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SCIENCETECH
Making Light Work Better Since 1985

Applications

- High Temperature Solar Thermal Research (e.g. Heat transfer and energy storage in molten salts research, etc.)
- Concentrated solar power and liquid-based solar receivers research
- Solar fuel research (e.g. solar hydrogen)
- Solar syngas, high power solar pyrolysis, high temperature gasification
- Photosynthetic irradiance
- Photo biological research
- Material testing
- Space applications
- Semiconductor industry
- Defense applications

Features

- Turn-key operation
- Customization available
- Touchscreen and software control
- Safety interlocks

High & Ultra-Powered Light Sources:
Xenon Arc Lamp 2.5 - 6.5 kW

MADE IN CANADA
FABRIQUÉ AU CANADA

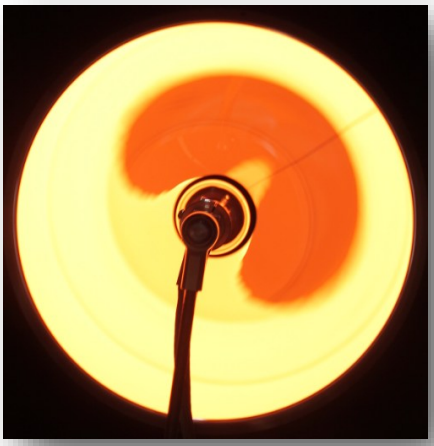
Version 4.6 2026-07-22

Ultra Powered Xenon Arc Lamp Housings

OVERVIEW

The HPLH and UPLH-series lamp housing feature modular lamp house designs, allowing you to customize depending on the required application. Standard offerings include elliptical (UPLH and HPLH) and spherical (HPLH) reflectors, but the lamp house can be easily customized to meet other needs. The Sciencetech HPLH-series is designed for 2500 W Xenon short arc lamps, while the UPLH-series lamp housing is designed for 6500 W Xenon short arc lamps.

The HPLH and UPLH-series lamp housings includes a forced air -cooled fan mounted on the top and bottom panel of the lamp house (when in horizontal operation). The system comes with a glass output window.



Configuration—Designing your HPLH or UPLH

	STEP 1	STEP 2	STEP 3
	SELECT THE OPTICAL COLLECTION	SELECT THE WINDOW MATERIAL	SELECT POWER SUPPLY VOLTAGE
	↓	↓	↓

Lamp House Series	Optical Collection	Window Material	Power Supply Voltage
UPLH-XE6500	**-EF** - Extra-Fast Elliptical	Annealed Safety Glass	200-240 VAC
	-E - Elliptical reflector, F/2.7	Fused Quartz	380-440 VAC
			380-480 VAC
HPLH-XE2500	**-E -** Elliptical reflector	Annealed Safety Glass	200-240 VAC
	-S - Spherical reflector	Fused Quartz	200-240 VAC

Selection Information

-E or -EF: Elliptical reflectors create a focused point of high-irradiance light.

-S: Spherical reflectors, when combined with the required output optics, create a collimated beam or focused spot (depending on optics chosen).

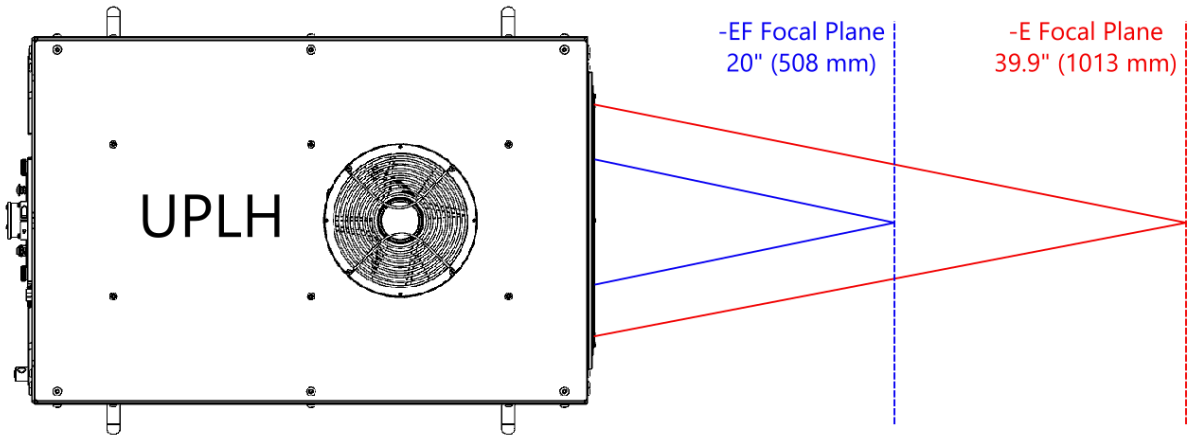
The HPLH and UPLH-series high-powered xenon arc lamps can be operated in the horizontal or vertical orientation. For the UPLH, feet are required for horizontal orientation, and a stand or mounting is required for vertical operation. The UPLH is configured for horizontal operation by default. Vertical operation will require the addition of a downward-facing stand (see Accessories page). By default, the HPLH-E is configured for horizontal operation, and the HPLH-S is configured for vertical operation.

