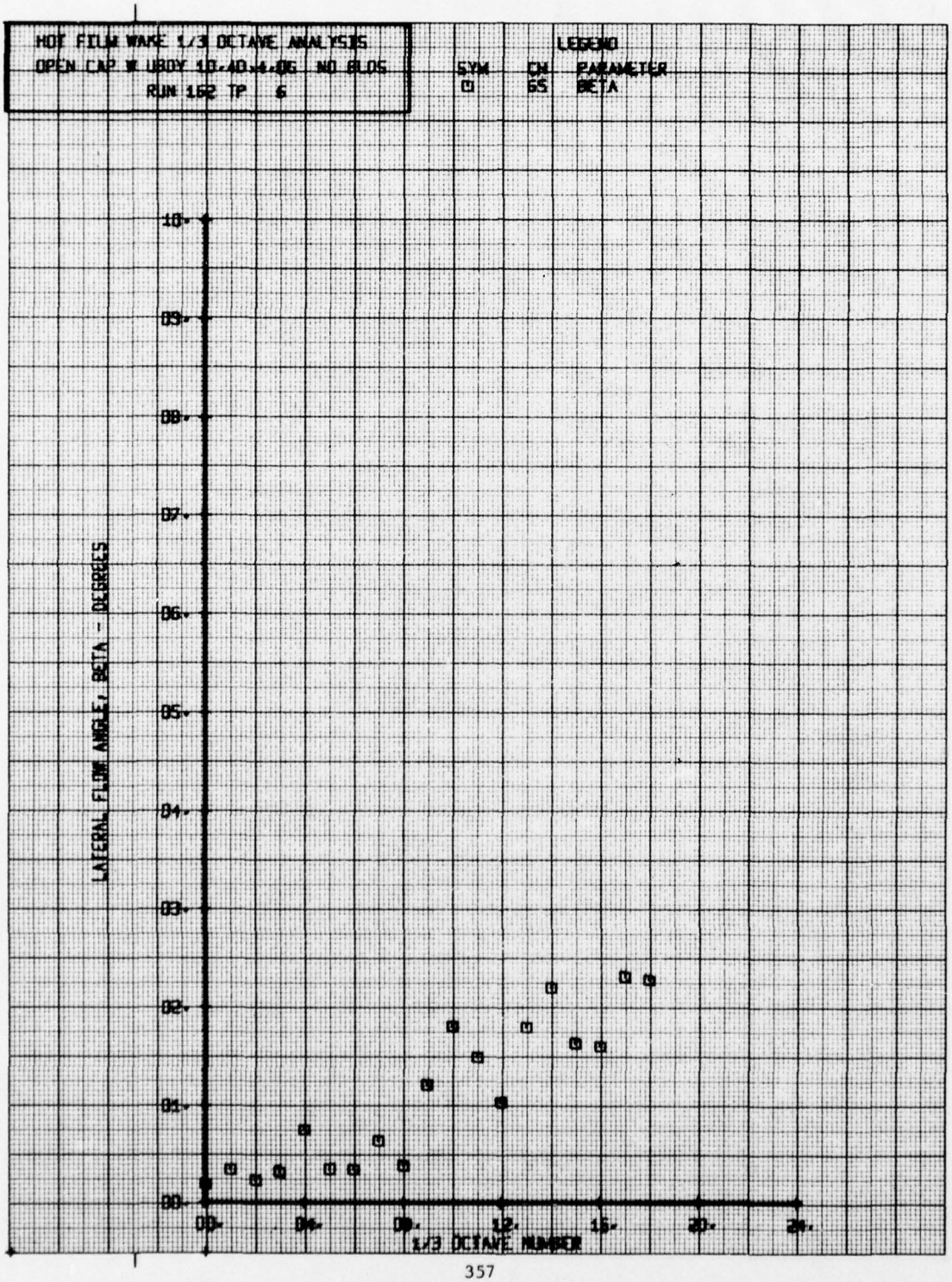

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LROY 10-40.4-OG NO BLOS
RUN 162 YP 8
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER

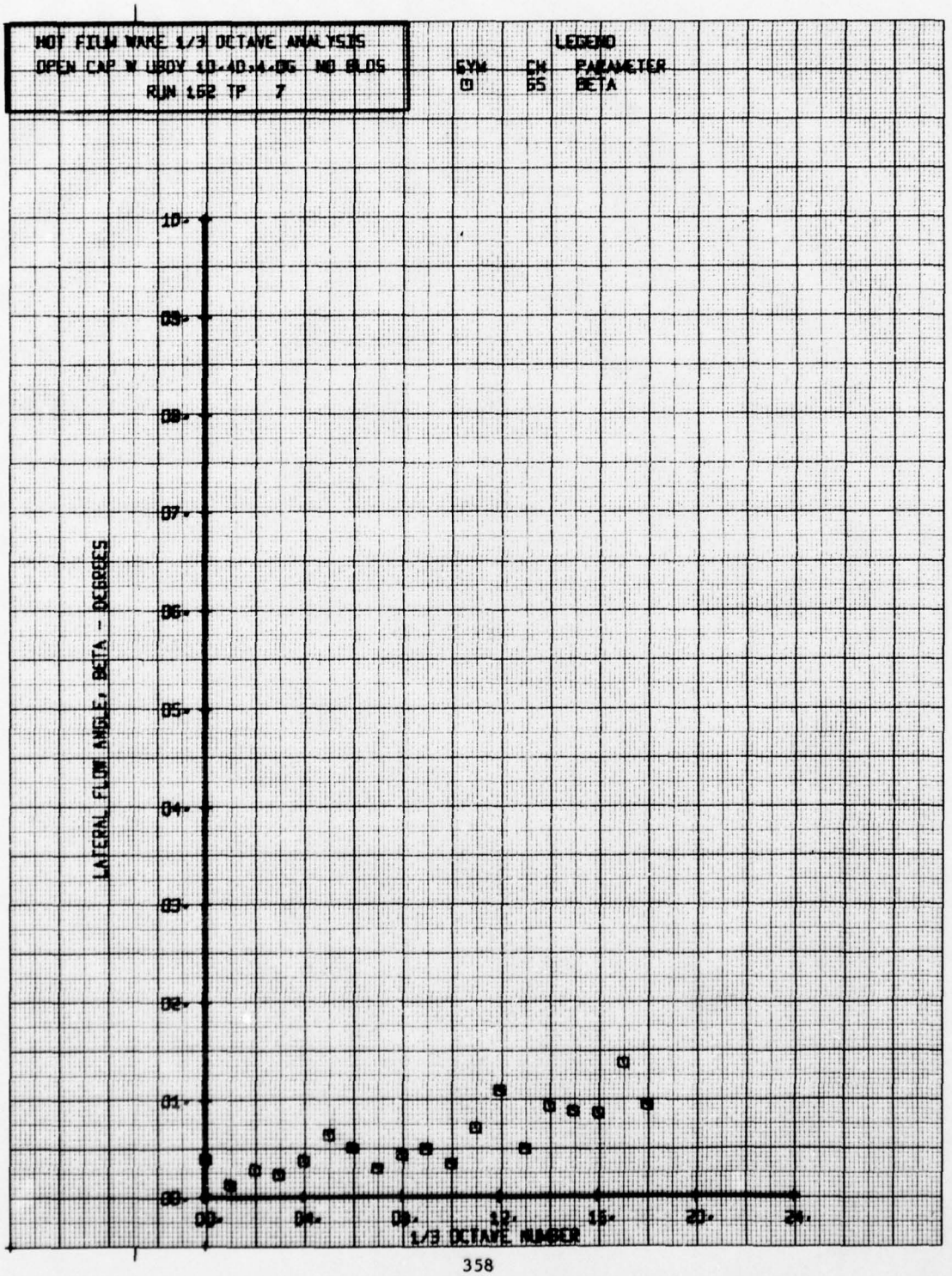

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.4D.4.0G NO BLOS
RUN 162 TP 2
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

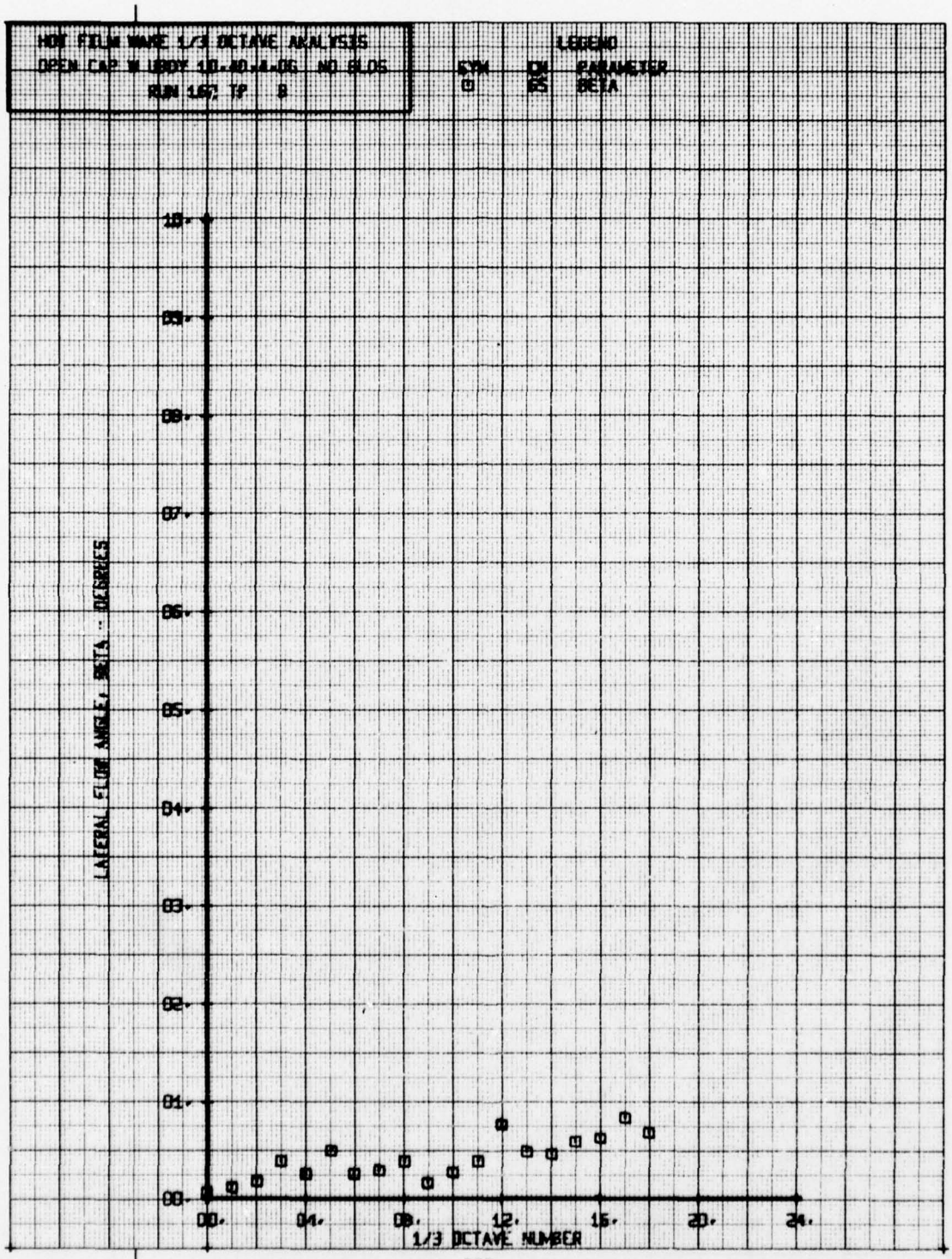

MDT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.4.0G NO BLOS
RUN 162 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
LATERAL FLOW ANGLE, BETA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

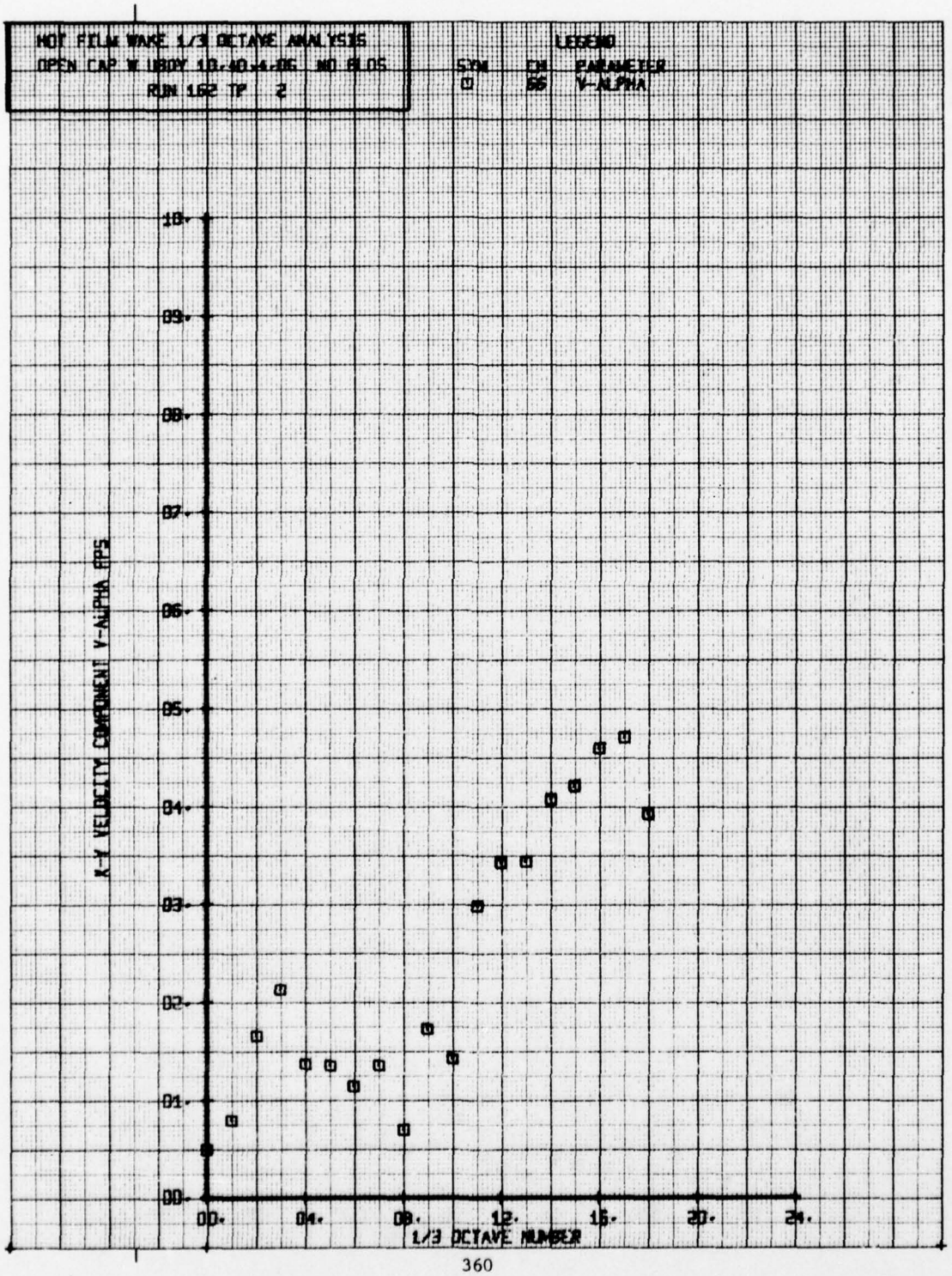

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.06 NO BLOS
RUN 162 TP 4
LEGEND
SYM DK PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

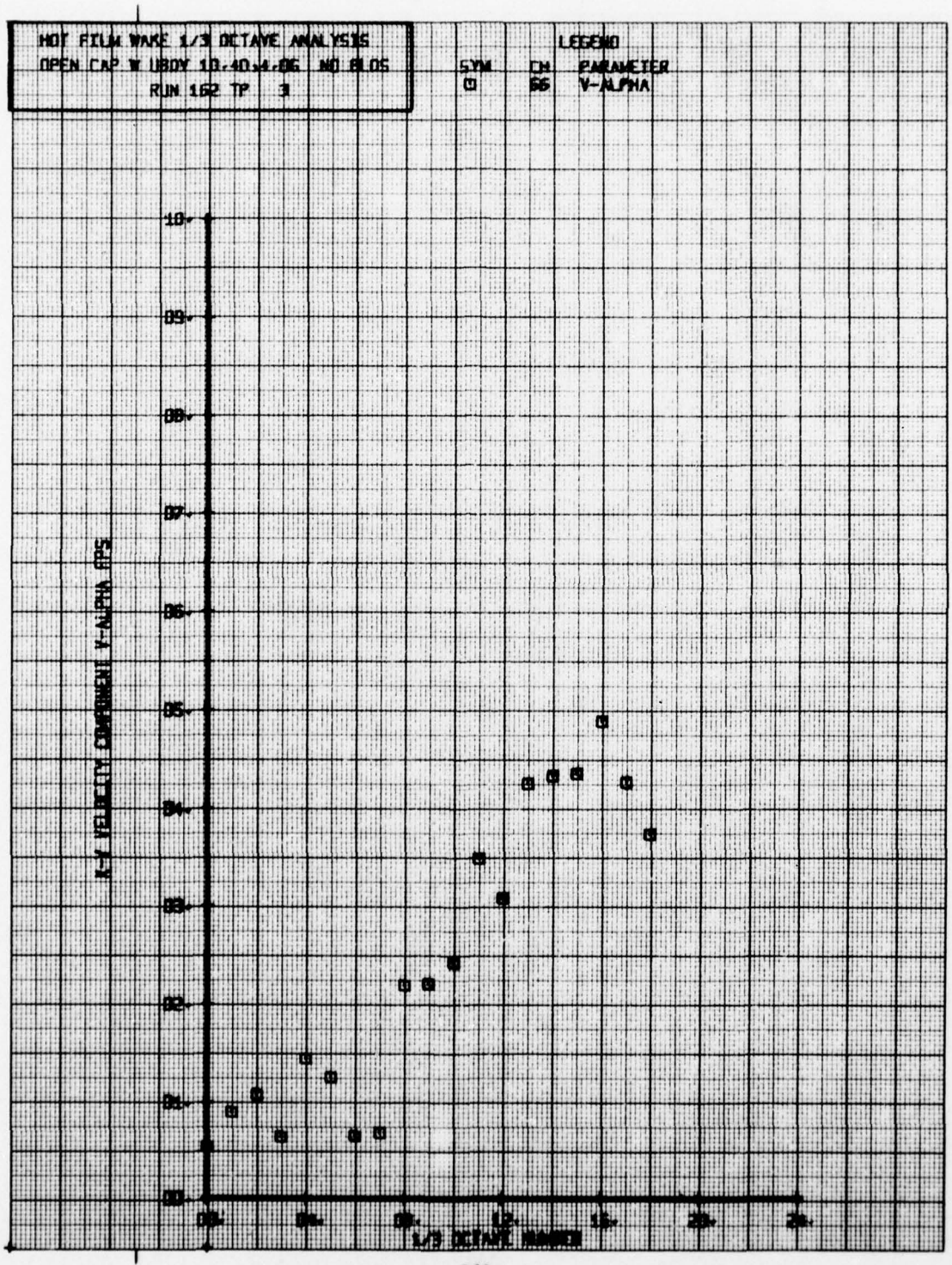

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10.40.4.0G NO BLDS
RUN 162 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

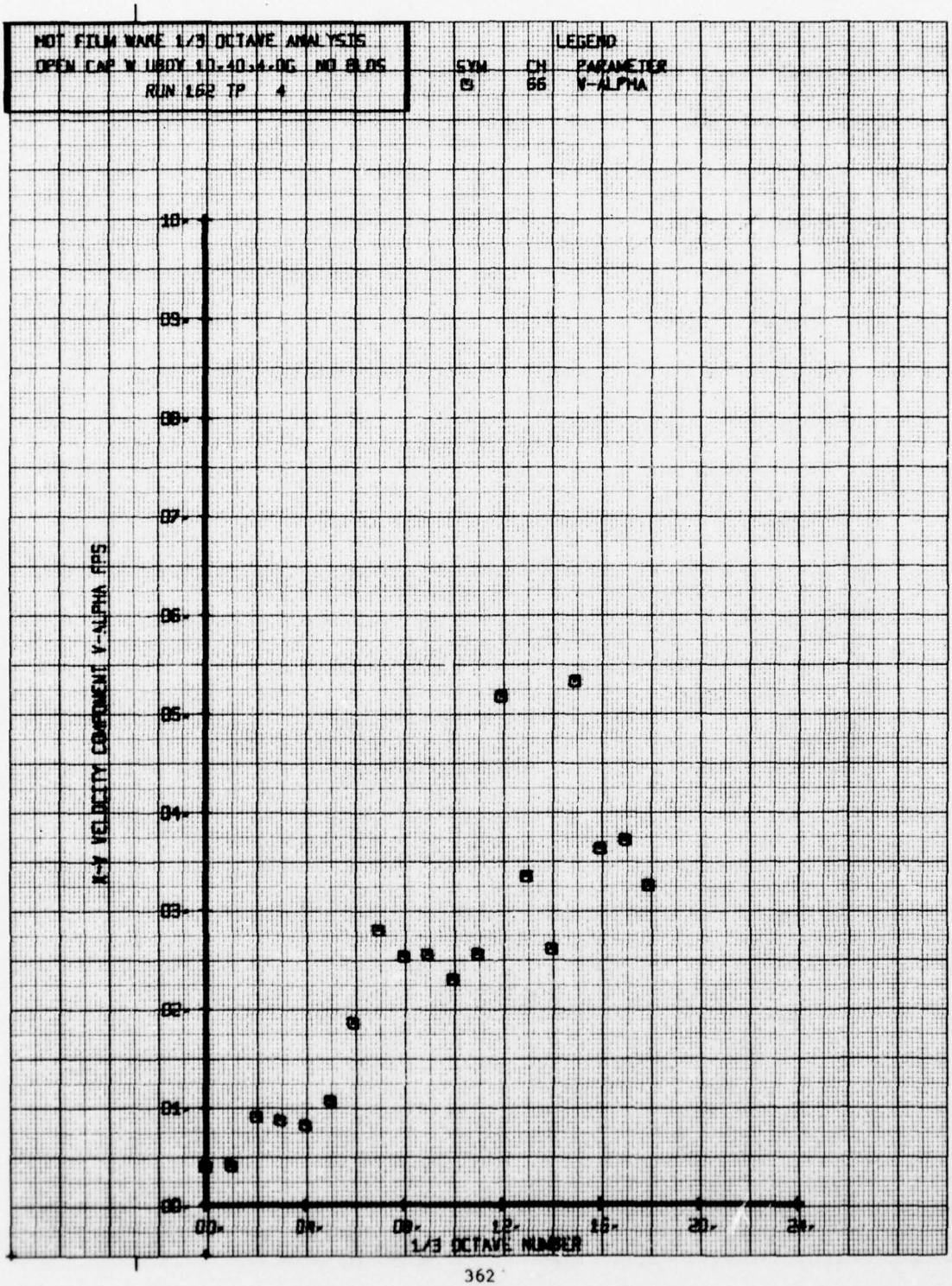

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.06 NO BLOS
RUN 162 TP 6
LEGEND
SYM CM PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

