

High Intensity, 150W Type, Vacuum UV (from 115nm) Light Source-L1835

The L1314 and L1835 are water-cooled 150W deuterium lamps that deliver a radiant intensity 3 to 4 times higher than standard 30W deuterium lamps. The lamp bulb is enclosed in a cylindrical metal jacket specially designed for water cooling. The L1314 has a synthetic silica window for an efficient emission of UV radiation, and the L1835 employs a MgF₂ (magnesium fluoride) window which even allows emitting vacuum UV radiation. Select the lamp that matches wavelengths required by your application. Vacuum flanges are also available as options in the L1835 for easy mounting to a vacuum chamber.

APPLICATIONS

- Spectrophotometer, Fluorescence Spectrophotometer
- Removal of static electricity from the semiconductor wafer
- PID (Photo Ionization Detector)
- Solar Simulator
- Optical CVD
- Optical Chemical Reaction
- Excitation Light Source

GENERAL

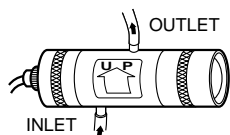
Parameter	L1314	L1835	Unit
Spectral Distribution	160 to 400	115 to 400	nm
Window Material	Synthetic silica	MgF ₂	—
Aperture Size	2.5		mm dia.
Cooling Method	Water cooling ^(A)		—
Weight (Approx.)	720	950	g

RECOMMENDED OPERATING CONDITION / CHARACTERISTICS(at 25°C)

Parameter		Value	Unit
Warm-up	Heater Voltage	10 ± 1	Vdc, ac
	Heater Current	1.2	Adc, ac
	Warm-up Time	20	s
Operation	Heater Voltage	5	Vdc
	Heater Current	1	Adc
Discharge Starting Voltage		500	Vdc Min.
Anode Current		1.2	A
Tube Drop Voltage		120 ± 10	Vdc
Output Stability	Drift	±1.0	%/h Max.
	Fluctuation	0.5	%p-p Max.
Water Flow Rate		1.5	L/min
Estimated Life		300	h

NOTE ^(A) Types L1314 and L1835 cannot be operated without cooling water passing through them. Care should be taken that the lamp is positioned properly so that the two nozzles are aligned vertically, with the water flowing into the jacket at the bottom nozzle and leaving the jacket at the top nozzle. If this arrangement is not observed, there is a danger of damaging the lamp due to overheating.

Flow of cooling water



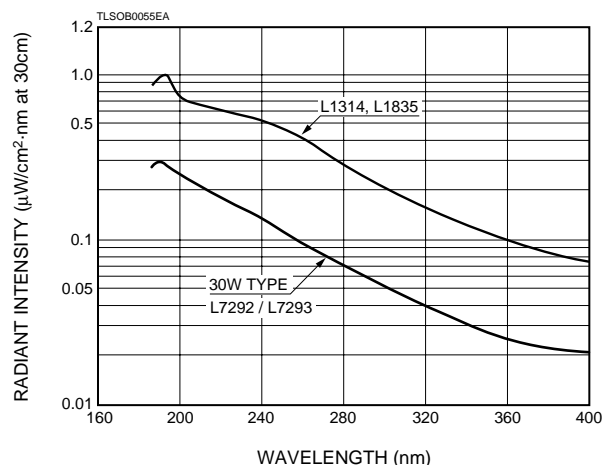
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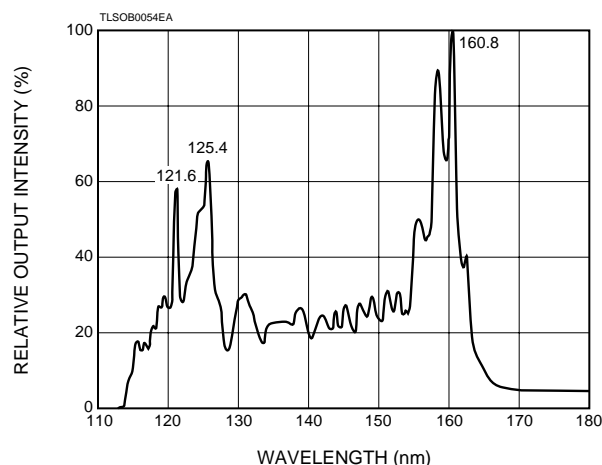
▲ Left: L1835 Right: L1314

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Figure 1: Spectral Distribution (UV range)

