

Diffusing Fiber Coupled 450nm Blue Laser Module

Application

Consumer products/ Medical / Biochemical

Property

Wavelength Range = 450nm

Corning Fibrance Light-Diffusing Fiber (Glass Fiber)

Introduction

Egismos produces high stability and quality fiber coupled laser modules that are successfully used in consumer's application or biochemistry and medical equipment. Our diffusing fiber coupled laser modules series stand out thanks to their small size, the bright shining light-diffusing fiber and a very competitive price.



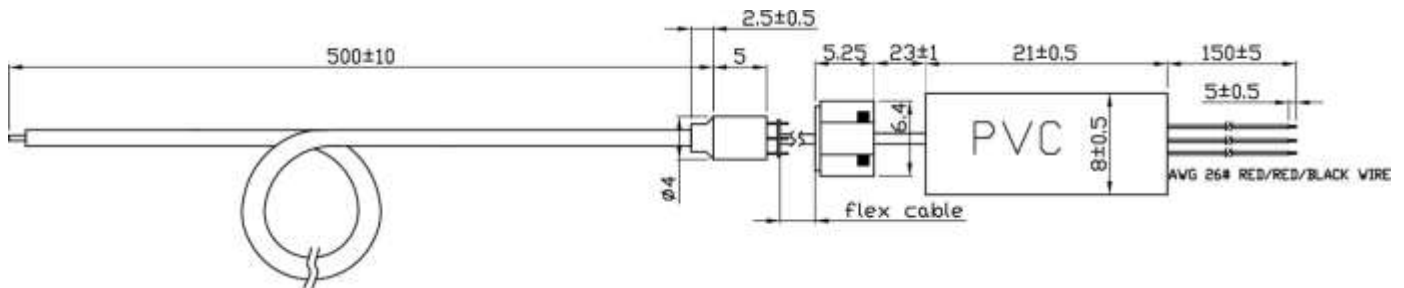
Laser Specification :

Specifications(T=25°C)	Symbol	FC450MD25-D170N1M / FC450MD25-D170N2~5M	
Optical Fiber	Corning Fibrance Light-Diffusing Fiber 170.1 for 1m /170.5 for 2~5m		
Wavelength	nm	Typ. 450	445~455
Coupled Laser Diode Power	mW	Typ. 25	22~27
Operating Voltage	V	Typ. 3.0	2.8~3.5
Operating Current	mA	Typ. 160	Max. 220
Operating Temperature	°C	Typ. 25	-10~+50
Storage Temperature	°C	-40~+85	
Storage Humidity	%	0~90	
Proof Test	kpsi	100	
Housing Material		Brass	
Mean time to failure(MTTF)	hrs	>8,000	
Numerical Aperture(N.A.)		>0.5	

Fiber patch cable Specification :

Specifications	Symbol	FC450MD25-D170N1M	FC450MD25-D170N2~5M
Fiber Pigtail Length	m	1 (Corning 170.1)	2~5 (Corning 170.5)
Fiber Core Diameter	D(μm)	170 ± 3	170±3
Fiber Core Material		Silica	Silica
Core/Cladding Concentricity	μm	≤ 3	≤ 3
Cladding Diameter	μm	230 ± 10	230±10
Connector(Optional)		None (Optional)	None (Optional)
Fiber Bend Radius	mm	≥ 5 (short time) ≥ 8 (long time)	≥ 5 (short time) ≥ 8 (long time)
Outer Jacket	mm	0.4 (Clear PVC)	0.4 (Clear PVC)

Specification chart :



Mean Time to Failure (MTTF)

Mean time to failure (MTTF) is the length of time a device or other product is expected to last in operation. MTTF is one of many ways to evaluate the reliability of pieces of hardware or other technology. It's important to note, however, that the mean time to failure metrics provided by companies regarding specific products or components may not have been collected by running one unit continuously until failure. Instead, MTTF data is often collected by running many units, even many thousands of units, for a specific number of hours.

Numerical Aperture

In optics, the numerical aperture (NA) of an optical system is a dimensionless number that characterizes the range of angles over which the system can accept or emit light. By incorporating index of refraction in its definition, NA has the property that it is constant for a beam as it goes from one material to another provided there is no optical power at the interface. The exact definition of the term varies slightly between different areas of optics. Numerical aperture is commonly used in microscopy to describe the acceptance cone of an objective (and hence its light-gathering ability and resolution), and in fiber optics, in which it describes the range of angles within which light that is incident on the fiber will be transmitted along it.

Bend Radius

Bend radius, which is measured to the inside curvature, is the minimum radius one can bend a pipe, tube, sheet, cable or hose without kinking it, damaging it, or shortening its life. The smaller the bend radius, the greater is the material flexibility.

