



Hilux™ Gro Grow Lights

Professional-Grade Horticulture Lamps

Professional growers will not use just any lamps to get just any results. They require specialty-grade lamps to maximize their growth and profits. This is why professionals choose USHIO, a Japanese specialty lighting manufacturer. The USHIO Hilux Gro™ professional-grade grow lights are manufactured at our European ISO 9001 certified factory and are used by a multitude of OEM's and professionals worldwide.

The Hilux Gro™ series consist of single-ended and double-ended HPS (High Pressure Sodium) and MH (Metal Halide) lamps as well as the new LEC/CMH (Ceramic Metal Halide) lamp types designed for open-rated fixtures.

- The Single-Ended HPS (2100K) and Metal Halide (7000K) lamp types, up to 2100 micromol/s, are available in 400W, 600W, and 1000W versions.
- The Double-Ended DE HPS (2100K) lamp types, up to 2100 micromol/s, are available in 600W, 750W, and 1000W versions.
- The Double-Ended DE Metal Halide (5500K) lamp types, up to 1800 micromol/s, are available in 600W and 1000W for Open-rated fixtures.
- The LEC/CMH lamp types are available in 315W and in 3000K and 4200K color temperatures.

FEATURES & BENEFITS

- High Output Lamp Technology
- Robust Plants Through High Blue Light Output
- Long Average Life
- Low Energy Consumption
- Reliable Operation Throughout the Growth Cycle
- Highest Quality and Consistent Performance
- Tubular Low Profile Design for Compact Fixtures
- Engineered in ISO 9001 Certified Facility

APPLICATIONS

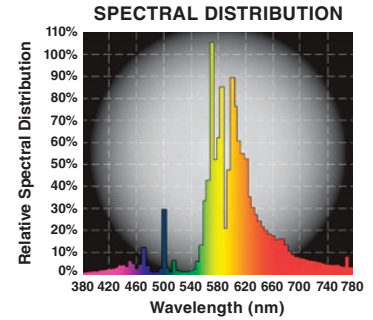
- Greenhouse Lighting
- Hydroponics
- Aquaponics
- Supplemental Plant Lighting
- Microgreen Lighting
- CEA Agriculture
- Plant Growth

DOUBLE-ENDED SUPER HIGH PRESSURE SODIUM - HILUX GRO GROW LIGHTS

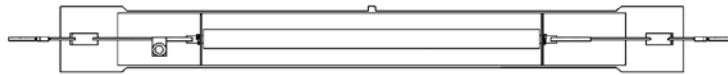


FEATURES & BENEFITS

- High red and blue spectral ratios for good photosynthesis efficiency
- Great lumen output for high PAR values
- Robust plants through high blue light output
- High red light ratio for healthy plant growth
- Economic (long average life, high lumen output, low energy consumption)
- Tubular low profile design for compact fixtures



L/W BASE



Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
1000	5002442	AHS-DE1000W/Pro-Plus	2100	2100	4.8A	7.0A	10,000	323	Horizontal
		System Voltage	Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
		400V	230V	3200V	7 minutes	2 minutes	T10	30	HPS 1000W Electronic
Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
1000	5002272	AHS-DE1000W/Opti-Red	1950	2100	4.8A	7.0A	10,000	325	Horizontal
		System Voltage	Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
		400V	230V	2440V	7 minutes	2 minutes	T10	30	HPS 1000W Electronic
Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
750	5002494	AHS-DE750W/Pro-Plus	1450	2100	3.6A	7.0A	10,000	323	Horizontal
		System Voltage	Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
		400V	210V	3200V	7 minutes	2 minutes	T10	30	HPS 750W Electronic
Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
600	5003285	AHS-DE600W/Pro-Plus	1150	2100	3.2A	7.0A	10,000	323	Horizontal
		System Voltage	Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
		400V	180V	2440V	7 minutes	2 minutes	T10	30	HPS 600W Electronic

(Hg) contains mercury
contient du mercure



Manage in Accord with Disposal Laws
www.lamprecycle.org 1-800-895-8842

⚠ CALIFORNIA PROPOSITION 65 WARNING: These products can expose you to Mercury known to the state of California to cause birth defects or other reproductive harm. For more information, please go to: www.p65warnings.ca.gov