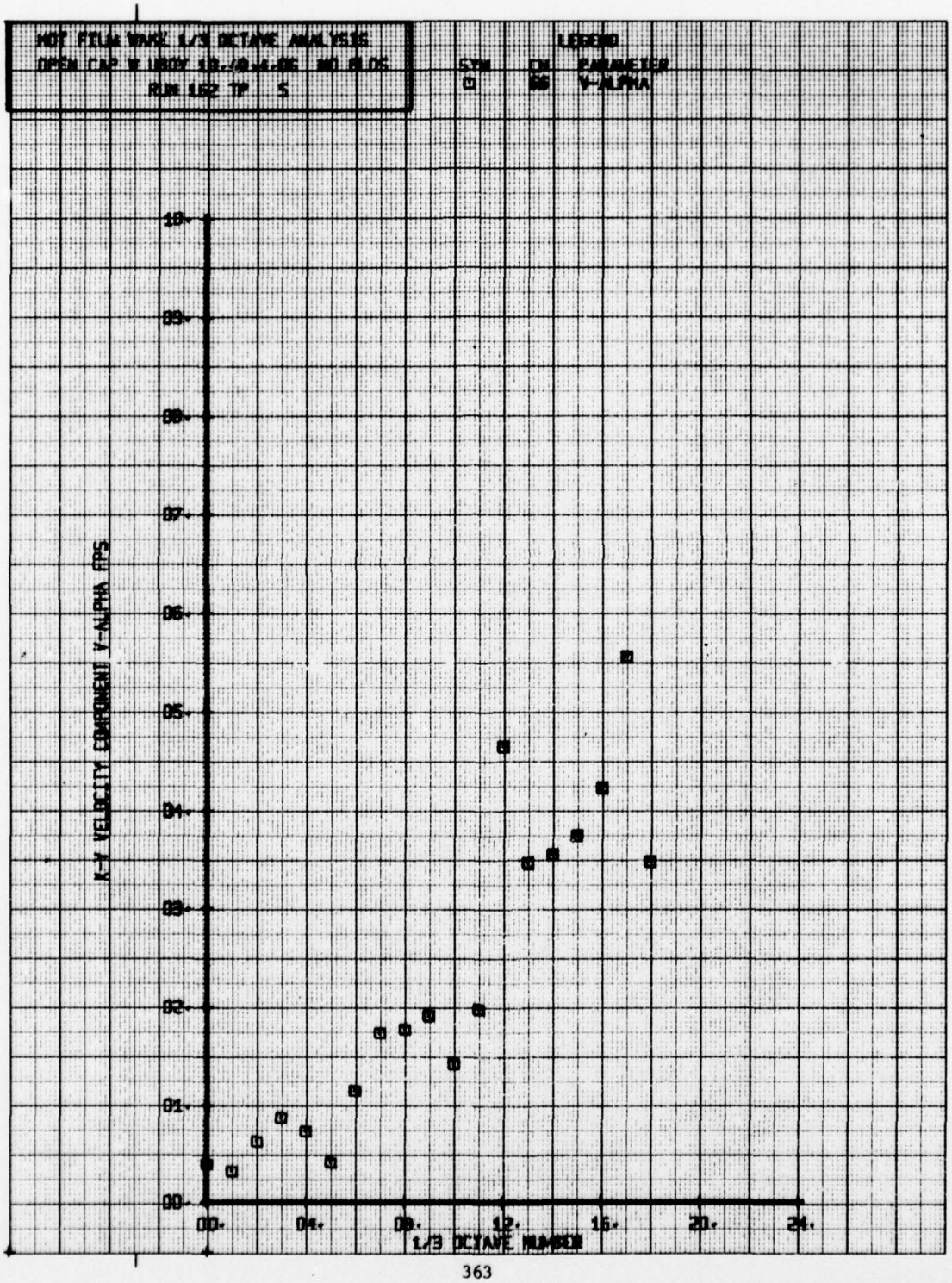

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY $0.40.4.0G NO BLOS
RUN 152 TP 7
LEGEND
SYM CH PARAMETER
0 65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

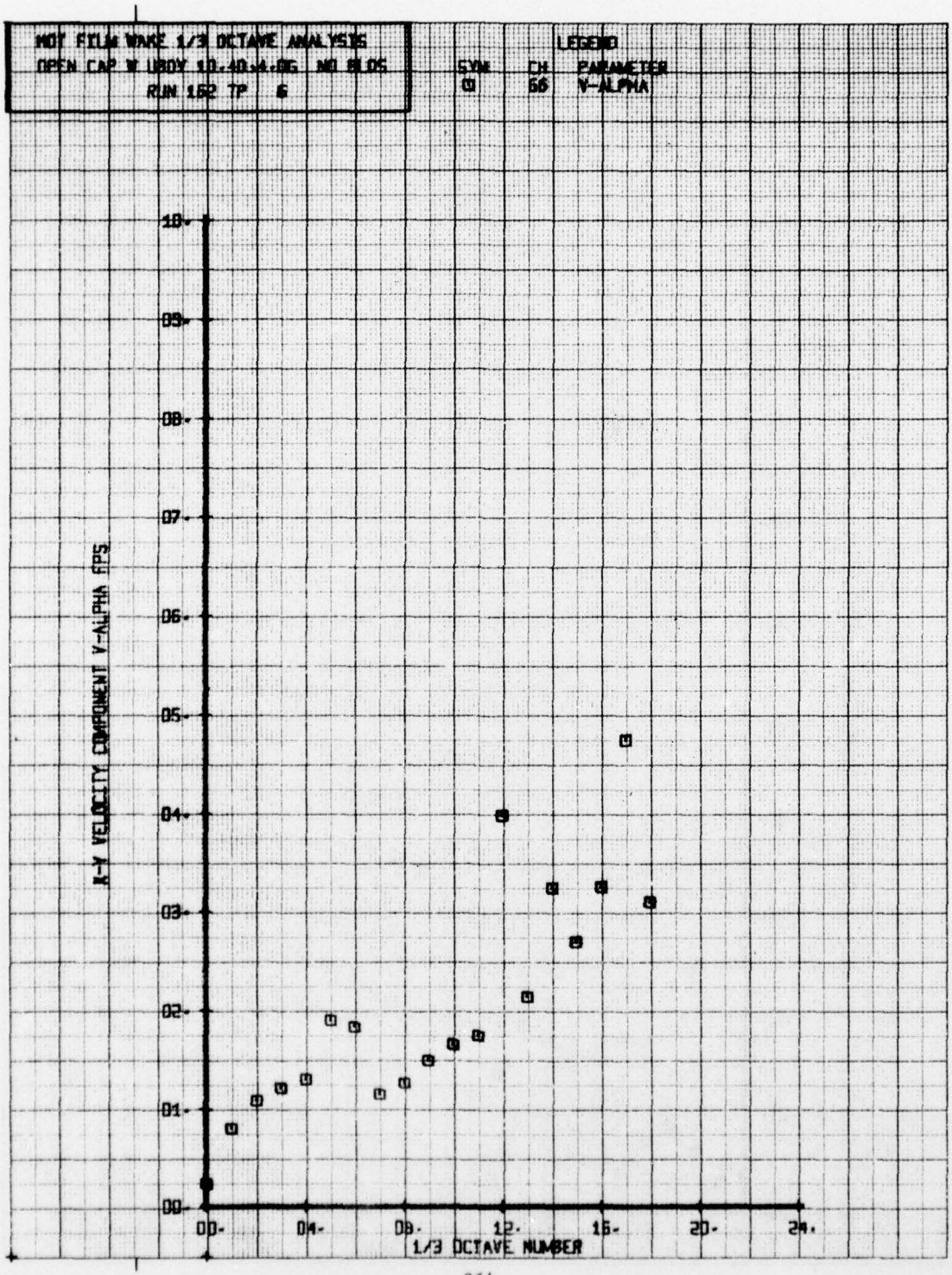

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBODY 10.40.4.06 NO BLDG
RUN 167 TP 8
LEGEND
SYM ICH PARAMETER
0 05 BETA
LATERAL FLOW ANGLE, BETA -- DEGREES
1/3 OCTAVE NUMBER
16.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

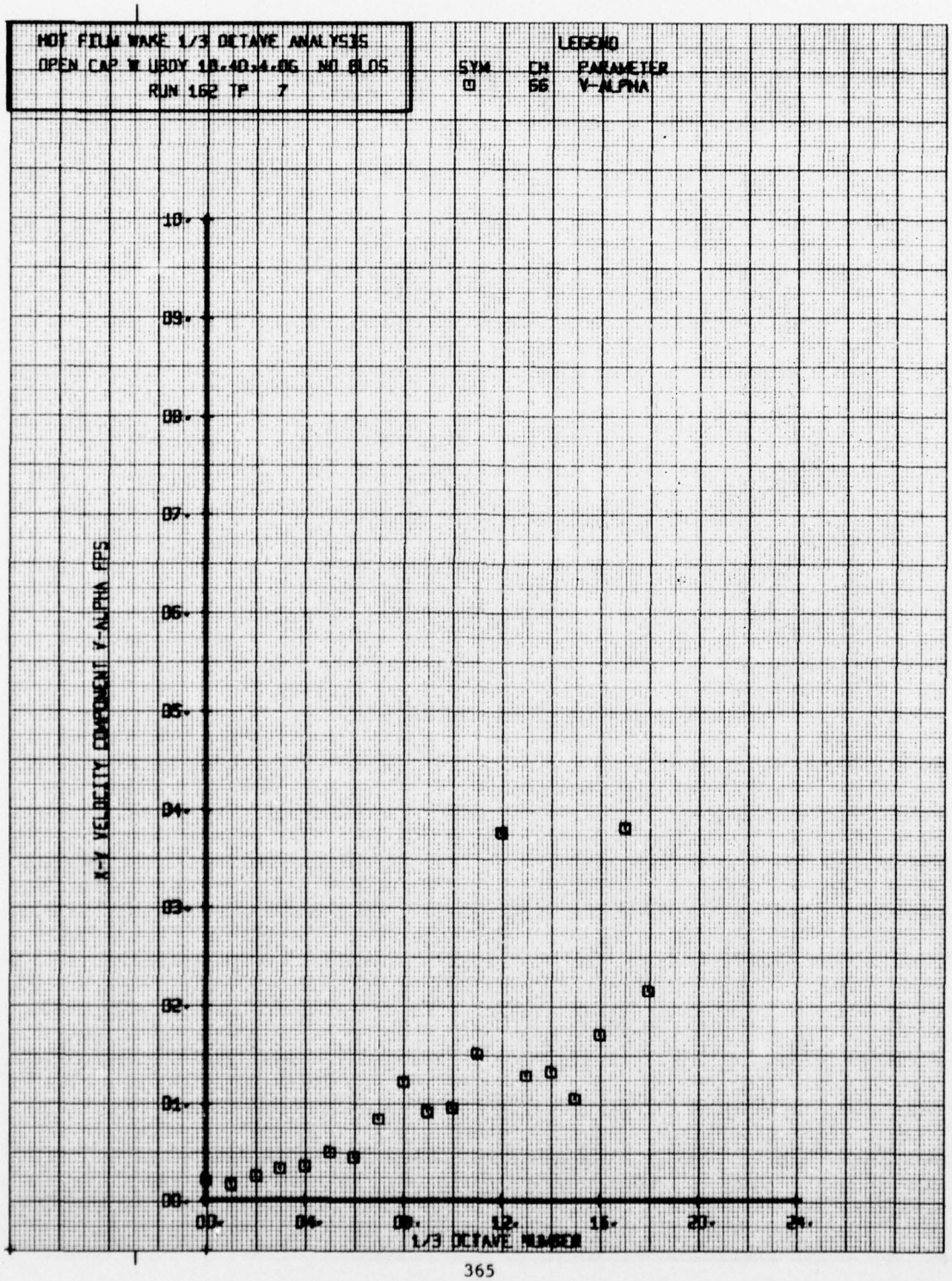

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40-6.0G NO BLDS
RUN 162 TP 2
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-Y VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

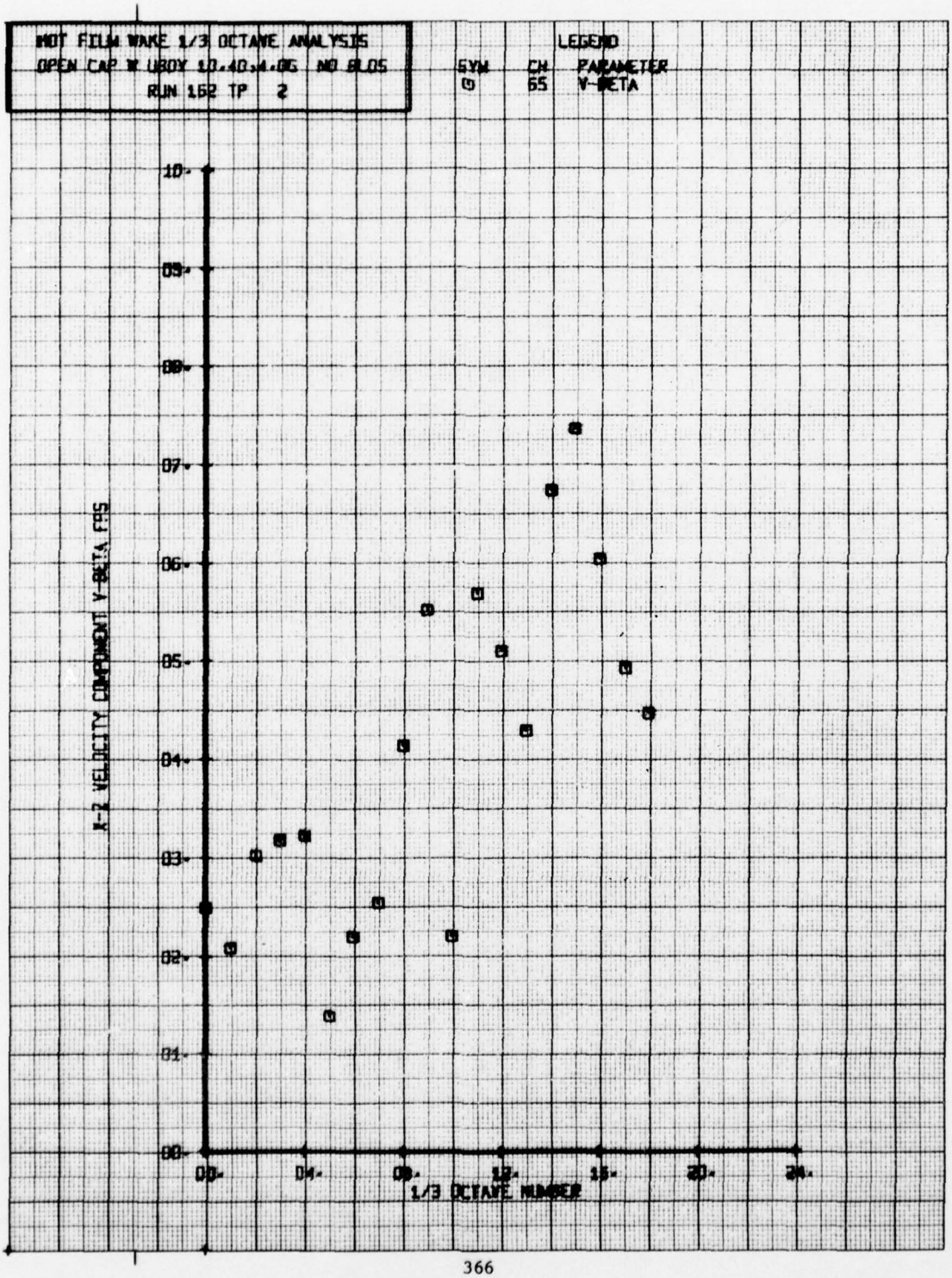

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.06 NO BLDS
RUN 162 TP 3
LEGEND
SYM CH PARAMETER
66 V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

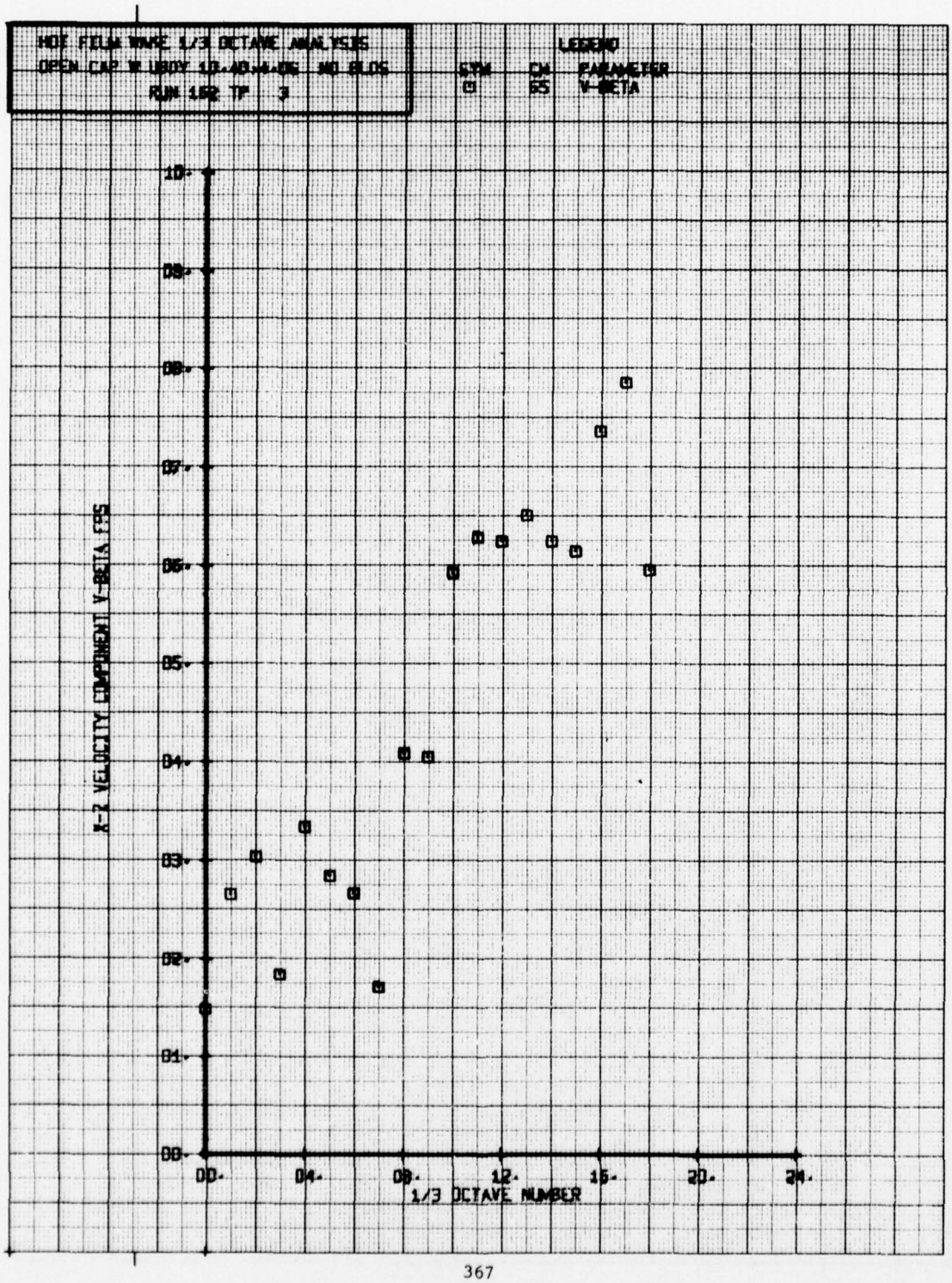

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBODY 10-40,4-DG NO BLOS
RUN L62 TP 4
LEGEND
SYM CH PARAMETER
66 V-ALPHA
10
09
08
07
06
05
04
03
02
01
00
U-V VELOCITY COMPONENT V-ALPHA RMS
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER

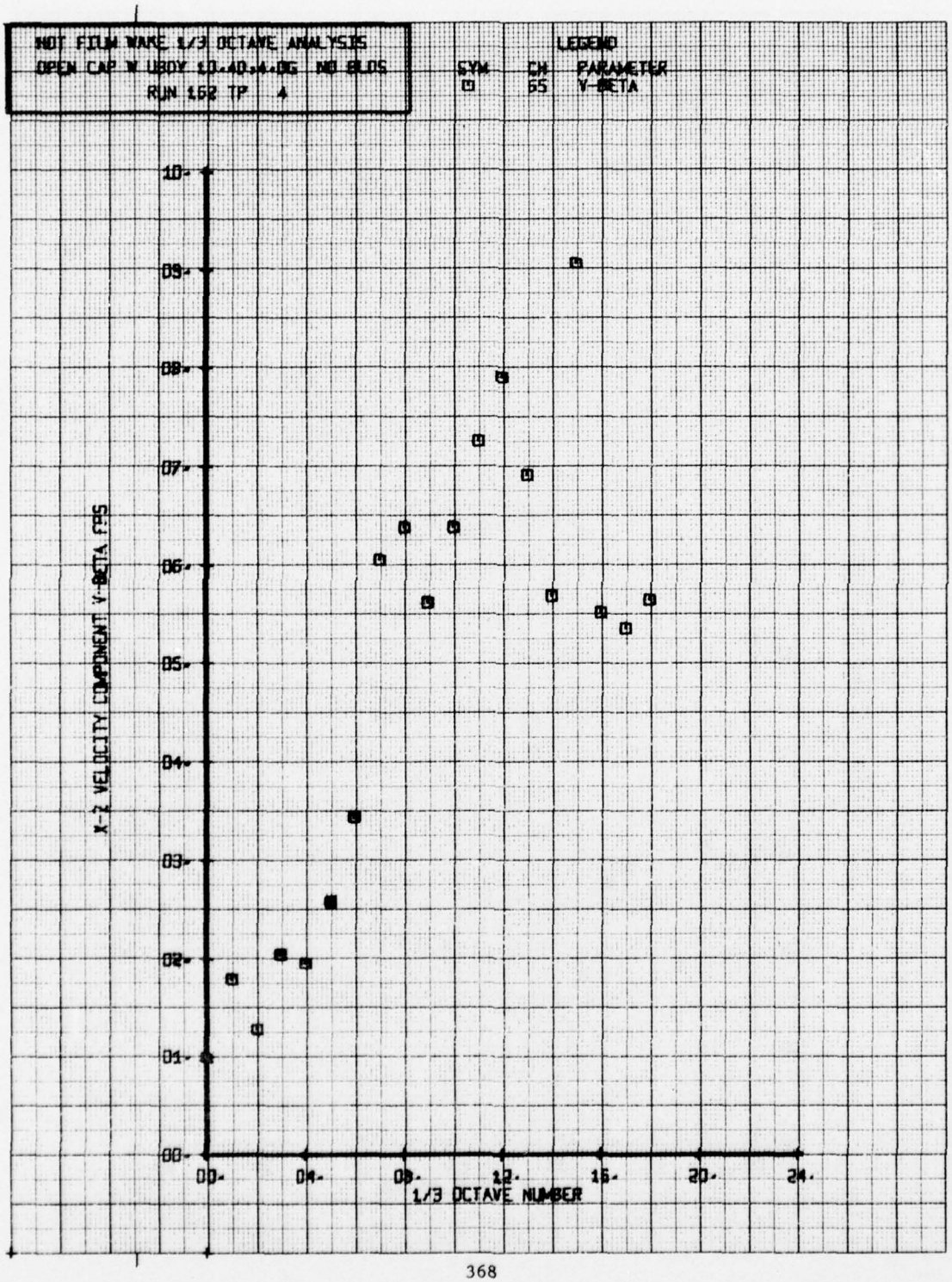

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10./0.4.06 NO BLDS
RUN 162 TP 5
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

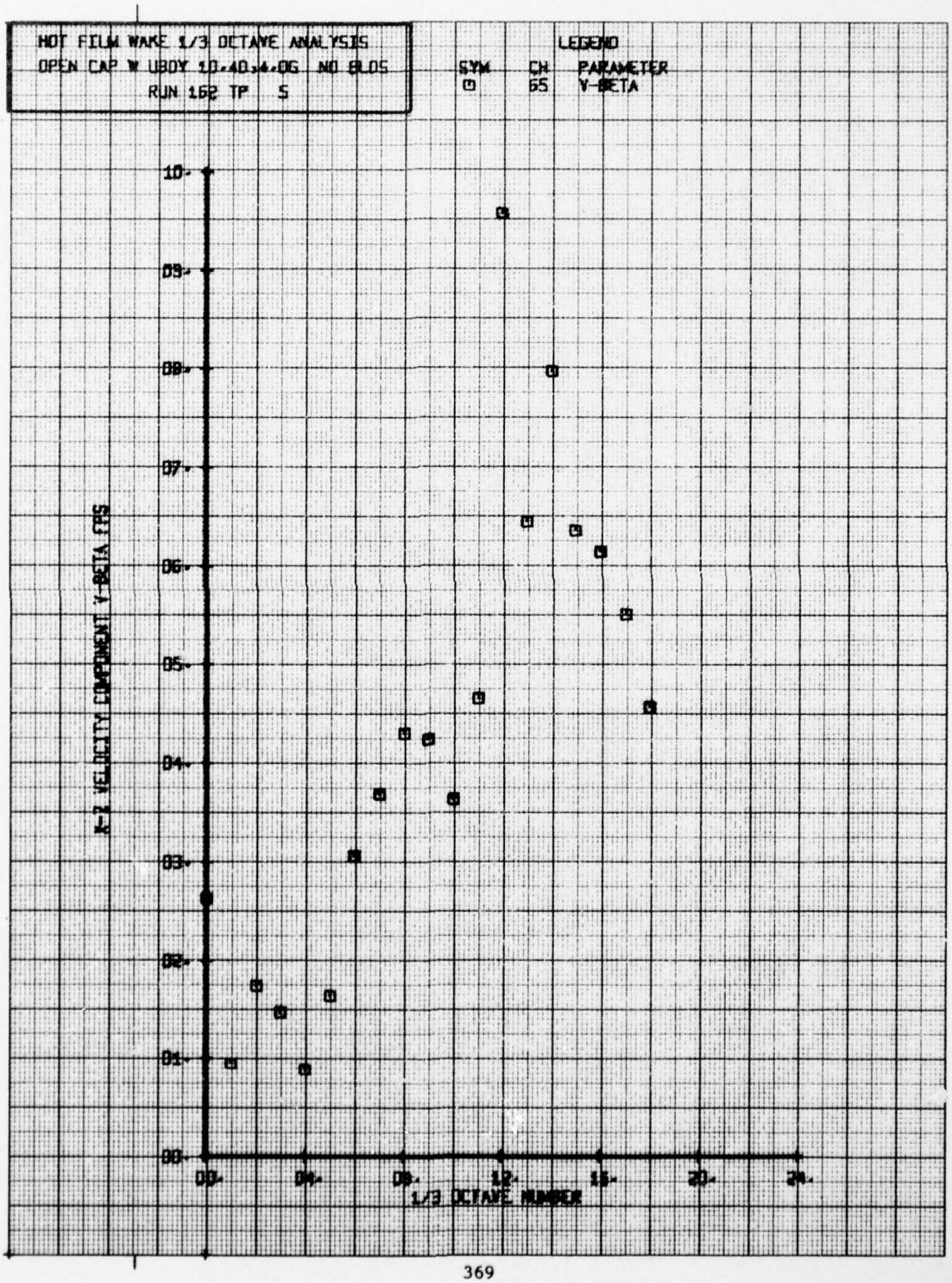

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.4.06 NO BLOS
RUN 162 TP 6
LEGEND
SYM CH PARAMETER
□ 66 V-ALPHA
A-V VELOCITY COMPONENT V-ALPHA FPS
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

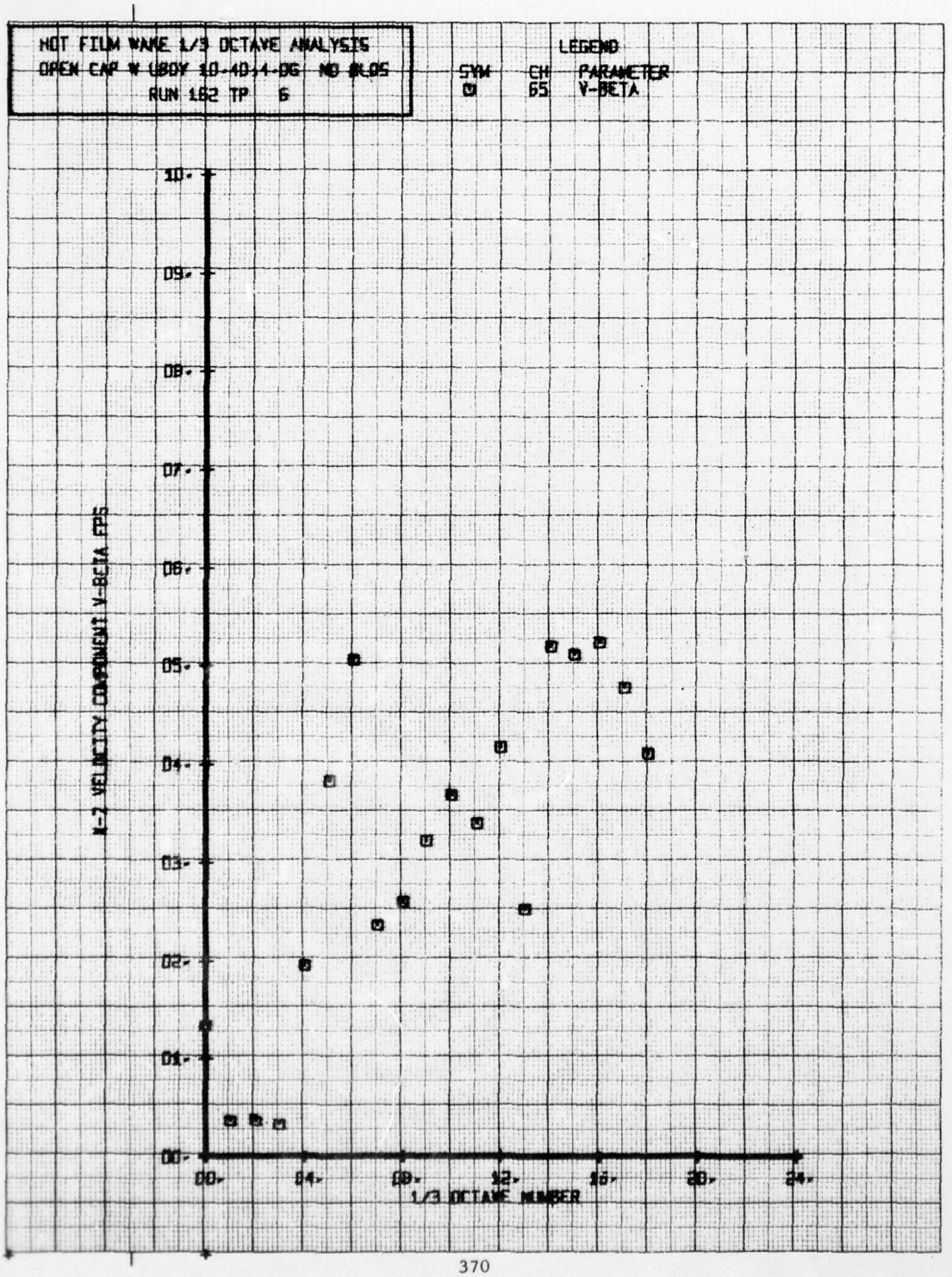

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 18.40.4.06 NO BLOS
RUN 162 TP 7
LEGEND
SYM CH PARAMETER
56 V-ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-V VELOCITY COMPONENT V-ALPHA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

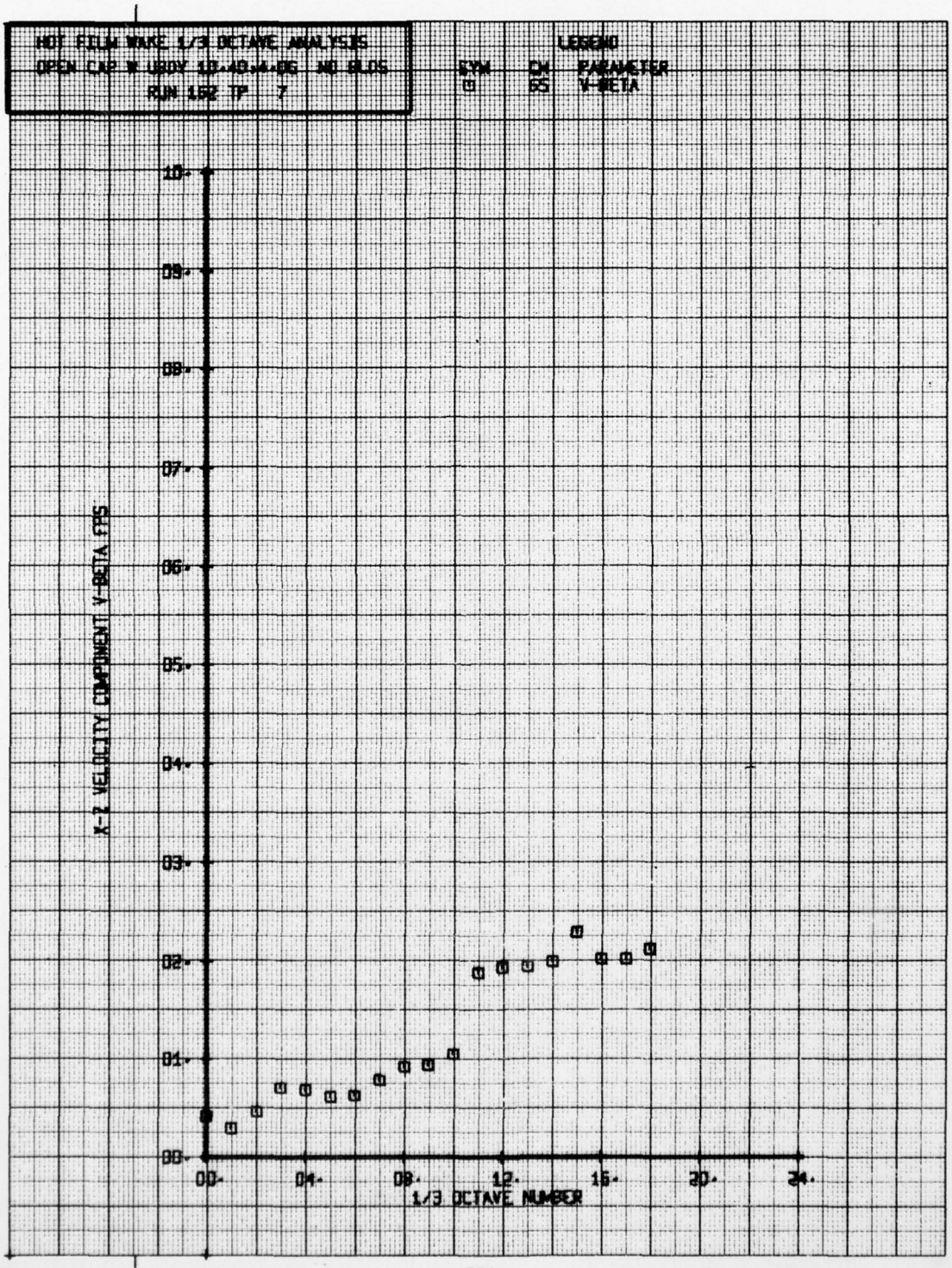

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40,4.06 NO BLOS
RUN 162 TP 2
LEGEND
SYM CH PARAMETER
65 V-BETA
X-2 VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

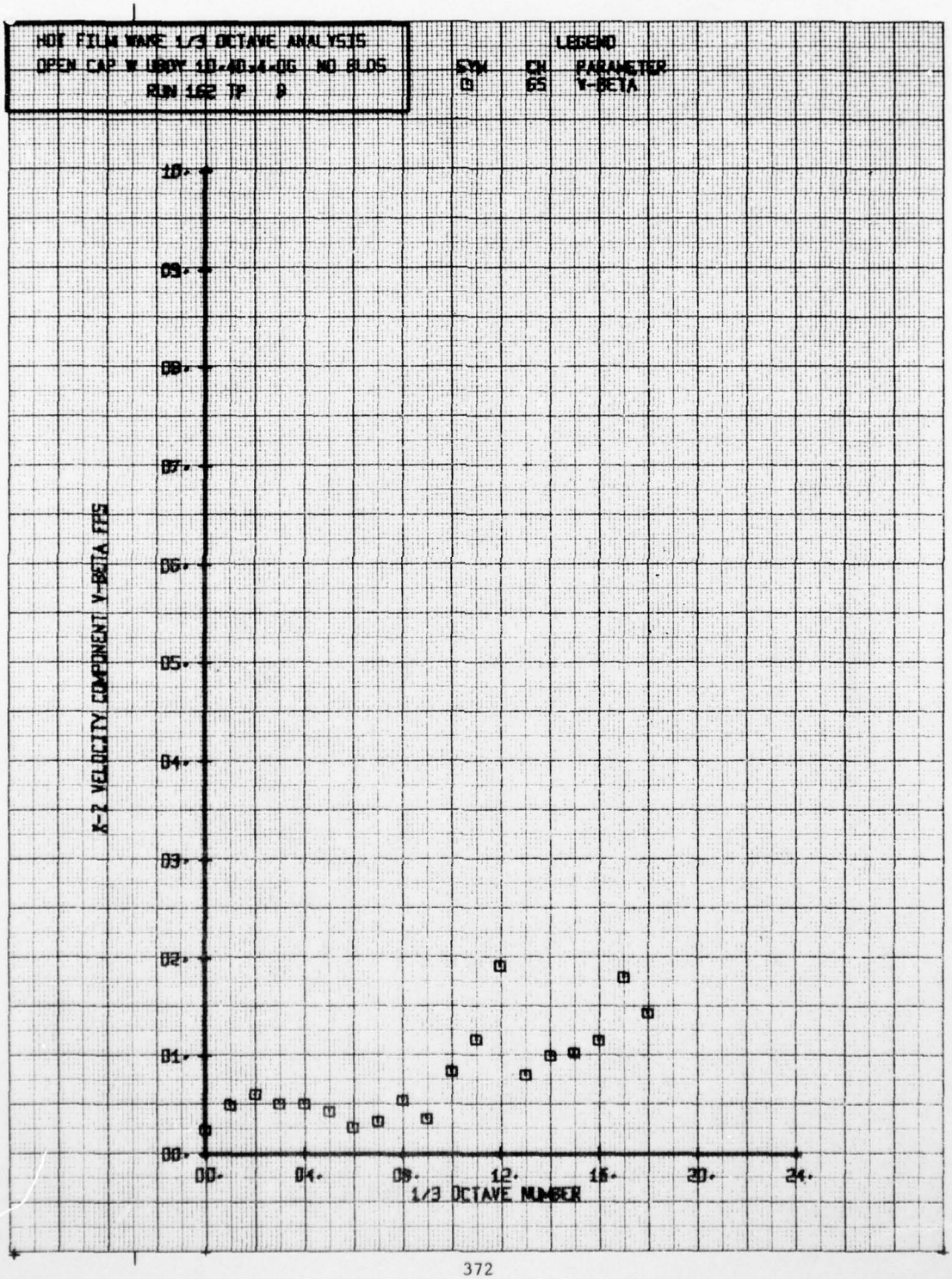

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.4.06 NO BLDS
RUN 162 TP 3
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

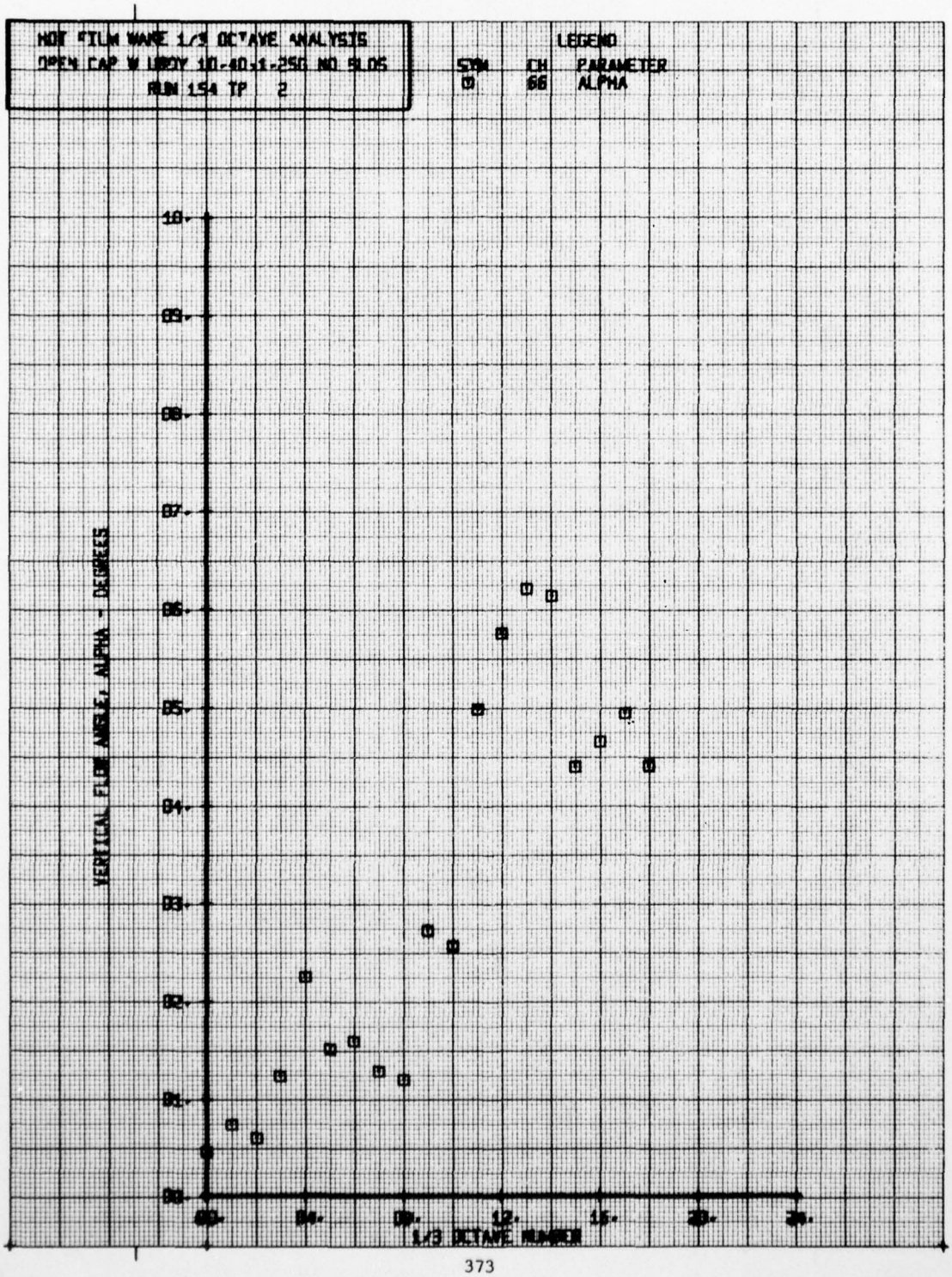

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.DG NO BLDS
RUN 162 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

