



LED Fiber Optic Illuminator – BRIGHTENING LIVES

Achieving brighter, cooler and longer life



LED fiber optic illumination.

- Markets and applications
 - microscope illumination
 - vision inspection systems
 - industrial borescopes and non destructive testing
- Advantages vs. halogen and metal halide lamps
 - long life
 - energy efficient
 - immediately stable output – no warm-up time
 - consistent color temperature over lifetime and when dimmed
 - true (“cool light” source)
 - no high voltage power supply



- **Long life >25,000 hours saves money.** A typical 150W EKE halogen bulb will require 125 replacements before the LED fiber illuminator reaches 70% of its original light output. At \$14.99 *125 the cost for replacement lamps is \$1875. That is more than 3X the price of the LED fiber illuminator.
- **Long life LED sources are environmentally responsible.** Helps keep waste out of landfills
- **Uses two-thirds less energy than a 150W halogen**
- **Halogen lamps turn yellow when aged and when dimmed.** LED's provide consistent color temperature throughout their lifetime.
- **LED's have almost no infrared energy they are truly cool light source.** A 150W halogen lamp operates between 260°F - 340°F (126°C – 171°C). Hot enough to burn fibers and fingers. Cooler is safer.



Complete product OTFI-0100 includes light engine plus:

- electronic LED driver
- manual intensity control
- fan
- AC power supply for mains power 100/240 VAC, 50/60 Hz
- on-off switch
- enclosure
- fiber interface adaptor (sold separately)
- power cord (sold separately)





ring light



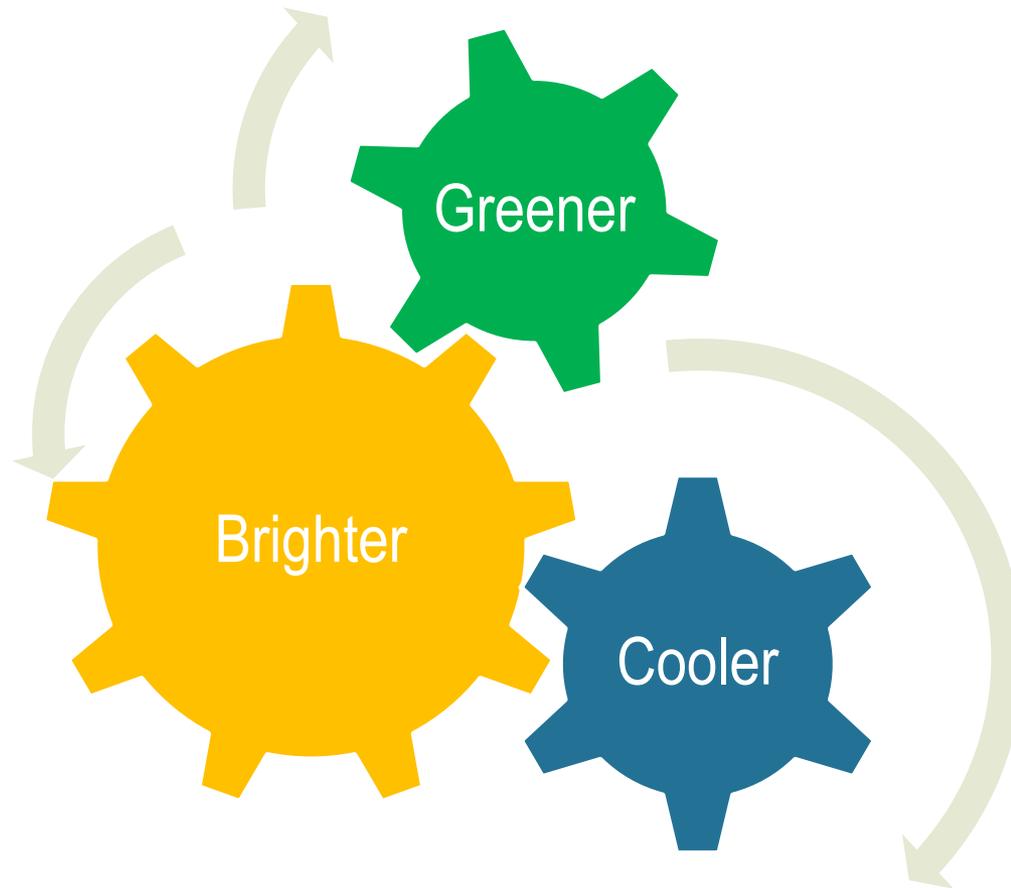
dual goose neck



assembly & inspection of electronics



Product performance



Flux from fiber optic output *	470 lumens
Flux delivered into fiber optic **	780 lumens
CRI (color rendering index)	70
CCT (correlated color temperature)	5,300 K typical