Ultra Powered Xenon Arc Lamp Housings

OPTICAL COLLECTION

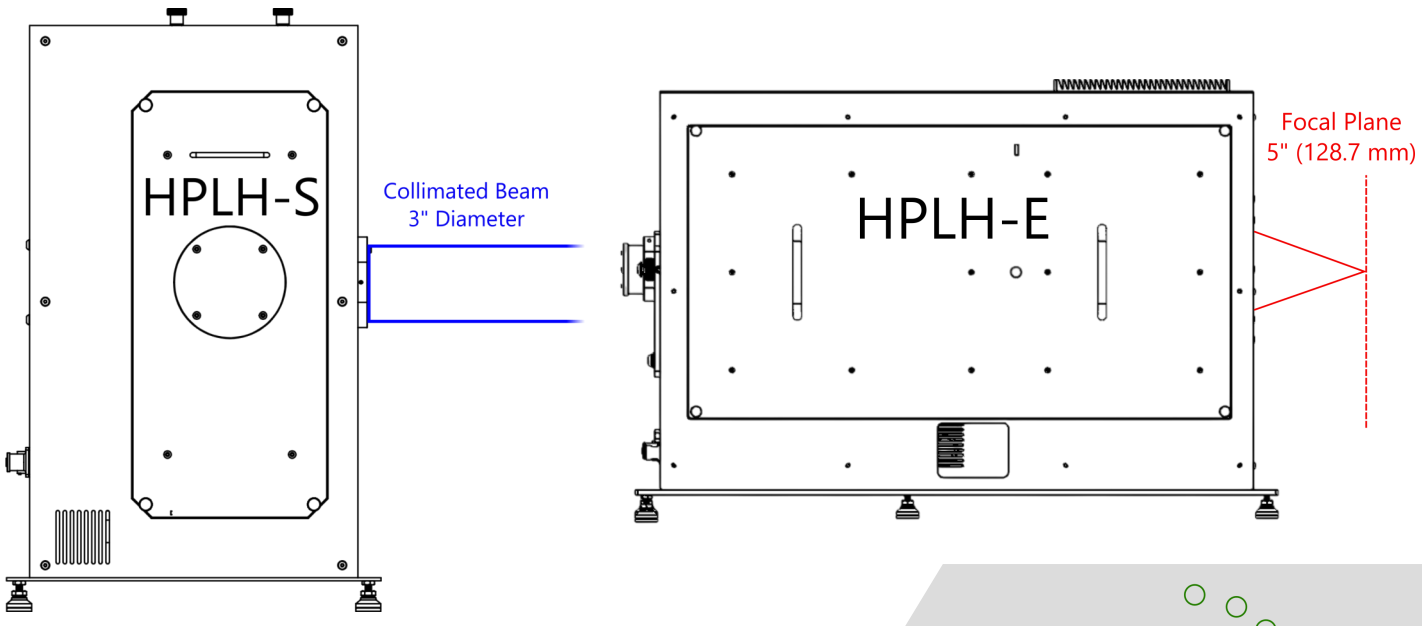
For the UPLH, there are two options when choosing the reflector shape: Elliptical (**E**) or Extra-fast Elliptical (**EF**):

- The E reflector has an F/# of 2.7, and has a longer focal length of the two options at ~40". It is ideal when adding additional filters outside of the UPLH housing, or when more room is required to work around the focal point.
- The EF reflector has an F/# of 2.4, and has half the focal length of the E variant. It shortens the overall length required to run the system, but also collects less overall light from the lamp.



For the HPLH, there are two options when choosing the reflector shape: Elliptical (**E**) or Spherical (**S**):

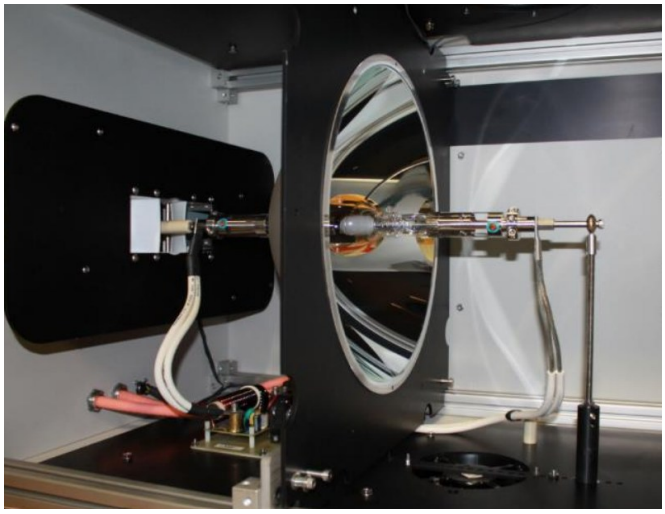
- The E reflector has an F/# of 1.5, and results in a focal plane at ~5" from the front surface of the HPLH-E housing.
- The S back-reflector needs to be configured with additional lenses to collimate or focus the output beam. With the collimation optics the beam is ~3" in diameter.



