

Table 1-1. Specifications

<b>INTERFACE</b> <b>General:</b> 16-bit TTL binary with 2-wire handshake (Option 704: 3-wire handshake), unterminated. <b>Connector:</b> 26-pin male Ansley type 609-2627. <b>Recommended Mating Connector:</b> 26-pin female Ansley type 609-2630 with strain relief Ansley type 609-2631. Recommended cable length $\leq 2$ feet. (Note: See Option 325 for mating data cables).				
<b>ANALOG OUTPUTS</b> <b>General:</b> X, Y, and Z analog signals to drive a slave CRT display. <b>Amplitude:</b> approximately 1V p-p open circuit. <b>Output Impedance:</b> X, Y: 340 ohms nominal. Z: 250 ohms nominal. <b>Polarity:</b> X — Positive-going voltage corresponds to right beam movement. Y — Positive-going voltage corresponds to upward beam movement. Z — Positive-going voltage corresponds to increasing luminance.				
<b>POWER REQUIREMENTS</b>				
<b>Recommended bandwidth of slave display:</b> X, Y Axis: $\geq 3$ MHz Z Axis: $\geq 10$ MHz <b>Recommended mating connector:</b> Molex 22-01-1023 (See option 323 for factory supplied X-Y-Z output cables)				
<b>DISPLAYED IMAGE</b> <b>Image Size:</b> Factory adjusted to approximately 8.5 cm (3.35 in.) vertically by 11.5 cm (4.53 in.) horizontally. <b>Resolution:</b> Addressable; 2048 by 2048. <b>Visible (shrinking raster):</b> $\leq 196$ lines vertically by 266 lines horizontally (full scale). <b>Geometric distortion:</b> $\leq 2.4$ mm error in addressing any location within the image area due to geometric distortions and nonlinearity in CRT and stroke generator. <b>Repeatability:</b> $\leq 0.5$ mm position variation in re-addressing any point. <b>Refresh rate (Option 704):</b> approximately 60 Hz for displayed images containing up to 2000 vectors each 3.3 cm long and 100 characters, at maximum programmable writing speed (approximately 0.5 cm/ $\mu$ sec). <b>Phosphor:</b> P31 (green).				
Operating Voltages		Max P-P Ripple	Max Current	
Voltage	Tolerance		Standard	Option 704
+15VDC	$\pm 5\%$	10mV	1.05A	1.05A
-15VDC	$\pm 5\%$	10mV	0.3A	0.3A
+5VDC	+5 -0%	50mV	0.75A	1.8A
<b>Recommended Mating Connector:</b> AMP type 1-350234-9				

Note: See Option 323 for mating power cable.

Table 1-2. 1345A Functions

<b>GRAPHIC FUNCTIONS</b> <b>CHARACTERS</b> <b>Character Sets:</b> 128 Character ANSI ASCII Set 0 HP 9825/9826 Special Keyboard Symbols <b>Sizes:</b> Four Sizes;				
Sizes	Characters/Line	No of Lines	Character Size	
			Graphic Units	MM(approx)
1.0X	56	28	24 X 36	1.3 X 1.5
1.5X	37	18	36 X 54	2.0 X 2.2
2.0X	28	14	48 X 72	2.6 X 3.0
2.5X	22	11	60 X 90	3.3 X 3.7

Table 1-2. 1345A Functions (Cont'd)

**Orientations:** 0, 90, 180, 270 degrees CCW relative to horizontal

## VECTORS

### Line Types:

- Solid Line
- Solid line with intensified end points
- Short dashed line
- Long dashed line
- Dots at end points only

### Velocity:

Four Beam Velocities:

- approximately 0.13 cm/ $\mu$ sec
- approximately 0.25 cm/ $\mu$ sec
- approximately 0.38 cm/ $\mu$ sec
- approximately 0.51 cm/ $\mu$ sec

**Brightness:** Three visible brightness levels plus blank (beam off). Maximum brightness is approximately 170 cd/m<sup>2</sup> at slowest programmable writing speed (approximately 0.13 cm/ $\mu$ sec and 60 Hz refresh rate).

## PLOTTING

**Plotting Modes:** Plot absolute and Graph

**Beam Control:** The beam may be turned on or off while plotting.

## GRAPH GENERATION

**Tick Marks:** X- and Y-axis tick marks of four selectable lengths.

**Graph Mode:** Allows generation of graphs which have a constant X-increment between points by storing the X-increment once, requiring only new values for succeeding points.

## SELF TEST

Self Test is invoked by disconnecting the I/O connector with power applied. The Test Pattern verifies that the 1345A is fully operational and provides necessary stimulus for routine calibration. Alternate Test Pattern, invoked by internal jumper change, verifies performance specifications and allows calibration of focus and astigmatism adjustments.

Table 1-3. Supplemental Characteristics

## OPERATING ENVIRONMENT

**Temperature:** (operating) 0° C to +65° C (+32° F to +149° F)

### NOTE

The 65° C (+149° F) temperature specification reflects the maximum allowable operating temperature with the 1345A enclosed, not the ambient temperature of the system housing. It is recommended that a minimum of 0.28m<sup>3</sup>/min (10 ft<sup>3</sup>/min) of air flow is forced around the instrument to ensure that the maximum operating temperature of 65° C (+149° F) is not exceeded.