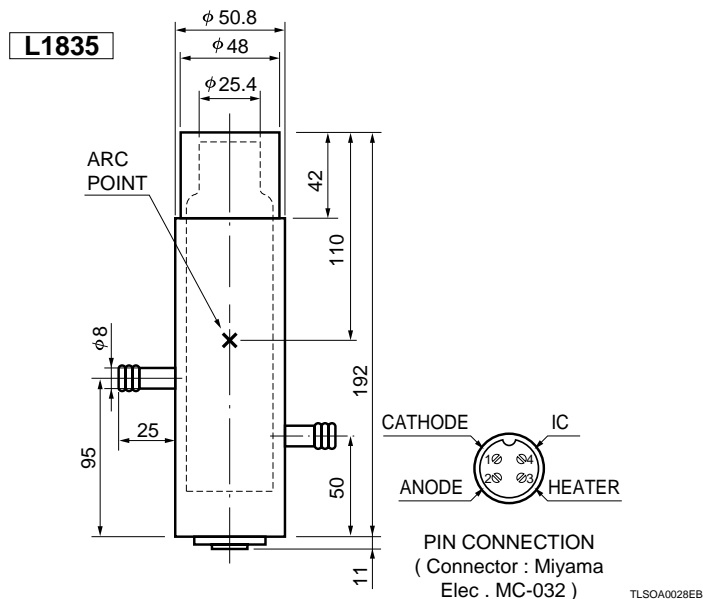
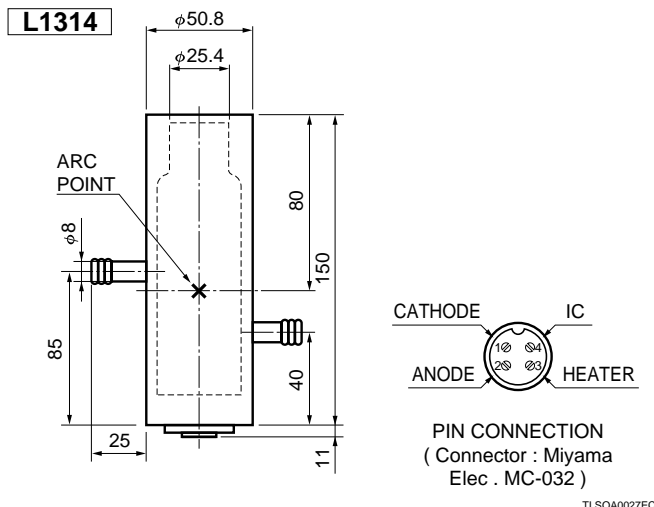


L1835: Vacuum UV range



WATER-COOLED TYPE DEUTERIUM LAMPS L1314, 1835

Figure 2: Dimensional Outline



OPTION

● POWER SUPPLY C3150

The C3150 power supply is specifically designed for water-cooled 150W lamps. Various devices to provide stable light output are built into this power supply. Protective functions such as a water flow rate monitor and lamp lighting monitor also ensure safe and correct operation.

CHARACTERISTICS

Anode output

Parameter		Description/Value
Output Current		1.2Adc
Output Voltage	Normal Operation	120 ± 25Vdc
	No Load	250Vdc
Trigger Voltage		600Vp
Output Fluctuation	Input Fluctuation (±10%)	±0.1% Max.
	Load Fluctuation (nomal operation range)	±0.1% Max.
	Drift	±0.1%/h Max.
	Ripple	0.1%p-p Max.
Over-load Protection		1.5A Fuse

● VACUUM FLANGE E3444 SERIES (for L1835)

Since the L1835 vacuum UV deuterium lamp is often used while installed onto a vacuum chamber, Hamamatsu provides the E3444 series vacuum flanges specially designed for this purpose. Among these, the E3444-02 has a flange conforming to ICF114 specifications, allowing easy installation onto most vacuum chamber ports. The E3444 series also includes a general-purpose "N" flange and JIS (Japanese Industrial Standards) specification flange. Select the desired type depending on the vacuum equipment to be used.

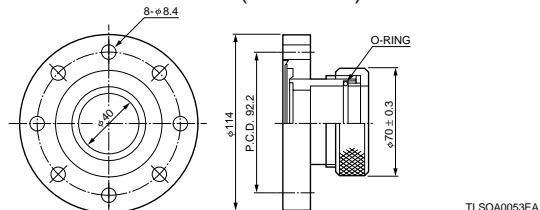
SPECIFICATIONS

Type No.	Sealing Method	Flange	Mount Flange	Sealing Force Retention
E3444	O-Ring	Regular	—	1.33 × 10 ⁻⁴ Pa L/s or less (1 × 10 ⁻⁶ Torr L/s)
E3444-01		JIS VF50	JIS VF50	
E3444-02		ICF114	ICF114	

Filament (heater) output

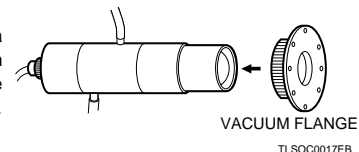
Parameter	Description/Value
Output Voltage for Warm-up	10Vdc 1.2A
Warm-up Time	Approx. 30 s
Output Voltage for Operation	5 ± 0.5Vdc 1.0A
Input Fluctuation (±10%)	±1.0% or less
Over-load Protection	2A slow-blow or by electronic circuit
Input Source Voltage	AC100/118/230V ±10%
Apparent Power	Approx. 330VA
Operating Ambient temperature	0 to 40°C
Performance Guaranteed Temperature	+5 to +35°C
Cooling Method	Forced air cooling
Cooling Water Detection Method	Flow rate switch (1.5 L/min)
Protective Functions (LED on when malfunction)	Less cooling water, excessive temperature in the C3150, short circuit, disconnection
External Dimensions (mm)	215(W) × 125(H) × 265(D)
Weight	Approx. 10kg

Dimensional Outline E3444-02 (Unit: mm)



Attachment Reference

Since the L1835 is often used inside a vacuum chamber, a special vacuum flange is provided. It is designed to be simply inserted over the lamp housing.



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