Ultra Powered Xenon Arc Lamp Housings

SPECIFICATIONS

Model	UPLH-XE6500			HPLH-XE2500	
				S - Spherical	E - Elliptical
Lamp Type	Xenon Short Arc (6.5 kW)			Xenon Short Arc (2.5 kW)	
Optics	Elliptical Reflector			Spherical Reflector	Elliptical Reflector
	Protected Aluminum, Al + SiO_2[1]				
F/#	By reflector selection F/2.4 (EF), F/2.7 (E)			By optics selection • Focused optics: F/3[2] • Collimated optics: collimated	F/1.5[2]
Window Material	By window material selection Annealed Safety Glass / Fused Quartz			Fused Quartz	
Dimensions	See DIMENSIONS pages				
Weight	Lamp House - 65 kg Power Supply (240 or 440 V) - 29 kg Power Supply (480 V) - 27 kg			Lamp House - 20 kg Power Supply - 18 kg	Lamp House - 51 kg Power Supply - 18 kg
Compatible Power Supply Model	PS-XE6500-A-T-240 (150-9340)	PS-XE6500-A-T-440 (150-9340)	PS-XE6500-A-T-480 (150-9341)	PS-XE3000-A-T (150-9330)	
Power Supply Electrical Requirements	200-240 VAC, 50/60 Hz, 24 A, 3P+N+G	380-440 VAC, 50/60 Hz, 12.5 A, 3P+N+G	380-480 VAC, 50/60 Hz, 16.8 A, 3P+G	200-240 VAC, 50/60 Hz, 20 A, 2P+G	



[1] Other coating options available, contact a Sciencetech Technical Specialist for more options.

[2] Other F/# options available, please contact Sciencetech for more information and options.

Our most popular offering is the UPLH-EF model which includes an F/2.4 reflector for very high-power over a small area at the focus plane of the system.

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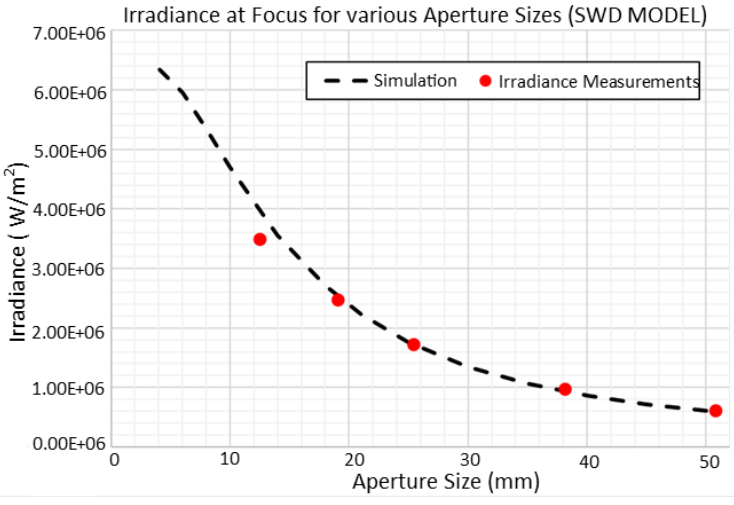
Ultra Powered Xenon Arc Lamp Housings

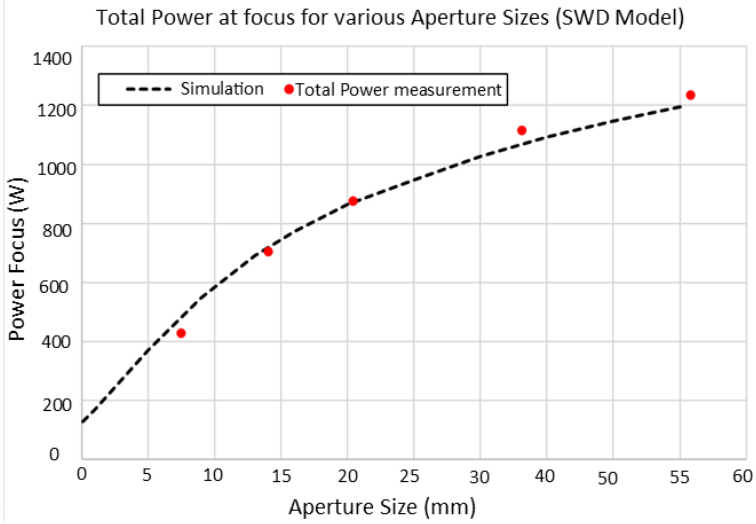
PERFORMANCE (-EF)

The UPLH-XE6500-EF with a 6500 W xenon arc lamp was modeled in FRED (optical modelling software) for power over various areas at the focal plane. Measurements of the system were then taken to confirm the optical modelling results and are shown below.

The graph below shows the irradiance vs diameter in mm at the focus plane. This shows how the irradiance increases for smaller sized apertures at the focus plane.



The graph below shows the total power vs diameter in mm at the focus plane. This shows how the total power increases for larger sized apertures.

