EmArc®

ENHANCED METAL ARC LAMPS

EmArc® lighting technology is the culmination of a dedicated effort to bring together the inherent advantages of a number of gas discharge sources into a single light source. The technology equates to a critical blending of rare gas and metal additives to derive, in a single source, many of the key properties and benefits of stand alone Xenon, Metal Halide and Mercury lamps.

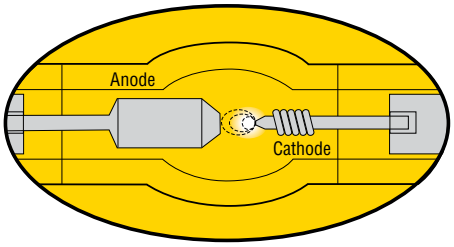
EmArc light sources are a series of highly efficient, Enhanced Metal Arc, DC gas discharge lamps designed for use in medical, scientific, industrial and entertainment settings. EmArc lamps are a progressive step ahead in lighting technology possessing features that offer advantages to an array of users for imaging, fiber optic and other important optical applications.

EmArc lamps have geometric designs which enable alignment in dichroic visible light or UV specific coated reflectors facilitating use in numerous applications like lighting for minimally invasive surgery, curing of light sensitive resins and adhesives and, dental whitening procedures. EmArc versatility enables its use in a number of entertainment applications including searchlights, followspots, special effects and automated fixtures.

EmArc lamps are comparable to Metal Halide sources in luminous efficacy but with 2 times to 5 times the life. A correlated color temperature like that of Xenon at 6000K, with very small arc gap sizes, but with 2 times the luminous efficacy of Xenon lamps.

EmArc technology differentiates itself as a new family of discharge lamps.

High luminance at tip of cathode with DC arc discharge



APPLICATIONS:

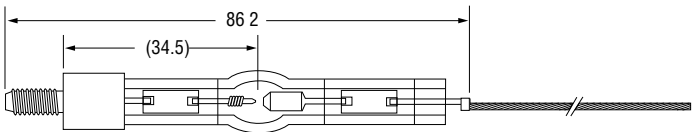
- Medical Fiber Optics for Endoscopy or Headlight Illumination
- Biotechnology / Micro-Array
- Industrial UV Curing
- Machine Vision
- Cosmetic Dentistry
- Projection / Entertainment
- Microscopy
- Entertainment

The construction of EmArc arc tubes, electrodes and precise filling technique provide the environment for the tightly confined plasma arc discharge. EmArc light output over time exceeds that of typical DC Xenon and AC short-arc Metal Halide lamps.

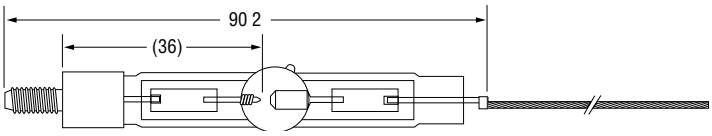
USHIO

Made in USA

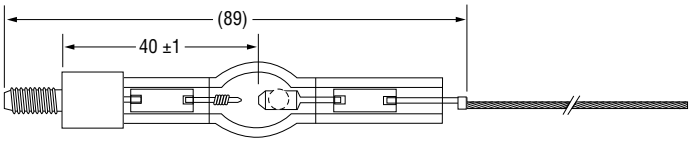
DOUBLE-ENDED BARE BURNER VERSIONS



(1) SMH-200/D1



(2) SMH-350/D2



(3) SMH-600/D1

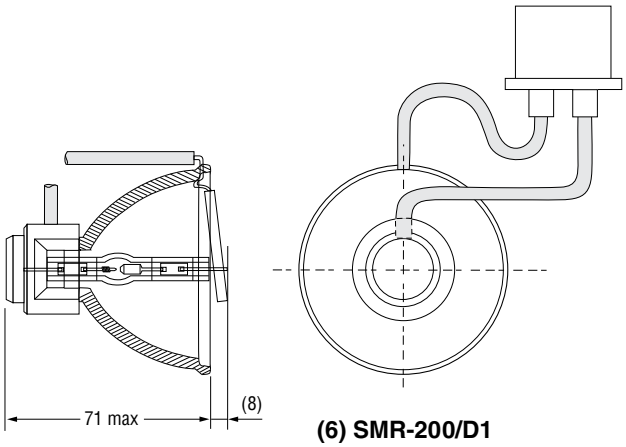
All dimensions shown in millimeters unless otherwise noted.

Watts (W)	Lamp Description	Lamp Voltage (V)	Lamp Current (A)	Arc Gap (mm)	Color** Temp (K)	Luminous Flux (lm) nom	Average* Rated Life (h)	Fig No.
	Double-Ended Bare Burner Versions							
160 - 200	SMH-200/D1	43	4.65	1.2	6000	10000	2000	1
350	SMH-350/D2	48	7.30	1.8	6000	21000	2000	2
600	SMH-600/D1	68	8.80	3.0	5700	44000	1000	3

* Based on 50% spherical lumen depreciation at a duty cycle of 2 hours 45 minutes ON and 15 minutes OFF.