**Temperature (non-operating):** -40° C to +75° C (-40° F to +167° F).

**Humidity:** to 95% relative humidity up to +40° C (+104° F).

**Altitude:** (operating) to 4600 m, (15,000 ft.); (non-operating) to 15,300 m, (50,000 ft.).

**Shock:** 30 G peak level with 11 ms duration and 1/2 sinewave shape.

**Vibration:** vibrated in three planes for 15 min. each with 0.38 mm (.01 in.) excursion, 10 to 55 Hz.

**Dimensions:** Refer to outline drawing Figure 1-8.

**Weight:** Net: approximately 4.4kg. (10 lb).

**Shipping:** approximately 5.8kg. (13 lb).

**Bezel:** Compatible with HP 197B camera equipped with 10375A adapter (order 197B option 006).

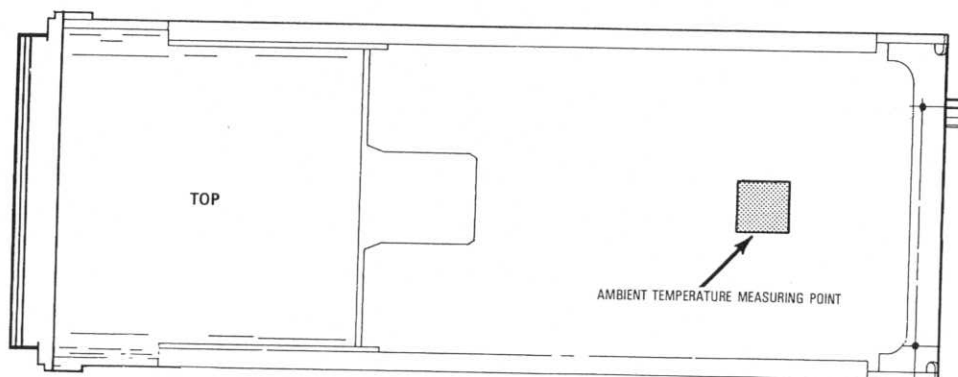


Figure 1-2. Ambient Temperature Measurement

**1-15. ACCESSORIES SUPPLIED.**

1-16. The following accessories are supplied with the 1345A:

One Operating and Service Manual.

**1-17. OPTIONS.**

1-18. Standard options are modifications installed on HP instruments at the factory and are available on request. Table 1-4 lists available options for the 1345A.

**1-19. OPTION 001.**

1-20. Option 001 provides all the necessary materials for external Focus and Intensity control. The cables between the Stroke Generator Board and the Focus and Intensity pots are 60.9 cm (24 in.) long.

1-21. Focus and intensity may be controlled from the front panel if external controls are added. Connectors are provided on the Stroke Generator Board (A1) for adding the controls. The External Intensity Control potentiometer should have a value of 1K ohm and the Focus Control potentiometer should have a value of 5K ohms. The potentiometers should have a tolerance of no greater than 10%, should be linear tapered and a wattage rating of  $\geq 1$  W. The external control connections should be made according to the schematics in figures 1-4 and 1-5.

Table 1-4. Standard Options

Option	Description
001	Provides external Focus and Intensity controls, P/N 01345-69501.
323	This option supplies X-Y-Z output cables for an external display. The cables are 61 cm (24 in.) long, P/N 01345-69502.
325	Provides a dc power input cable and an I/O interface cable. The cables are 91.5 cm (36 in.) long, P/N 01345-69503.
500	This option deletes Operating and Service manual.
564	Provides a blue contrast filter in place of the standard neutral density filter.
704	This option adds 4K x 16-bit Vector Memory (see Service Sheet 6).
910	This option provides an extra Operating and Service Manual.

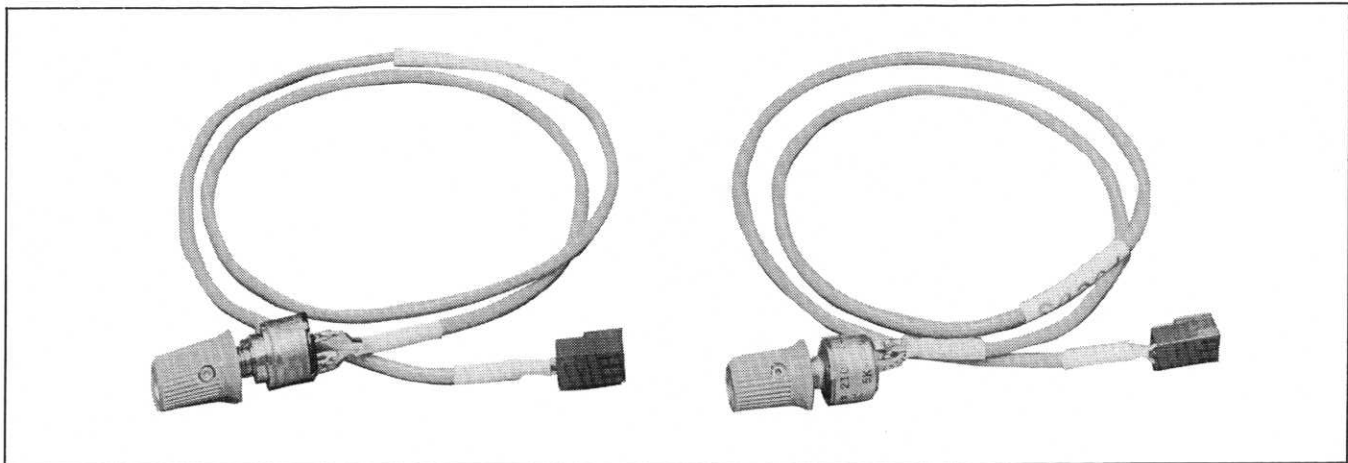


Figure 1-3. Option 001 Cable Detail