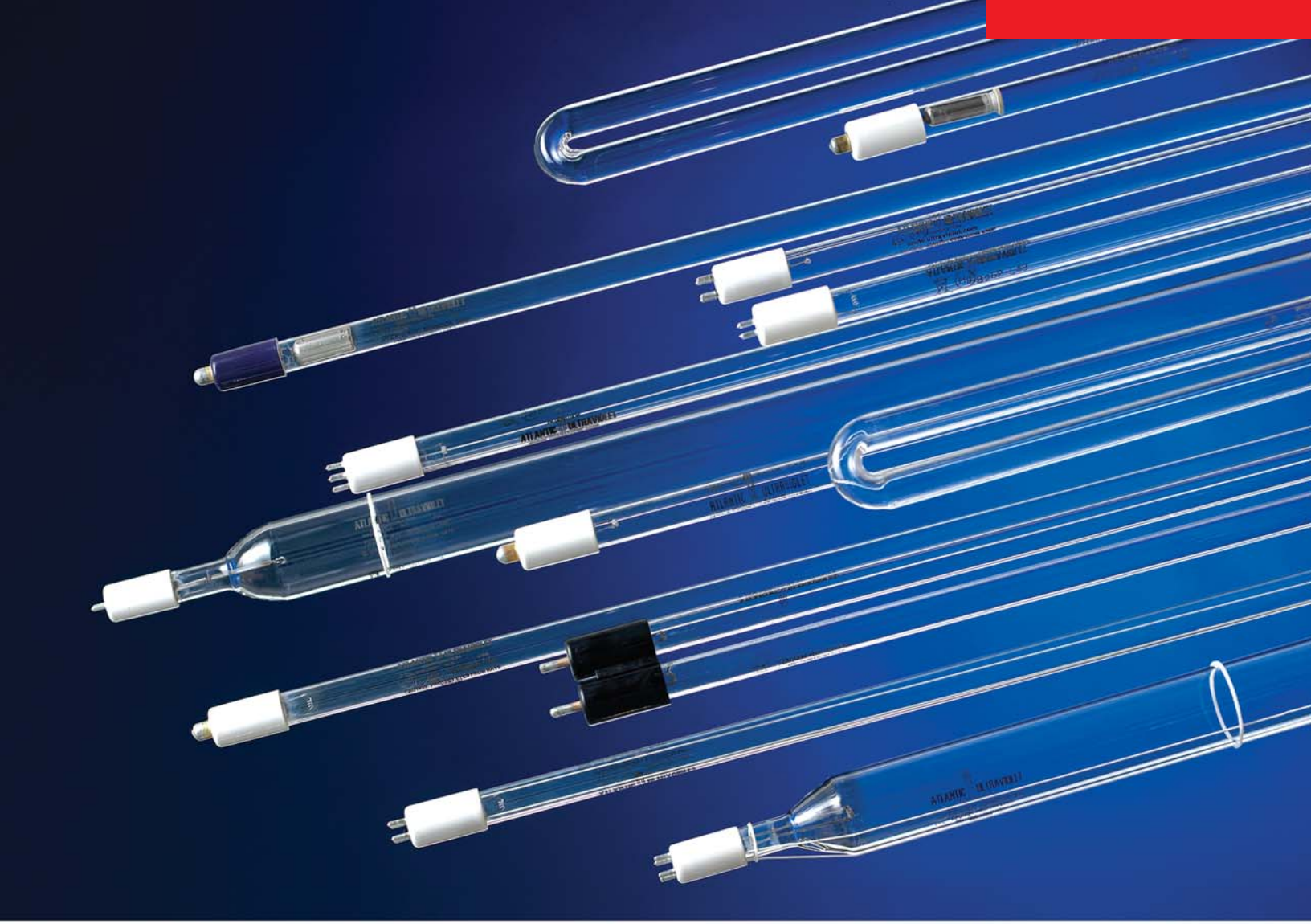


GERMICIDAL ULTRAVIOLET LAMPS

ATLANTIC ULTRAVIOLET CORPORATION®

STER-L-RAY™

Since 1963

The Standard of Excellence in Ultraviolet

Manufacturers / Engineers / Sales / Services

ABOUT US

Since 1963, Atlantic Ultraviolet Corporation has pioneered the discovery and development of beneficial uses of ultraviolet energy. Over the years these efforts have led to the development of valuable, cost effective and environmentally sound techniques and products now known and respected throughout the world.