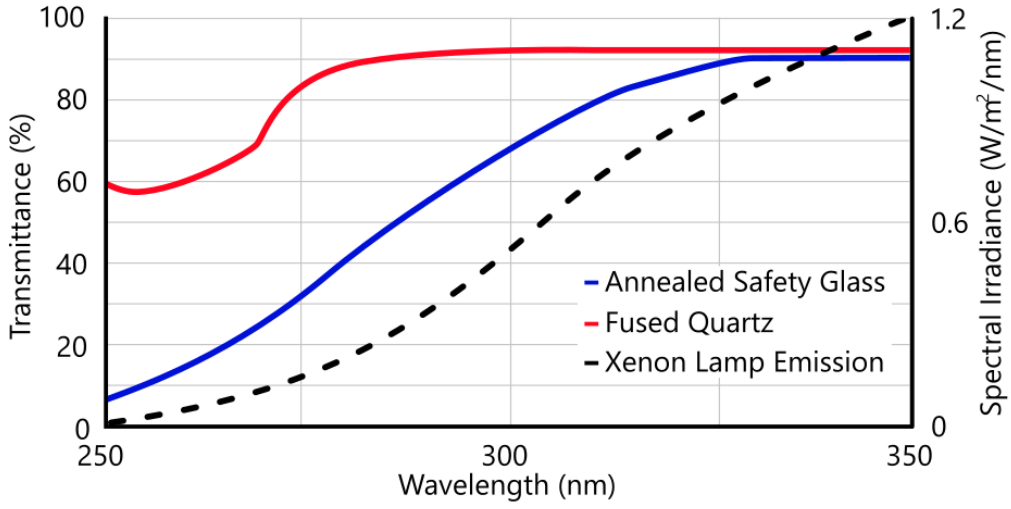


WINDOW MATERIAL

There are two options when choosing the window material at the end of the UPLH housing: annealed safety glass or fused quartz.

- Annealed safety glass blocks a larger percentage of UV radiation emitted by the lamp, and is the safer option for operators when high UV transmittance is not required.
- Fused quartz allows the passage of much more UV radiation between 200-320 nm.

Example transmission spectra of annealed safety glass and fused quartz alongside emission spectrum of Xenon Lamp



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Ultra Powered Xenon Arc Lamp Housings

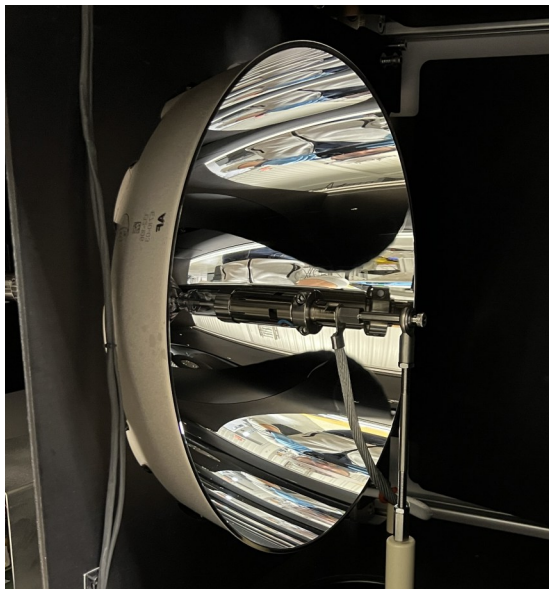
ACCESSORIES

To cater to specific requirements we have no standard accessories. The following list details some of the possible custom accessories we can add-on to the UPLH:

- Custom reflector
- Stands
- Exhaust venting
- Beam turning mirrors
- Homogenizing Optics (see SLP brochure)
- And more, just let us know your requirements!

Various custom reflectors, coatings, and optics are available for the UPLH and can be customized to meet specific requirements.

Model	Part Number	Description
DFS-HPLH	Contact Us	Downward-facing stand to mount HPLH-series lamp house.
DFS-UPLH	100-8215	Downward-facing stand to mount UPLH-series lamp house.
-CUSTOM REFL	Contact Us	Custom reflector selection, some other reflector options are available.
-CUSTOM COAT	Contact Us	Custom reflector coating. UV-enhanced aluminum, gold, silver or various dichroic coatings are available.
-CUSTOM OPTIC	Contact Us	Customized light guiding systems can be coupled to the UPLH series lamp house. For lamps with high power we use a fused silica light pipe polished to perfection. Imaging optics are used to provide high uniformity and can also provide high collimation.



A custom reflector installed in a UPLH

For information on spectral filtering, please see Sciencetech's Bandpass Filters brochure or contact your Sciencetech technical sales representative.

