

Table 1-2. Specifications of 8690B Sweep Oscillator with RF Unit Installed

SWEEP FUNCTIONS

Start-Stop Sweep: Sweeps from "start" to "stop" frequency setting.

Range: Both settings continuously and independently adjustable over the entire frequency range; can be set to sweep either up or down in frequency.

End-point Accuracy: Same as RF Unit frequency accuracy.

Marker Sweep: Sweeps from "Marker 1" to "Marker 2" frequency setting.

Range: Both settings continuously and independently adjustable over the entire frequency range; can be set to sweep either up or down in frequency.

End-point Accuracy: Same as RF Unit frequency accuracy.

ΔF Sweep: Sweeps upward in frequency, centered on CW setting.

Width: Continuously adjustable from zero to 10% of the frequency band; calibrated directly in MHz.

Width Accuracy: $\pm 10\%$ of ΔF being swept $\pm 1\%$ of maximum ΔF ($\pm 20\%$ $\pm 2\%$ respectively with 8691A/B RF Units).

Center-frequency Accuracy: Same as RF Unit frequency accuracy.

FREQUENCY MARKERS

Two frequency markers, independently adjustable over the entire frequency range, amplitude modulate the RF output. Amplitude is adjustable from the front panel. The markers are also available for external use.

Accuracy: 1% of full scale for all RF Units.

Resolution: Better than 0.05% of RF Unit bandwidth.

Marker Output: Triangular pulse, typically -5 V peak into 1000-ohm load.

CW OPERATION

Single-frequency RF output selected by START/CW or MARKER 1 control, depending upon sweep function selected.

Accuracy: Same as RF Unit frequency accuracy.

Preset Frequencies: Start-stop sweep end points and marker frequencies can be used as four preset CW frequencies.

SWEEP MODE

Auto: Sweep recurs automatically.

Manual: Front-panel control provides continuous manual adjustment of frequency between end frequencies set in any of the above sweep functions.

Triggered: Sweep is actuated by front-panel push button or by externally applied signal between -7.5V and -25V, $> 1 \mu\text{sec}$ pulse width, and $> 0.1 \text{ V}/\mu\text{sec}$ rise.

SWEEP CHARACTERISTICS

Sweep Time: Continuously adjustable in four decade ranges, 0.01 to 100 seconds. Can be synchronized with the power line frequency.

Sweep Indicator: Front-panel indicator lights during the sweep to provide indication of sweep duration on slower sweep times.

Sweep Output: Direct-coupled sawtooth, zero to approx. +15 V, concurrent with swept RF output. Zero at start of sweep, approximately +15 V at end of sweep regardless of sweep width or direction. Source impedance, 10,000 ohms.

Frequency Linearity: (Correlation between frequency and both the sweep and reference output.) Same as RF Unit frequency accuracy.

Blanking: RF automatically turned off during retrace, turned on after completion of retrace. On automatic sweeps, RF is on long enough before sweep starts to stabilize external circuits and equipment whose response is compatible with the selected sweep rate. Blanking disable switch provided.

Blanking Output: Direct-coupled rectangular pulse approximately -4 V coincident with RF blanking. Source impedance approximately 3000 ohms.

Penlift: For use with X-Y graphic recorders. Penlift terminals shorted during sweep, open during retrace (100-10 and 10-1 sec ranges only).

POWER LEVELING AMPLIFIER

Internal dc-coupled leveling amplifier provided.

Crystal Input: Approximately -20 to -350 mV for specified leveling at rated output; for use with negative-polarity detectors such as 780 series Directional Detectors, 423 and 424 series Crystal Detectors.

MODULATION

Internal AM: Square wave modulation continuously adjustable from 950 to 1050 Hz on all sweep times. On/off ratio greater than 20 dB at rated output.

Table 1-2. Specifications of 8690B Sweep Oscillator with RF Unit Installed (Cont'd)

External AM

Frequency Response: dc to 350 kHz unlevelled, dc to 50 kHz levelled.

Sensitivity: -10 V reduces RF output level at least 30 dB below rated CW output ("A" Model RF Units, 20 dB for "B" Models).

Input Impedance: Approximately 1000 ohms.