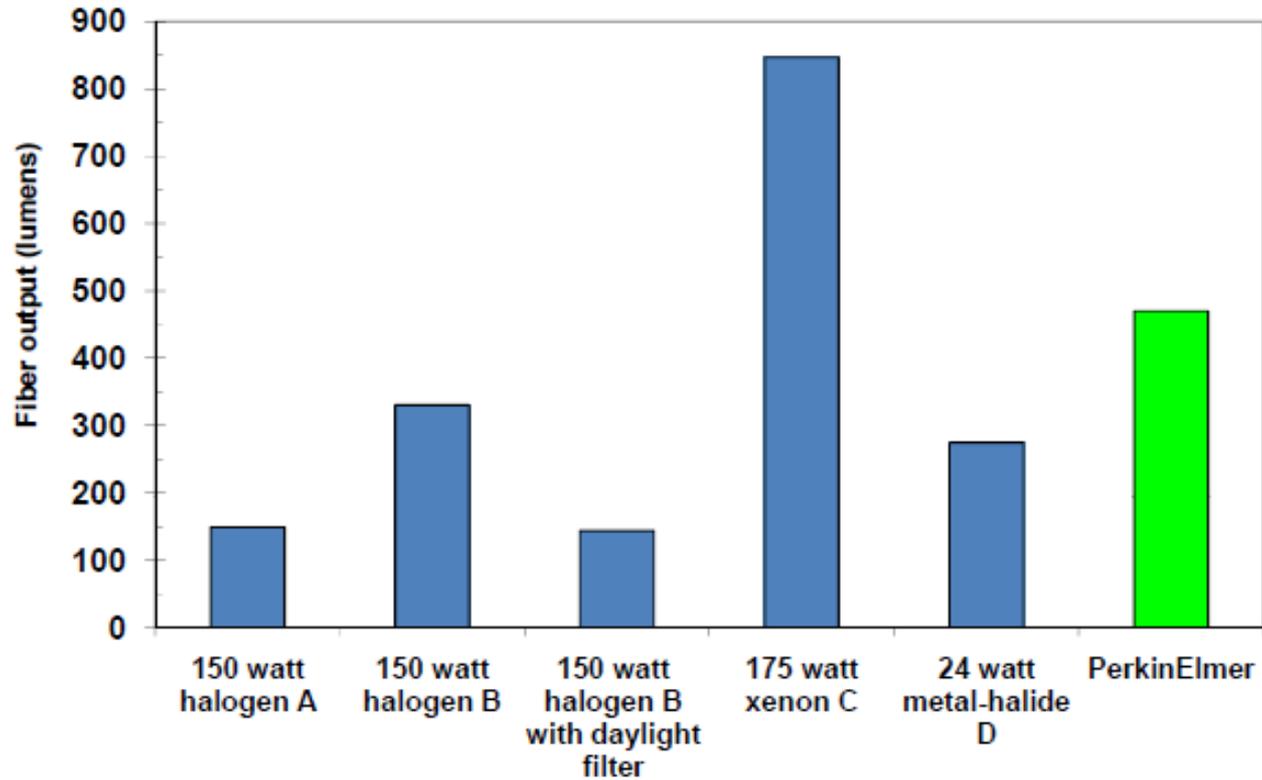
* Coupled into a 5 mm fiber optic bundle of NA = 0.6

** Calculated based on fiber optic throughput of 60%

Fiber optics with an active area of 3 mm – 10 mm can be used with the FOI; however, output flux will vary based on fiber diameter.

Mechanically accommodates fibers with ferrules up to 20 mm outer diameter maximum can be accepted.

