

Oriel Pencil Style Calibration Lamps



6035 Hg(Ar) Lamp in 6058 Fiber Optic Accessory.

These calibration lamps produce narrow, intense lines from the excitation of various rare gases and metal vapors. They are used for wavelength calibration of spectroscopic instruments such as monochromators, spectrographs, and spectral radiometers. We offer six lamps; choose the lamp or lamps that suit your wavelength range, using Table 1 as a guide. We offer AC and DC power supplies to run these lamps. If output variations are not a concern, and you are only operating one or two line lamps, choose an AC supply. If you are calibrating multichannel detectors or if you are using various lamps, the DC supply is a better choice (the DC supply runs any of the line lamps).

We also offer the following accessories:

- Spectral Calibration Lamp Mounts

These hold one or two calibration lamps at the input slit of an Oriel Monochromator or Spectrograph.

- Fiber Optic Accessory

The 6058 Accessory holds the face of an SMA terminated fiber close to the lamp, to collect a portion of the light output for spectral calibration purposes.

- Rod Mounted Lamp Holder

If you want to hold the lamp in open air, use the 63670 Holder. It holds the lamp atop an optical rod.

- Booklet of Spectra

The 6052 is a booklet of typical spectra of these lamps.

- Filters

We offer filters that fit over the lamp to block a specific wavelength region (see Fig. 1)

- Aperture Shields

These fit over the lamps to limit the radiation area.

- Compact and simple tools for calibrating spectral instruments
- Narrow, discrete UV to IR wavelengths
- Excellent stability

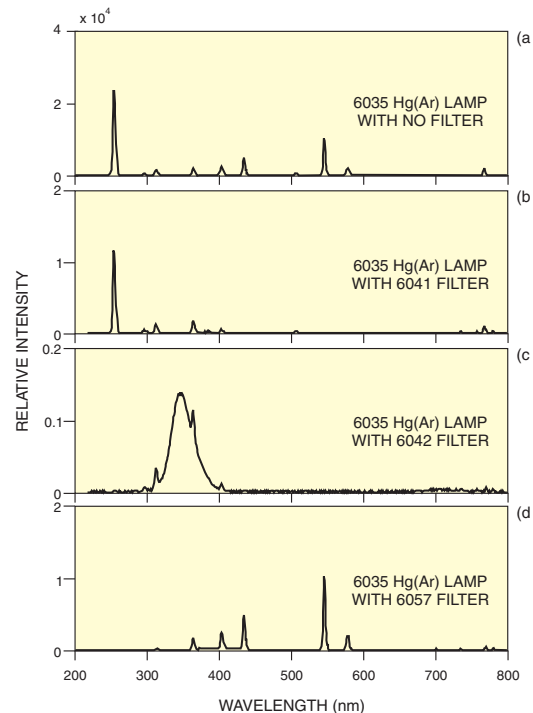


Fig. 1 Relative line intensities of 6035 Lamp with different filters.

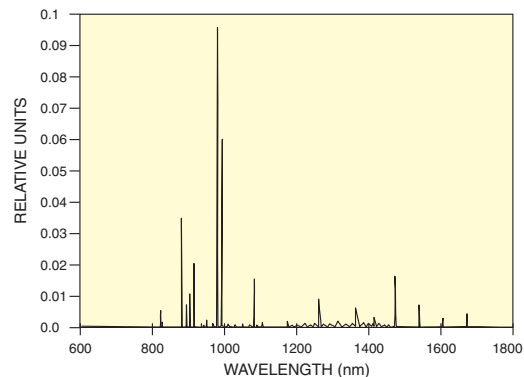


Fig. 2 Output spectrum of 6033 Xenon Lamp, run at 6 mA, measured with MIR8025 FT-IR with CaF_2 beam splitter and InGaAs Detector.