R - NON SELF-EXTINGUISHING LAMP

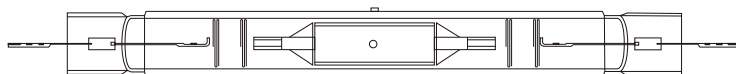
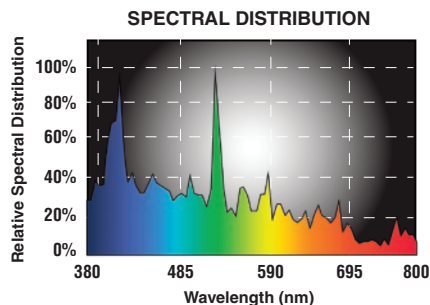
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. Complies with the USA Federal Standard 21 CFR 1040.30 and Canada Standard SOR/80-381.

DOUBLE-ENDED SUPER METAL HALIDE - HILUX GRO GROW LIGHTS



FEATURES & BENEFITS

- Color temperature similar to daylight
- High blue light ratio and full spectrum output for healthy plant growth and robustness
- Superior μmol output within the PAR spectral range
- Easy lamp change
- Spectral lamp design optimized for usage in open luminaires



L/W BASE

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
1000	5003100	AMH-DE1000W/AGRO	1800	5500	4.8A	5.6A	6,000	387	Horizontal
		System Voltage	Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
		—	220V	3200V	3 minutes	10 minutes	Tubular	34	HPS/MH 1000W Electronic

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
600	5003284	AMH-DE600W/AGRO	1040	5500	3.4A	5.6A	6,000	385	Horizontal
		System Voltage	Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
		—	220V	3200V	3 minutes	10 minutes	Tubular	34	HPS/MH 600W Electronic

Kr-85
Thorium

contains mercury
contient du mercure



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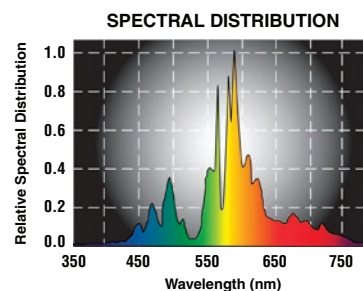
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SINGLE-ENDED SUPER HIGH PRESSURE SODIUM - HILUX GRO GROW LIGHTS



FEATURES & BENEFITS

- 400W, 600W, 1000W SUPER high output HPS with maximized output in both red and blue spectral range
- Operates on HPS Ballast
- SUPER HPS bulb with maximum output in both red and blue spectrum
- Optimized for maximum flower yield, and added blue spectrum for vegetative growth efficiency
- Outperforms standard HPS bulbs



E39 BASE

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
1000	5001671	AHS-1000/Opti-Red	2100	2100	4.7A	7.0A	24,000	390	Universal
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			200-280V	4KV-5KV	7 minutes	2 minutes	T23	65	HPS S52

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
600	5001670	AHS-600/Opti-Red	1150	2100	6.2A	8.1A	19,000	265	Universal
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			95-125V	4KV-5KV	5 minutes	2 minutes	T15	46	HPS S106

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
400	5001669	AHS-400/Opti-Red	720	2100	4.45A	6.0A	24,000	271	Universal
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			90-120V	4KV-5KV	4 minutes	2 minutes	T15	46	HPS S51

(Hg) contains mercury
contient du mercure



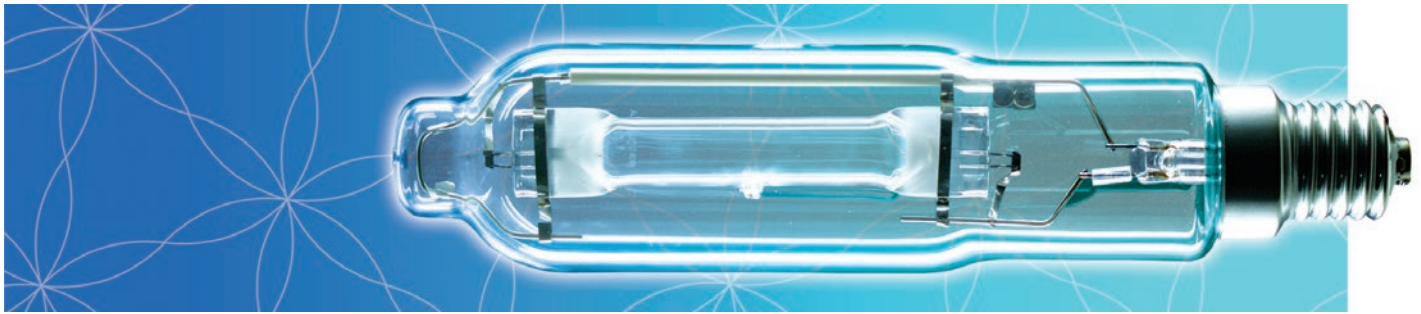
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R - NON SELF-EXTINGUISHING LAMP