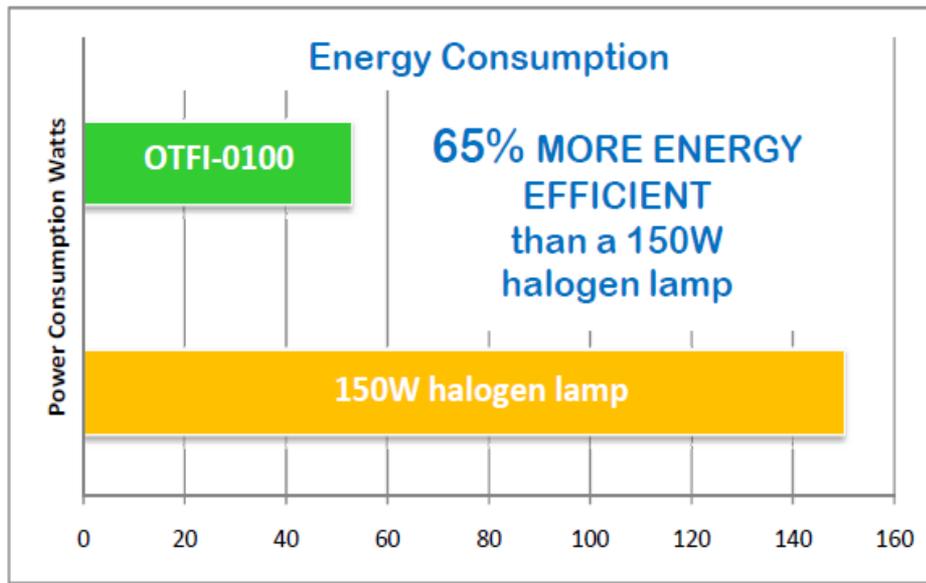




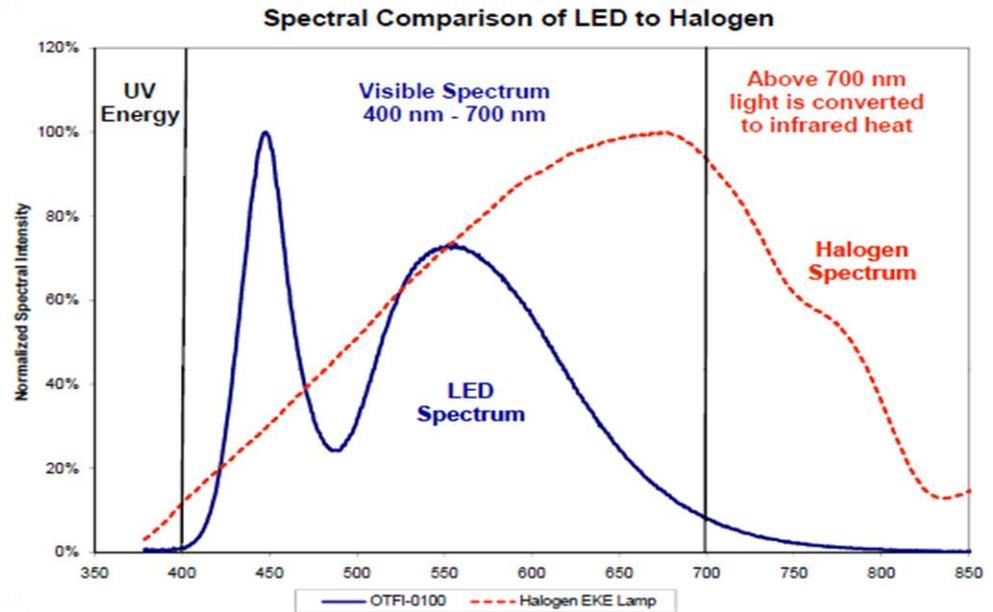
Coupled into a 5 mm fiber optic bundle of NA = 0.6 Calculated based on fiber optic throughput of 60%



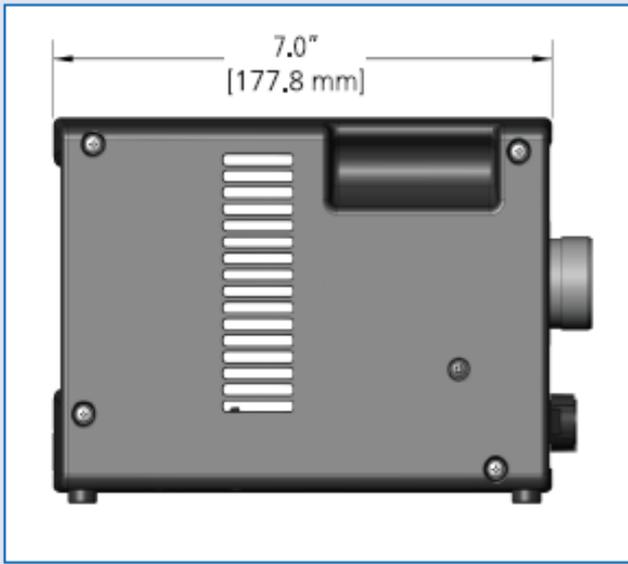
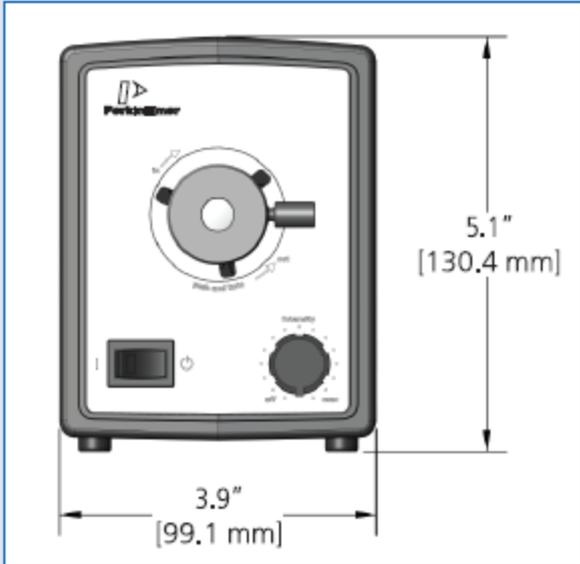
- Universal auto-switching AC input: 100/240 VAC, 50/60 Hz
- Incorporates DC current control (not true PWM)
- Light engine input power 53 watts typical
- Requires approximately **two-thirds less energy** to operate as compared to 150W halogen



- Leds have almost NO infrared energy
- LEDs are a truly cool light source
- Cooler is safer
- PerkinElmer LED fiber illuminator operates at 10°C above ambient.
- A 150W halogen lamp operates at a temperature between 260°F - 340°F (126°C- 171°C) Hot enough to burn fingers



Physical Specifications	Width	Length	Height	Weight
Entire Product	3.9" (9.9 cm)	7.0" (17.8 cm)	5.1" (13 cm)	6.5 lbs. (2.95 kg)



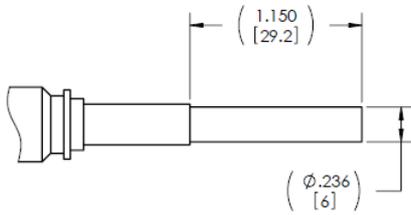
	LED	Halogen
Lifetime	25,000 hours**	200 hours
Dimmable	*maintains constant color temperature	color shifts to lower color temperature when dimmed
Spot size	5 mm	8 mm
Energy consumption	53 watts	150 watts
CCT	5,300 K	3,500 K
Usable light:	no UV or IR	emits UV and infrared
Light output	470 lumens	350 lumens

