

High Power LED Endoscope Illuminator

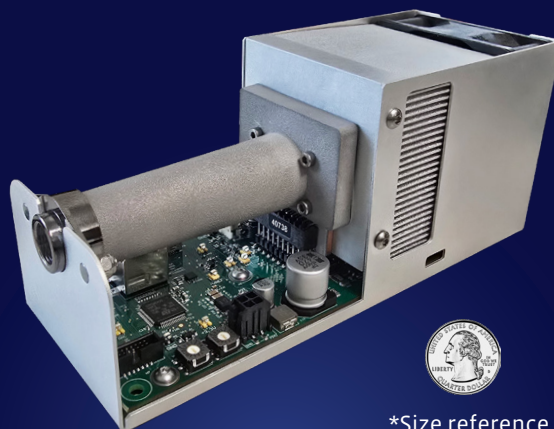
LumiScope™

Applications

- Exceeds lumen output and color rendering of 300W Xe lamp
- User-adjustable CCT
- High CRI (85 to 98) over broad range of CCT
- $R9 > 95$
- Highly stable CCT
- Independent blue-green, white, red λ 's for high CRI
- Contiguous spectrum 430 - 700nm
- Highly uniform far field from coupling fiber
- Near field uniformity $> 95\%$ all λ 's
- NA 0.66
- Accommodates fiber diameters up to 5mm
- Multiple output coupler options
- Pulsed or CW
- Forced air cooling
- Higher efficiency, longer life and lower cost than arc lamps
- Future option - white die only (high/low & adjustable CCT)

LumiScope™ LED Endoscope Illuminator is a powerful tool for enhancing precision and lowering costs in healthcare. It is ideal for use with surgical headlamps for both deep cavity and endoscopic surgeries. LumiScope™ offers superior performance and flexibility with its user-adjustable correlated color temperature (CCT) and high color rendering index (CRI). It is highly stable in CCT and has CRI between 85 and 98 over a large range of CCT.

As an LED-based illuminator, LumiScope™ not only provides higher optical power, but it is more efficient than Xenon arc lamps which consume about 300W of electrical power and must be replaced frequently. The



*Size reference

Features

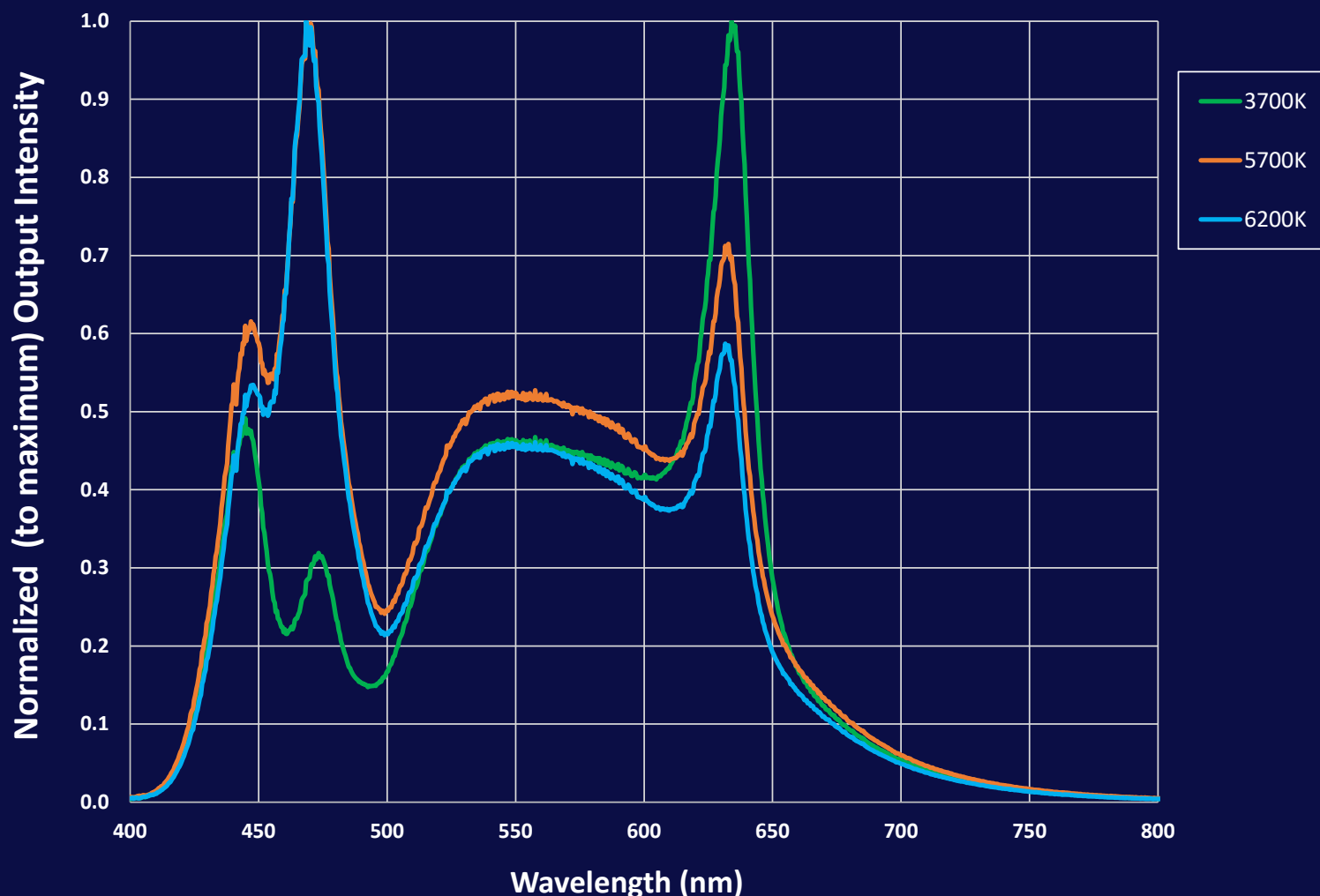
- Endoscope illumination for surgical headlamps
- Xenon or Tungsten Halogen lamp replacement
- High contrast oxy/deoxy visualization (blue only)
- Improved visualization of mucosa
- Detection of normal vs. unhealthy tissue