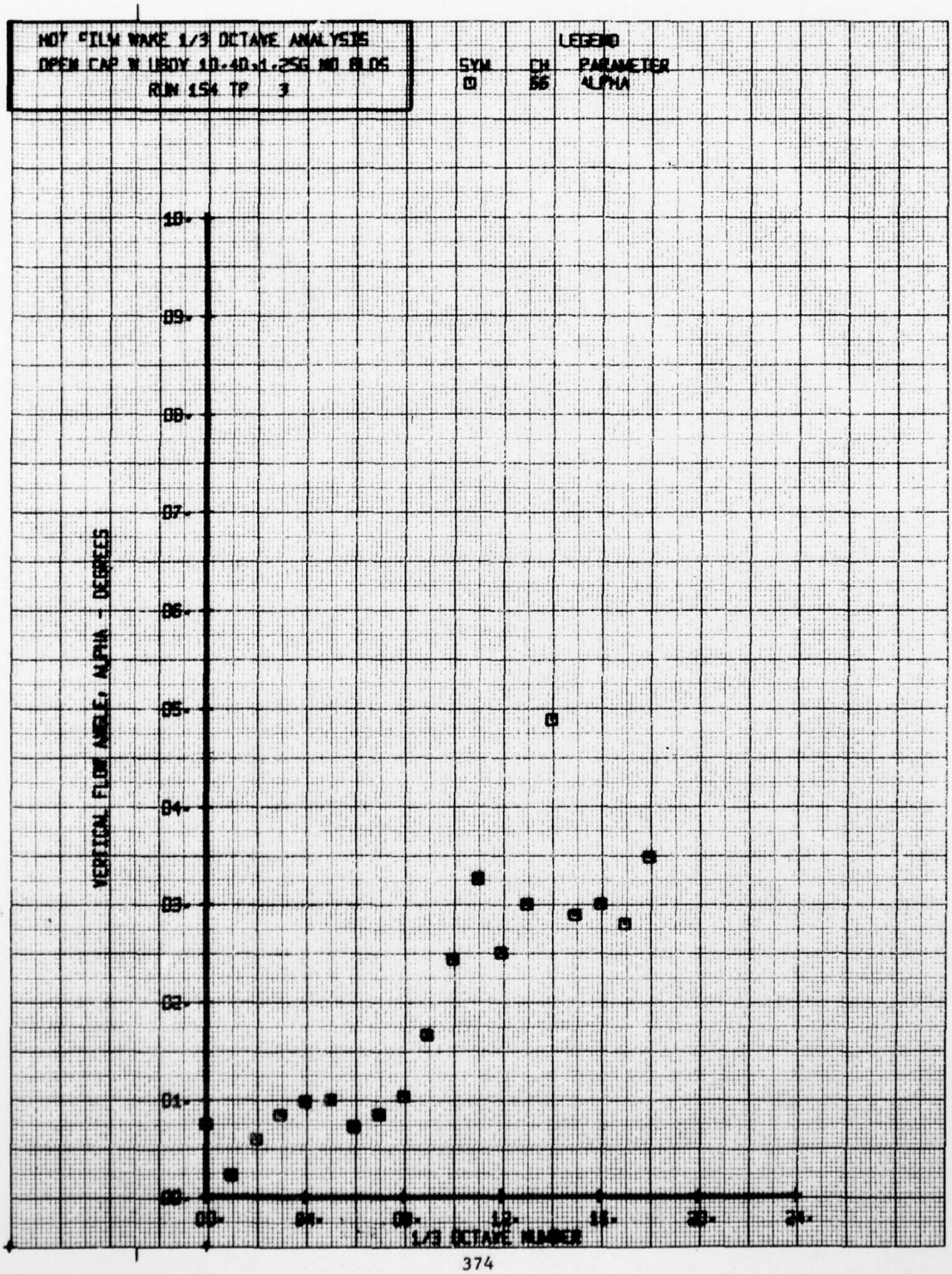

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40,4.06 NO BLDS
RUN 162 TP 5
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
K-2 VELOCITY COMPONENT V-BETA FPS
00.
06.
09.
12.
15.
20.
24.
1/3 OCTAVE NUMBER

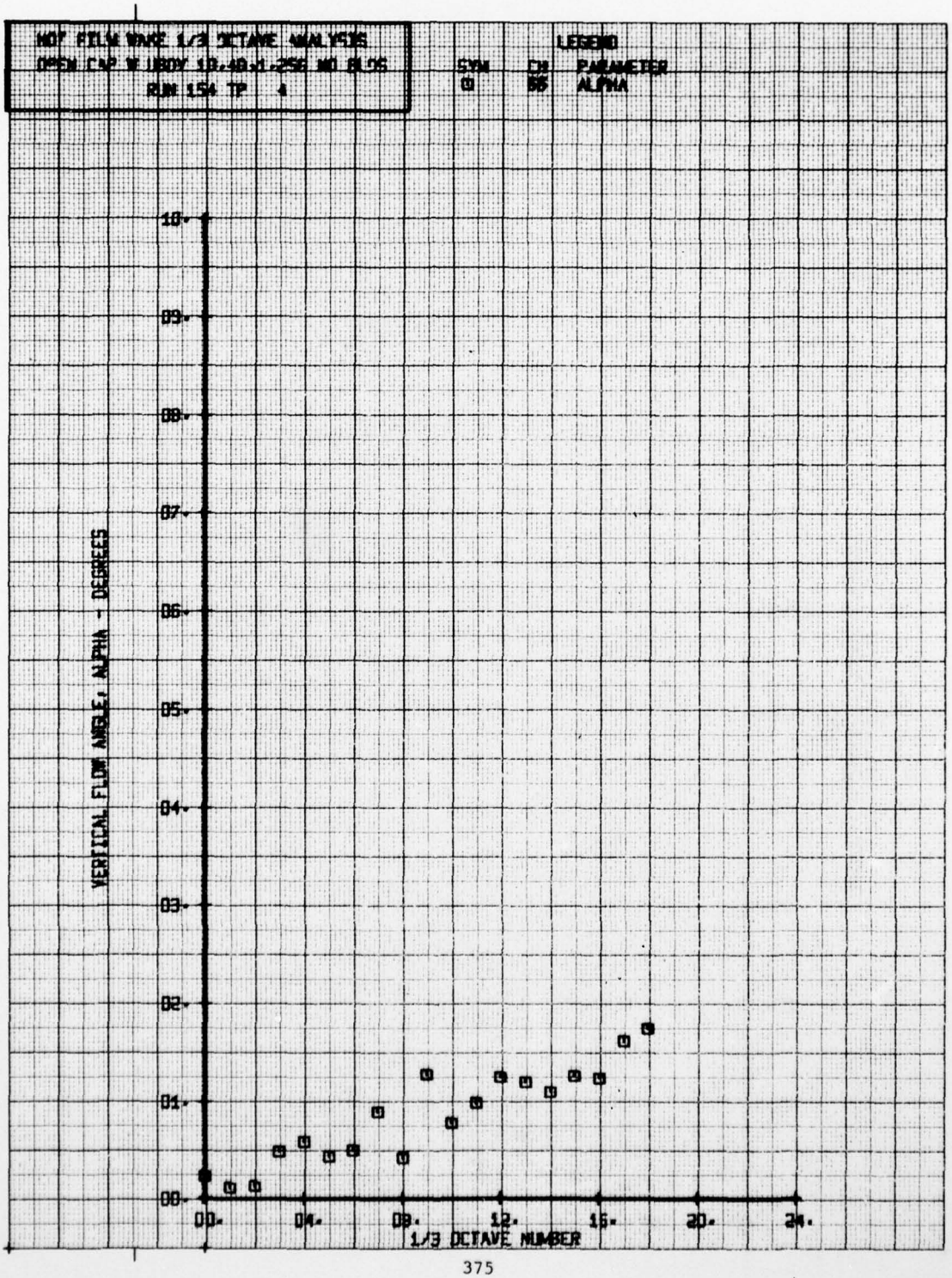

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-4D/4-DG NO BLOS
RUN 162 TP 6
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00. 04. 08. 12. 16. 20. 24.
1/3 OCTAVE NUMBER
K-2 VELOCITY COMPONENT V-BETA FPS

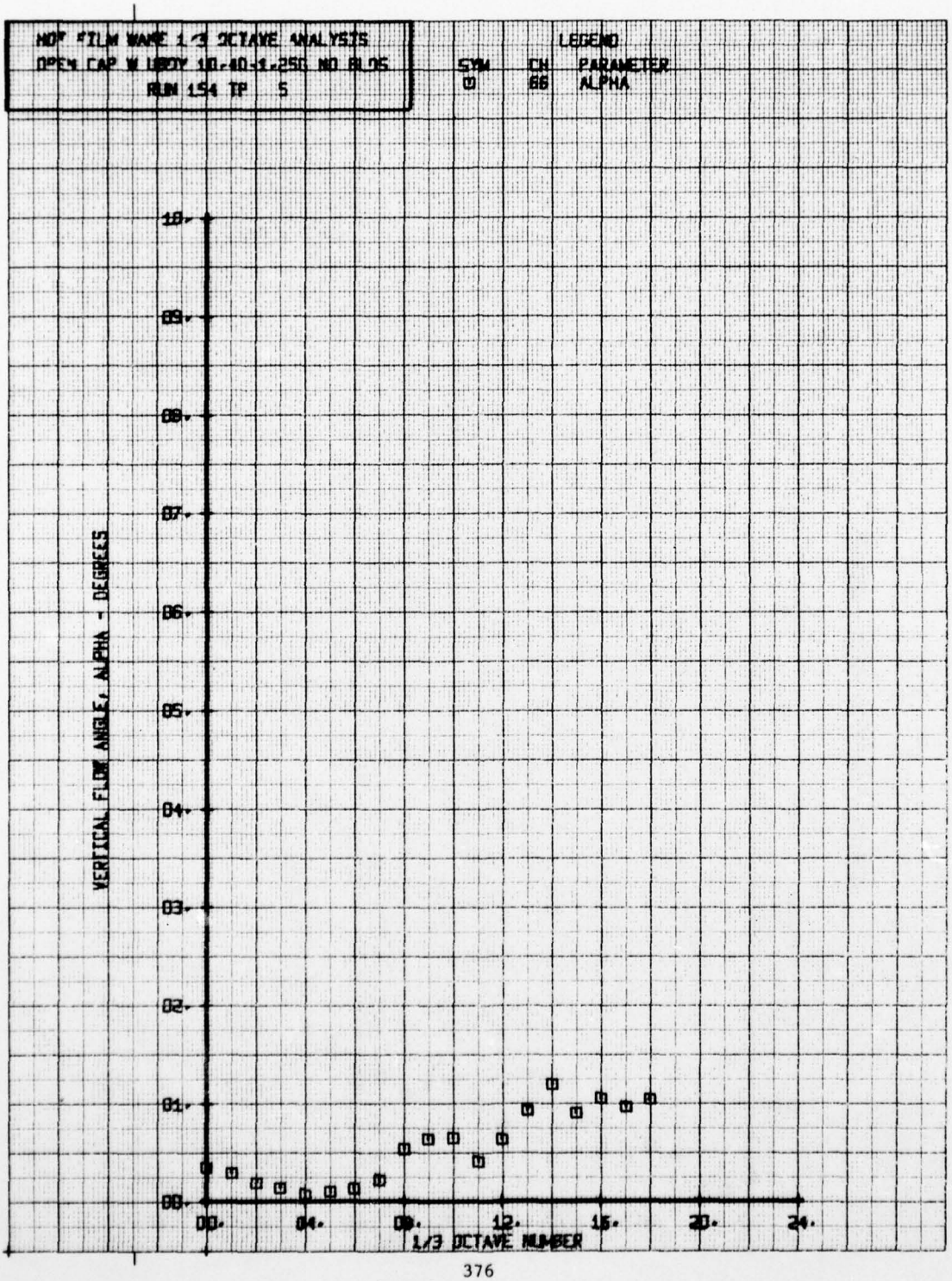

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.4.DG NO BLOS
RUN 182 TP 7
LEGEND
SYM CH PARAMETER
B 65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

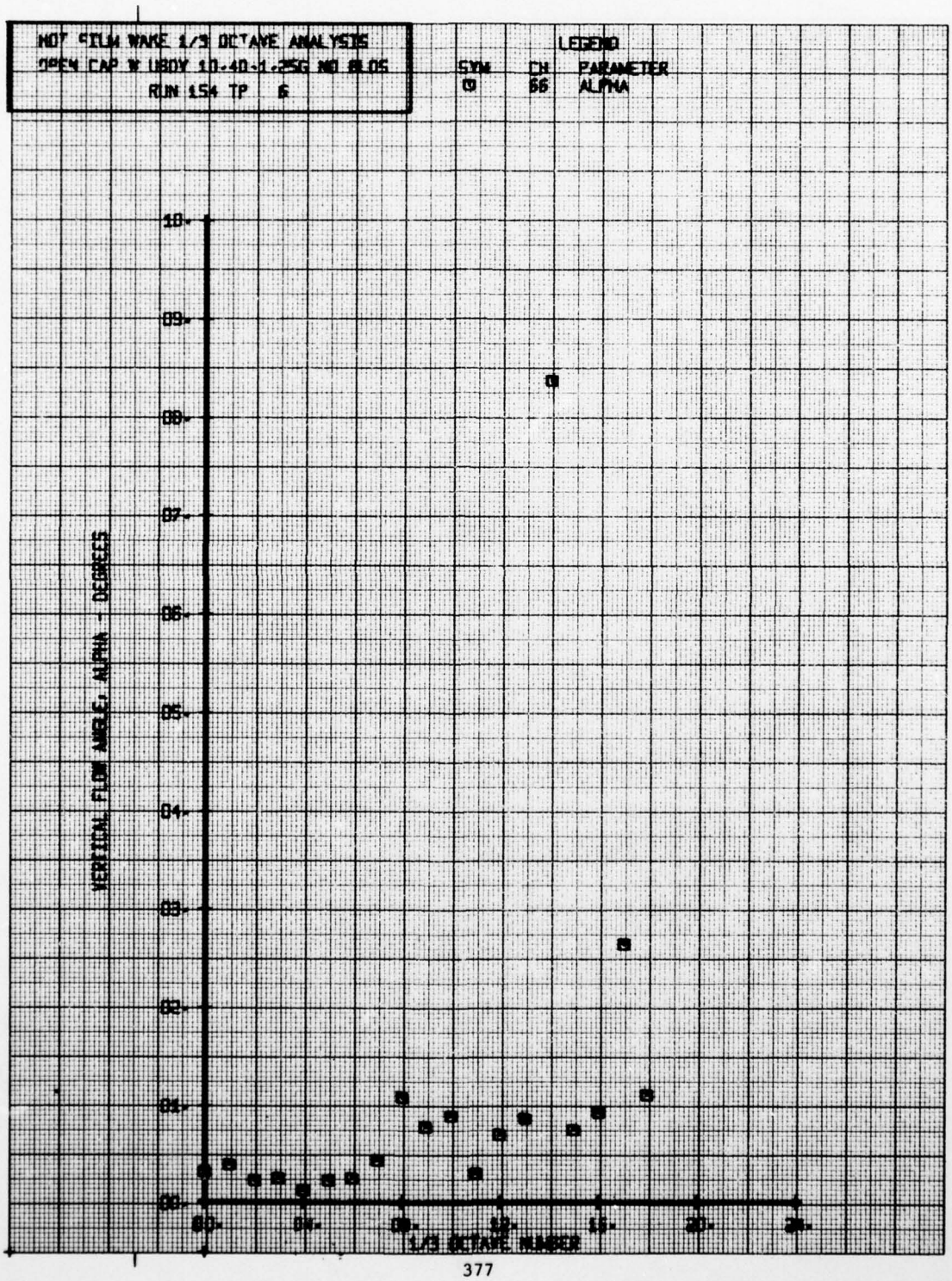

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10.40x4.00 NO BLDS
RUN 162 TP 8
LEGEND
SYM CH PARAMETER
65 V-BETA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
X-2 VELOCITY COMPONENT V-BETA FPS
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

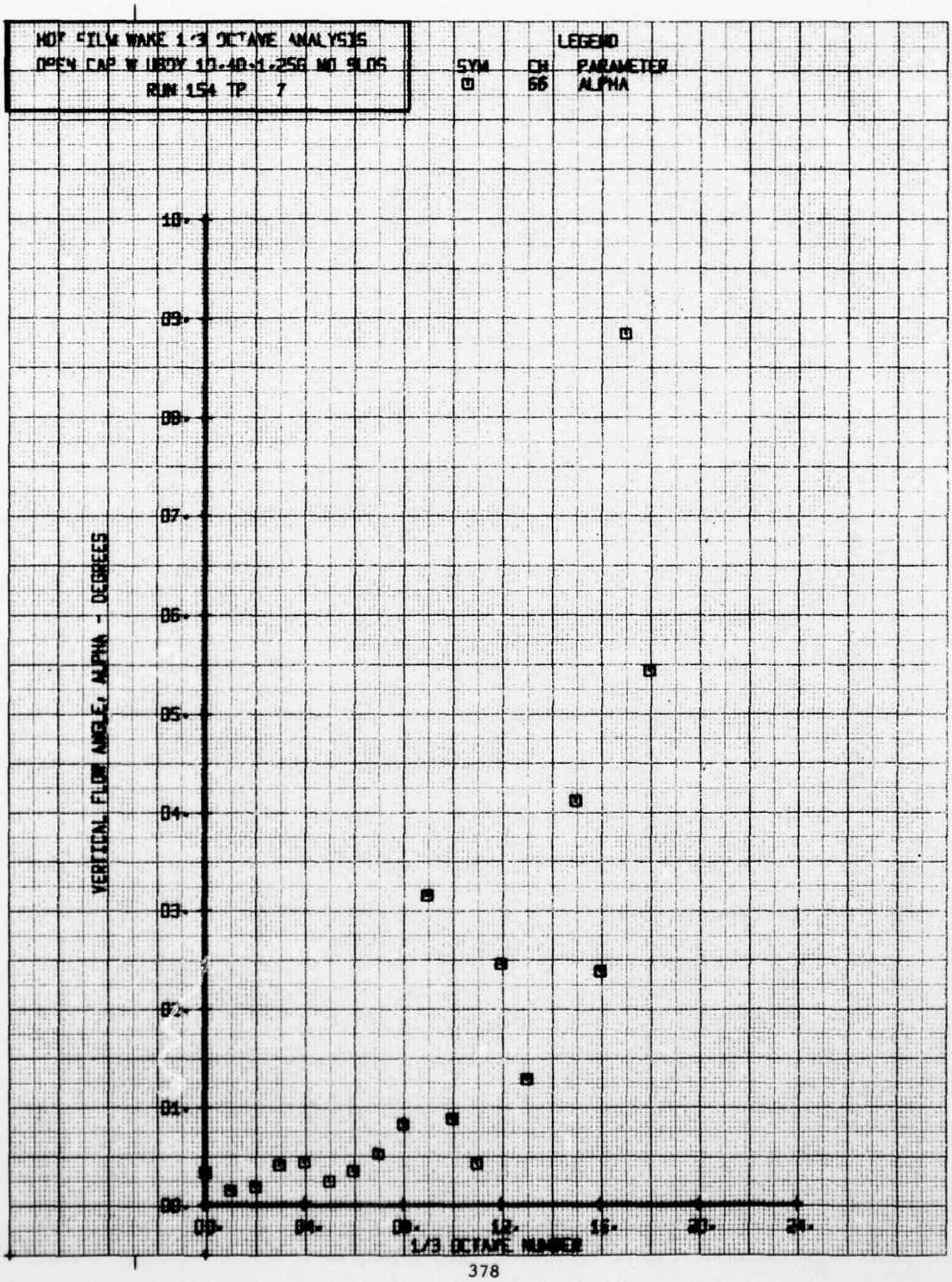

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LEDDY 10-40-1-250 NO BLDG
RUN 154 TP 2
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