Atlantic Ultraviolet's application specialists assist customers in the selection of germicidal lamps and equipment. Their specialized knowledge is a valuable resource in formulating effective and cost-conscious ultraviolet solutions. Extensive inventories and a dedicated staff enable Atlantic Ultraviolet to fulfill its commitment to provide fast deliveries and responsive customer service.

Continuing research and development maintains Atlantic Ultraviolet Corporation's leadership in applied ultraviolet technology. Exacting procedures and stringent quality control measures insure products of consistently high quality. Engineering studies of product design and materials are conducted with an eye to enhancing product usefulness and value. Existing and potential new products are subjected to rigorous test protocols in order to insure the highest standards of performance and reliability.

Production methods and equipment are continually reviewed and, where possible, upgraded to improve productivity and reduce cost. Products include ultraviolet water purifiers, ultraviolet phototherapy equipment, germicidal ultraviolet lamps, ultraviolet product sanitation and disinfection equipment, room air sanitizers, air duct disinfection fixtures and accessories (for application in HVAC systems), ozone generators and equipment, ultraviolet "blacklight" lamps and equipment (suitable for fluorescent analysis, inspection and display, etc.) and ultraviolet photochemical reactors.

Wavelength

The nanometer (one billionth of a meter) is a unit of length used to describe ultraviolet wavelengths. Approximately 95% of the ultraviolet energy emitted from ***STER-L-RAY***™ germicidal lamps is at the mercury resonance wavelength of 254 nanometers. This wavelength is in the region of maximum germicidal effectiveness and is highly lethal to virus, bacteria, protozoa and mold.

Ozone Producing Lamps

Ozone (O_3) is a highly reactive form of oxygen and is useful in water purification, as a deodorizer and as a cleaning agent. Ultraviolet wavelengths shorter than 200 nanometers are capable of producing ozone from Oxygen (O_2) in the air.

STER-L-RAY™ ozone lamps, in addition to emitting germicidal ultraviolet output at 254 nanometer wavelength, also emit ozone producing rays at 185 nanometer wavelength.

Because it is necessary to avoid exposing personnel to high concentrations of ozone, the use of ozone lamps is limited to applications in which ozone concentration will not exceed .05 parts per million in occupied spaces.

STER-L-RAY™ ozone producing lamps are available in slimline, cold cathode, high output, high intensity, enhanced output and preheat types.

U-Shaped Lamps

U-shaped lamps are the ideal choice for applications that require more intense ultraviolet radiation in a limited space. ***STER-L-RAY***™ slimline and cold cathode lamps are available in U-shaped configuration. Available in ozone producing and non-ozone producing versions.

Slimline Germicidal Lamps

STER-L-RAY™ slimline germicidal lamps are instant starting and utilize a coil filament on each end which operates hot. Lamp life is governed by the life of the electrodes and is affected by the frequency of starting. ***STER-L-RAY***™ slimline germicidal lamps are well suited to applications requiring high ultraviolet intensity such as water sterilization, air purification in duct systems and conveyorized product disinfection. Available in ozone producing and non-ozone producing versions.

Preheat Germicidal Lamps

STER-L-RAY™ preheat germicidal lamps are operated by a preheat start circuit that employs a relatively compact and economical ballast. The preheat circuit requires four electrical connections per lamp and a slight to moderate delay is needed to start the lamp. Some modern electronic ballasts are capable of instant starting a preheat lamp. Available in ozone producing and non-ozone producing versions.

GERMICIDAL ULTRAVIOLET LAMPS

STER-L-RAY™ germicidal lamps are short wave low pressure mercury tubes that produce ultraviolet wavelengths that are lethal to microorganisms in the air, on surfaces and in water. Germicidal lamps (sometimes also referred to as UVC lamps) should not be confused with sunlamps or blacklight lamps, for while these are also ultraviolet lamps, the ultraviolet produced is of longer wavelength and is not useful for germicidal applications.