*CCT stable within 300°K

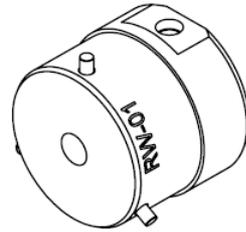
**70% lumen maintenance

- Accepts common fibers 3 mm – 10 mm diameter:
 - Richard Wolf
 - Karl Storz
 - ACMI
 - Dolan-Jenner
 - Schott
 - Custom adapters available
- Fully dimmable with 15 settings
- Separate on/off switch
- Available with EU, UK & US wall plugs
- Ideal for double gooseneck fibers the added weight prevents tip over during adjustment of fibers
- Stackable (2 high)
- Private label options available (200 piece MOQ)
- Optional diffuser for high definition camera applications

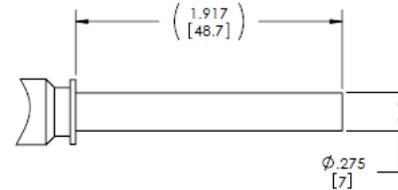




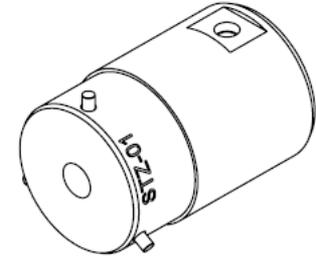
RICHARD WOLF
(END FERRULE)



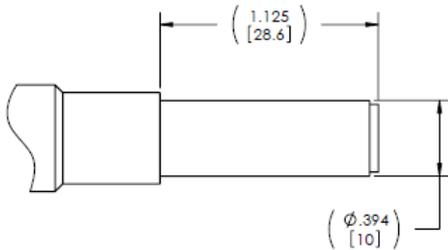
64MT-0532 ADAPTOR (RW-01)



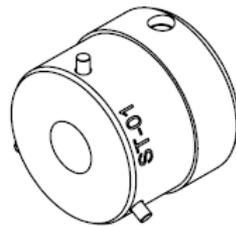
STORZ (END FERRULE)



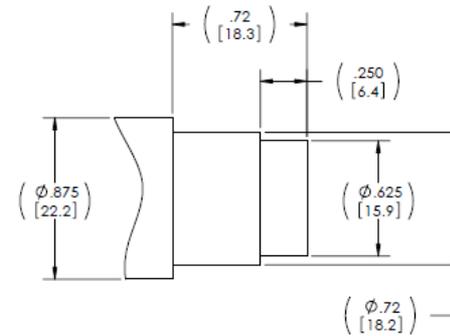
64MT-0531 ADAPTOR (STZ-01)



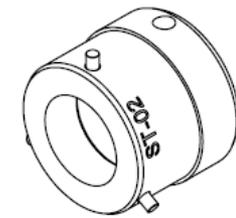
SCHOTT (END FERRULE)



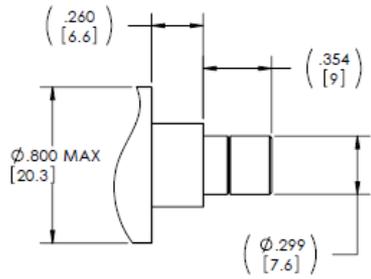
64MT-0435 ADAPTOR (ST-01)



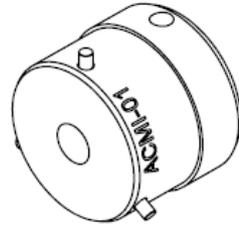
SCHOTT (END FERRULE)



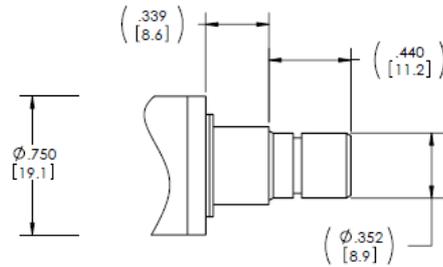
64MT-0550 ADAPTOR (ST-02)



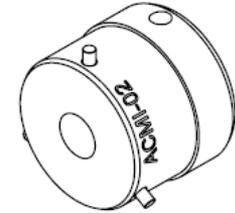
ACMI (END FERRULE)
ALSO FITS STORZ



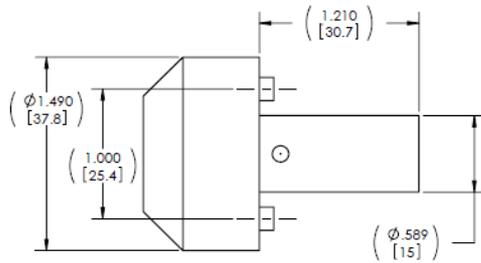
64MT-0533 ADAPTOR (ACMI-01)



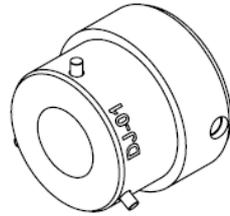
ACMI (END FERRULE)