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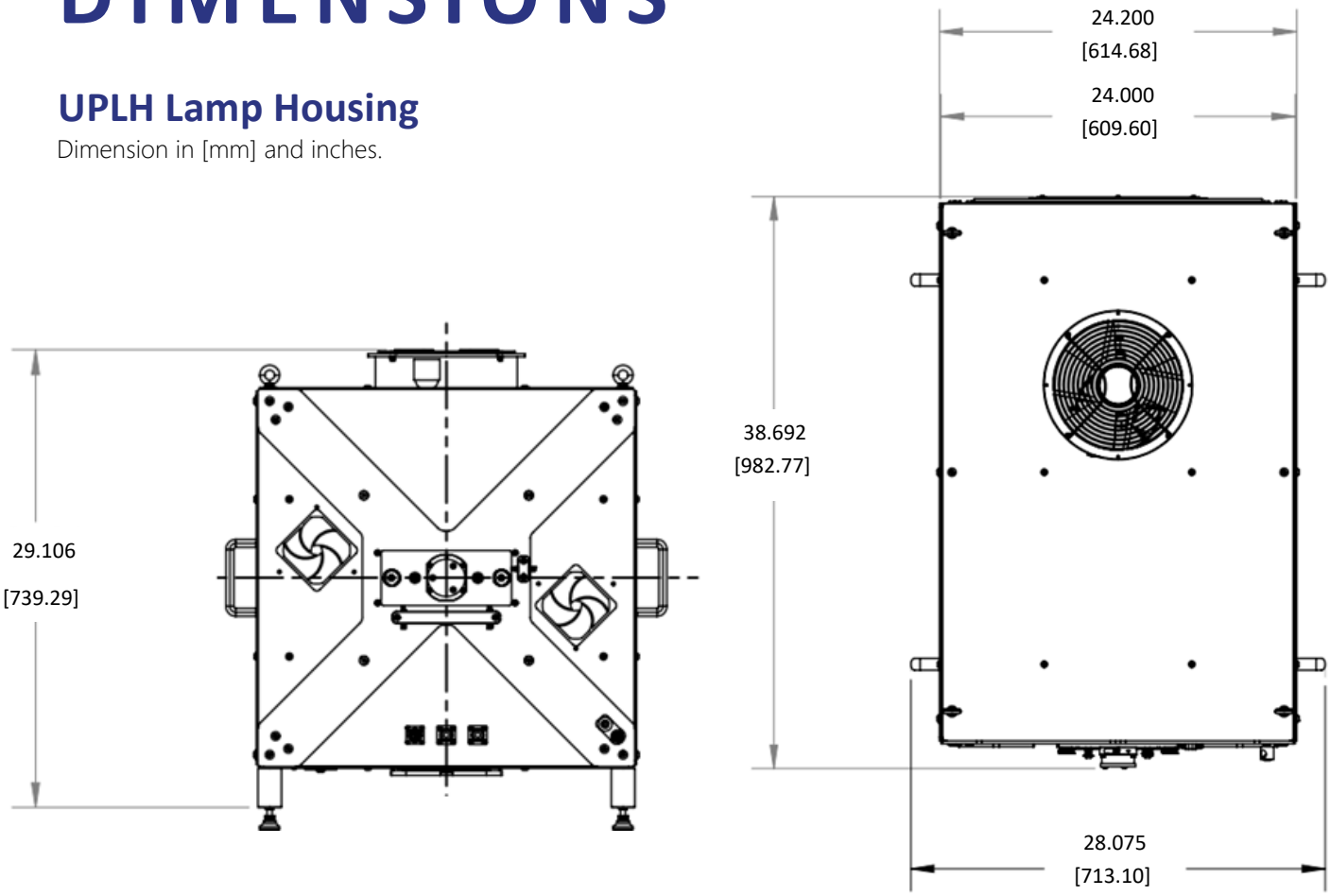
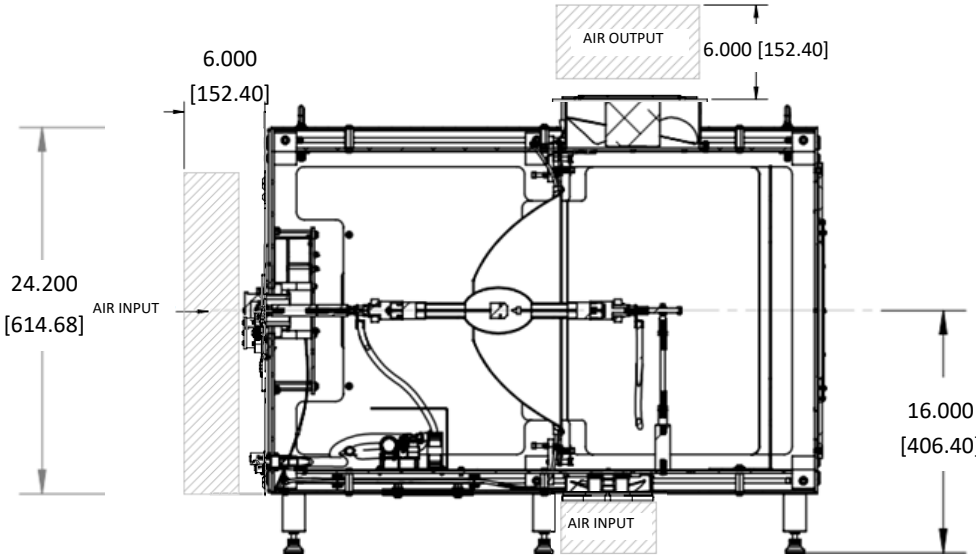
Ultra Powered Xenon Arc Lamp Housings

DIMENSIONS

UPLH Lamp Housing

Dimension in [mm] and inches.