External FM

Frequency Response: dc to 3 kHz.

Sensitivity: Deviation from CW setting approximately 6% of the frequency band per volt.

Maximum Range: Full band for modulation frequencies up to 150 Hz (approximately 17 V pp input), decreases to about 20% of the band for 3 kHz modulation.

Input Impedance: Approximately 100,000 ohms.

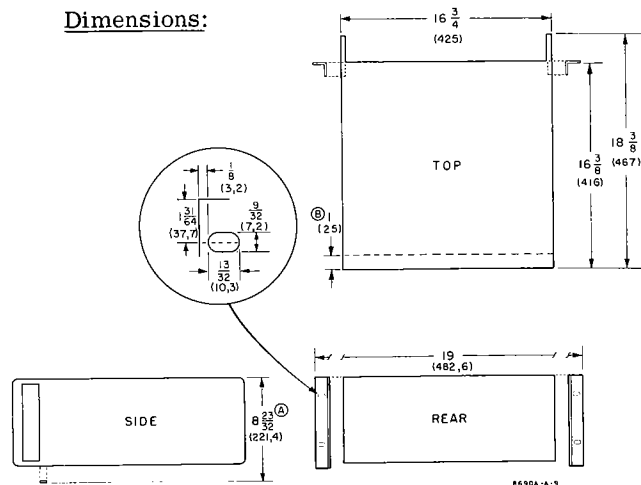
GENERAL

Power: 115 or 230 Vac $\pm 10\%$, 48 to 66 Hz. Approximately 350 watts with one RF Unit; if RF Unit holder HP 8707A is used add approximately 30 watts for each RF Unit.

Available:

Directional Couplers	776/777	Coaxial Dual coupler, 1 to 4 GHz, 20 dB coupling, high directivity
	790 series	Ultra-flat coaxial coupler, 1 to 8.3 GHz, high directivity
	752 series	Waveguide coupler, 2.6 to 40 GHz, 40 dB directivity
Directional Detectors	781-789 series	Ultra-flat coupler with built-in detector, 1-12.4 GHz
Detectors	423	Coaxial crystal detector, 0.01 to 12.4 GHz, flat response
	424 series	Waveguide crystal detector, 2.6 to 18 GHz, flat response
	422	Waveguide crystal detector, 18 to 40 GHz, ± 2 dB response
	478	Coaxial thermistor mount for 432, 0.01 to 10 GHz
	486 series	Waveguide thermistor mounts for 431, 2.6 to 40 GHz
Power Meter	432	10 μ W to 10 mW full scale.
Adapter	281 series	Coax to waveguide adapter, 2.6 to 12.4 GHz
Loads, Shorts	906	Coaxial sliding load, 1 to 12.4 GHz, low load SWR
	11511/11512	Coaxial fixed short, 11511 female, 11512 male
	910 series	Waveguide termination, 2.6 to 18 GHz, low SWR
	914 series	Waveguide moving load, 2.6 to 40 GHz, 1.01 load SWR
	X923/920 series	Waveguide adjustable short 2.6 to 40 GHz
Refl. Coeff. Bridge	X8440	Reflection coefficient measurements in coax, 8.2 to 12.4 GHz
Oscilloscopes, X-Y Recorders	140/1416	Oscilloscope, calibration in dB/cm, high sensitivity
	130	Oscilloscope, calibration in V/cm, high sensitivity
	7035, Opt 01	X-Y recorder with AUTOGRIP hold down, high sensitivity
Filters	360	Low pass filters; cut off at 2.2 and 4.1 GHz
	8430 series	Bandpass filters, octave and semi-octave, 1-12.4 GHz

Dimensions:



NOTES
DIMENSIONS IN INCHES AND (MILLIMETERS)
Ⓐ EIA RACK HEIGHT
FOR CABINET HEIGHT (INCLUDING FEET) ADD $\frac{5}{16}$ (8.0) TO EIA RACK HEIGHT
Ⓑ REAR APRON RECESS

Weight (not including RF Unit): Net, 53 lbs. (23,9 kg). Shipping, 71 lbs. (32 kg).

Furnished: 7-1/2 ft (2290 mm) power cable with NEMA plug; rack mounting kit.