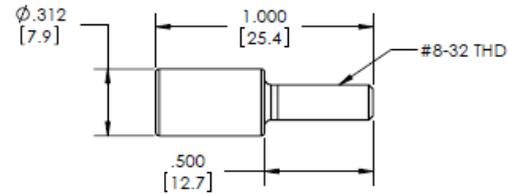
64MT-0539 ADAPTOR (ACMI-02)



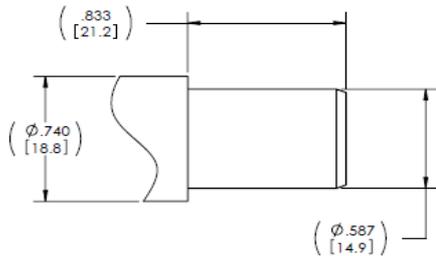
DOLAN-JENNER
(END FERRULE)



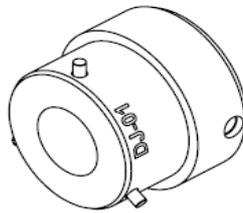
64MT-0431 ADAPTOR (DJ-01)



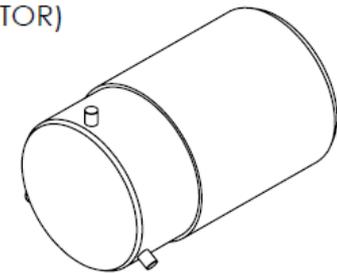
THUMB SCREW
(SUPPLIED WITH EACH ADAPTOR)



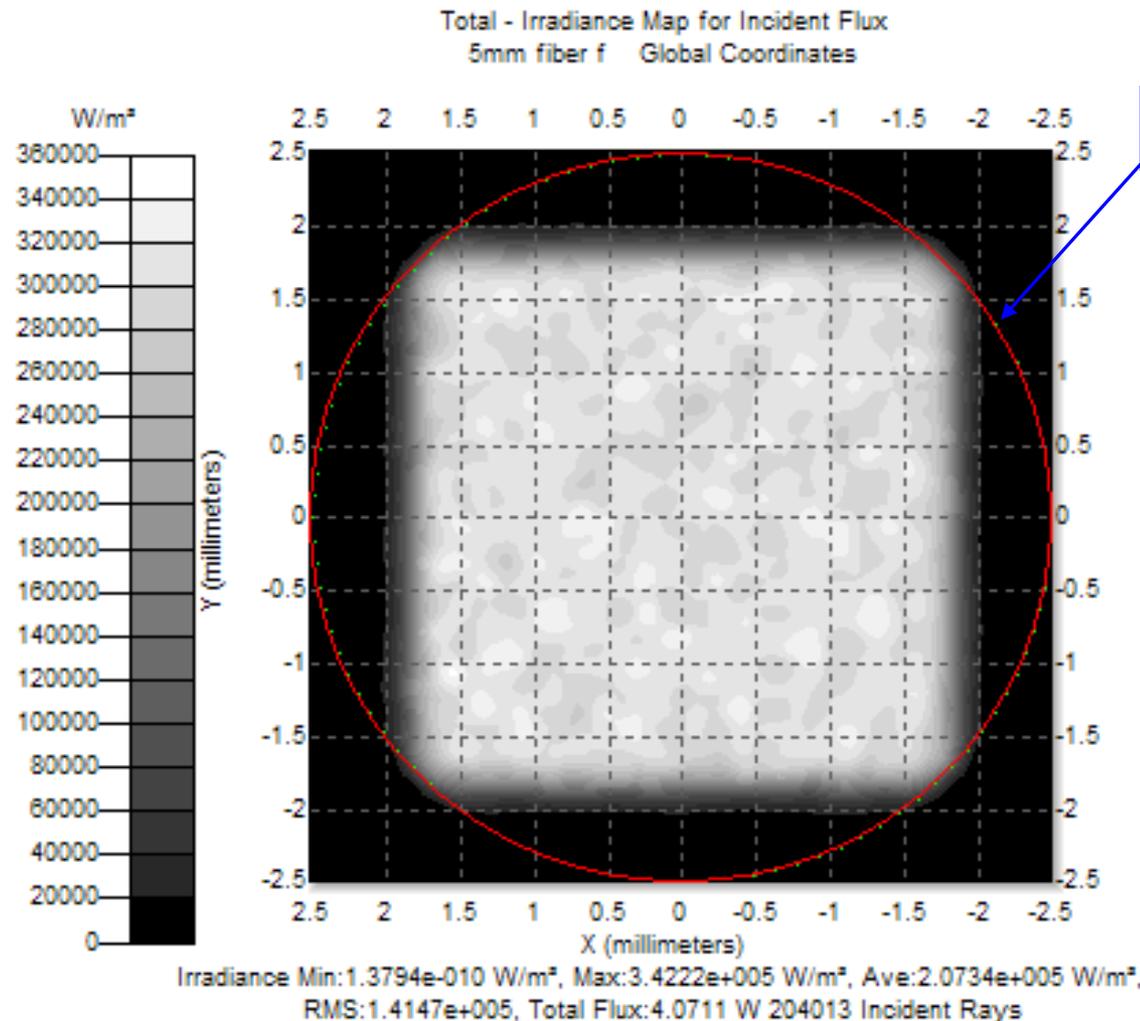
DOLAN-JENNER
(END FERRULE)