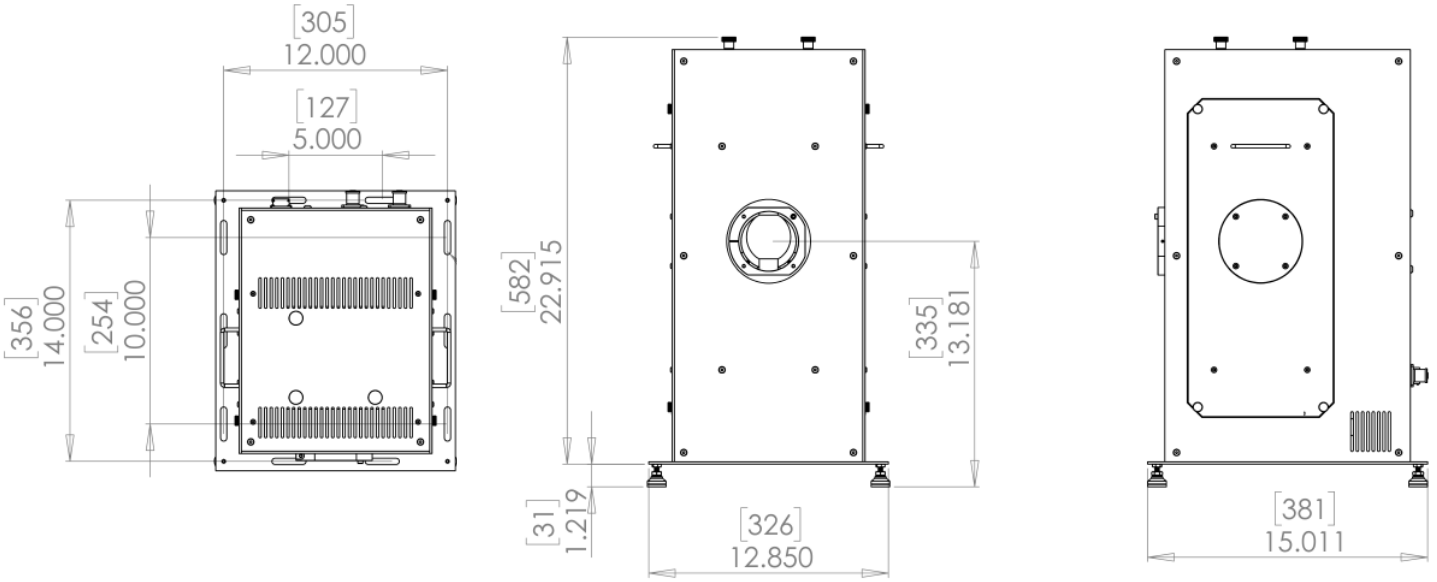
Keep all vents clear 6" [152 mm]

Ultra Powered Xenon Arc Lamp Housings

DIMENSIONS

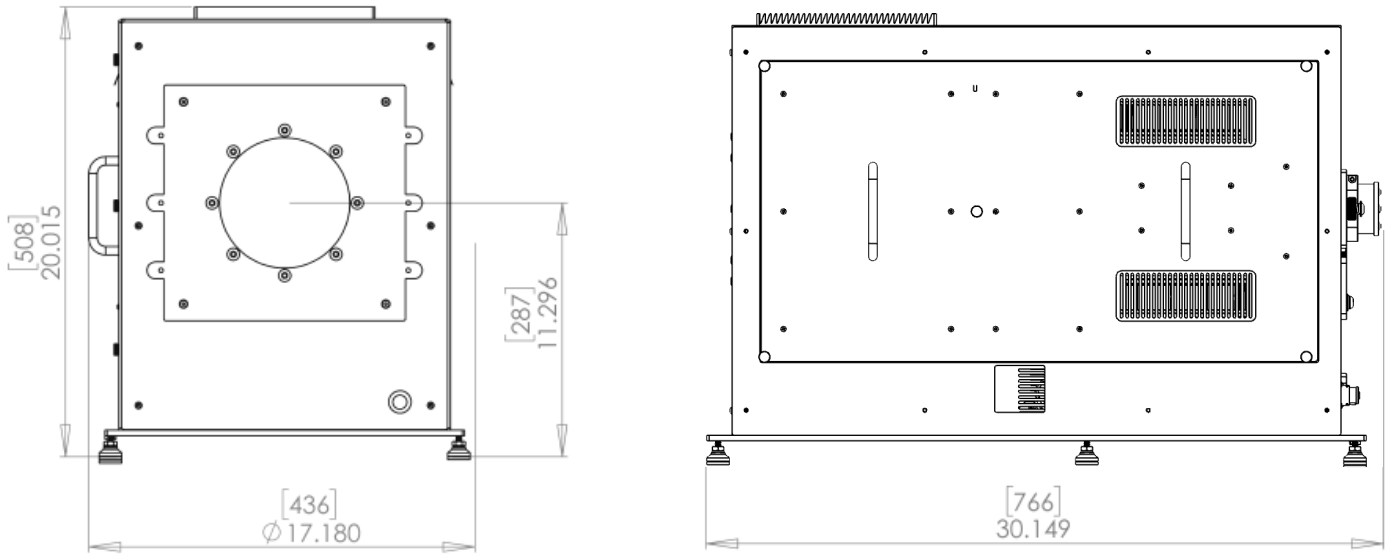
HPLH-S Lamp Housing

Dimension in [mm] and inches.



HPLH-E Lamp Housing

Dimension in [mm] and inches.



