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16A

3,855⁰⁰

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CO2 Spectrum Analyzer

The CO2 Spectrum Analyzer is a unique grating spectroscope which simultaneously displays all the lasing transactions of a CO2 laser. It is calibrated both in wavelength and rotational line designation to permit easy identification of 140 possible laser transitions between 9.1 and 11.3 μ . These transitions are visually displayed through the use of a UV excited thermal sensitive screen which darkens in the area struck by the IR laser beam.

The spectrum analysis screen has a response time of 1/4 seconds and permits the instrument to resolve all the CO2 rotational lines. The Model 16-A is light, portable and can easily be introduced into laboratory setups.

Wavelength Scale

This is a portion of the wavelength scale shown at full size. The upper calibrations are CO2 rotational line designations and the lower scale is the wavelength in microns. The thermal sensitive screen in the center displays the lasing wavelengths as a dark line.

The wide sensitivity range of the spectrum analysis screen can simultaneously display lines which differ in power density by a factor of 20. Each instrument is factory calibrated and should never need adjustment. However, a simple procedure allows the calibration to be checked by the user.

Specifications: Model 16A

Wavelength Range:9.1 μ to 11.3 μ Resolution..... .003 μ (0.3cm-1) Maximum Power..... 100 watts Minimum Power (focused)... 0.01 watts Screen Response Time..... .25 sec.* Length..... 18" Width..... 9.9" *Screens with other sensitivities and response times available.	Minimum Height..... 6.5" Elevation of Slit..... 2.25" to 3.8"(adjustable) Electrical Power..... 115 V, 60 HZ, 10 watts ¹² C ₁₆ O ₂ Vibrational-Rotational Lines Identified: 00°1 - 02°0 P2 to P60 and R2 to R62 00°1 - 10°0 P2 to P56 and R2 to R60 01°1 - 11°0 P19 to P45 Includes an additional display screen for use with Tea Lasers.
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During operations, the laser beam is allowed to strike the front of the Spectrum Analyzer so that a portion hat a portion of the beam passes through a variable slit. Normally the laser beam is intense enough that it is not necessary to focus the light on the slit. The light which does not pass through the slit is absorbed in the matte anodized case.

The internal beam monitor is a Thermal Imaging Plate that displays the CO2 laser beam which has passed through the slit. During the positioning of the instrument this device is engaged. When the monitor indicates the Analyzer to be properly positioned, it is then disengaged to allow the beam to pass onto the display screen.

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