Cold Cathode Germicidal Lamps

STER-L-RAY™ cold cathode germicidal lamps are instant starting and utilize a large cylindrical cathode instead of a tungsten filament. Due to this construction, the lamp is not adversely affected by frequent starting and the life is considerably in excess of other lamp types. Cold cathode germicidal lamps have favorable operating characteristics at reduced temperatures. They are, therefore, widely used in walk-in refrigerators and holding rooms.

STER-L-RAY™ cold cathode germicidal lamps are well suited to disinfection of air and surfaces of unoccupied areas due to their long life and low depreciation. Cold cathode germicidal lamps are also employed in applications where frequent starting is a requirement. Available in ozone producing and non-ozone producing versions.

GERMICIDAL ULTRAVIOLET LAMPS

High Output Germicidal Lamps

STER-L-RAY™ high output (HO) germicidal lamps are similar in size and shape to conventional germicidal lamps but are capable of operating at higher input power and current. Atlantic Ultraviolet's Surelite™ ballasts have been extensively tested with ***STER-L-RAY***™ high output (HO) lamps and are strongly recommended to achieve the best performance and longest lamp life.

STER-L-RAY™ HO germicidal lamps are widely used in forced air duct systems and water disinfections applications. HO ozone producing lamps are often found in odor control and photochemical applications.

Enhanced Output™ Germicidal Lamps

STER-L-RAY™ Enhanced Output™ (amalgam) lamps provide germicidal ultraviolet output three or more times that of conventional germicidal lamps of similar length without sacrificing efficiency or lamp life. ***STER-L-RAY***™ Enhanced Output™ (amalgam) lamps are the highest expression of ultraviolet lamp technology and as such are the subject of ongoing technical development and improvement. Custom and proprietary designs are available to satisfy specialized needs. A complete range of Surelite™ high efficiency electronic ballasts are available to provide superior and reliable performance of ***STER-L-RAY***™ Enhanced Output™ ultraviolet lamps. Available in ozone producing and non-ozone producing versions.

High Intensity Germicidal Lamps

STER-L-RAY™ high intensity germicidal lamps are manufactured with a unique structure and large diameter quartz envelope which translates to more than twice the amount of ultraviolet output when compared to standard germicidal lamps of the same length. Custom designed lengths can also be supplied. Available in ozone producing and non-ozone producing versions.

SLIMLINE GERMICIDAL LAMPS

Lamp Description		Length (mm) Base Face to Base Face	Lamps Watts (I)	Approx. Lamp Current mA	UV Output Total Watts (2)	UV Output Microwatts at 1 Meter (3)	Ozone Output (if applicable) (4)	Rated Effective Hours
Ozone Free	Ozone Producing							
G12T5L	G12T5VH	233	11	425	3.1	32	0.8	10,000
G10T51/2L	G10T51/2VH	357	17	425	5.7	57	1.4	10.000
G18T5L	G18T5VH	386	18.4	425	5.8	59	1.6	10,000
G24T5L	G24T5VH	538	25.6	425	8.5	82	2.3	10.000
G30T5L	G30T5VH	691	32	425	11	95	3.0	10,000
GSL692T5L	-----	692	32	425	11	95	----	10,000
G36T5L*	G36T5VH*	843	41	425	15	130	3.7	10.000
G37T5L	G37T5VH	868	42	425	15.4	133	3.8	10,000
G48T5L	G48T5VH	1148	55	425	21	170	5.2	10.000
G64T5L*	G64T5VH*	1554	75	425	33	220	7.2	10,000

* Also available in 2 and 3 and 4-pin configurations

Custom lamp lengths can also be supplied.