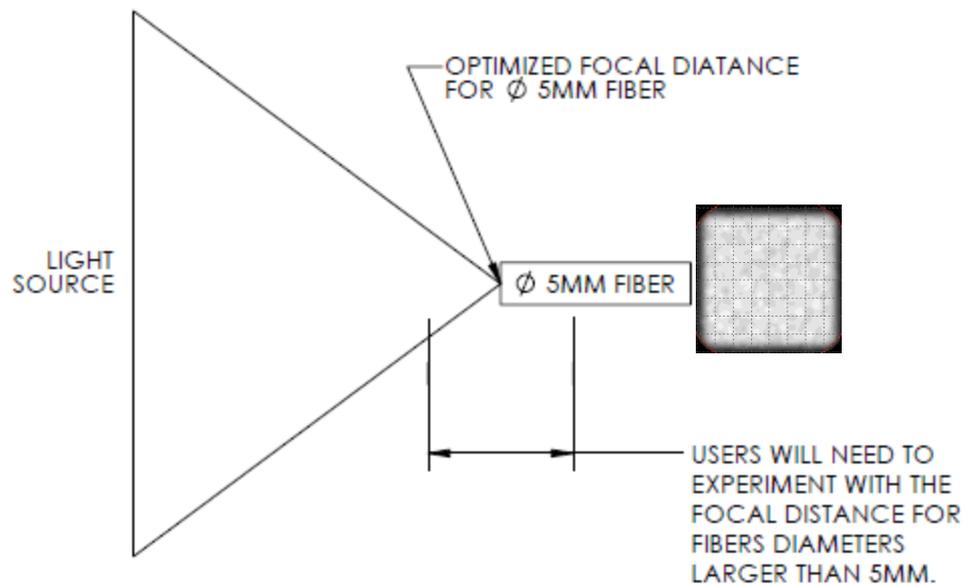
64MT-0431 ADAPTOR (DJ-01)



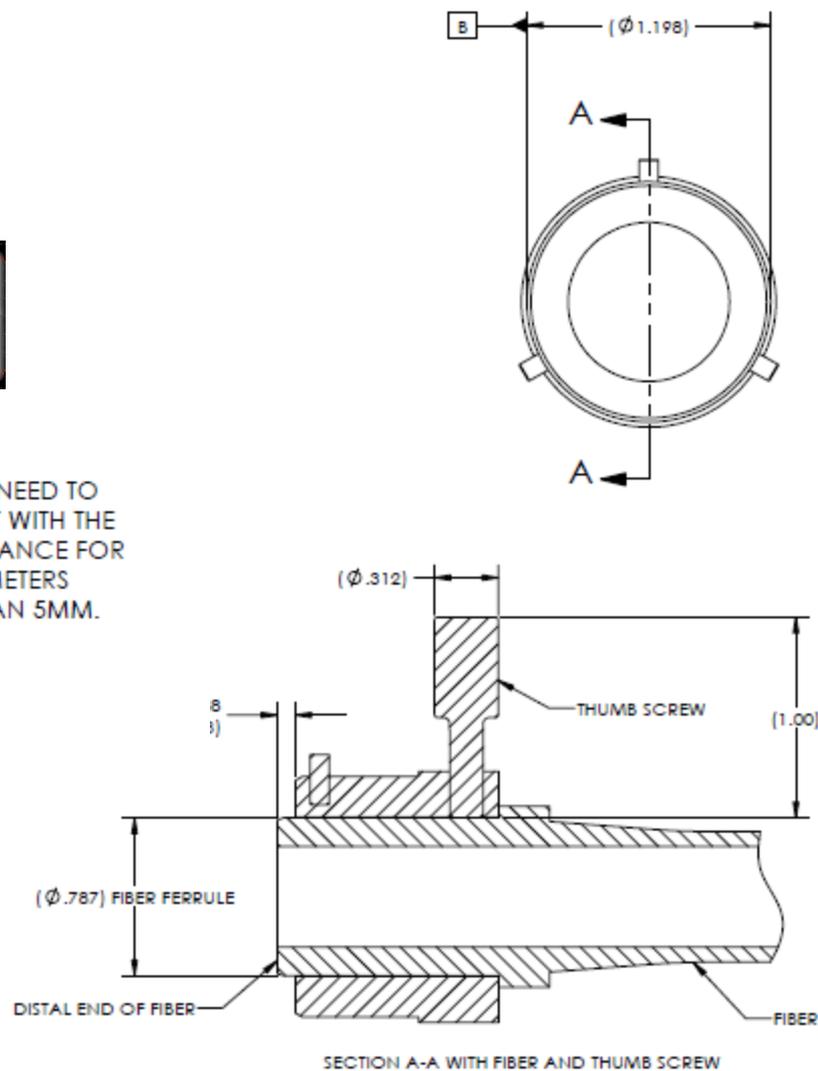
64MT-0535 ADAPTOR (BLANK)



5 mm fiber input



LIGHT SOURCE ILLUSTRATION



Accessories are sold separately

Description	Part number
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EU cord	61PL-0051
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UK cord	61PL-0052
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USA cord	61PL-0050
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Cord length 2 meters