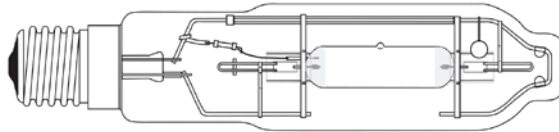
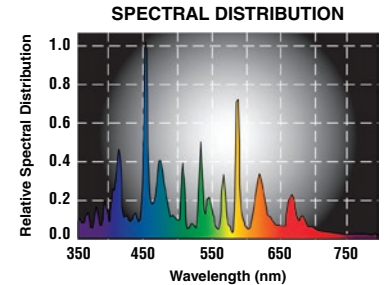
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. Complies with the USA Federal Standard 21 CFR 1040.30 and Canada Standard SOR/80-381.

SINGLE-ENDED SUPER METAL HALIDE - HILUX GRO GROW LIGHTS



FEATURES & BENEFITS

- 400W, 600W, 1000W SUPER high output MH with maximized output in both blue and red spectral range
- Conversion bulb to operate on ANSI coded HPS ballast
- SUPER MH bulb with maximum output in both blue and red spectrum
- Optimized for maximized branching and vegetative growth, and added red spectrum for flowering efficiency
- Outperforms standard MH bulbs



E39 BASE

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
1000	5001673	AMH-1000/ Opti-Blue/Conversion	1250	7000	4.2A	5.6A	12,000	284	Universal
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			230-280V	4KV-5KV	3 minutes	10 minutes	T25	76	HPS S52

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
600	5001675	AMH-600/ Opti-Blue/Conversion	695	7000	6.2A	8.0A	12,000	284	Universal
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			90-120V	4KV-5KV	3 minutes	10 minutes	T25	76	HPS S106

Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
400	5001674	AMH-400/ Opti-Blue/Conversion	480	7000	4.6A	6.0A	12,000	248	Universal
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			80-110V	4KV-5KV	3 minutes	10 minutes	T15	46	HPS S51

Kr-85

Thorium

contains mercury
contient du mercure



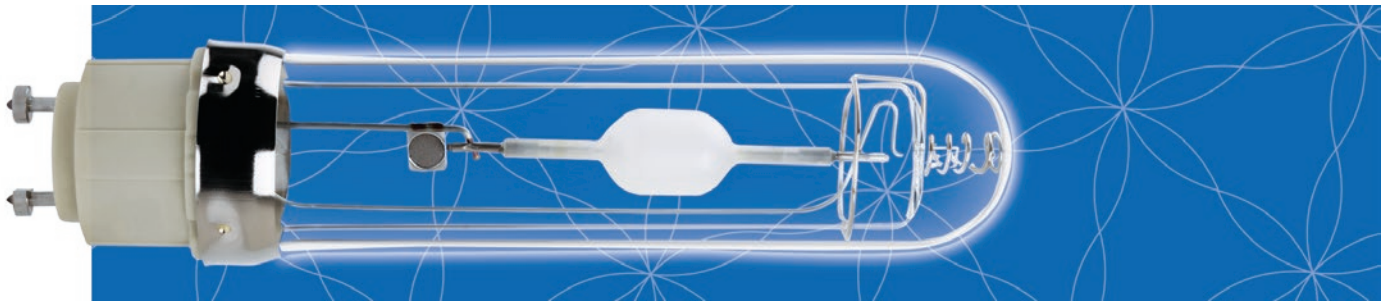
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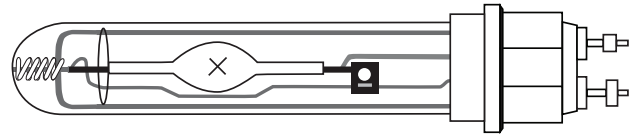
CERAMIC METAL HALIDE - HILUX GRO GROW LIGHTS



USHIO introduces “HiLux Gro”, a new line of Ceramic Metal Halide grow lights to promote enhanced vegetative growth and flowering. The lamps are made to assure consistency in quality and optimized for high performance.