Keep all vents clear 6" [152 mm]

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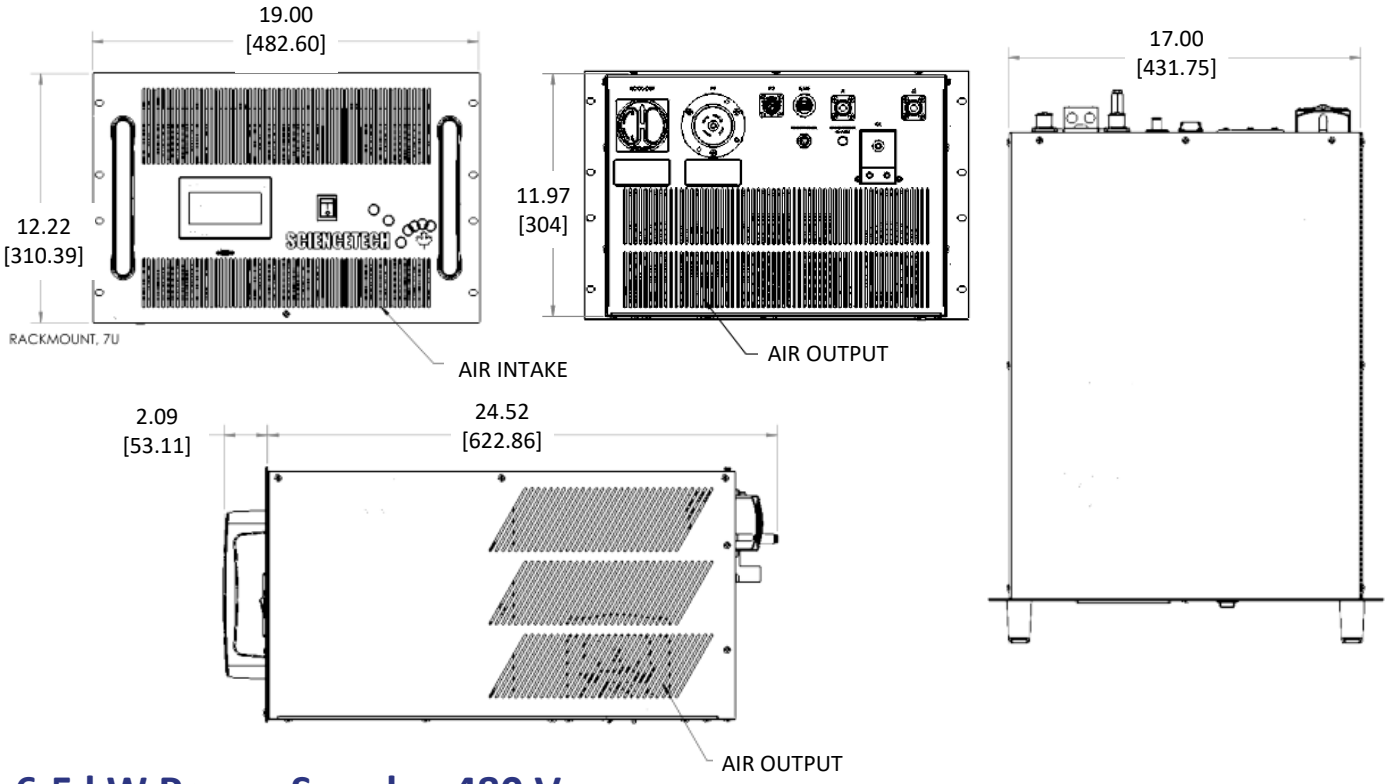
Ultra Powered Xenon Arc Lamp Housings

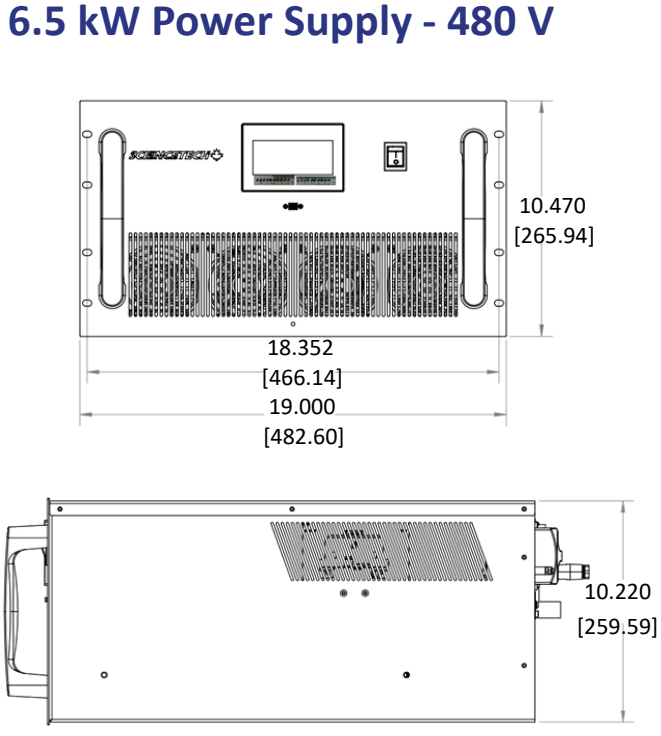
DIMENSIONS

6.5 kW Power Supply - 240 or 440 V

Dimension in [mm] and inches.



