



65130 and 65010 High Power Spectral Line Lamps.

- Sources of intense, discrete UV, VIS and NIR spectral lines
- Highly stable long term output
- Low cost rod mounted housing supports lamps
- Easily interchangeable lamps

Choose these sources if you require very intense, discrete spectral lines. These lamps are approximately 2X more intense than comparable pencil calibration lamps, although the spectral intensity distribution is very different. See Fig. 1 for the irradiance from the 65130 High Power Mercury Lamp, and Fig. 3 on page 1-30 for the output spectra of each lamp.

The lamps are housed in the 65160 Lamp Housing, and powered by the 65150 Regulated AC Power Supply.

## LAMP HOUSING WITH INTEGRATED FILTER HOLDER

The lamps are operated in the 65160 Housing. A socket adapter holds the lamp so the direction of maximum radiance is through the lamp housing aperture. The same socket holds any of these high powered spectral line lamps so you can interchange between the lamps without switching lamp mount.

A filter holder at the aperture holds 1 inch (25.4 mm) diameter interference filters for wavelength isolation. We talk more about wavelength isolation on the following pages.

The 65160 can be rod mounted using standard 1/4-20 threaded optical rods. A rod is not included; see page 17-14. A 6 ft. (1.8 m) long cable is included to connect to the 65150 Power Supply. To ensure the greatest flexibility we offer a Z Bracket accessory, described on the following page.

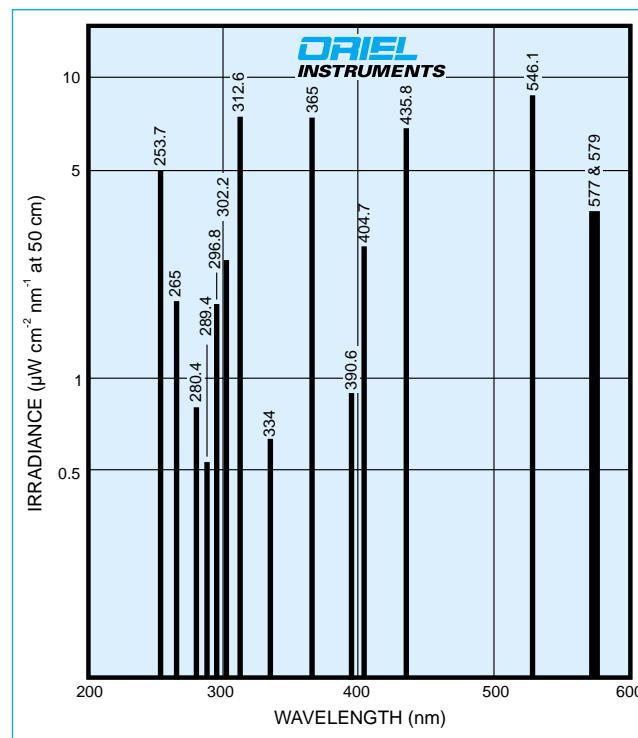


Fig. 1 Irradiance, at 50 cm, from the 65130 Mercury High Power Spectral Line Lamp.

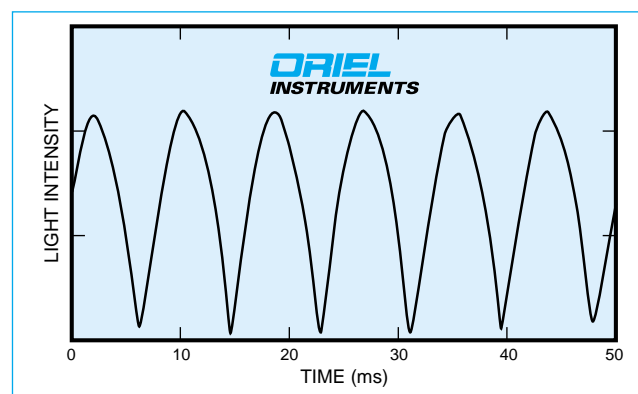
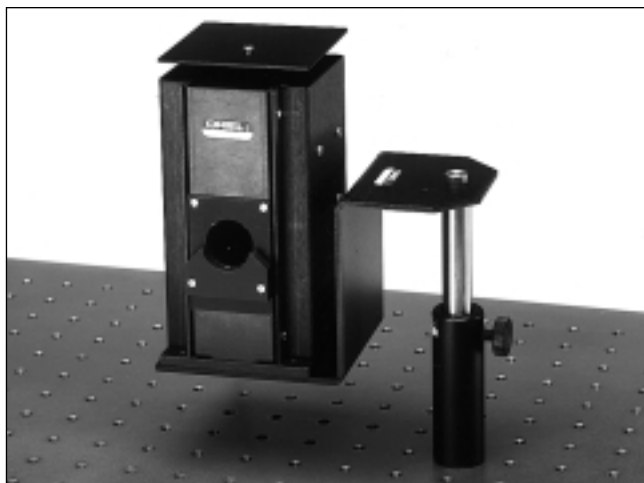