FEATURES & BENEFITS

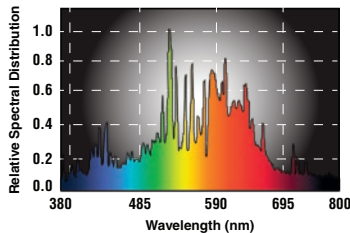
- Ceramic Metal Halide lamp for plant growth
- Spectral distribution optimized for photosynthesis efficiency
- Blue output for healthy plant growth and robustness
- Ceramic μmol output within the PAR spectral range (Photosynthesis Active Radiation)
- Economic (long average life, high μmol output, low energy consumption)
- Easy lamp change



PGZX18 BASE

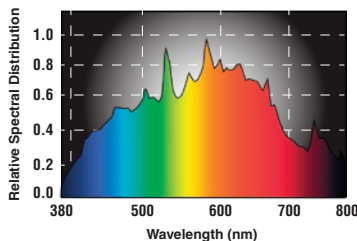
Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
315	5002536	CMH-315W/930/AGRO	620	3000	3.15A	4.7A	15,000	193	BU $\pm 90^\circ$
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			100V	4KV-5KV	3 minutes	6-8 minutes	T12	38	C182/O or Electronic

SPECTRAL DISTRIBUTION



Watts (W)	Ordering Code	Lamp Description	PAR (MMOL/S)	Color Temp (K)	Operating Current	Max. Starting Current	Average Life (h)	MOL (MM)	Burn Position
315	5002537	CMH-315W/942/AGRO	520	4200	3.15A	4.7A	15,000	193	BU $\pm 90^\circ$
			Lamp Voltage	Ignition Voltage	Warm Up Time	Reignition Time	Bulb Type	Dia. (MM)	Ballast
			100V	4KV-5KV	3 minutes	6-8 minutes	T12	38	C182/O or Electronic

SPECTRAL DISTRIBUTION



Kr-85

 contains mercury
contient du mercure



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E-BALLAST FRIENDLY

USHIO has seen the development of electronic ballasts in the lighting industry since its first introduction into the fluorescent lamp market. Once a new technology for fluorescent lamp is now a mass produced item that has achieved consistency in its high performance and reliability.

Since then, electronic ballasts continues to evolve in capacity to operate higher pressure lamps up to 12,000W in high technology industrial markets. (as of 3/2009)

Electronic ballast for HID lamps will become the preferred technology of the future, and it will become the horticulture industry standard, just like the evolution that happened in the fluorescent lamp era. That is why we support the electronic ballast technology in the horticulture market, and work with various electronic ballast manufacturers in strategic alliance to improve the industry standard.

APPLICATION NOTES

To achieve optimum lamp performance, the manufacturer's recommended length of lamp cord from the ballast is less than 5ft.

When operating lamps on a longer range, lamp operator must make sure specified ignition voltage is supplied to the lamp.

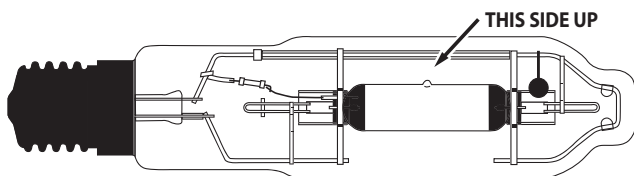
Please make sure your igniter and capacitor is well maintained on magnetic ballasts, and make sure the electronic ballast of your choice is designed to ANSI standards electronic characteristics.

With any HID lamp, operation voltage will increase as the lamp ages. If you notice misfiring of lamps, please make sure specified ignition voltage is supplied to the lamp.

USHIO horticulture lamps are filled with higher pressure to achieve higher output in comparison to standard HID lamps. Higher pressure in the arc tube requires ignition voltage to be at the specified range.

Super HPS and Super MH lamps achieve their unique spectrum by mixing proprietary gas and chemical into the arc tube. HID lamps require approximately 100 hours burn-in time for these gasses and chemicals to blend properly resulting in the correct spectrum output.

Over cooling or uneven cooling may cause cool spots in the lamp causing spectrum shift. Overheating may cause seal leaks or bulb deformation resulting in short life.



