

Liquid Light Guide, Ø3 mm Core



LLG0338-8

Description

Thorlabs' Liquid Light Guides offer outstanding transmission from 340 to 800 nm for white light illumination applications. They provide excellent transmission from the near UV to the far red range even at a length of 30 m. These light guides are recommended for use with tungsten halogen, xenon or metal halide light sources. The long-term temperature range for the liquid light guides range from -5 to 35 °C. This light guide is 8 feet in length with a core diameter of 3 mm. Light guides can also be offered with custom core diameters or in custom lengths, please contact Technical Support for more details.

Specifications

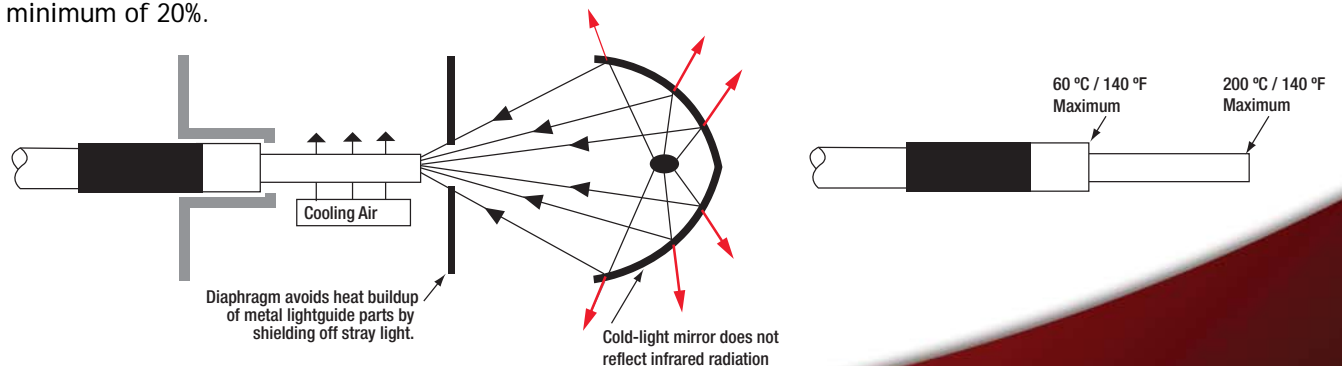
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Wavelength Range	340 - 800 nm
Numerical Aperture	0.59
Half Angle (θ)	36°
Minimum Bend Radius	40 mm (3 mm Core)

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Temperature Range	
Continuous, Long Term	-5 to 35 °C (23 to 95 °F)
Few Days, Maximum	-15 to 50 °C (5 to 122 °F)
Few Hours, Maximum	-20 to 70 °C (-4 to 158 °F)

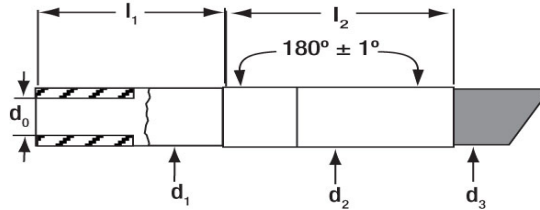
Lifetime and Stability

Liquid light guides can operate under normal conditions many years without degradation of transmission properties. The life of the light guide depends on the type of light source and filter being used. The liquids inside the light guides are stable over years if the light guide is not exposed to wavelengths below 400 nm or above 800 nm. Shorter wavelengths may destroy the transmission property of the liquid, depending on the power rate. Longer wavelengths may overheat the liquid, depending on the power rate, causing bubbles.

Under normal temperatures (i.e. -5 °C up to 35 °C) there is no degradation of the transmission to be expected. Lower temperatures over a period of a few hours may cause bubbles which usually will disappear after storage at room temperatures for a few days. Temperatures over 35 °C and below 50 °C are usually no problem for a period of a few days. Exceeding this limit does not destroy the liquid itself but may cause degradation of the sealing and therefore bubbles occur which cannot recover. However, the tip may be hotter as long as it does not exceed 60 °C at the gasket of the light guide; which is measured where the fitting changes from chrome metal to black color. The liquid light guide is an optical instrument and has to be handled with care. Sharp bending (tighter than the minimum bend radius) may cause the tube to kink, making transmission drop by a minimum of 20%.



Drawings



Active Core Diameter d_0	Standard End Fittings				Protective Sleeve	Minimum Bend Radius
	d_1	l_1	d_2	l_2	d_3	
3 mm	5 +0/-0.1 mm	20 ± 0.1 mm	9 ± 0.1 mm	24 ± 0.1 mm	7 ± 0.1 mm	40 mm

Note:

It is recommended to secure the liquid light guide by the ferrule (dimension d_1 above) with a set screw. Two set screws will help for better centering if placed at 180° . Fixation at the thickest part (dimension d_2 above) is not recommended as at this section the sealing is located.

Transmission