6.5 kW Power Supply - 480 V



Keep all vents clear 6" [152 mm]

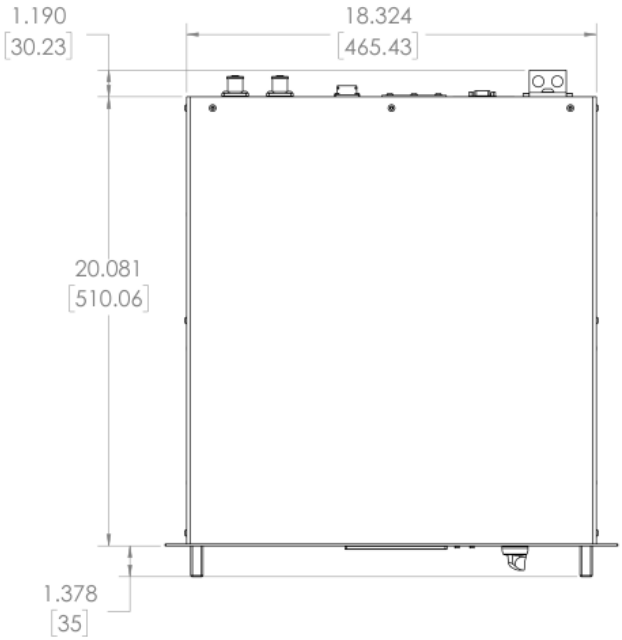
SCIENCETECH

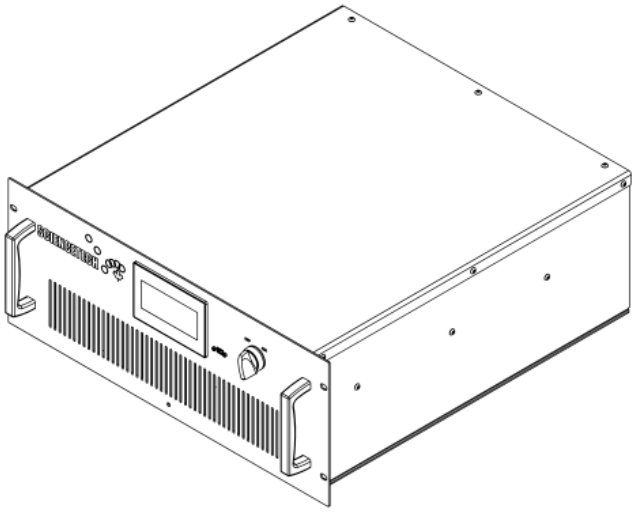
Ultra Powered Xenon Arc Lamp Housings

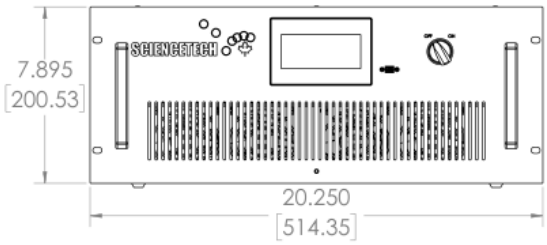
DIMENSIONS

3 kW Power Supply - 240 V

Dimension in [mm] and inches.







KEEP ALL VENTS CLEAR 4"[100mm]

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Ultra Powered Xenon Arc Lamp Housings

ORDERING INFORMATION

Model	Part Number	Description
Packages		
UPLH-XE6500	100-9252	Ultra Powered Xenon Arc Lamp Housing, 6.5 kW, with power supply
HPLH-S-XE2500-COL-3-FS-F1	100-9150	High Powered Xenon Arc Lamp Housing, Spherical Back Reflector, Collimated output, 2.5 kW, with power supply
HPLH-S-XE2500-FOC-3-FS-F3	100-9151	High Powered Xenon Arc Lamp Housing, Spherical Back Reflector, Focused output, 2.5 kW, with power supply
Accessories		
DFS-UPLH	100-8215	Downward facing stand to mount UPLH series lamp house.
-CUSTOM REFL	Contact Us	Custom reflector selection, some other reflector options are available.
-CUSTOM COAT	Contact Us	Custom reflector coating. UV Enhanced Aluminum, Gold, Silver or various Dichroic coatings are available.
-CUSTOM OPTIC	Contact Us	Customized light guiding systems can be coupled to the UPLH series lamp house. For lamps with high power we use a fused silica light pipe polished to perfection. Imaging optics are used to provide high uniformity and can also provide high collimation.
Spare/Replacement Components		
UPLH-E-XE6500	100-9221	Ultra Powered Xenon Arc Lamp Housing, Elliptical Reflector, power supply not included.
UPLH-EF-XE6500	100-9220	Ultra Powered Xenon Arc Lamp Housing, Extra-Fast Elliptical Reflector, power supply not included.
PS-XE6500-A-T	150-9340	6.5 kW Xenon Power Supply, 240 or 440 V
PS-XE6500-A-T-480	150-9341	6.5 kW Xenon Power Supply, 480 V
HPLH-S-XE2500	100-9075	High Powered Xenon Arc Lamp Housing, Spherical Reflector, 2.5 kW, power supply not included
HPLH-E-XE2500	100-9100	High Powered Xenon Arc Lamp Housing, Elliptical Reflector, 2.5 kW, power supply not included
PS-XE3000-A-T	150-9330	3.0 kW Xenon Power Supply, 240 V
XE6500	650-0104	Lamp Bulb, 6500 W Xenon Short Arc, Ozone Free
XE2500	650-0102	Lamp Bulb, 2500 W Xenon Short Arc, Ozone Free