When operating the Metal Halide Dual Core bulbs in horizontal position, please install the lamp with the "tip-off" of the Metal Halide burner pointing UP. This lamp positioning will allow better circulation of the gas mixture inside the burner, optimizing the lamp operation, ensuring best spectrum and maximum output. It will also improve ignition characteristics and extend lamp's life.

LAMP SAFETY

METAL HALIDE & HIGH PRESSURE SODIUM DISCHARGE LAMPS

- ANSI Type E = Enclosed Fixture Required
Lamps that are enclosed fixture rated should only be operated in an enclosed fixture that safely contains all lamp parts in the event of a lamp burst or rupture. These lamps operate at a high internal pressure and at high temperatures which can emit harmful ultraviolet light if the outer glass bulb is broken. A lamp may burst causing physical injury and property damage unless protective safety glass is used with the fixture. Use fixture that meets requirements per UL standard #1572.
- Metal Halide discharge lamps can emit ultraviolet radiation that may be harmful to eyes and skin. Metal Halide discharge lamps that are not open fixture rated should only be used in enclosed fixtures with ultraviolet absorbing filter glass. Do not operate these lamps if the ultraviolet absorbing filter glass is broken or not installed.
- Metal Halide and High Pressure Sodium discharge lamps should only be operated with the compatible ballast, rated ignition voltage, and socket. (See lamp specification for electronic characteristic information.)
- Only operate the lamp in its designated operating position. (See lamp specification for lamp operation position)
- Metal Halide lamps should be turned off for a minimum of 15 minutes per week.
- Lamps should never be operated beyond their rated useful life. The risk of a lamp burst increases with lamp age, temperature, improper operation and improper handling. Replace the lamp at or before the end of its rated life. Group relamping is always recommended.
- Never bump, drop, apply excessive stress, or scratch the lamp. This could cause the lamp to burst! Do not operate any lamps with any traces of scratches, cracks, or physical damage.
- Never operate a lamp above or below its rated current or voltage. This may cause the lamp to leak or burst.
- Always turn off the electrical power before inserting, removing, or cleaning the lamp.

LAMP SAFETY & WARRANTY

LAMP SAFETY

METAL HALIDE & HIGH PRESSURE SODIUM DISCHARGE LAMPS (Continue)

- Clean any dirt, oil, or lint away from the lamp with alcohol and a lint-free cloth or tissue. Dirt or other contaminants will affect light output and may cause the lamp to overheat and decrease lamp life.
- Electrical connections should be clean and in good condition. Replace lamp holders and sockets when needed. Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to lamp and socket.
- Never touch the lamp when it is on, or soon after it has been turned off, as it is hot and will cause serious burns. Lamps should be allowed to cool for a minimum of ten (10) minutes after the lamp is turned off.
- Do not use lamp in close proximity of paper, cloth or other combustible material that can cause a fire hazard.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.
- Metal Halide discharge lamps contain mercury. USHIO strives to preserve the environment and make efficient use of resources. Please refer to your local environmental laws regarding disposal and recycling of mercury containing lamps. For more information, please go to www.lamprecycle.org.

WARRANTY

USHIO horticulture lamps are warranted for one (1) year when used in conjunction with major brand, UL-Listed ballasts. USHIO horticulture lamps are said to be free from defects in materials and workmanship for the one year period beginning on the date of sale or if unknown, from date of production. If the lamps fail to operate for the warranty period, USHIO America, Inc. will provide a free replacement lamp (no labor allowance).

TERMS AND CONDITIONS

USHIO horticulture lamps must be installed and operated under suitable environmental conditions and in accordance with the latest National Electrical Code, Underwriters Laboratory Bulletins, and ANSI specifications. This warranty will not apply in the event of conditions demonstrating abnormal use or stress, such as operating temperatures in excess of maximum rated temperatures, under/over voltage conditions, excessive switching cycles or operating hours, dirty or cracked sockets, or improper lamp or ballast installation.

REPLACEMENT OF PRODUCT, LIMITS OF LIABILITY

The foregoing shall constitute the sole and exclusive remedy of the purchaser and the sole and exclusive liability of USHIO AMERICA, INC. NO WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. Ushio America, Inc. will not, under any circumstance, whether as a result of breach of contract or warranty, tort, or otherwise, be liable for any costs or damages, including lost profits or revenues, incidental, special or consequential damages. Ushio America, Inc. reserves the right to examine all failed lamps and/or ballasts and reserves the right to be the sole judge as to whether any lamps and/or ballasts are defective and covered under this warranty.

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