Fig. 2 Short term temporal behavior of the light output of 65010 Cesium Lamp, over time, when powered by the 65150 Power Supply.



65160 Lamp Housing on 66275 Z Bracket.

### REGULATED POWER SUPPLY

These lamps operate in AC mode. The output stabilizes after a few minutes of warm-up. Because the power supply operates in regulated AC mode, there are rapid variations in output on a ms time scale; see Fig. 2. However, the average output over many seconds is very stable. In fact, input voltage variations of as much as 10% are removed by the regulation circuit so you only see changes of less than 1% in light output.

### HIGH POWER SPECTRAL CALIBRATION LAMPS

The radiating material is enclosed in a compact burner. Starter gases are used with the metallic elements. The burner is surrounded by a glass tube for thermal insulation and mechanical protection. Several of the lamps have a quartz tube for transmission of the UV.

### Z BRACKET LOWERS OPTICAL AXIS HEIGHT

The 66275 Z Bracket lets you rod mount the 65160 Lamp Mount at a low optical axis height to match our monochromator inputs. The lowest centerline height with this mount is 2.8 inches (71 mm). See page 1-168 for a dimensional diagram.

## SPECIFICATIONS

Power Supply	
Starting voltage:	600 V peak to peak for ca. 350 ms
Operating voltage:	10 - 60 V, lamp dependent
Operating current:	0.6 - 1 A, lamp dependent
Input:	115 V/2.4 A or 230 V/1.2 A
Weight:	40 lbs (18.2 kg)
System	
Line regulation (<1 Hz):	<±1% for ±10% change in line voltage

## TECH NOTE

### ISOLATE THE WAVELENGTHS YOU NEED

*Interference filters pass the wavelength of interest and block the others. (Filters have different blocking specifications; check these before using the filter, if blocking is critical.) They are often used with spectral line lamps, to isolate the desired lines. The 65160 Lamp Housing has an integrated 1.0 inch (25.4 mm) diameter filter holder with a 0.93 inch (23.5 mm) clear aperture. We list UV interference filters on page 10-33 and VIS-NIR filters on pages 10-34 and 10-35.*

### SAFETY CONSIDERATIONS

*Although these are low wattage sources, they still emit hazardous UV radiation. Be sure to wear protective eyewear and gloves; see page 1-173 for safety equipment.*