Table 1 Usable Wavelengths of Spectral Calibration Lamps (in nm)

6035 Hg(Ar)	6034 (Hg/Ne)	6033 (Xenon)	6030 (Argon)	6032 (Neon)	6031 (Krypton)	6035 Hg(Ar)	6034 (Hg/Ne)	6033 (Xenon)	6030 (Argon)	6032 (Neon)	6031 (Krypton)
184.9	253.65	418.0	294.3	585.25	427.4			1541.8		826.6	1689.68
187.1	296.73	419.3	415.9	594.48	432.0			1672.8		826.7	1693.58
194.2	302.15	433.1	420.1	607.43	435.5			1732.5		830.0	1816.73
253.65	312.57	439.6	427.7	609.62	457.7			2026.2		836.6	
265.4	313.15 ¹	444.8	476.5	614.31	461.9			2482.4		837.8	
284.8	313.18 ¹	446.2	488.0	616.36	465.9			2626.9		841.7	
302.2	365.02	473.4	696.54	621.73	473.9			2651.0		841.8	
312.57 ¹	404.66	480.7	738.40	626.65	476.6					846.3	
313.15 ¹	435.84	483.0	750.39	630.48	483.2					848.8	
313.18 ¹	546.07	508.1	751.47	633.44	557.0					849.9	
320.8	576.96	529.2	763.51	638.3	587.1					854.5	
326.4	579.07	531.4	772.38 ¹	640.11 ¹	758.74					857.1	
345.2	614.31 [*]	554.0	772.42 ¹	640.22 ¹	760.15					859.1	
365.02	638.30 [*]	541.9	794.82	650.65	769.45					863.5	
404.66	640.11 ^{**}	547.2	801.48	653.29	769.45					864.7	
435.84	640.22 ^{**}	597.7	811.53	659.90 ¹	785.48					865.4	
546.07	650.65 [*]	603.6	826.45	660.29 ¹	805.95					865.6	
576.96	703.24 [*]	605.1	840.82	667.83	810.44					867.9	
579.07	1013.98	609.8	842.46	671.70	811.29					868.2	
615.0	1128.74	659.5	912.3	692.95	819.00					870.4	
1014.0	1357.02 ^{**}	680.5	922.4	703.24	826.32					877.2	
1357.0	1367.35 ^{**}	699.1	965.8	717.39	829.81					878.0	
1692.0	1529.58	823.2	1047.1	724.52	829.81					873.4	
1707.3	1688.15 ^{**}	828.0	1331.3	743.89	850.9					885.4	
1711.0	1692.02 ^{**}	834.7	1336.7	783.9	877.7					920.7	
	1694.20 ^{**}	840.9	1371.8	792.7	975.2					930.1	
	1707.28 ^{**}	881.9	1694.0	793.7	975.2					932.7	
	1710.99 ^{**}	895.2		794.3	1363.4					942.5	
	1732.94 ^{**}	980.0		808.2	1442.7					948.7	
	1813.04 ^{**}	992.3		811.9	1523.9					953.4	
	1970.02 ^{**}	1262.3		812.9	1533.4					1056.2	
		1365.7		813.6	1678.51					1079.8	
		1473.3		825.9	1689.04					1084.5	
										1114.3	

¹ Adjacent lines will remain unresolved on many spectroscopic systems.
^{*} These are neon lines brought out by forced air-cooling.
^{**} These lines are very weak, but forced air-cooling makes them more useful.