Specifications are subject to change without notice.





Corning® Fibrance™ Light-Diffusing Fiber

Specification Sheet

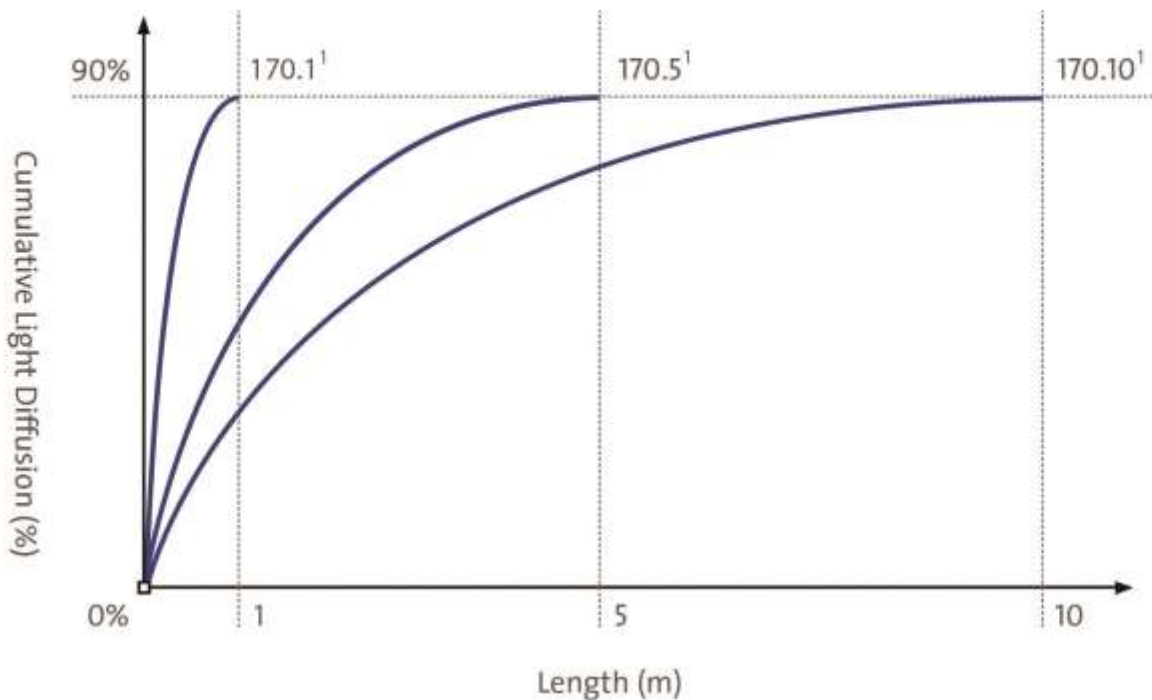
Corning® Fibrance™ Light-Diffusing Fiber is a glass optical fiber made for thin, colorful, aesthetic lighting. This technology enables decorative lighting to be designed or embedded into tight or small places where other bulky lighting elements cannot fit.

With this fiber, designers can add light where and how they want, while enhancing the product’s overall appeal, functionality, and user experience.

Product Attributes:

- Glass optical fiber
- Small, thin, and flexible
- Tight-bend capability
- Bright, clear color
- Emits continuous, uniform light
- Versatile for a variety of applications

Light Diffusion Characteristics



Optical:

Product Offering ¹	170.1	170.5	170.10
Light-Diffusion Length (Nominal)	1 m	5 m	10 m
Numerical Aperture	> 0.5		
Operating Wavelength Range	405 – 1000 nm evaluated, broader possible		
Viewing Angle ²	> 120 degrees		

Mechanical:

Core Diameter (µm)	170 ± 3
Outer Diameter (µm)	230 ± 10
Proof Test - Tensile Strength (kpsi)	> 100

Environmental:

Operating Temperature Range	- 40 to +85 °C
Storage Temperature Range	- 40 to +85 °C

- 1 Different offerings of Corning® Fibrance™ Light-Diffusing Fiber are identified by the core diameter and light-diffusion length. For example, a core diameter of 170 and light-diffusion length of 1 m, is identified as 170.1.
- 2 Viewing angle is defined as the angle at which the luminance is greater than 50 % of the maximum. The fiber emits light uniformly in 360° around the circumference of the fiber and >120° along the length of the fiber if viewed from either end.



Products available in standard lengths of 1 m, 5 m, and 10 m diffusion lengths. Also available with 900 micron clear outer jacket. Fiber designs have been optimized for use with laser diode sources.