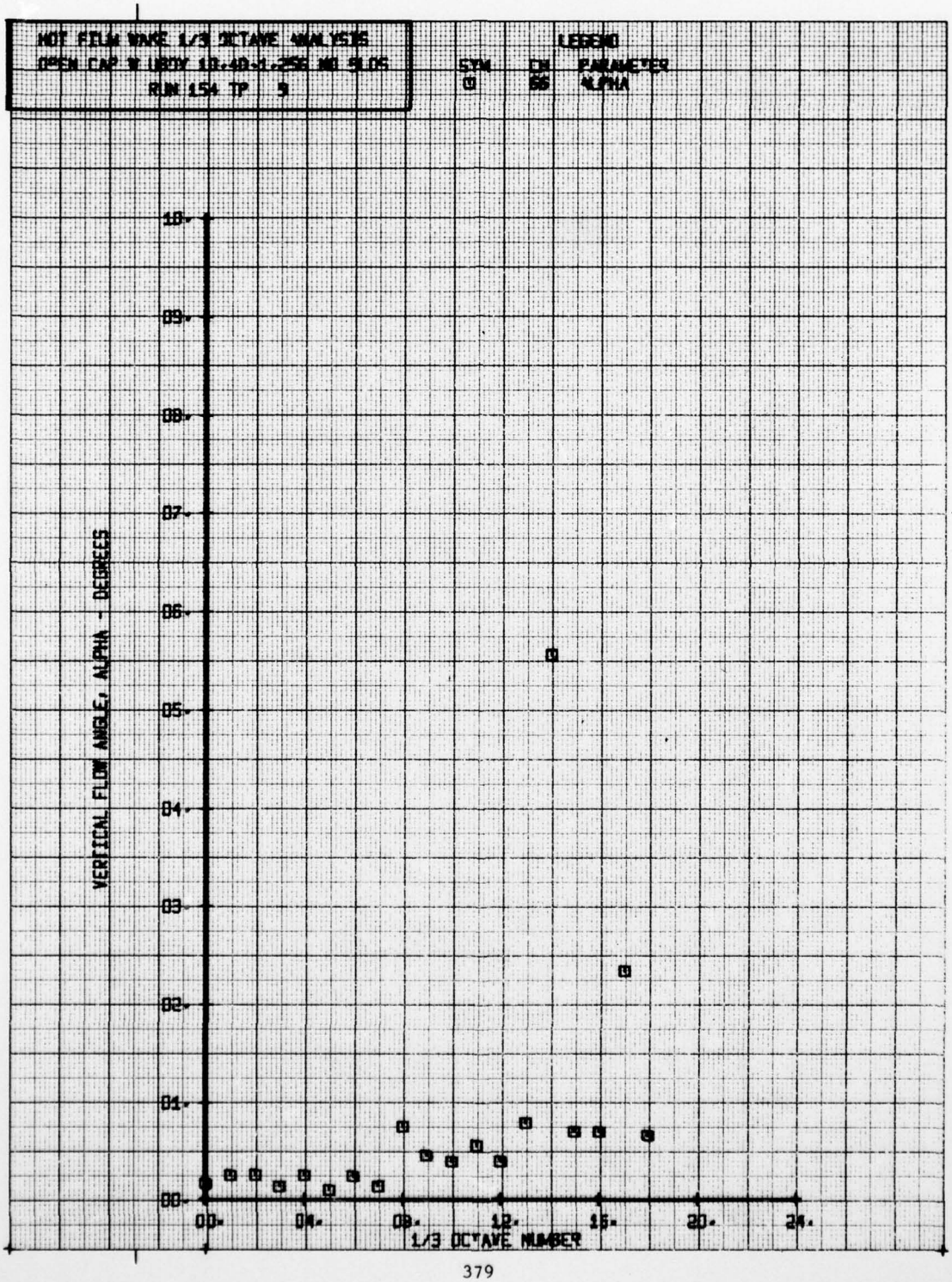

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40,1.25G NO BLOS
RUN 154 TP 3
LEGEND
SYM CH PARAMETER
□ 56 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

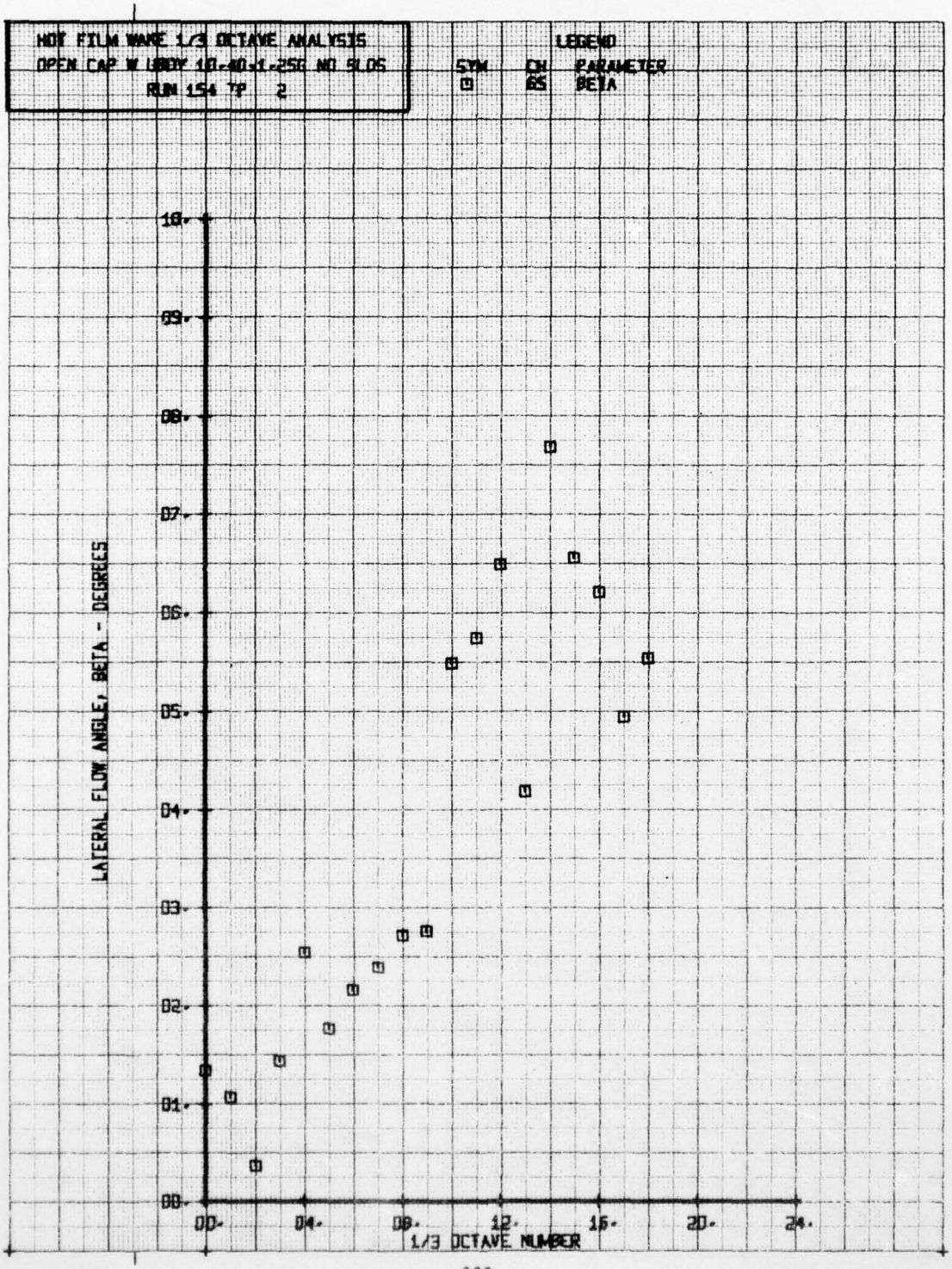

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W HBDY 10.40.1.256 NO BLDG
RUN 154 TP 4
LEGEND
SYM
CH
PARAMETER
ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

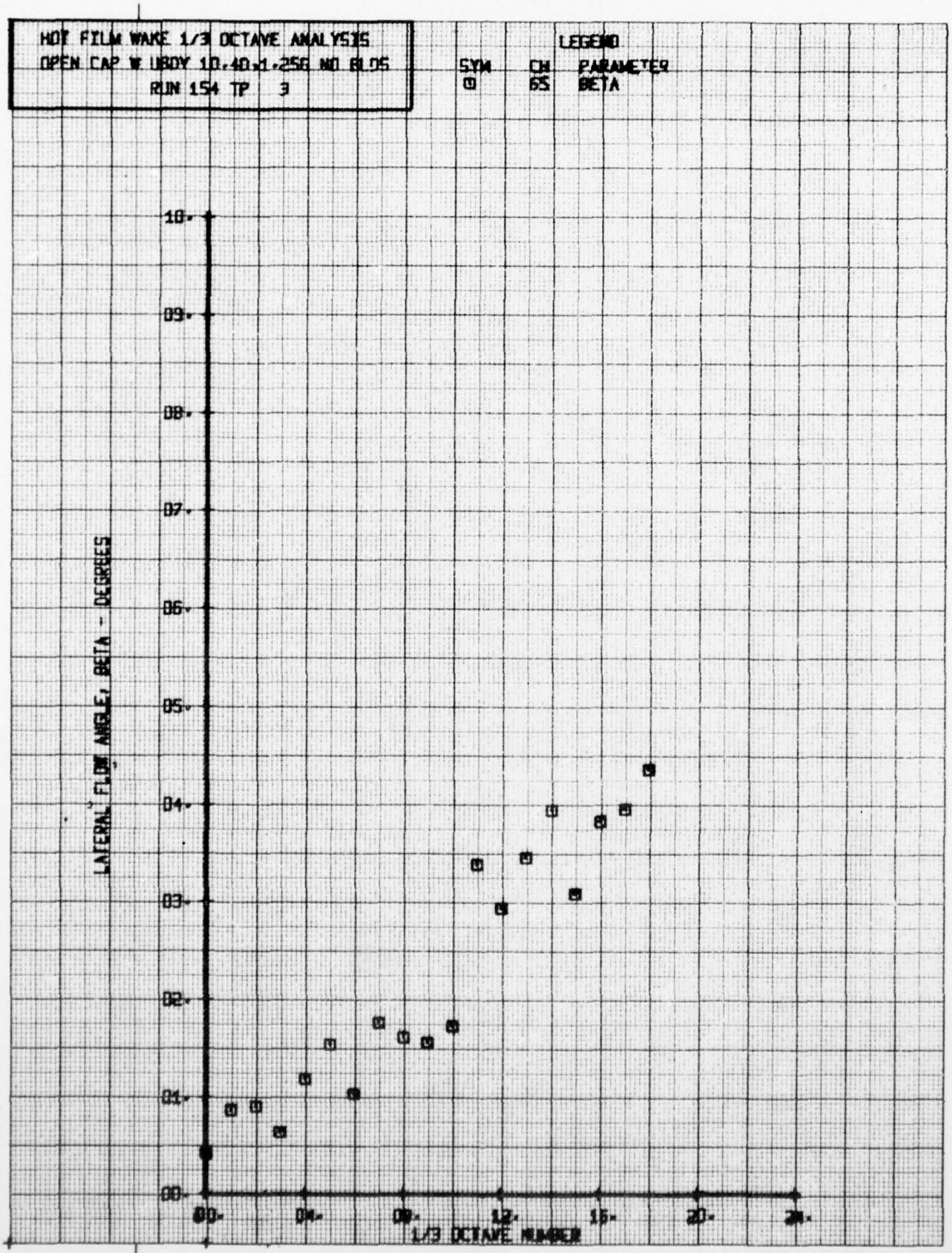

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-1-250 NO BLDS
RUN 154 TP 5
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.
01.
02.
03.
04.
05.
06.
07.
08.
09.
10.

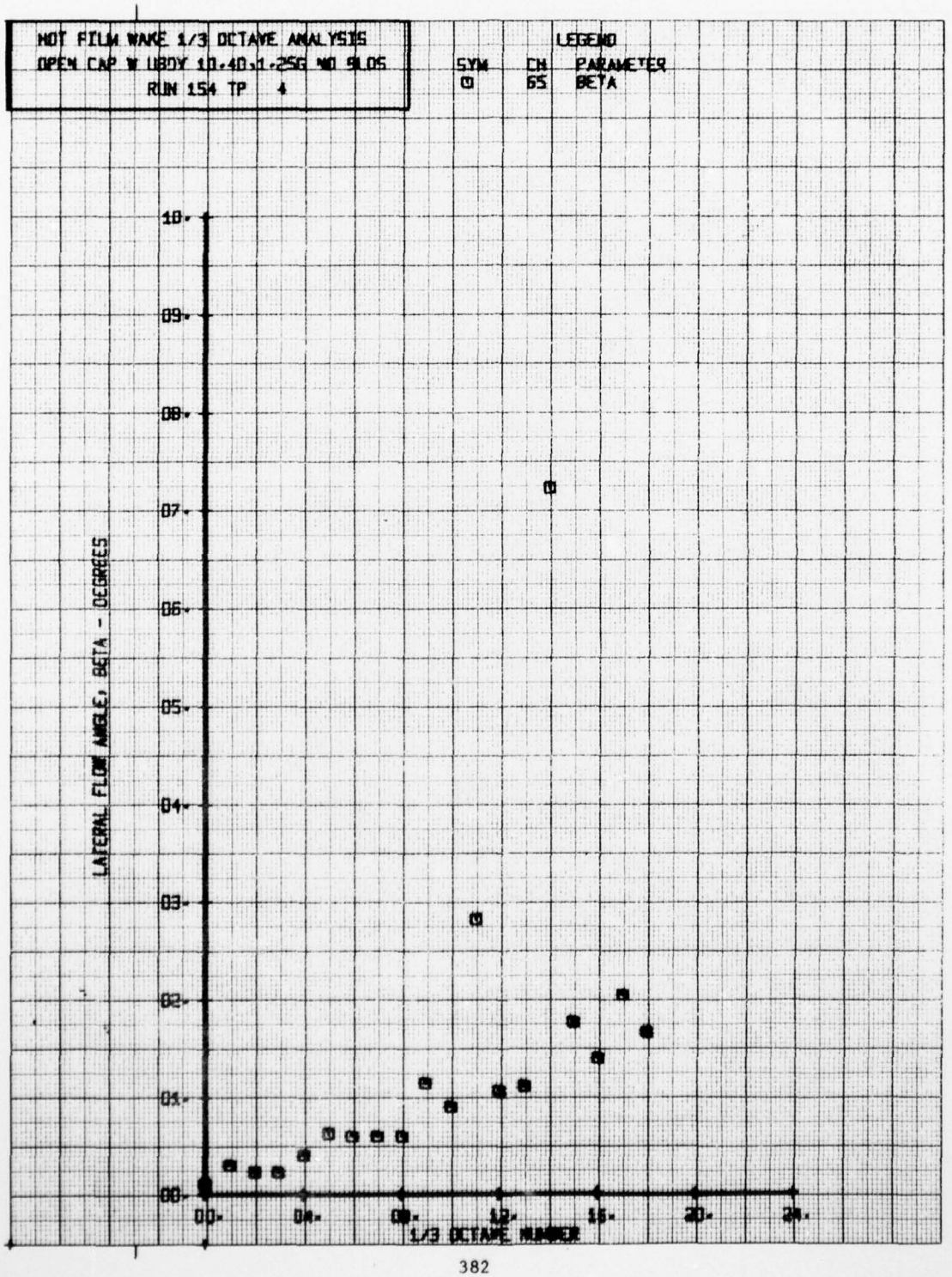

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10-40-1-25G NO BLOS
RUN 154 TP 6
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER

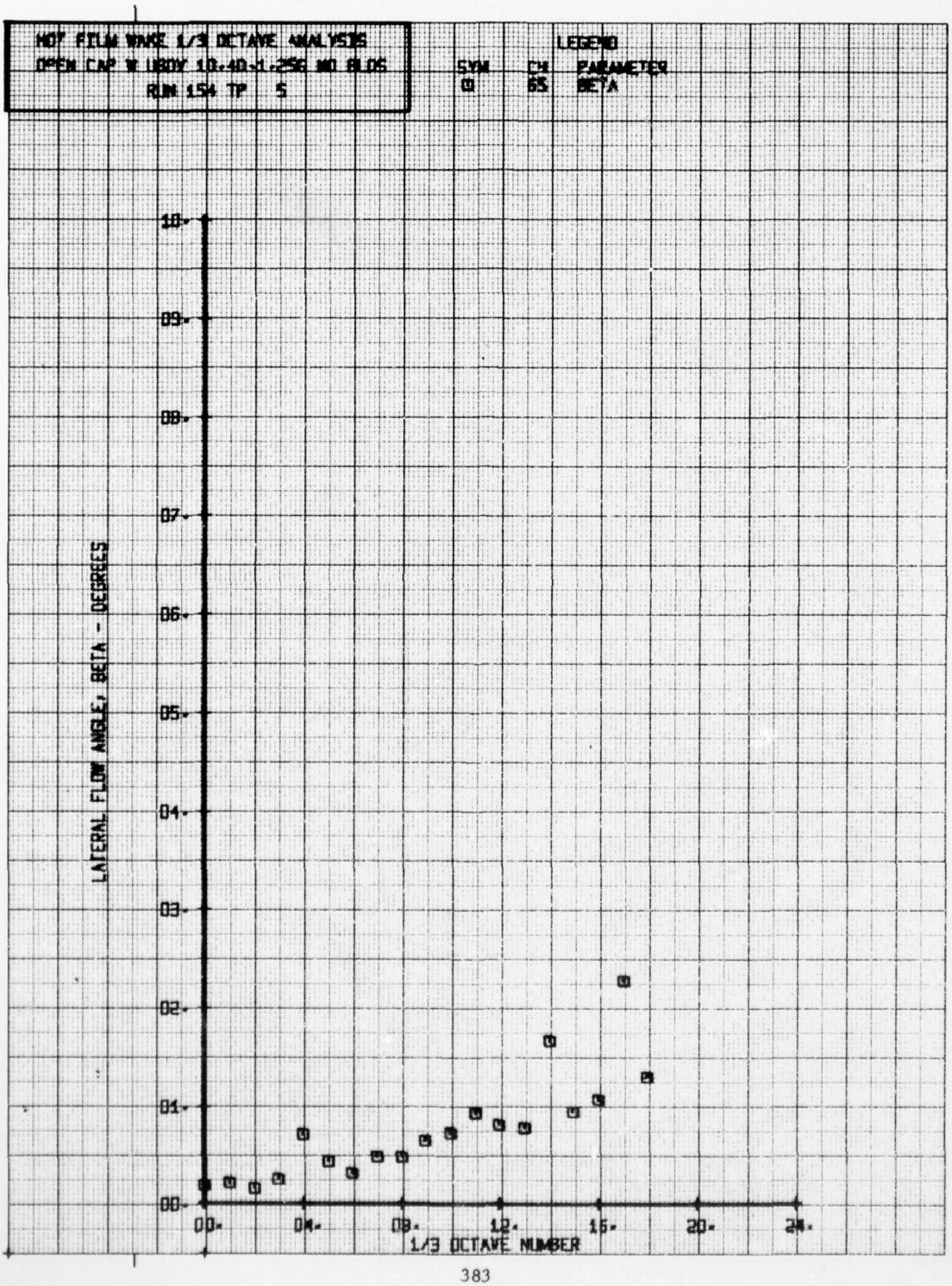

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40-1.256 NO SLOS
RUN 154 TP 7
LEGEND
SYM CH PARAMETER
66 ALPHA
VERTICAL FLOW ANGLE, ALPHA - DEGREES
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10.40-1.256 MD SLOS
RUN 154 TP 9
LEGEND
SYM
CH
PARAMETER
66
ALPHA
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
VERTICAL FLOW ANGLE, ALPHA - DEGREES
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W LBODY 10-40-1.25G NO SLOS
RUN 154 TP 2
LEGEND
SYM CH PARAMETER
BS BETA
LATERAL FLOW ANGLE, BETA - DEGREES
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.
1/3 OCTAVE NUMBER

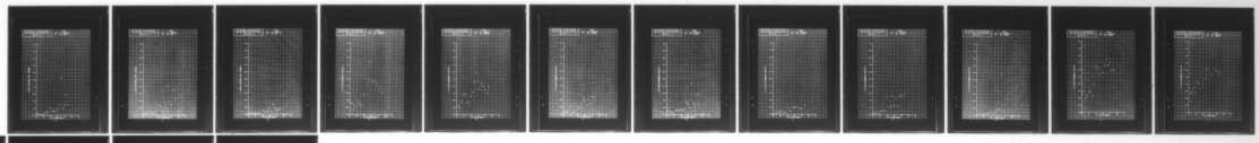

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.1.256 NO BLDS
RUN 154 TP 3
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
04.
08.
12.
16.
20.

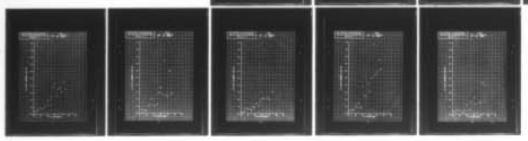

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.4D,1.25G NO SLOS
RUN 154 TP 4
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOW 10.40-1.256 NO BLOS
RUN 154 TP 5
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER
10.
09.
08.
07.
06.
05.
04.
03.
02.
01.
00.
00.
04.
08.
12.
16.
20.
24.