output aperture is sized for a standard NA 0.66 and 5mm fiber optic bundle with several output coupler options. In addition, IOI's patented technologies ensure high uniformity, long lifetime, accuracy, and reliability.

LumiScope™ accommodates single or four standard fiber interfaces. The multi-channel drive electronics allow communication over Modbus RS485 serial interface. IOI's LumiScope™ provides reliability and economic advantages over Xenon arc lamps including environmental safety with reduced CO₂ emissions, mercury-free illumination, low maintenance, and higher electrical efficiency with lower operating cost.

LumiScope™ Optical Performance

High CRI Spectral Data at 3 Selected CCTs Normalized Output Intensity vs. Wavelength



LumiScope™ Specifications

Parameter	Specification	Comment
LED Configuration	High CRI White	Future options 405nm, 808nm, 940nm
Diffuser Option	Yes	
CRI Ra min (Full CCT Range)	92	
CRI R9 min (Full CCT Range)	90	R9 max up to 98
CCT Range	3800K - 6200K	CCT max > Xe lamp @ 5700K
Min Lumens (at 5700°K CCT)	2000 Lumens (>300W Xe lamp)	5mm, 0.66 NA Fiber
Numerical Aperture	0.66	Largest standard fiber NA
Max Light Guide Diameter	5mm	Largest standard light guide
Spatial Non-Uniformity	<10%	
Raidal Angular Non-Uniformity	<10%	
Tangential Angular Non-Uniformity	<10%	% of Spectral Max
Lifetime	10,000 Hours	
Optical Feedback	No	
Noise Limit	<60 dB(A)	
Input Voltage	24V	
Maximum Compliance Current	8A	
Max Electric Input Power (REF)	192W	
Wavelength Band 1	WHT	nm (or WHT)
Wavelength Band 2	475	nm (or WHT)
Wavelength Band 3	630	nm (or WHT)

LumiScope™ Specifications (cont.)

Parameter	Specification	Comment
Output Adapter Types	None; Storz; Wolf; ACMI; Olympus; 4-way turret	
Output Range (Power)	10 - 100%	
Certifications	CE; RoHS	
Safety/Warnings	Intense light; Infrared	
Cooling Method	Forced air	
Operational Temperature Range	5 - 55°C	
Operational Humidity	0 - 85%	Non-condensing
Non-Operational Temperature	-40 - 85°C	
Non-Operational Humidity	<10%	Non-condensing
Shock/Vibration	0.5G 0-200Hz	RMS Acceleration
Independent Channel Operation	Yes	

Dimensions

Height	Width	Depth
69.5 mm	63.5 mm	175 mm