Ordering Information

Spectral Calibration Lamps

Model	Lamp Type	Operating Current (mA)	Rated Life* (Hrs)
6035	Hg(Ar)	18, ±5	5000 (@ 18 mA)
6034	Hg(Ne)	18, ±5	500
6030	Argon	10	500
6031	Krypton	10, ±4	1000
6032	Neon	10, ±4	250
6033	Xenon	6, ±3	250

* This data is for AC operation

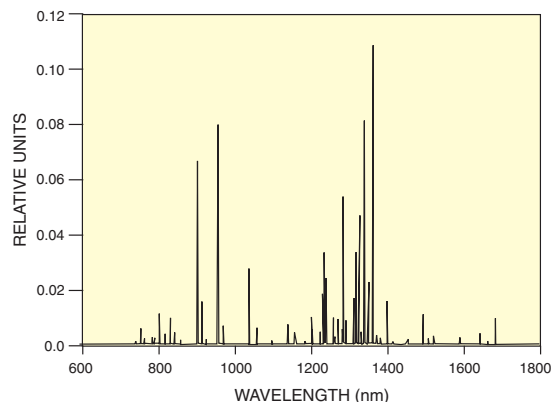


Fig. 3 Output spectrum of 6030 Argon Lamp, run at 10 mA, measured with MIR 8025 FT-IR with CaF₂ beam splitter and InGaAs Detector.

Power Supplies

Type	For These Lamps	Output Current* (mA)	110 V, 60 Hz Model	220 V, 50 Hz Model
AC	Hg(Ar), Hg(Ne)	18	6047	6048
	Xe	6	6043	6044
	Hg(Ar), Ar, Kr, Ne	10	6045	6046
DC	Hg(Ar), Hg(Ne), Ne, Xe, Ar, Kr	6 to 20	6060	6061

* Do not run the lamps at more than the rated operating current; you can damage the phenolic handle

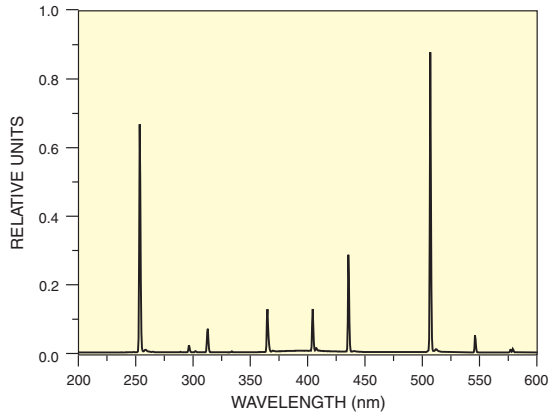


Fig. 4 Output spectrum of 6035 Hg(Ar) Lamp, run at 18 mA, measured with MS257 1/4 m Monochromator with 50 μm slits.

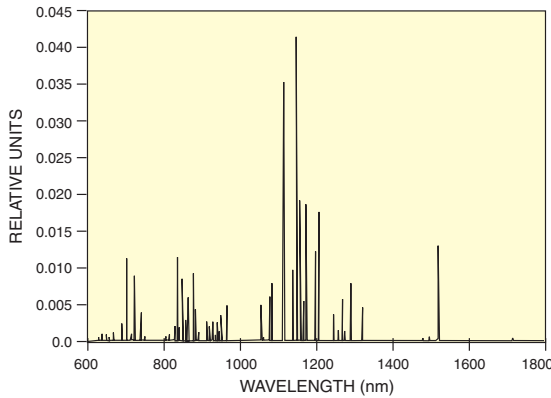


Fig. 5 Output spectrum of 6032 Neon Lamp, run at 6 mA, measured with MIR 8025 FT-IR with CaF₂ beam splitter and InGaAs Detector.

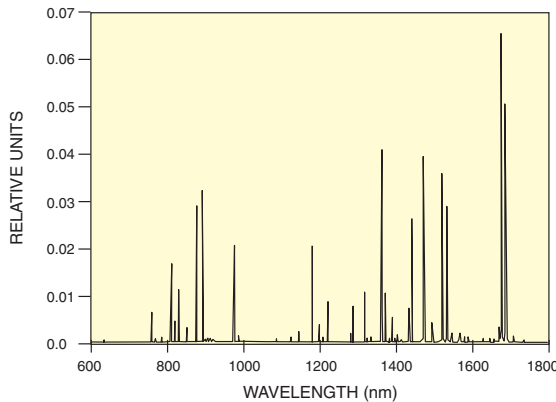


Fig. 6 Output spectrum of 6031 Krypton Lamp, run at 10 mA, measured with MIR 8025 FT-IR with CaF₂ beam splitter and InGaAs Detector.