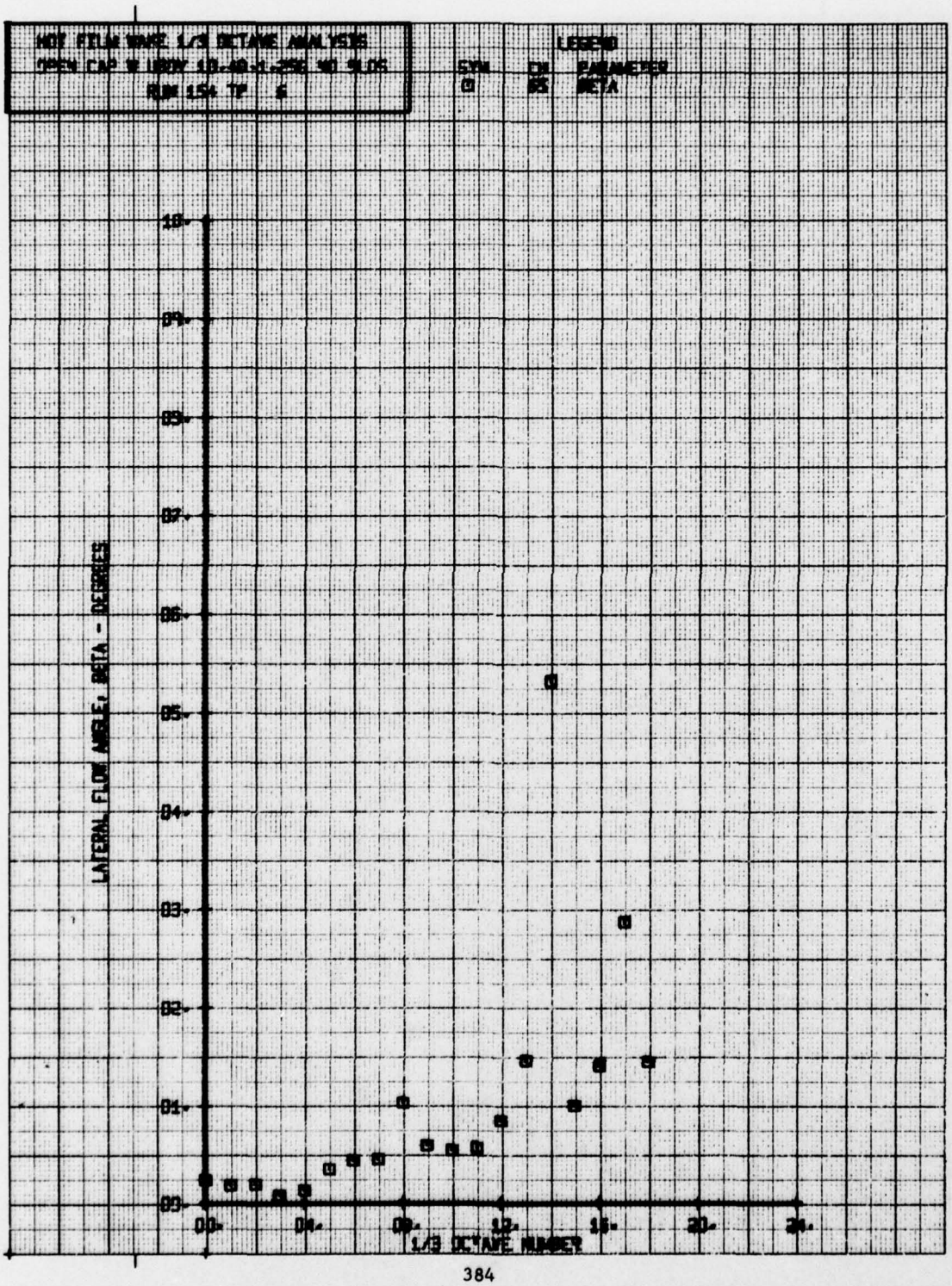
AD-A063 214 BOEING VERTOL CO PHILADELPHIA PA F/G 1/3
INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONFI--ETC(U)
SEP 78 P F SHERIDAN DAAJ02-77-C-0020
UNCLASSIFIED USARTL-TR-78-23D NL

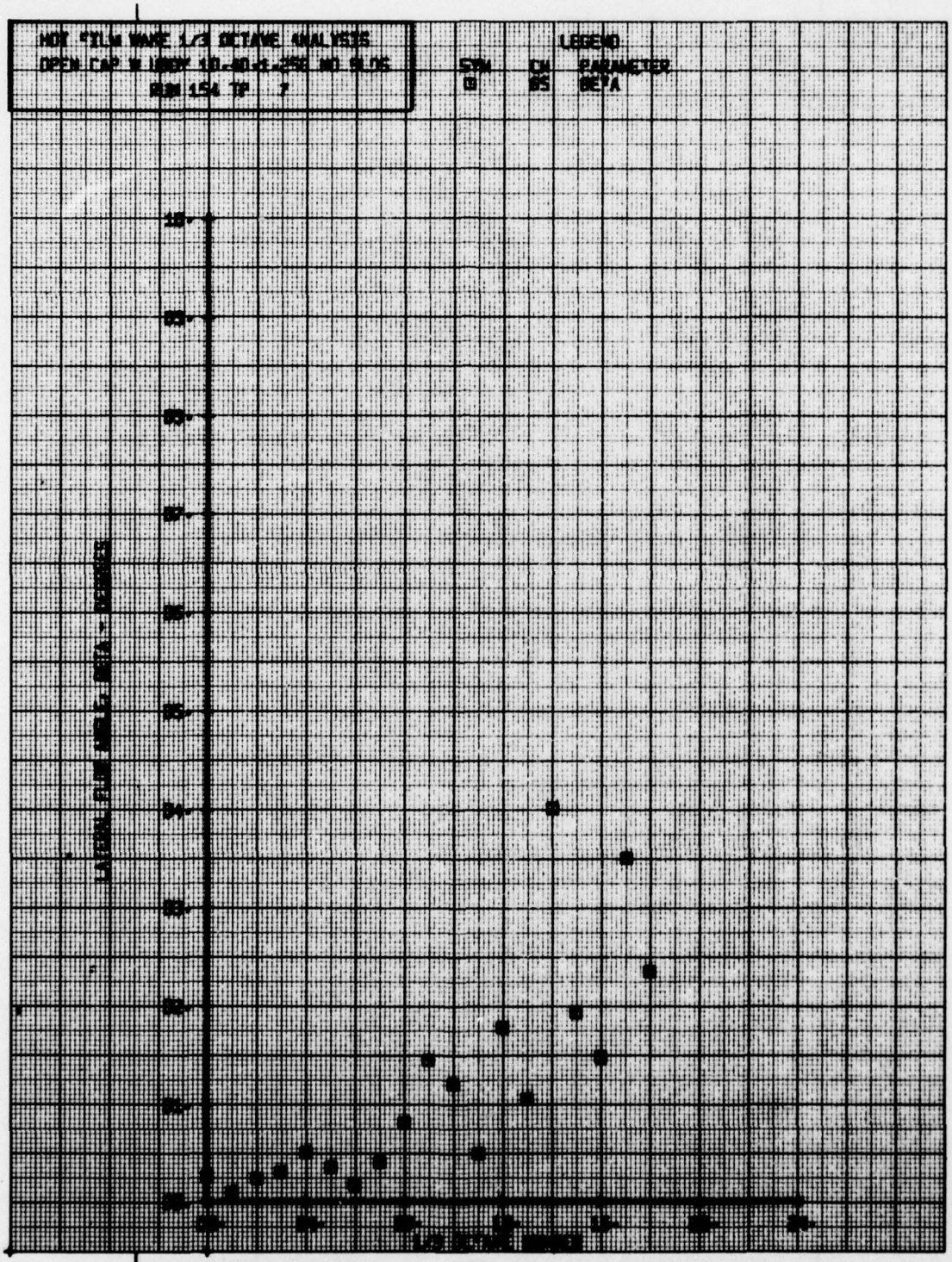
5 OF 5
AD
A063214

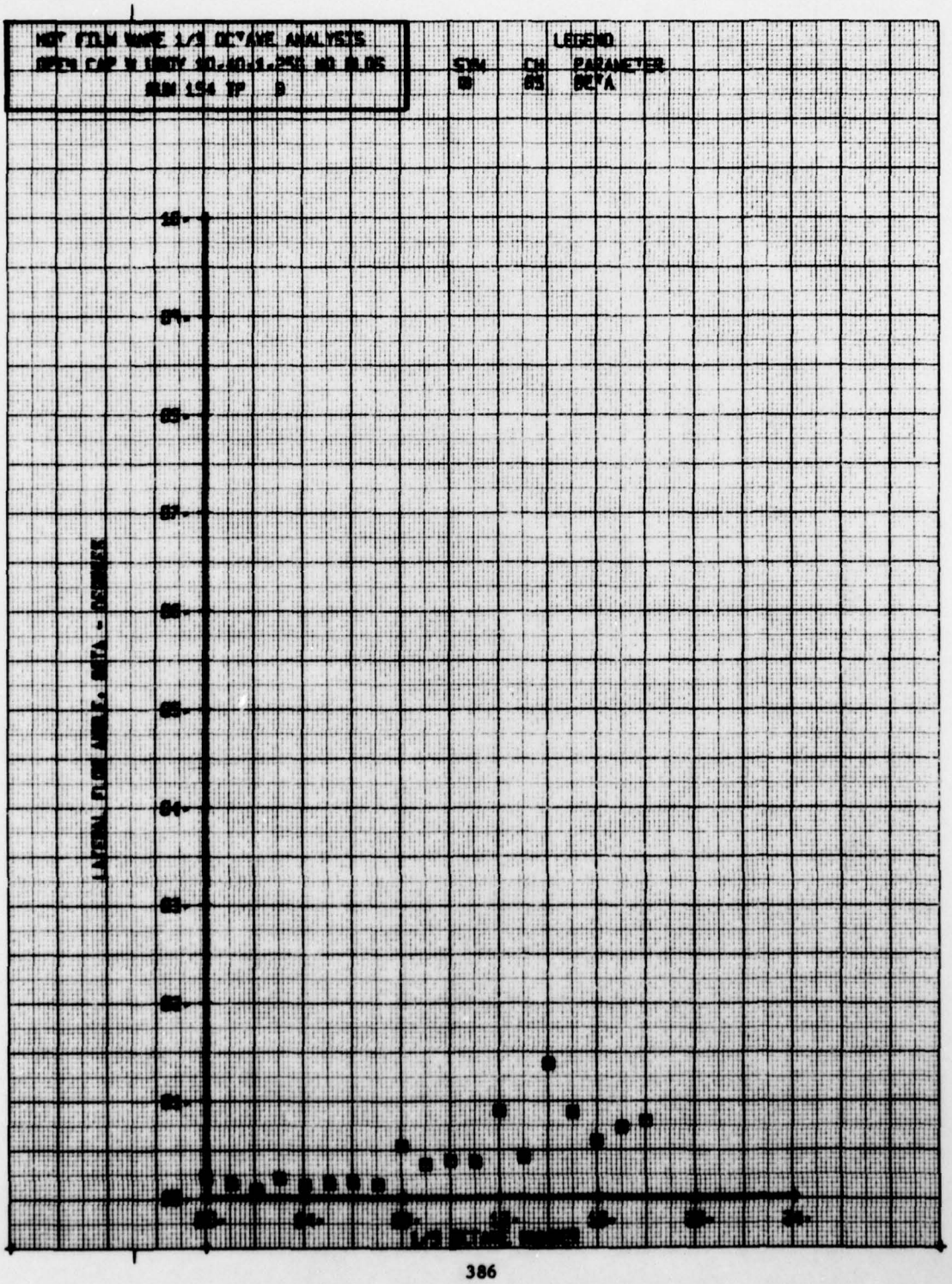


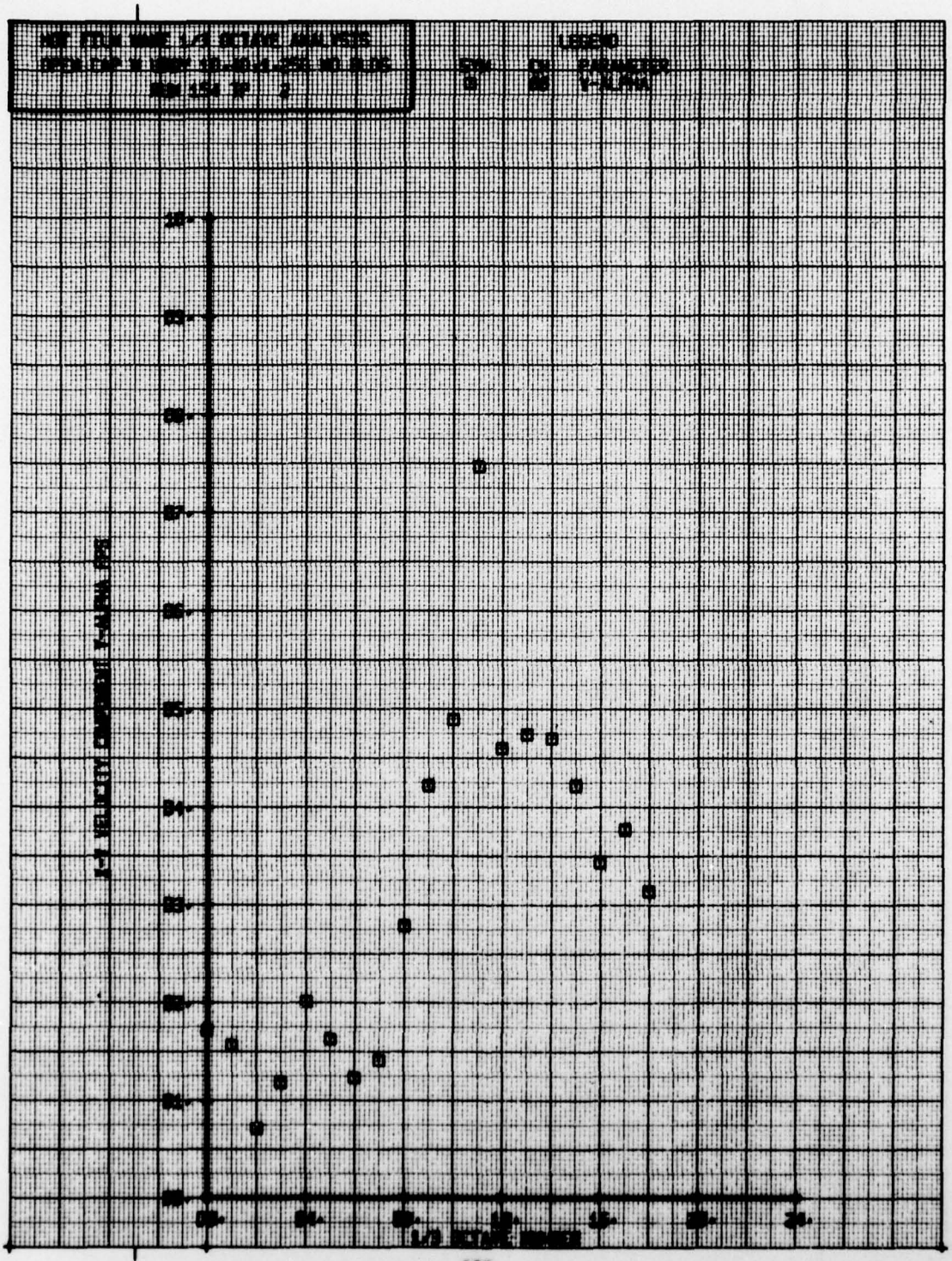


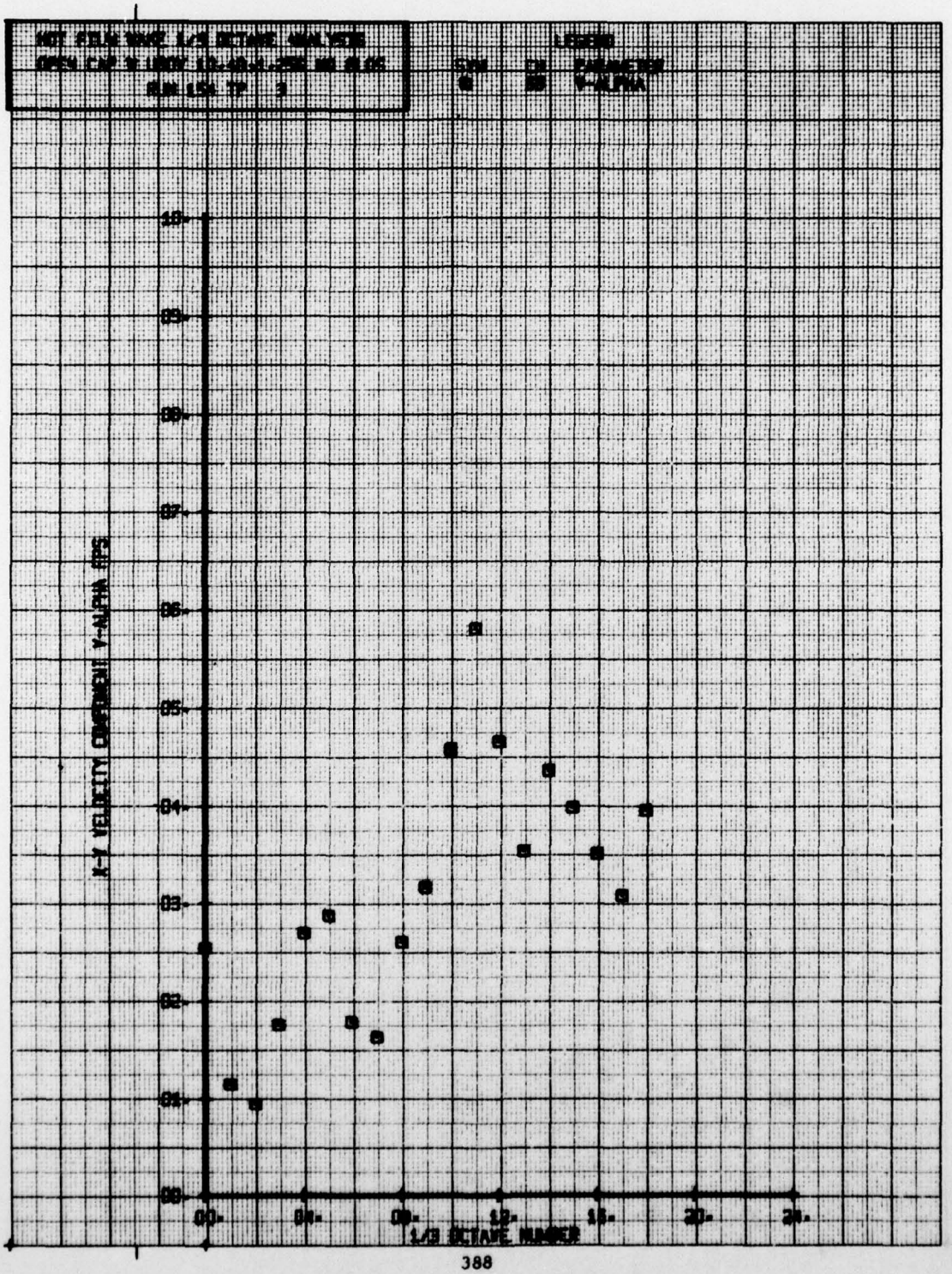
END
DATE
FILMED
3-79
DDC

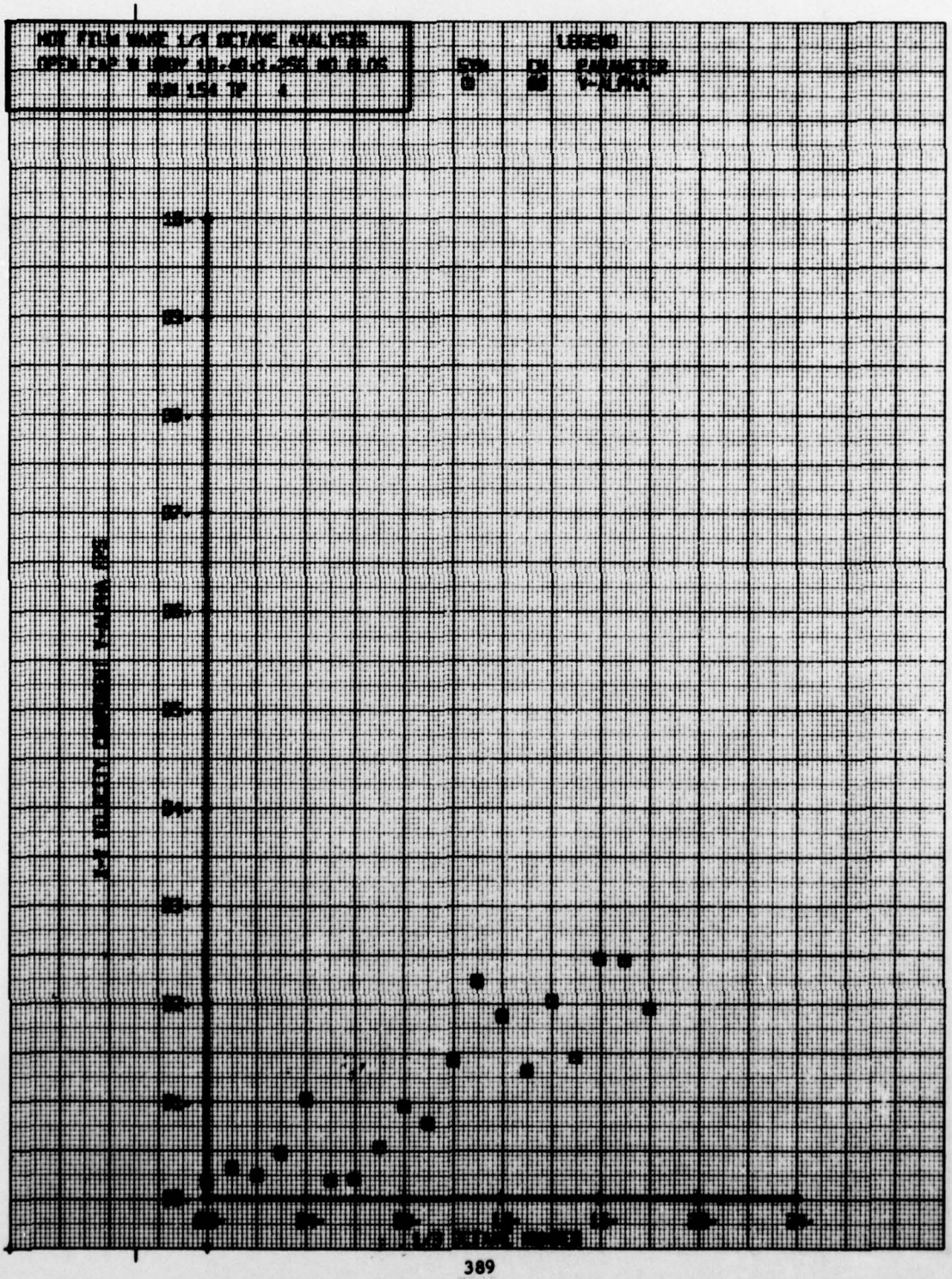

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-1-256 NO SLOS
RUN 154 TP 6
LEGEND
SYM CH PARAMETER
65 BETA
LATERAL FLOW ANGLE, BETA - DEGREES
1/3 OCTAVE NUMBER