U-SHAPED SLIMLINE GERMICIDAL LAMPS

Lamp Description		Length (mm) Base Face to Outside of Bend	Lamps Watts (I)	Approx. Lamp Current mA	UV Output Total Watts (2)	UV Output Microwatts at 1 Meter (3)	Ozone Output (if applicable) (4)	Rated Effective Hours
Ozone Free	Ozone Producing							
G18T5L/U	G18T5VH/U	201	18.4	425	5.8	59	1.6	10,000
G24T5L/U	G24T5VH/U	287	25.6	425	8.5	82	2.3	10.000
G30T5L/U	G30T5VH/U	353	32	425	11	95	3.0	10,000
G36T5L/U	G36T5VH/U	429	41	425	15	130	3.7	10.000
G48T5L/U	G48T5VH/U	582	55	425	21	170	5.2	10.000

(1) Wattage is lamp watts only and does not include ballast loss.
(2) Ultraviolet output at 254 nanometers at 100 hours and 80°F (approximate).
(3) Microwatts per square centimeter at one meter from lamp.
(4) Approximate ozone output in grams per hour under favorable conditions. Figures apply only to ozone producing types. Please note that ozone output is subject to considerable variation due to conditions under which the lamp is used; under many conditions, the ozone output may be only a fraction of the specified figure.

Custom lamp lengths can also be supplied.

COLD CATHODE GERMICIDAL LAMPS

Lamp Description		Length (mm)	Lamps	Approx. Lamp	UV Output	UV Output	Ozone Output	Rated
Ozone Free	Ozone Producing	Base Face to Base Face	Watts (1)	Current mA	Total Watts (2)	Microwatts at 1 Meter (3)	(if applicable) (4)	Effective Hours
CC12T5L	CC12T5VH	230	15	90	2.8	22	0.4	20,000
782L10	782VH10	357	20	90	2.9	29	0.8	20,000
CC18T5L	CC18T5VH	381	21	90	3.2	32	0.8	20,000
CC24T5L	CC24T5VH	538	23	90	5.0	47	1.3	20,000
782L20	782VH20	611	24	90	5.8	55	1.5	20,000
CC36T5L	CC36T5VH	843	28	90	8.5	75	2.3	20,000
782L30	782VH30	865	29	90	8.7	77	2.3	20,000
CC48T5L	CC48T5VH	1148	34	90	11.2	98	3.0	20,000

Custom lamp lengths can also be supplied.

U-SHAPED COLD CATHODE GERMICIDAL LAMPS

Lamp Description		Length (mm)	Lamps	Approx. Lamp	UV Output	UV Output	Ozone Output	Rated
Ozone Free	Ozone Producing	Base Face to Outside of Bend	Watts (1)	Current mA	Total Watts (2)	Microwatts at 1 Meter (3)	(if applicable) (4)	Effective Hours
CC18T5L/U	CC18T5VH/U	201	21	90	3.2	32	0.8	20,000
CC24T5L/U	CC24T5VH/U	287	23	90	5.0	47	1.3	20,000
688A45	N/A	370	26	90	7.0	66	N/A	20,000
CC36T5L/U	CC36T5VH/U	429	28	90	8.5	75	2.3	20,000
CC48T5L/U	CC48T5VH/U	582	34	90	11.2	98	3.0	20,000

Custom lamp lengths can also be supplied.

PREHEAT GERMICIDAL LAMPS

Lamp Description		Length (mm) Base Face to Base Face	Lamps Watts (1)	Approx. Lamp Current mA	UV Output Total Watts (2)	UV Output Microwatts at 1 Meter (3)	Ozone Output (if applicable) (4)	Rated Effective Hours
Ozone Free	Ozone Producing							
GPH212T5L**	GPH212T5VH**	212	10	425	2.7	26	0.6	10,000
GPH238T5L/4	GPH238T5VH/4	238	11	425	3.0	30	0.65	10,000
GPH250T5L/4	GPH250T5VH/4	250	12	425	3.2	32	0.7	10,000
GPH254T5L**	GPH254T5VH**	254	12	425	3.3	33	0.71	10,000
GPH275T5L/4	GPH275T5VH/4	275	13	425	3.5	35	0.76	10,000
GPH287T5L**	GPH287T5VH**	287	14	425	4	40	0.9	10,000
GPH303T5L**	GPH303T5VH**	303	15	425	4.3	43	0.94	10,000
GPH330T5L/4	GPH330T5VH/4	330	16	425	4.6	46	1.0	10,000
GPH357T5L**	GPH357T5VH**	357	17	425	5.7	58	1.25	10,000
GPH436T5L**	GPH436T5VH**	436	21	425	7.3	72	1.6	10,000
GPH450T5L/4	GPH450T5L/4	450	22	425	7.5	75	1.6	10,000
GPH463T5L**	GPH463T5L**	463	23	425	8.0	78	1.7	10,000
GPH620T5L/4	GPH620T5VH/4	620	30	425	10.4	104	2.2	10,000
GPH650T5L/4	GPH650T5VH/4	650	34	425	11.0	109	2.4	10,000
GPH793T5L**	GPH793T5VH**	793	38	425	13.5	125	2.9	10,000
GPH810T5L/4	GPH810T5VH/4	810	39	425	13.8	130	3.0	10,000
GPH843T5L**	GPH843T5VH**	843	41	425	15	136	3.3	10,000