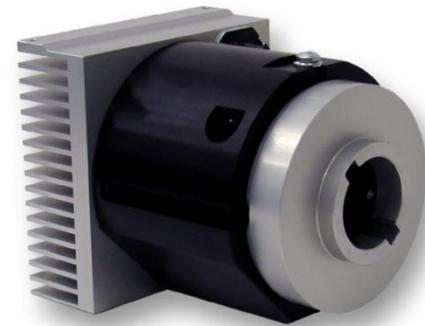




LED Fiber Optics module &
module with driver board
OEM solutions



The one who gets to market first

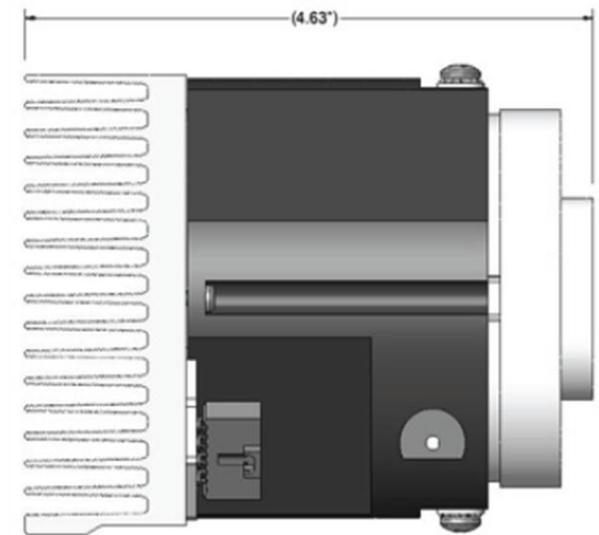
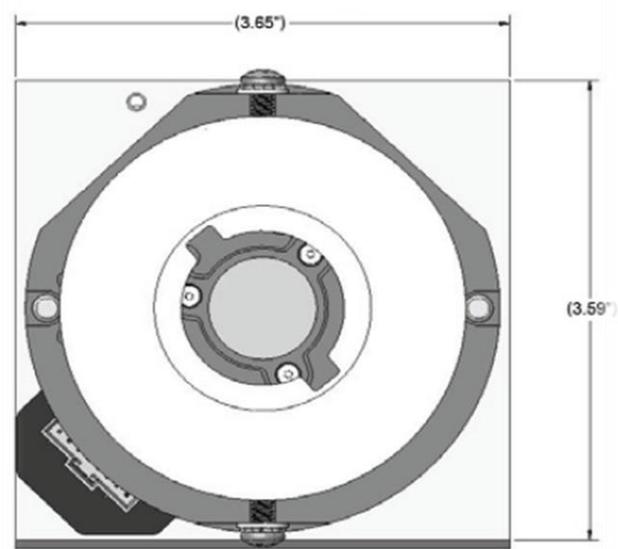


*PerkinElmer can help get OEMs there.... **FASTER***

- Markets and applications
 - microscope illumination
 - industrial borescopes and non destructive testing
 - machine vision
 - **endoscopy** (customer must submit finished product for 510K regulatory certification)



Physical Specifications	Width	Length	Height	Weight
Light Engine	3.65" (9.3 cm)	4.63" (11.8 cm)	3.59" (9.1 cm)	2.2 lbs. (1.0 kg)



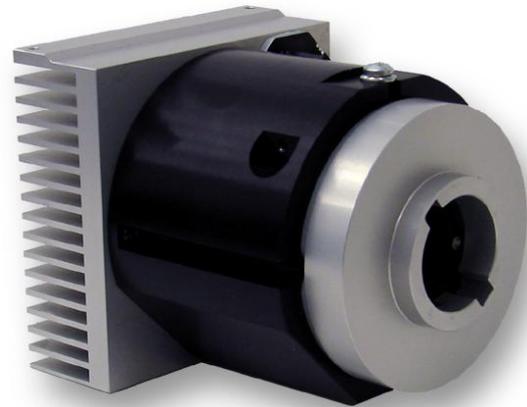
- Optical module available for OEM's who wish to differentiate their product within the market
- Faster time to market
- Lower development costs
- Add the features your customers value
- Accepts common fibers 3 mm – 10 mm
- Optional diffuser for high definition camera applications (*Jan. 2010*)
- Suitable for machine vision applications

What's inside?



An optical module for OEM's

- Optical module with drive electronics
- For OEM's who wish to differentiate their product within the market
- OEM to add wire harnesses, switches, fan and enclosure
- Continuous mode operation only
- Quick and easy design in
- Accepts common fibers 3 mm – 10 mm
- Optional diffuser for high definition camera applications



Q: Can I operate the light engine in a pulse mode operation?