Light Sources

Photolithography

Lasers

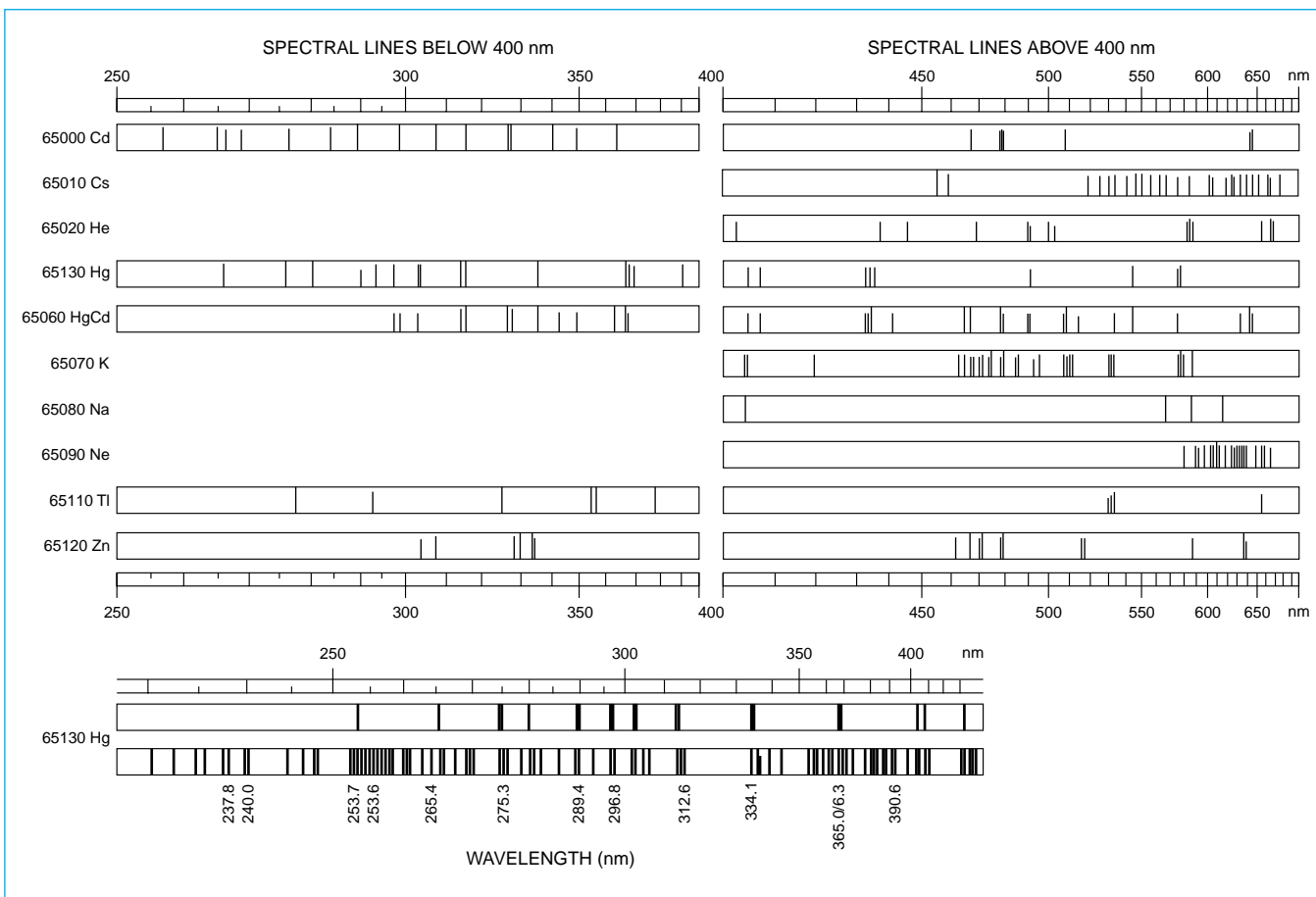
Monochromators  
& Spectrographs

FT-IR  
Spectrometers

Detection  
Equipment

Instruments

Fiber Optics



**Fig. 3 Output spectra of High Power Spectral Calibration Lamps.**

### SPECTRAL LINES

The following are commonly used spectral lines from these lamps.

Lamp	Wavelength (nm)
Mercury	253.7
Zinc	280.0
Zinc	307.1
Mercury	312.6
Cadmium	326.1
Mercury	334.1
Mercury	365.0
Mercury	404.7
Mercury	435.8
Cesium	455.5
Cadmium	508.5
Thallium	535.0
Mercury	546.1
Mercury	577.0
Sodium	590.0
Zinc	636.2
Potassium	766.5
Cesium	852.1
Mercury	1014.0