** Also available in 4-pin configuration.

Custom lamp lengths can also be supplied.

HIGH INTENSITY GERMICIDAL LAMPS

Lamp Description		Length (mm) Base Face to Base Face	Lamp Watts (1)	Tube Diameter (mm)	UV Output Total Watts (2)	UV Output Microwatts at 1 Meter (3)	Rated Effective Hours
Ozone Free	Ozone Producing						
GX48L	GX48VZ	1146	110	38	48	420	10,000
GX48L/4	GX48VZ/4	1146	110	38	48	420	10,000

(1) Wattage is lamp watts only and does not include ballast loss.
(2) Ultraviolet output at 254 nanometers at 100 hours and 80°F (approximate).
(3) Microwatts per square centimeter at one meter from lamp.
(4) Approximate ozone output in grams per hour under favorable conditions. Figures apply only to ozone producing types. Please note that ozone output is subject to considerable variation due to conditions under which the lamp is used; under many conditions, the ozone output may be only a fraction of the specified figure.

Custom lamp lengths can also be supplied.

HIGH OUTPUT GERMICIDAL LAMPS

Lamp Description	Length (mm) Base Face to Base Face	Arc Length	Lamps Watts (1)	Approx. Lamp Current mA	UV Output at 254nm		Rated Effective Hours
					Watts (2)	µW/cm2 (3)	
GPH436T5L/HO/4PSE	436	360	48	800	13	120	9,000
GPH436T5VH/HO/4PSE	436	360	48	800	13	120	9,000
GHO36T5L/4PSE	843	755	87	800	28	260	9,000
GHO36T5VH/4PSE	843	755	87	800	28	260	9,000
GPH846T5L/HO/4PSE	846	767	90	800	29	265	9,000
GPH846T5VH/HO/4PSE	846	767	90	800	29	265	9,000
GPH893T5L/HO/4PSE	893	815	95	800	30	270	9,000
GPH893T5VH/HO/4PSE	893	815	95	800	30	270	9,000
GHO64T5L/4PSE	1554	1421	155	800	45	380	9,000
GHO64T5VH/4PSE	1554	1421	155	800	45	380	9,000

Those considering the use of HO lamps in a new application are advised to consult one of Atlantic Ultraviolet's Application Engineers for specific recommendations.

Custom lamp lengths can also be supplied.

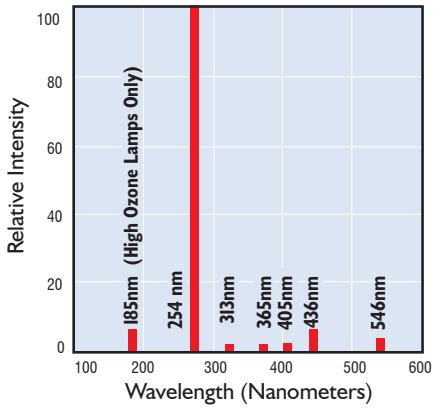
ENHANCED OUTPUT™ (AMALGAM) LAMPS

Lamp Description	Tube Diameter (mm)	Length (mm) Base Face to Base Face	Arc Length (mm)	Lamp Watts (1)	Lamp Current	UV Output Total Watts (2)	UV Output Microwatts at 1 Meter (3)	Rated Effective Hours
GA36T5L	15	843	764	105	1.2 amps	35	320	13,000
GA64T5L	15	1554	1475	190	1.2 amps	68	500	13,000
GA36T6L	19	843	764	127	1.8 amps	43	400	13,000
GA64T6L	19	1554	1475	240	1.8 amps	84	600	13,000