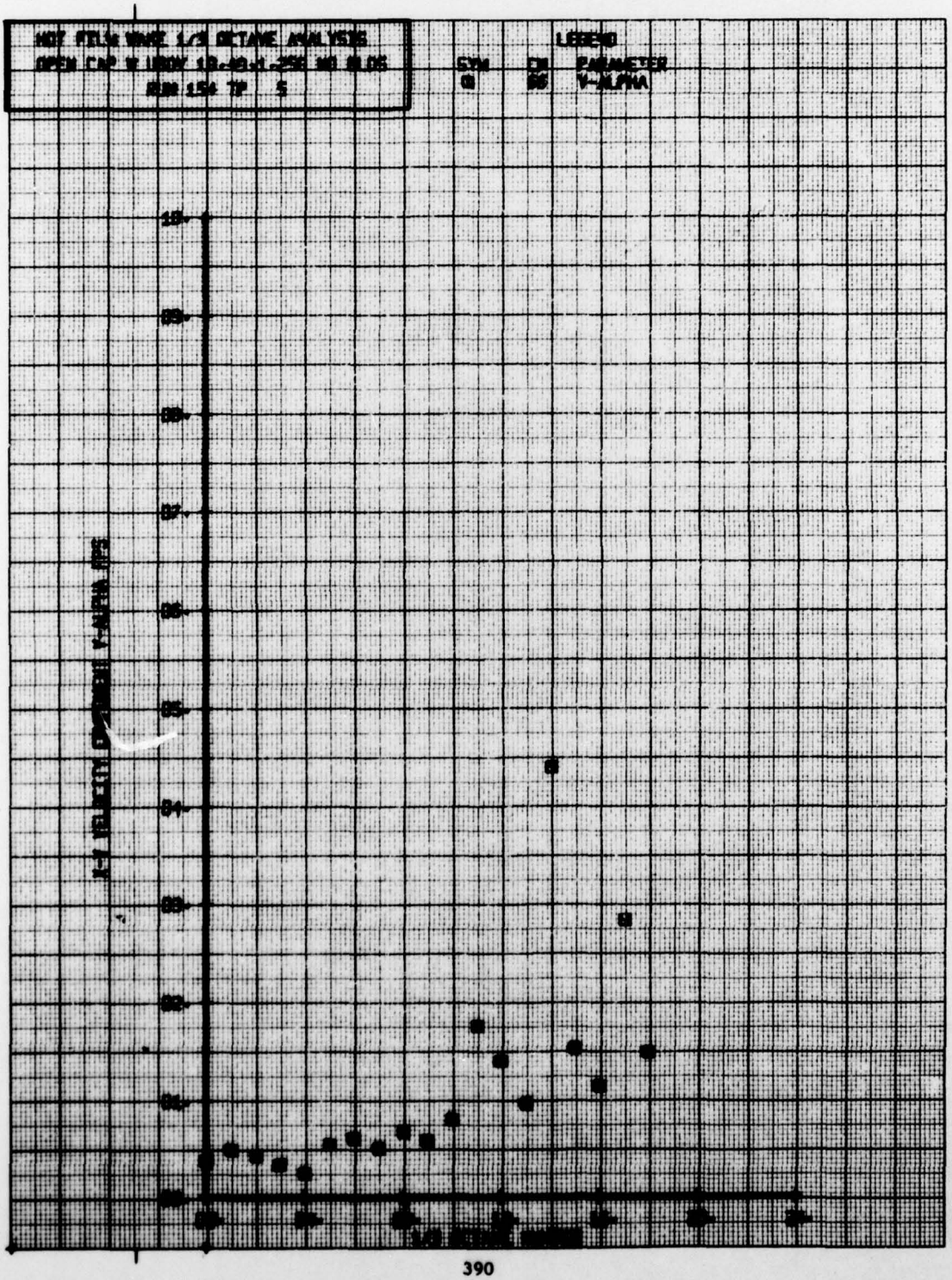

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UNDY 10-40-1-250 NO BLDG
RUN 154 TP 7
LEGEND
SYM CH PARAMETER
05 BETA

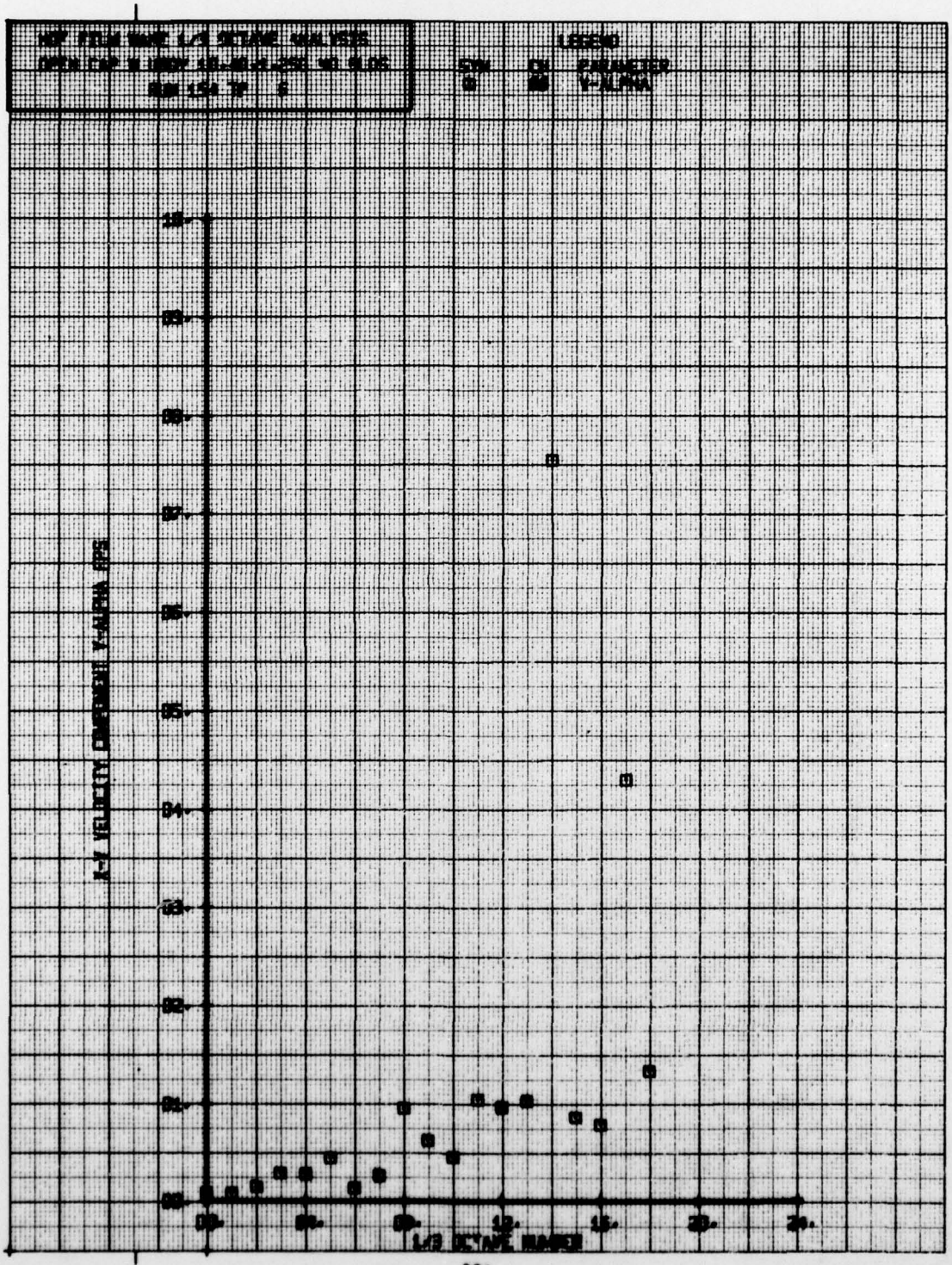

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
RUN 154 TP 9
LEGEND
SYM CH PARAMETER
DELTA

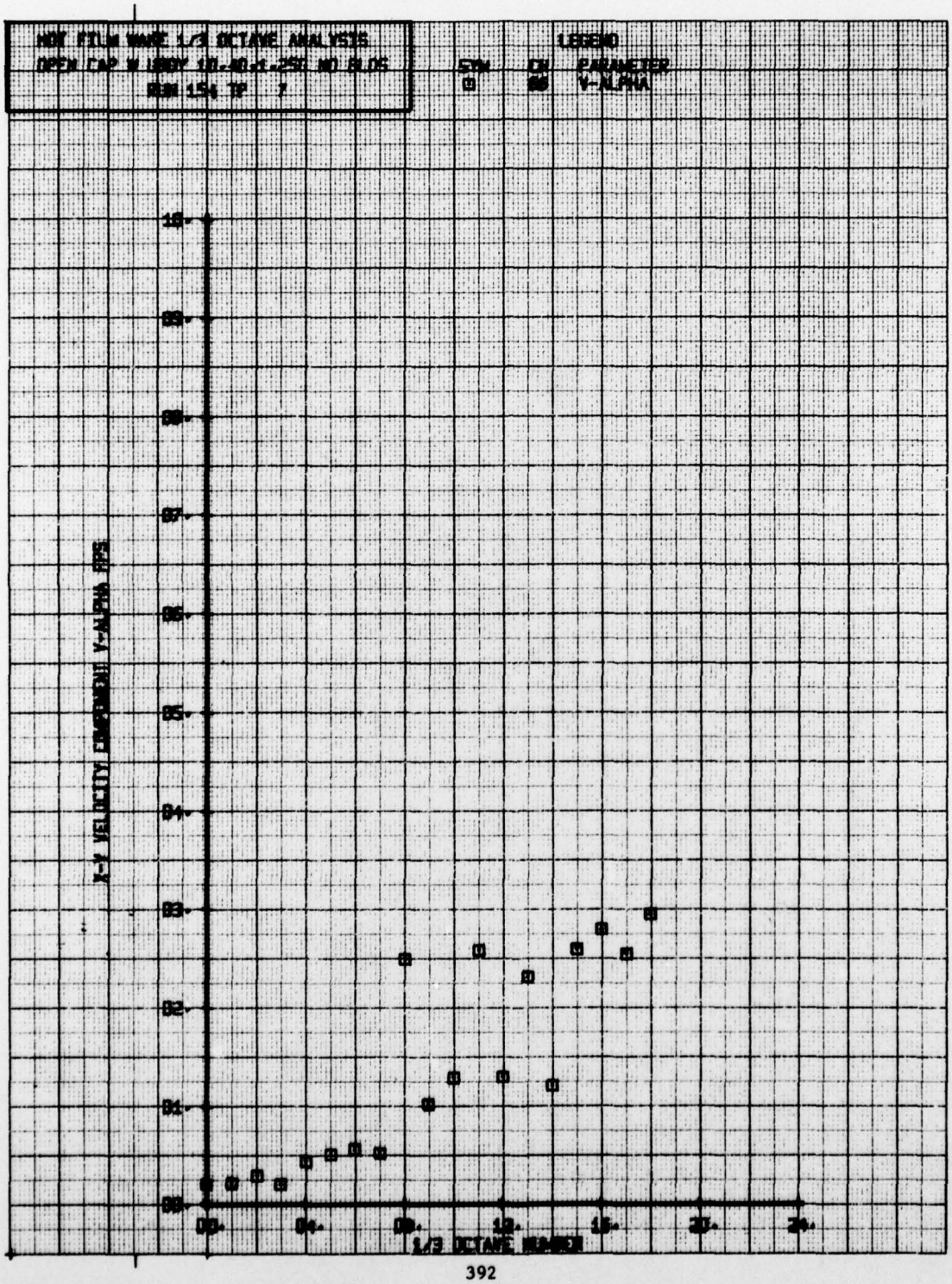


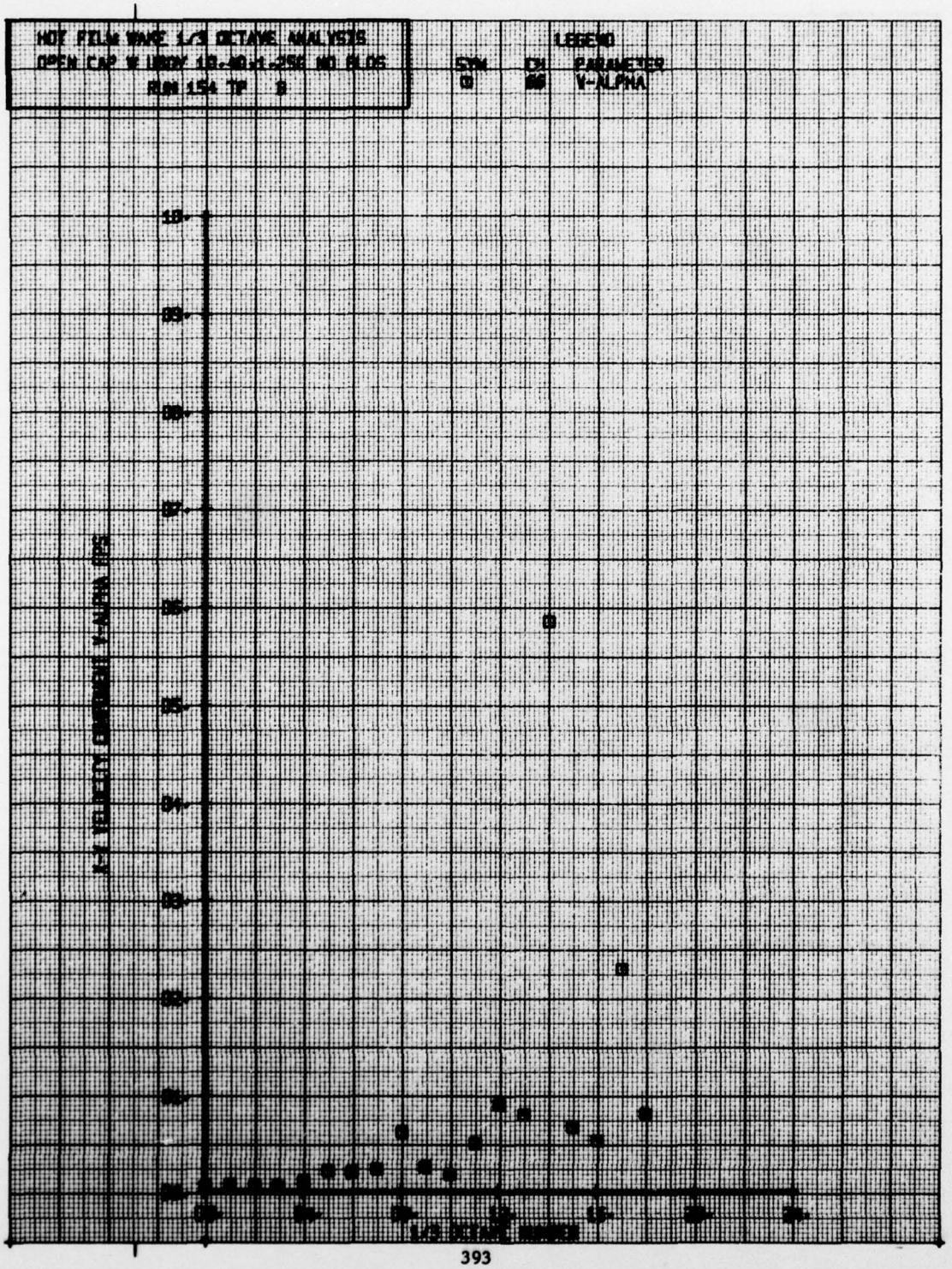

LEGEND
SYM ID PARAMETER
V-ALPHA
X-Y VELOCITY COMPONENT V-ALPHA FPS
1/3 OCTAVE NUMBER

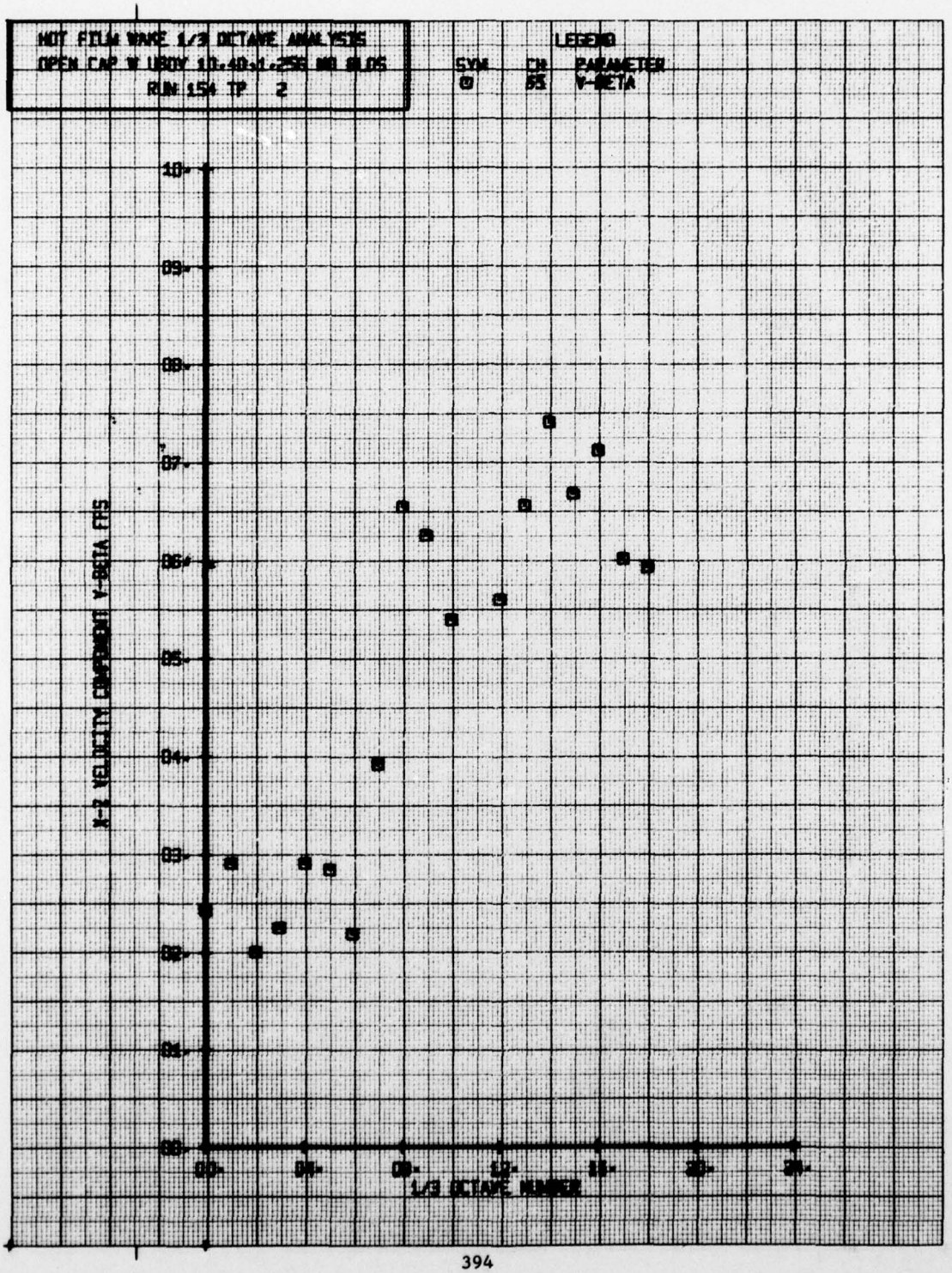


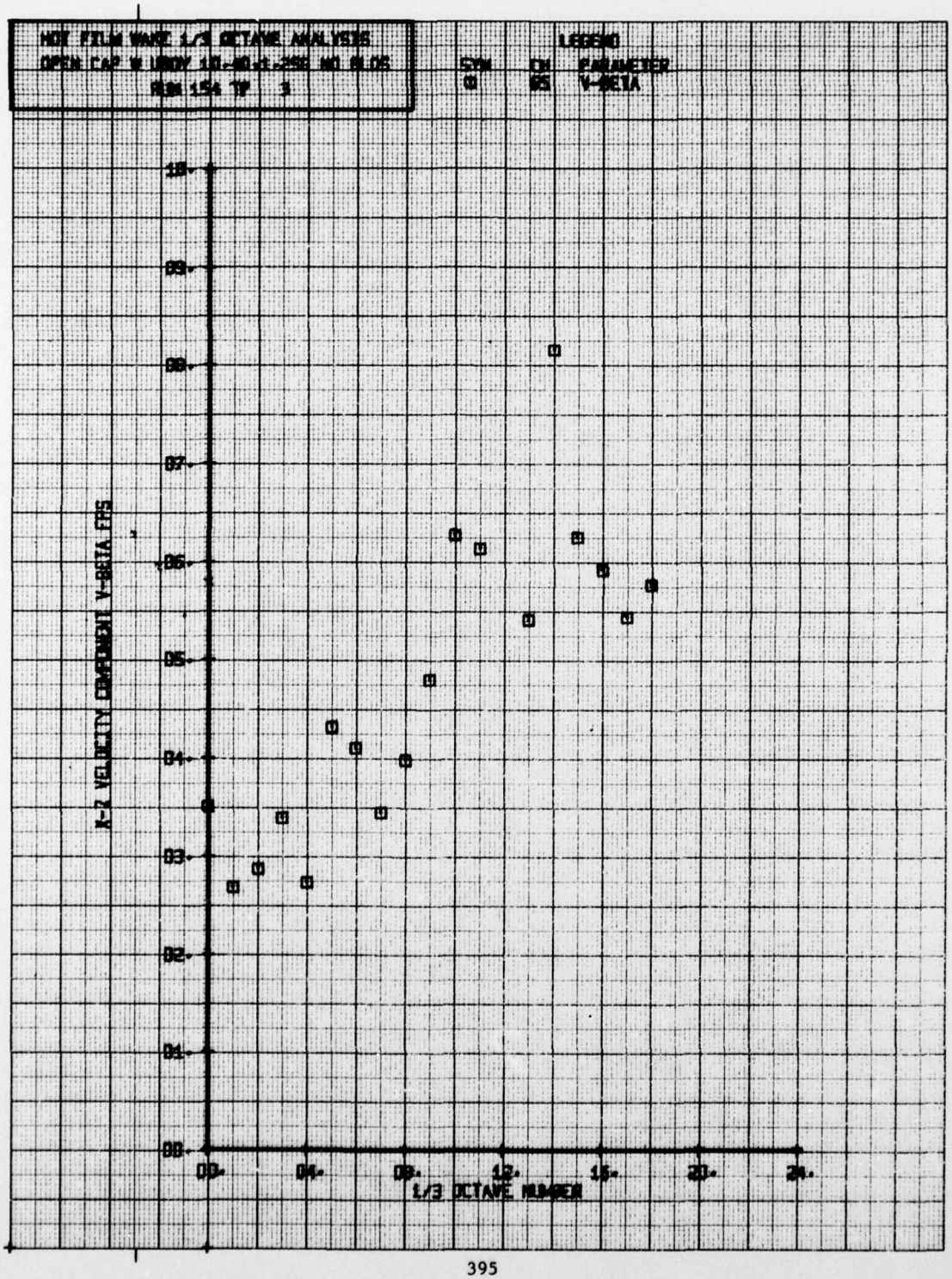

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40-1.250 NO BLDS
RUN 154 TP 5
LEGEND
SYM CM PARAMETER
V-ALPHA
X-Y VELOCITY EQUIVALENT V-ALPHA FPS

