

## Leading-edge technologies for ultra-miniature, single use video scopes

- Laser light source: couples 100s of mW of light into sub-millimeter fiber optics
- Enables illumination channels as small as a single sub-millimeter fiber
- Light source module designed to be integrated into an OEM electronics unit

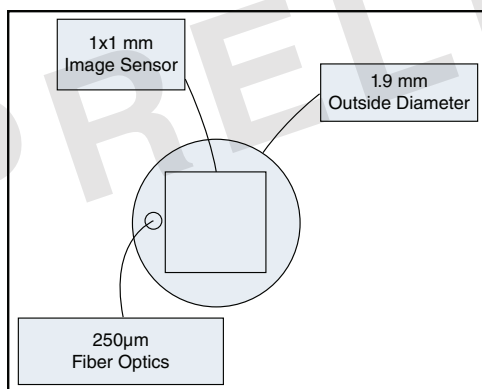
# HYPERION 100L

## High Intensity Small Fiber Optic Illumination

### Overview

The Hyperion 100L is a patented high intensity fiber optic illuminator designed for medical and industrial applications. The Hyperion is designed to work with an ultra-miniature camera. The light source is especially suited to illuminating sub-millimeter fiber optics. Hyperion 100L is ready for OEM integration into a variety of applications including:

- minimally invasive surgical platforms
- robotic surgical systems
- endoscopic illumination
- chandeliers for ophthalmic surgery
- light guides for cardiothoracic platforms
- industrial inspection



Example of Videoscope Enabled  
by Hyperion Technology



The Hyperion 100L starts with high efficiency visible wavelength lasers delivering uniform light output. The light is captured with a custom optics assembly to couple the light into sub-millimeter optical fibers.

The Hyperion couples a significant amount of light into sub-millimeter fibers making it a perfect complement to an ultra-miniature camera. They create a sub-2mm endoscopic imaging system when combined. One option is the Awaiba Naneye camera which is very low cost and a 1mm square package.

The Hyperion 100L technology can be tailored for various fiber sizes, camera systems and customized for specialized light guide applications.<sup>1</sup>

Ushio's reputation for delivering the highest quality technology in a robust and simple package continues with the Hyperion 100L.

Powered by:



***“Now you can have ample illumination with a miniature image sensor.”***

# SPECIFICATIONS

Hyperion 100L Technical Specifications	
Light Output <sup>1</sup> , White	200mW maximum, diffuse radiation
Fiber Size	250 micron standard, others optional
Fiber Numerical Aperture	0.63 NA
Color Control	Adjustable
Laser Type	Continuous Wave
Laser Classification	3R with 250 micron fiber
Wavelengths	465nm, 525nm, 638nm
Laser Module Life	Up to 20,000 hours
Light Output, IR	Optional, laser or other
Light Output, Other	Optional special illumination, fluorescence illumination or pointing laser

Electrical and Mechanical Specifications	
Power Input	15VDC @ 4A typical, 8A max
Enclosure	All metal ventilated housing, Customized trade housings optional <sup>2</sup>
Operating Conditions	10 - 35C requires external cooling 0% - 95% RH non-condensing
Weight	8.8 lbs / 4.0 kg
Dimensions (WHD)	16.8 x 7.6 x 20 cm; 6.6 x 3 x 7.9 in

## Features:

- Hyperion 100L is a complete system with optics and drivers
- High intensity visible radiation coupling to  $\leq 250$  micron fibers via front panel
- Cool light reduces melting and burnout of valuable fibers<sup>1</sup>
- Complete set of accessories are available: fibers and mounting kits<sup>2</sup>
- Efficiently match light output to the application using standard optical fiber
- Solid state, no hassle implementation; single electrical and optical connector
- Custom packaging and wavelengths are available<sup>2</sup>

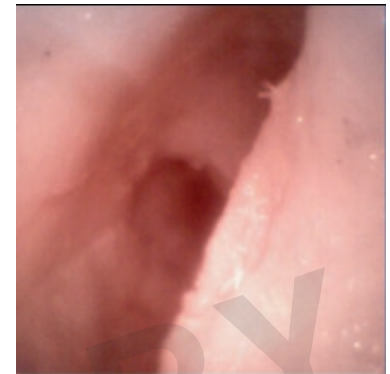
1. Light energy is very high; damage may still occur under certain conditions  
2. Engineering charges may apply and laser classifications may change

All specifications subject to change without notice.

Will be designed in accordance with IEC60601-1, 3rd ed., 60601-2-18 Particular requirements for basic safety and essential performance of endoscopic equipment, 60825 Laser Safety, Part 1; Can/CSA C22.2 Number 61010-1.



Quality Mgmt  
System Registered  
ISO13485:2016  
SAI Global



Actual images taken with the Awaiba video processor using the Hyperion illuminator.



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