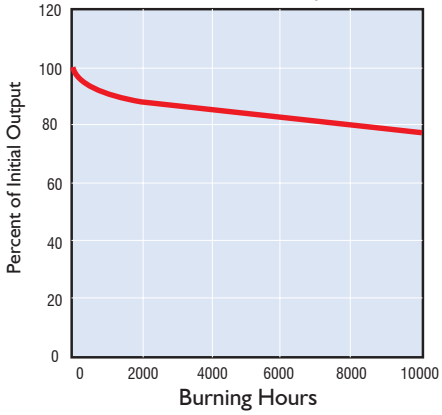
(1) Wattage is lamp watts only and does not include ballast loss.
(2) Ultraviolet output at 254 nanometers at 100 hours and 80°F (approximate).
(3) Microwatts per square centimeter at one meter from lamp.
(4) Approximate ozone output in grams per hour under favorable conditions. Figures apply only to ozone producing types. Please note that ozone output is subject to considerable variation due to conditions under which the lamp is used; under many conditions, the ozone output may be only a fraction of the specified figure.

Custom lamp lengths can also be supplied.

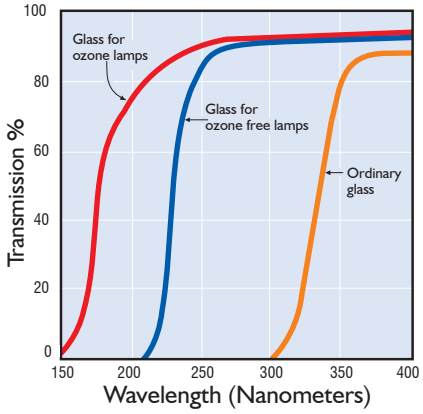
Relative Spectral Energy Distribution
(Typical)



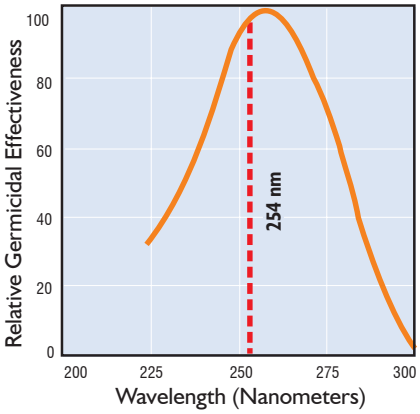
Average Ultraviolet
Maintenance at 254nm
(conventional lamps)



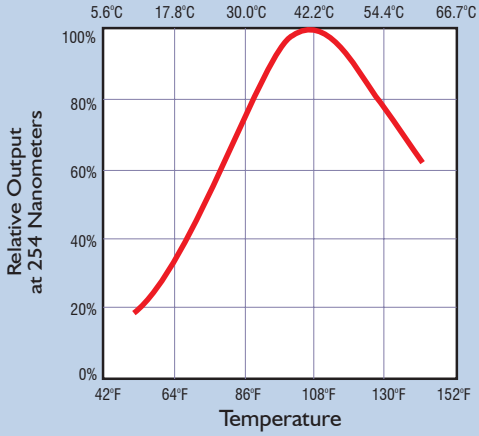
Transmission Curves for High Silica
Glass Used in STER-L-RAY™ Germicidal Lamps



Germicidal Effectiveness
as Related to Wavelength



Slimline Lamp Output at
Various Bulb Wall Temperatures



OPERATING CHARACTERISTICS

CAUTION: Exposure to direct or reflected germicidal ultraviolet rays will cause painful eye irritation and reddening of the skin. Personnel subject to such exposure must wear suitable faceshield, gloves and protective clothing.

Hg - LAMP CONTAINS MERCURY, manage in accord with disposal laws, see: www.lamprecycle.org.