Lamp Accessories

Model	Description
6052	Booklet of Spectra
6038	Pinhole Shield, 0.040 inch (1 mm) diameter aperture
6039	Small Aperture Shield, 0.313 x 0.375 inch (8x9.5 mm) aperture
6040	Large Aperture Shield, 0.188 x 1.5 inch (4.8x38 mm) aperture
6041	Short Wave Filter
6042	Long Wave Filter
6057	Glass Safety Filter
6058NS	Fiber Optic Accessory, with SMA Adapter (rod not included)
63670	Lamp Holder (1.75 inch long optical rod included)
77251	Spectral Calibration Lamp Mount (Mounts 6031 Lamp to MS125™ Spectrograph)
78117	Dual Spectral Calibration Lamp Mount (holds two lamps on the input of an Oriel Monochromator)

Note: Please check our product web pages for more technical information at www.newport.com.

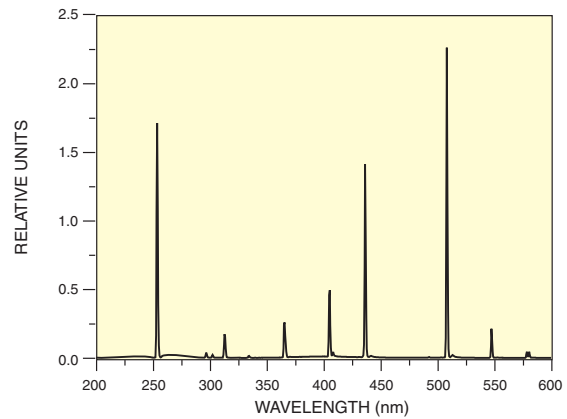


Fig. 7 Output spectrum of 6034 Hg(Ne) Lamp, run at 18 mA, measured with MIR 8025 FT-IR with CaF₂ beam splitter and InGaAs Detector.

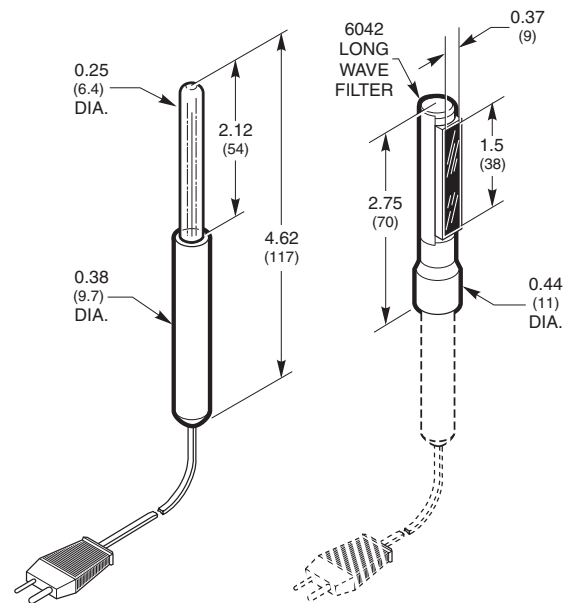


Fig. 8 Dimensional diagram of Pencil Style Calibration Lamps, and 6042 Long Wave Filter.

TECHNICAL REFERENCE
 CALIBRATION SOURCES
 DEUTERIUM SOURCES
 ARC SOURCES
 INCANDESCENT SOURCES
 MONOCHROMATOR AND FIBER ILLUMINATORS
 SOLAR SIMULATORS
 PHOTOLITHOGRAPHY INSTRUMENTS
 ACCESSORIES FOR ORIEL LIGHT SOURCES