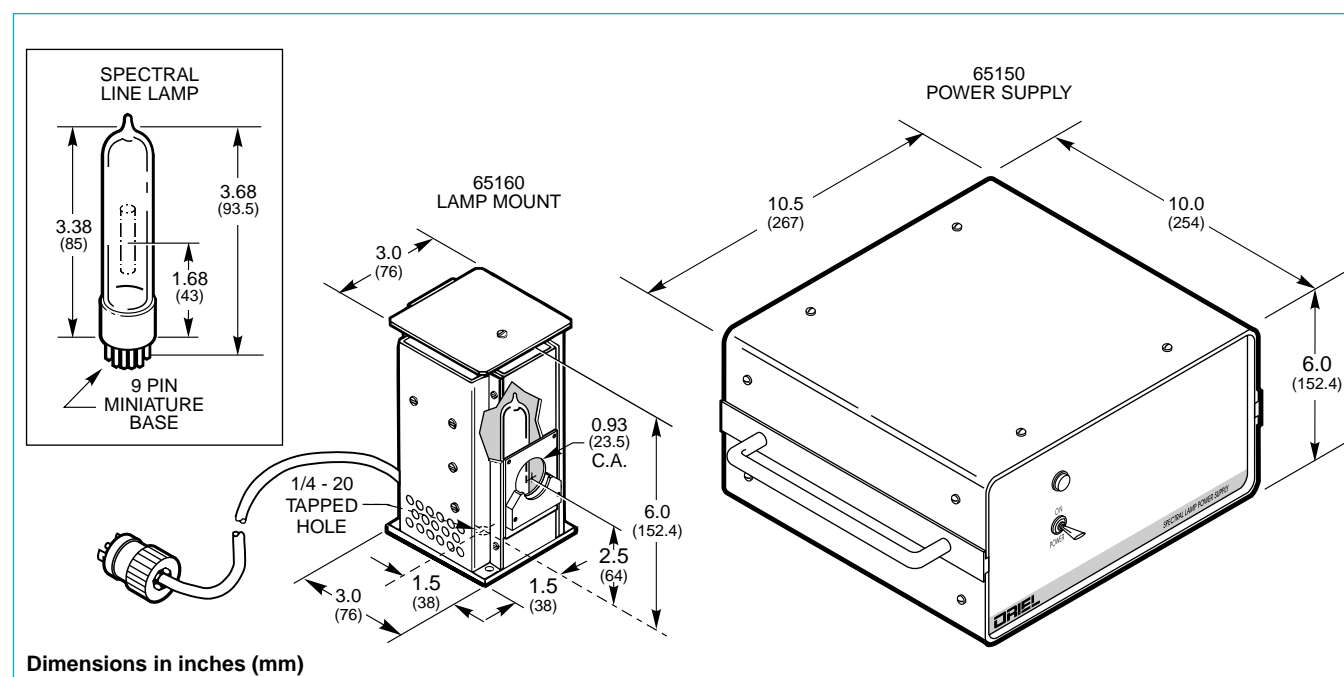


Fig. 4 Dimensional diagram of High Power Spectral Line Lamps, 65160 Lamp Housing and 65150 Power Supply.

#### LAMP SPECIFICATIONS AND ORDERING INFORMATION

Lamp Type	Lamp Wattage	Lamp Current (A)	Approx. Luminous Intensity (cd)	Radiating Area (mm)		Model No.	Price
				Height	Width		
Cadmium (Cd)*	15	1	1.2	15	6	65000*	
Cesium (Cs)	10	1	0.3	15	6	65010	
Helium (He)	55	1	2	15	8	65020	
Mercury-Cadmium (Hg - Cd)*	25	1	10	20	8	65060*	
Potassium (K)	10	1	0.04	15	6.5	65070	
Sodium (Na)	15	1	40	15	6.5	65080	
Neon (Ne)	30	1	3.5	15	8	65090	
Thallium (Tl)*	15	1	1.5	8	3	65110*	
Zinc (Zn)	15	1	0.5	15	6	65120*	
Mercury (Hg)*	22 - 44	0.6 - 1	20 - 45	20	3	65130*	

\* These lamps have a quartz envelope for UV transmittance.

**65150** Regulated Spectral Line Power Supply  
**65160** Lamp Mount  
**66275** Z Bracket

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