ArmorLite™ SAFETY SHIELD

STER-L-RAY™ **Germicidal Ultraviolet Lamp** (Broken lamp with quartz particles and mercury contained within **Armor**Lite™ **Safety Shield**)

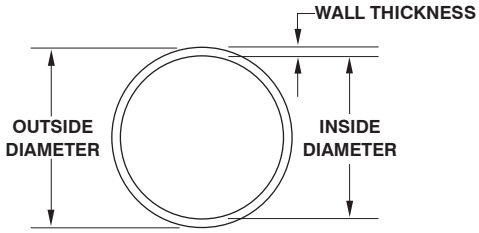
ArmorLite™ Safety Shield is now available for use with most ***STER-L-RAY***™ Germicidal Ultraviolet Lamps. The ArmorLite™ Safety Shield is a protective envelope that can be applied to most germicidal lamps (linear lamps up to 64-inches long) purchased from and manufactured by Atlantic Ultraviolet Corporation.

The ArmorLite™ Safety Shield provides increased security for employees, products and work environments by eliminating the dangers associated with fragments of broken quartz and mercury contamination.

ArmorLite™ protected lamps are available for use with any new or existing ultraviolet installation.

Contact our Ultraviolet Application Specialists to discuss the advantages of using germicidal lamps protected by the ArmorLite™ Safety Shield in your installation.

CRYSTAL CLEAR™ QUARTZ SLEEVES & TUBING



Standard Sizes

Inside Diameter	*Outside Diameter*	*Wall Thickness*
18.0 mm	*20.5 mm*	*1.25 mm*
20.0 mm	*22.0 mm*	*1.00 mm*
20.0 mm	*23.0 mm*	*1.50 mm*
22.0 mm	*24.5 mm*	*1.25 mm*
22.0 mm	*25.0 mm*	*1.50 mm*
25.0 mm	*28.0 mm*	*1.50 mm*
30.0 mm	*33.0 mm*	*1.50 mm*
35.0 mm	*38.0 mm*	*1.50 mm*
45.0 mm	*48.0 mm*	*1.50 mm*

High quality quartz sleeves are available in a wide range of diameters and wall thicknesses in virtually any length.

Many other sizes available - consult factory. Supplied with open ends or with closed (test tube) end. Firepolishing and custom fabrication are available upon request.

LAMP HOLDERS & SOCKETS

FOR SINGLE PIN LAMPS

Tombstone Telescopic
Stationary &
Spring-Loaded Set Illustrated
Catalog # 05-1319

Butt-On
Stationary &
Spring-Loaded Set Illustrated
Catalog # 05-1320A-R

Lamp Socket & Lead Wire
Catalog # 05-1218A2-R

FOR MULTI-PIN LAMPS

Lamp Socket & Lead Wire
For Miniature Bi-Pin Lamps
Catalog # 05-2400A

Miniature Bi-Pin
Catalog # 05-1322

3-Pin Socket
Catalog # 35-1112A

Lampholder
For Slimline or
Cold Cathode U-Shaped
Lamps
Catalog # 05-0026A

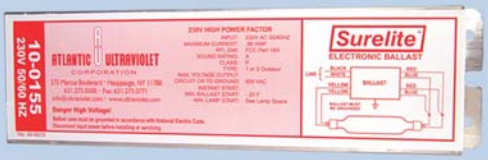
4-Pin Socket
Catalog # 35-1103A

Atlantic Ultraviolet maintains a complete inventory of lampholders and sockets for all applications. To select the proper lampholder, consult our application specialists.

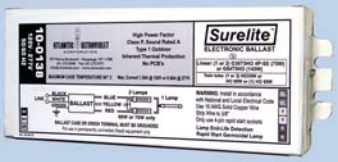
SURELITE™ BALLASTS

Contact our Ultraviolet Application Specialists for assistance on selecting a ballast.