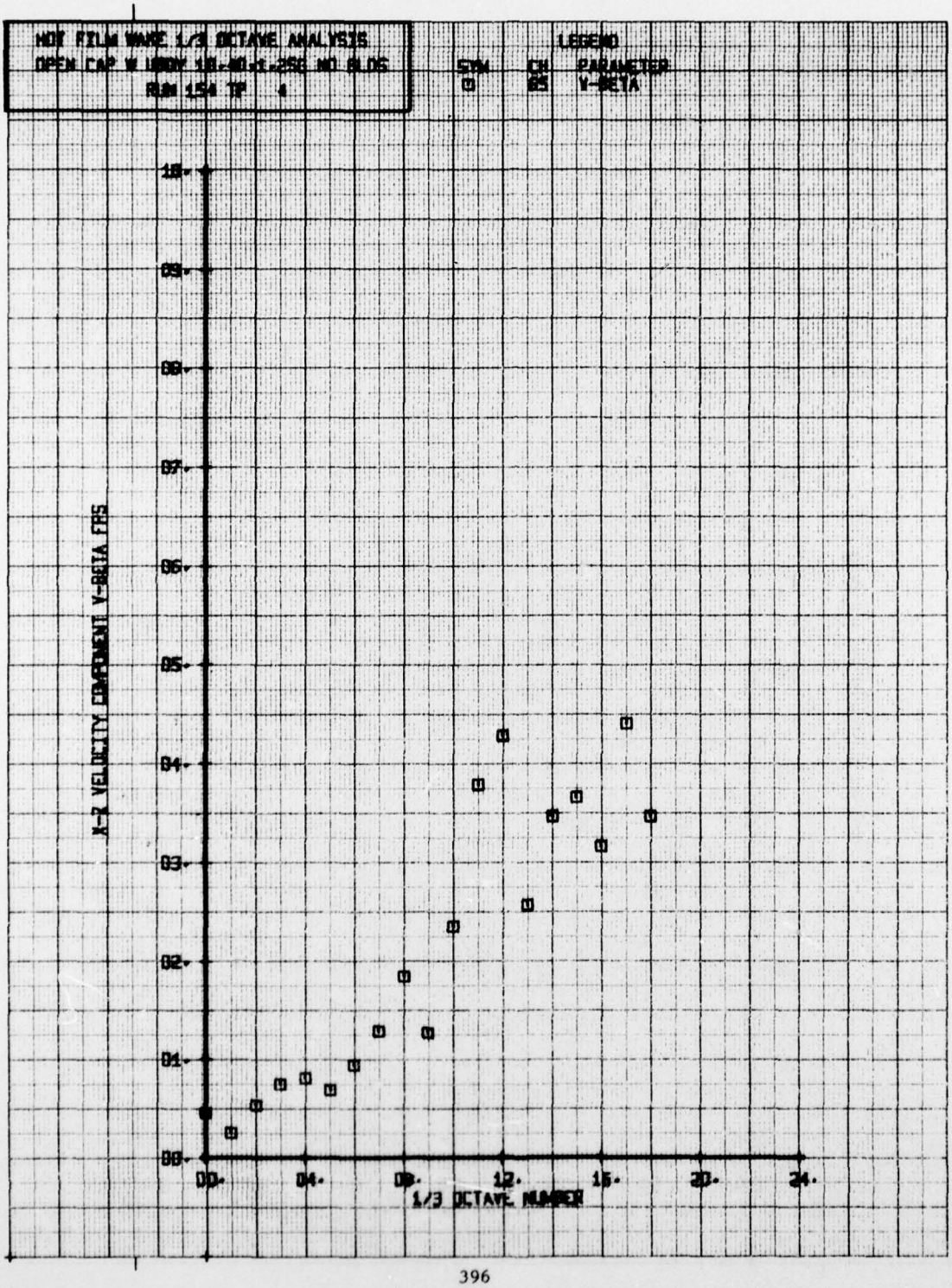

LEGEND
SYM CH PARAMETER
Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
1/3 OCTAVE NUMBER

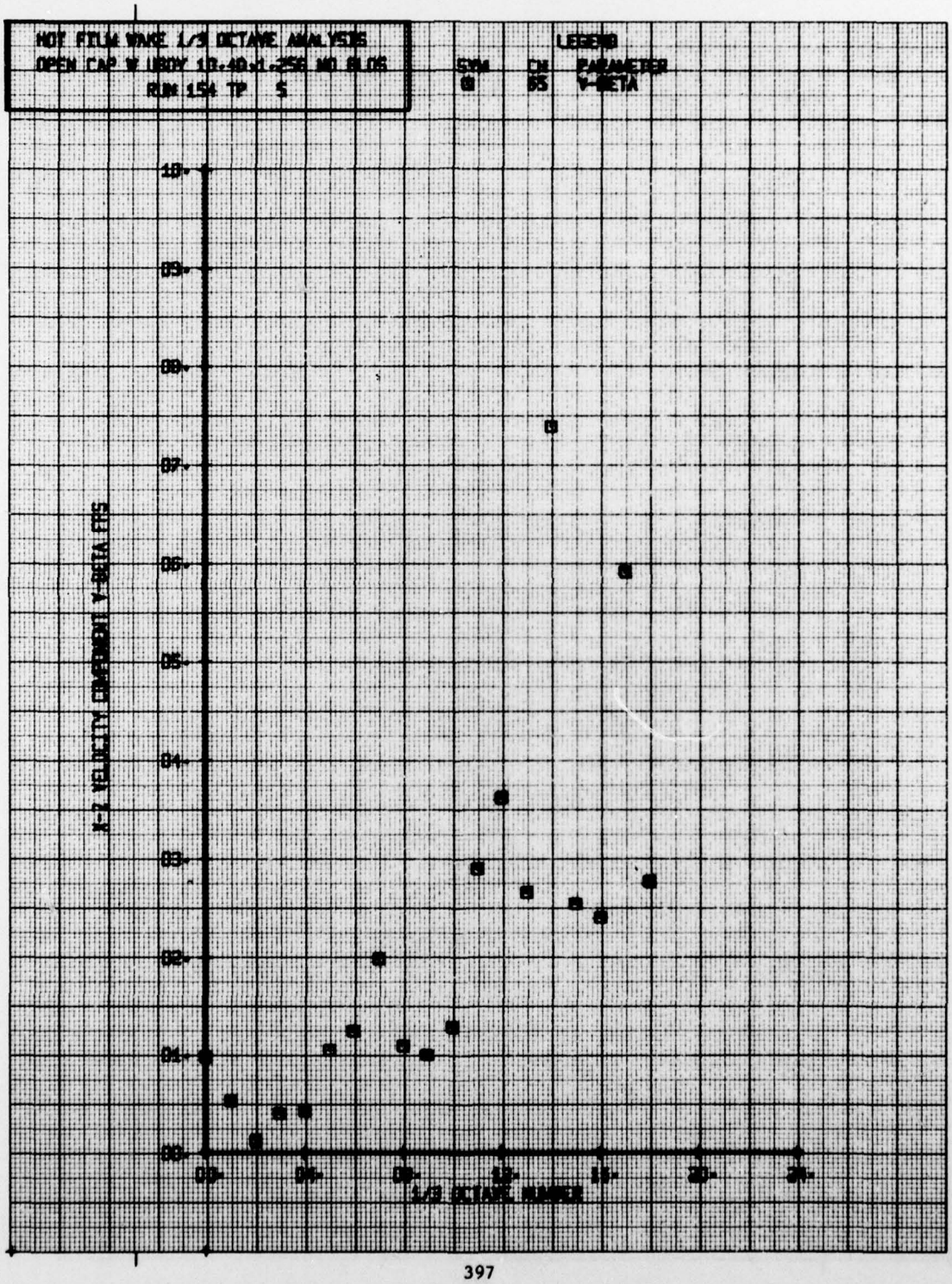

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W BODY 10.40.1.25E NO BLOS
RUN 154 TP 7
LEGEND
SYM CH PARAMETER
V-ALPHA
X-Y VELOCITY SPECTRUM Y-ALPHA RMS
1/3 OCTAVE MEASUREMENT

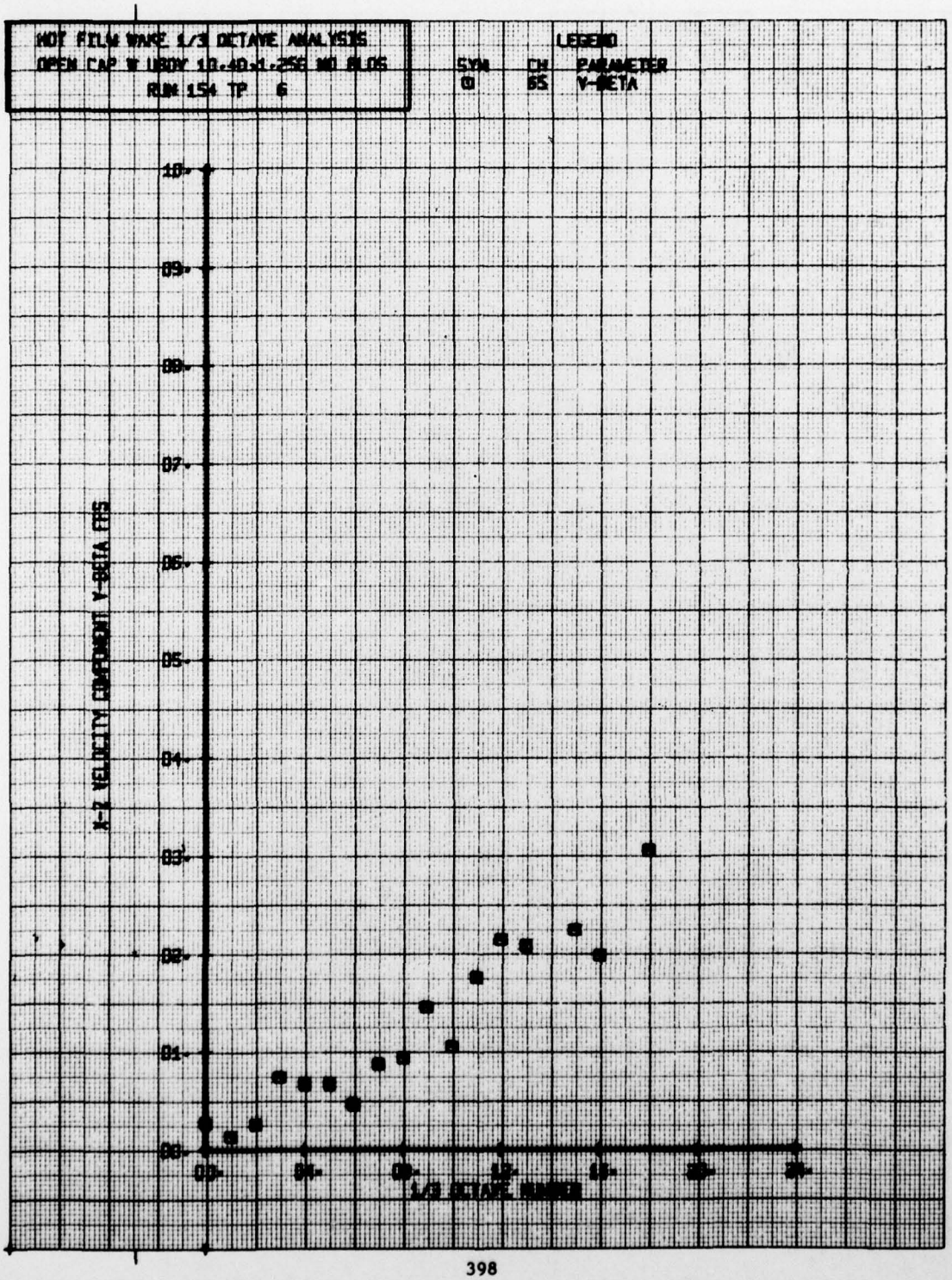

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40x1.250 NO BLDS
RUN 154 TP 8
LEGEND
SYM CH PARAMETER
Y-ALPHA
X-Y VELOCITY COMPONENT Y-ALPHA FPS
1/3 OCTAVE NUMBER

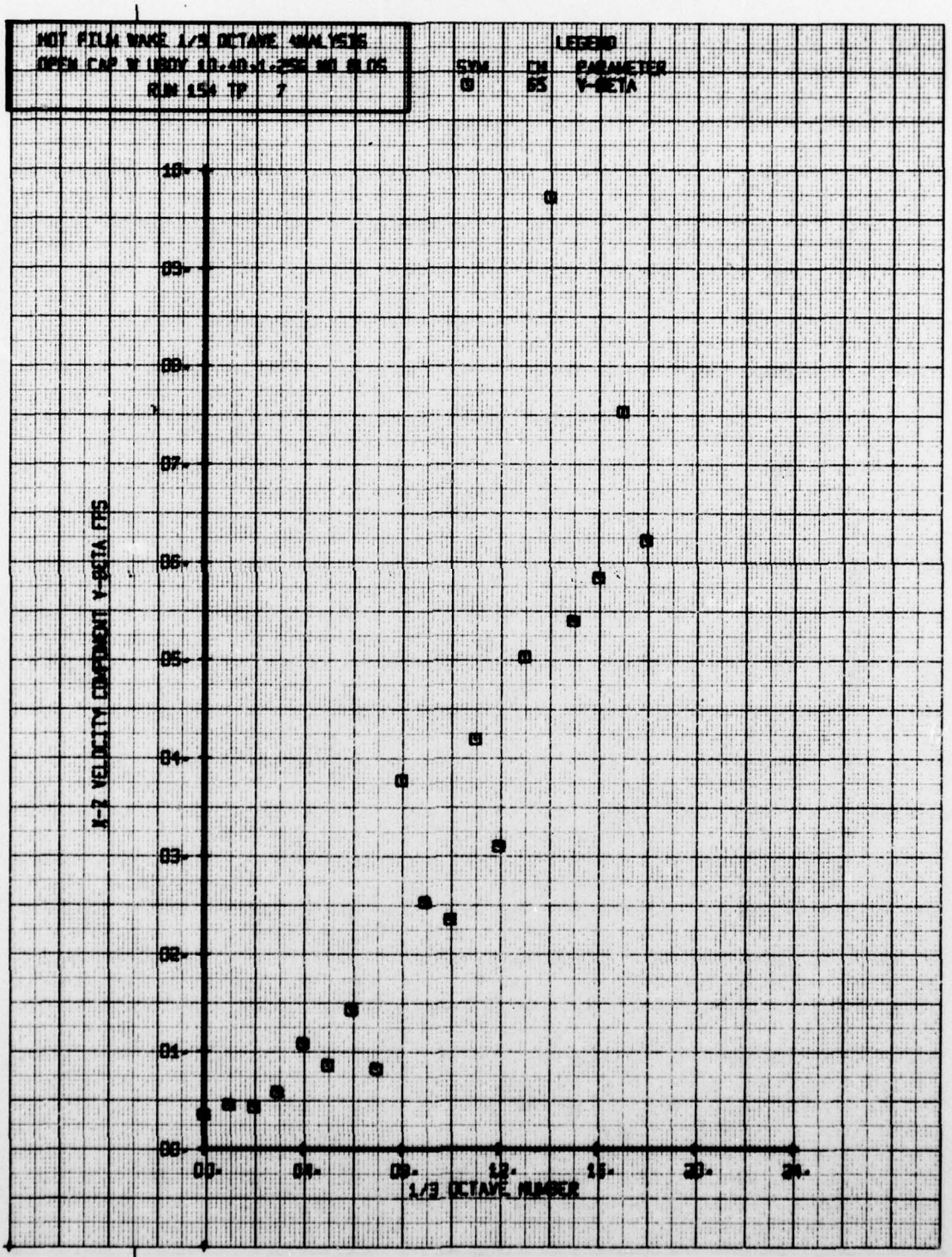

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10.40.1.256 MB BLDG
RUN 154 TP 2
LEGEND
SYM CH PARAMETER
@ 55 V-BETA
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
00
04
08
12
16
20
24
1/3 OCTAVE NUMBER

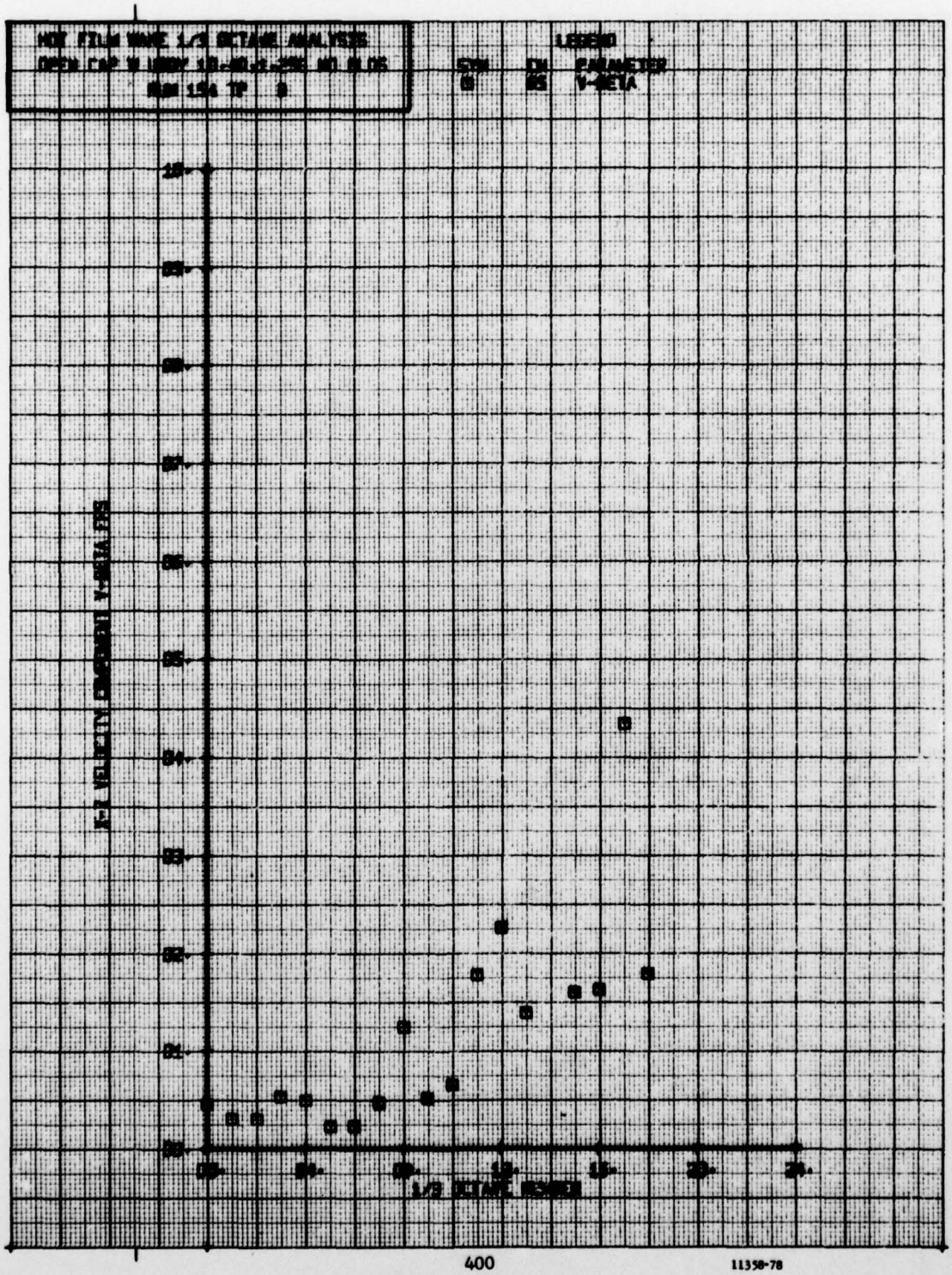

HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBOY 10-40-1-250 NO BLDS
RUN 154 TP 3
LEGEND
SYM CH PARAMETER
85 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40.1.256 NO BLDS
RUN 154 TP 4
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER
00.
04.
08.
12.
16.
20.
24.


HOT FILM WAVE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40,1.250 MO SLOS
RUN 154 TP 5
LEGEND
SYM CH PARAMETER
05 V-BETA
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.0
X-Z VELOCITY CORRELATION V-BETA,FRS
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W HBOW 10.40.1.250 NO BLOS
RUN 154 TP 6
LEGEND
SYM CH PARAMETER
@ 65 V-BETA
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.0
X-Z VELOCITY COMPONENT V-BETA RMS
1/3 OCTAVE NUMBER


HOT FILM WAKE 1/3 OCTAVE ANALYSIS
OPEN CAP W UBDY 10.40,1.25G NO BLDS
RUN 154 TP 7
LEGEND
SYM CH PARAMETER
65 V-BETA
X-Z VELOCITY COMPONENT V-BETA FPS
1/3 OCTAVE NUMBER






11358-78