** As measured in a sphere. All values ± 500K from nominal.

REFLECTORIZED VERSIONS
70mm Reflector

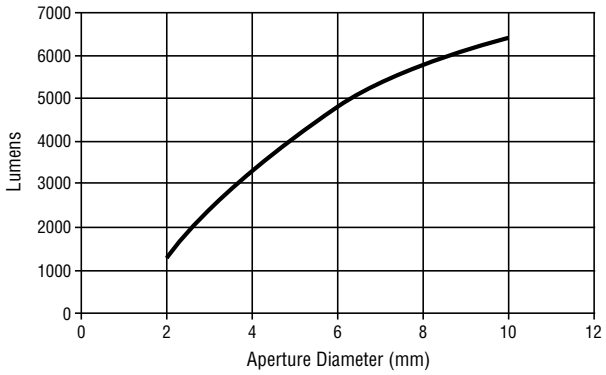


(6) SMR-200/D1

Lamp aligned for maximum throughput thru 6mm aperture at 52mm distance from reflector rim.

FIBER OPTIC EFFICIENCY

Measured lumens vs. aperture size
200W DC 1.2mm arc gap



All dimensions shown in millimeters unless otherwise noted.

Watts (W)	Ordering Code	Lamp Description	Lamp Voltage (V)	Lamp Current (A)	Arc Gap (mm)	Color*** Temp (K)	Luminous* Flux (lm) nom	Average** Rated Life (h)	Fig No.
		Reflectorized Versions							
160 - 200	5001399	SMR-200/D1	43	4.65	1.2	6500	5100/6mm Aperture	2000	6
160 - 200	5001523	SMR-201/D1	47	4.25	1.6	6500	5500/8mm Aperture	2500	6
160 - 200	5001466	SMR-202/D1	56	3.50	2.0	6900	5900/10mm Aperture	4000	6

* Based on measurement through aperture into a sphere.

** Based on 50% spherical lumen depreciation at a duty cycle of 2 hours 45 minutes ON and 15 minutes OFF.

*** As measured in a sphere. All values ± 500K from nominal.

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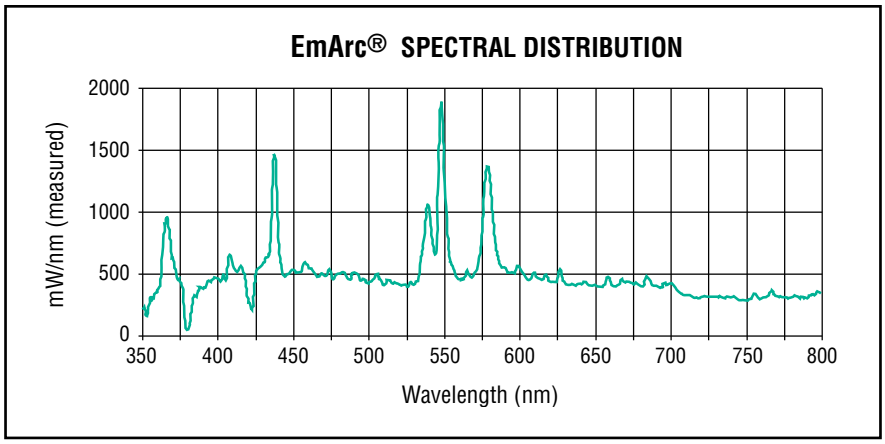
Enhanced Metal Arc Lamps



FEATURES & BENEFITS:

- Power Ranges from 150-600 Watts - Versatility / Power Tunability
- Custom Reflector Designs Available
- Small Arc Gap Sizes - Down to 1.2mm Highly Effective Optical Collection Capability
- Unique Hybrid Gas Discharge Technology - 2,000 Hours of Life; No Internal Pressure When Cold
- EmArc DC Technology - Enables Operation on Lower Cost DC Power Supplies Reducing OEM System Design Costs
- 6000K Correlated Color Temperature - Xenon-Like Light for Crisp, White Imaging
- Hot Reignition
- Up to 60 Lumens per Watt Efficacy - Two Times That of Xenon Sources
- Highly Durable, Rugged Elliptical and Parabolic Reflector Designs - Very High Light Path Efficiencies for Small Diameter Fiber Optic Bundle Applications
- Precise Filling Control, Electrode Design and Tight Manufacturing Tolerances with Tipless Arc Tube Construction Allows for Tightly Confined and Stable Plasma Discharge, Long Life with Minimal Color Temperature Drift Over Life, Better Optical Control, No Shadowing
- Far Better Color Control Over Life Than Conventional Metal Halide Lamps

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