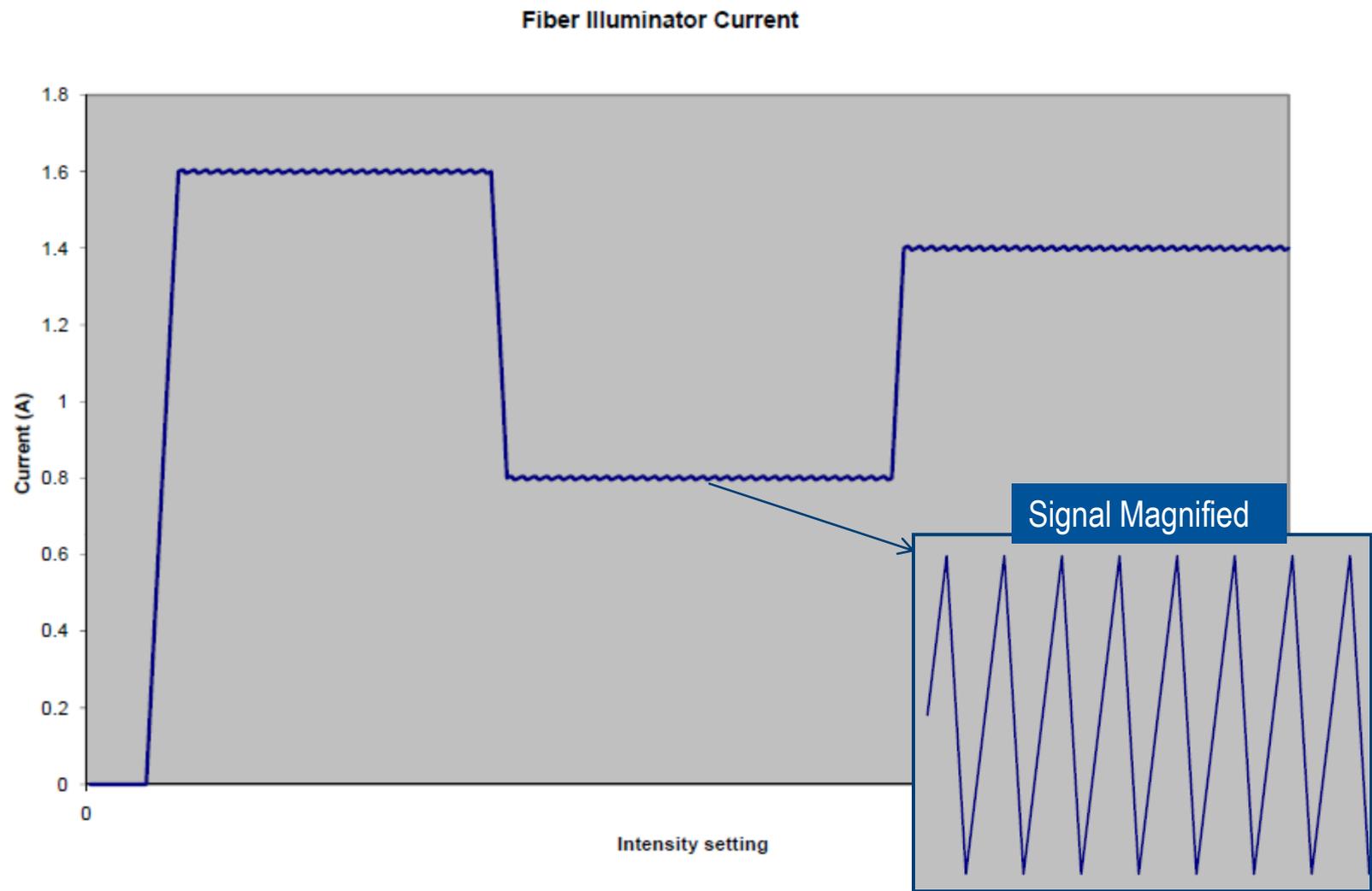
A: The OTFI-0100 unit does not have an external control interface for pulsing.

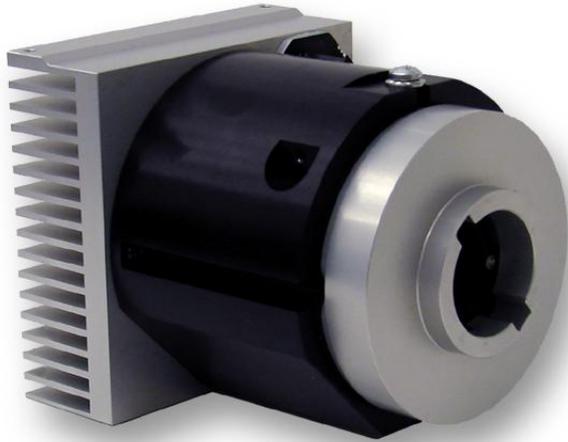
A: The OTFI-0075 is not designed for pulse mode operation.

A: The OTFI-0050 can be pulsed. LED's have rise and fall times in the nanoseconds range. However, because there are so many variations in duty cycles the illuminator has not been characterized in a pulsed mode operation. The manufacturer of the LED recommends a maximum of 1.6A at a 1 kHz, 10% duty cycle.

Q: How are the LED's configured?

A: The LED's are configured in series.





- Applications requiring high degrees of uniformity such as those with HD cameras may want to use an optional diffuser.
- The diffuser will reduce the light output by approximately 17%.
- Therefore a light engine delivering 470 lumens will emit ~390 lumens when the diffuser is incorporated.
- The temperature at the fiber input port is 10°C (50°F) without a diffuser and 60°C (140°F) with a diffuser.

- One of the brightest illuminators available in the industrial market
- Most LED fiber illuminators are designed for fibers 8 mm – 15 mm
- PKI LED fiber illuminator can accept fibers ranging from 3 mm up to 20mm* outer diameter bundles.
- Multiple design solutions available to reduce OEM's time to market
- Lower price solution than competitors offers customers savings
- Combines high intensity, long life, design flexibility, and cost savings

**(Custom adapters may be required for fibers greater than 10 mm active area)*