10-0201
120V, 50/60HZ



10-0155
230V, 50/60HZ



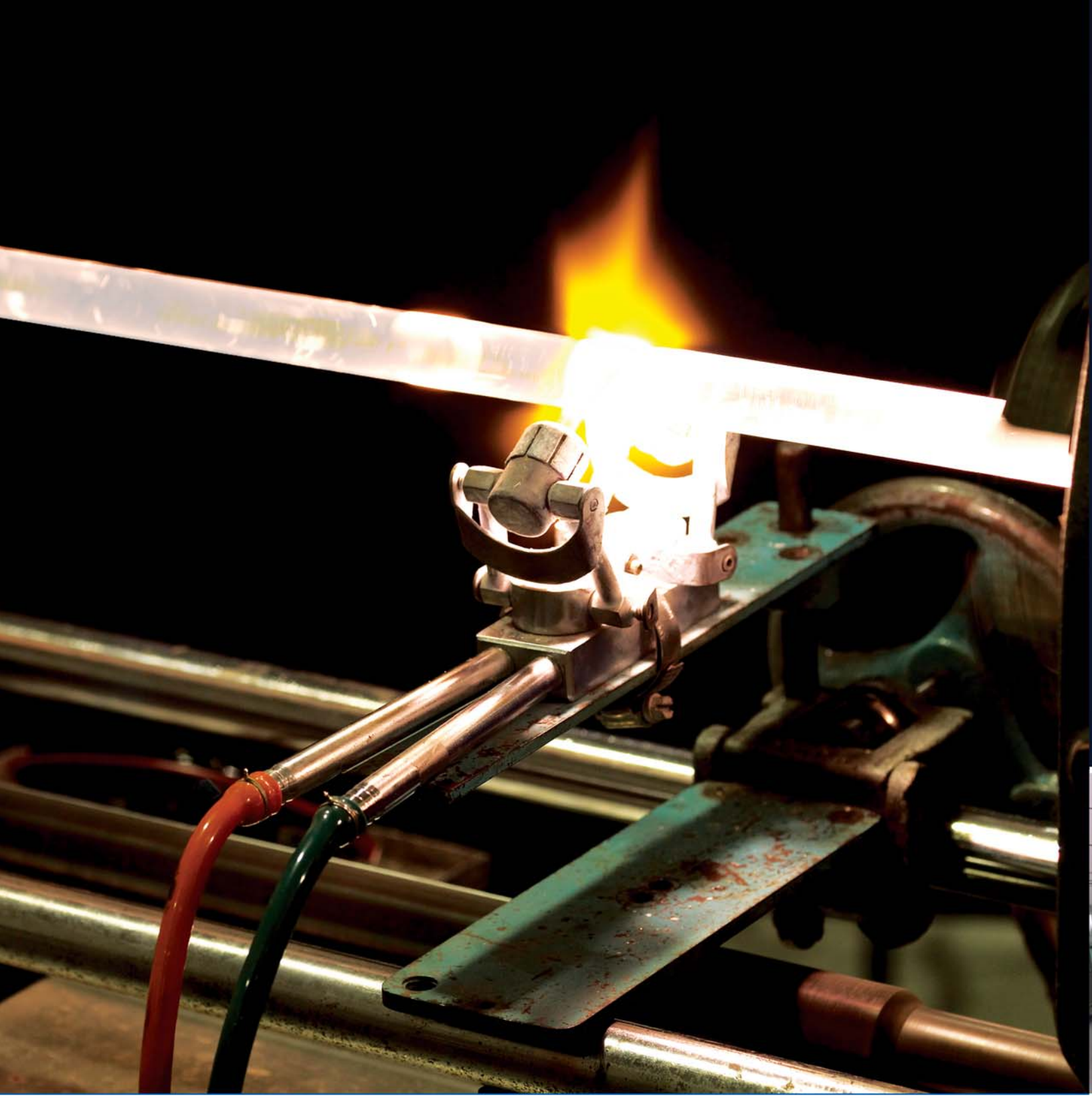
10-0138
120V - 277V, 50/60HZ

10-0091
120V, 50/60HZ

10-0137
120V, 50/60HZ

10-0127
230V, 50/60HZ

10-0136
230V, 50/60HZ



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Atlantic Ultraviolet lamps and equipment are manufactured in the USA.

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