

Specifications for Plastic Optical Fiber

Multi-core POF

Flame-retardant Grade < UL VW-1, 80°C >

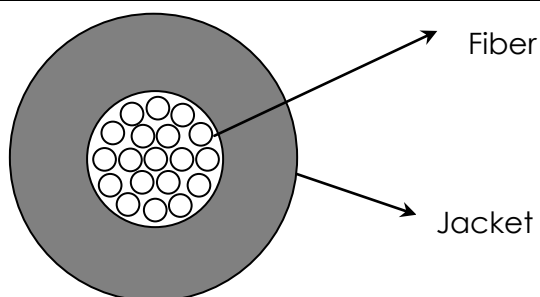
HMCKU-1000P

Issued on : May 14, 2013

Issued by : Asahi Kasei E-Materials Corporation

1, STRUCTURE

ITEM	UNIT	Specifications
Core Material		PMMA
Clad Material		Fluorinated Polymer
Fiber Diameter	μm	1000 ± 60
Core Number		19
NA		0.5
Jacket Material		Flame-retardant PE
Jacket Diameter	μm	2200 ± 70
Jacket Color		Black
Marking		[RU AWM STYLE 5292 VW-1 80°C E116331 ASAHIKASEI E-MATERIALS CORPORATION]
Marking Color		White

2, PROPERTIES

ITEM	UNIT	Specifications	
Application Temperature Range	°C	-55 ~ 80	
Attenuation	dB/m	≤ 0.18	*1
Tensile Strength at Break Point	N	≥ 90	*2
Elongation at Break Point	%	≥ 90	*2
Minimum Bending Radius	mm	6	*3

3, RoHS certification

The product does not contain RoHS 2 hazardous substances, Cadmium, Lead, Mercury, Chrome VI, PBB, PBDE, HBCDD, DEHP, DBP and BBP intentionally.

Sample conditions

Temperature: T = 23°C
 Humidity: RH = 50%
 Storage time: t = 200h

*1 : Monochromatic light at 650nm, LNA = 0.15, 20-2m Cut-back Method

*2 : Interval between grippers = 100 mm, Tensile Speed = 100mm/min

*3 : L = 2m, 90 degree bending at the middle of fiber

Light Source : LED (Peak Wavelength = 657nm)

Transmission Rate ≥ 90%

Precautions in Handling and Use

Restricted applications

DO NOT USE LUMINOUS™ FOR ANY APPLICATION WHICH IS INTENDED TO COME INTO DIRECT CONTACT WITH THE HUMAN BODY OR DIRECT CONTACT WITH FOOD. Consult ASAHI KASEI E-MATERIALS before considering LUMINOUS™ for any non-invasive medical device applications; invasive applications cannot be considered.

Installation and operating environment

LUMINOUS™ is not structurally or materially designed to bear large external loads. Do not place or drop heavy objects on LUMINOUS™, or hang objects from LUMINOUS™. Improper installation or service environment may seriously degrade its light transmission capability. The design of any system or instrument in which LUMINOUS™ is to play an essential role must provide effective control of its installation and operating environment (temperature, humidity, freedom from exposure to solvents, chemicals, ultraviolet light, etc.) and appropriate back-up in case of light transmission loss.

Laboratory tests and experience have shown all of the following to require particular care, in both installation and service.

- * Do not squeeze, pinch, or compress LUMINOUS™ with tools, fixtures, or securing devices.
- * Do not bring into direct contact with any chemicals that might degrade the LUMINOUS™ plastic resins.
- * Do not bring into direct contact with any tubes, cables, or other rubber or plastic objects containing plasticizer (DOP, etc.), stabilizer, or other additive that might migrate into the LUMINOUS™ cord or cable and cause discoloration or reduced photoconductivity.
- * Do not apply or permit contact with any adhesive containing a solvent, monomer, or other component that might adversely affect the physical or optical properties of LUMINOUS™.
- * Do not use any alcohol or organic solvent in cleaning or wiping LUMINOUS™, as it may cause cracking or hazing.
- * Do not expose LUMINOUS™ to ultraviolet or radioactive rays, which may cause deterioration and loss of photoconductivity.

Heat exposure

LUMINOUS™ softens at approximately 100°C, decomposes and emits flammable gas at approximately 200°C, and above 200°C may ignite and burn. Any lamp or other light source assembly must include a cooling device to keep LUMINOUS™ below 80°C, and particularly in conjunction with the use of a condenser lens, the end surface of LUMINOUS™ must be kept free of dirt and other contaminants, which may cause elevated LUMINOUS™ surface temperature, decomposition, and fire.

Storage

Store LUMINOUS™ indoors, in a place free from direct sunlight, water and excessive humidity, to protect its properties and performance.

Disposal

LUMINOUS™ bare fiber and cord contain fluorine and vinyl chloride resins, and will emit hydrogen fluoride, hydrogen chloride or other toxic gases during incineration. Dispose of LUMINOUS™ either by land-fill burial or by incineration in a facility capable of removing and disposing of such gases, in strict accordance with national and local laws and regulations.

**Technical Data
for Plastic Optical Fiber**

HMCKU-1000P

Asahi Kasei E-Materials Corporation

Attenuation

Light source : 650nm NA=0.15、20—2m cut-back method (Typical)

Product	Attenuation[dB/m]
HMCKU-1000P	0.136

Heat resistance

Light source : 657nm LED

Condition	Time [hours]	Attenuation loss [dB/m]
		HMCKU-1000P
85°C dry	0	0
	168	0
	500	0
	1000	0
85°C 85%RH	0	0
	168	0.3
	500	0.3
	1000	0.3

Repeated Bending

Method : $\pm 90^\circ$ $r=15\text{mm}$ Weight 0.5kg (JIS C6861) (Typical)

# of Bending times	10,000	20,000	30,000	40,000
Attenuation Loss (dB)	0	0	0.3	1.8

Static bending

Bending radius 90° (typical)

R [mm]	4	6	8	10	20	25	30	40
Light power [%]	86	92	94	96	99	99	100	100
Attenuation Loss (dB)	0.66	0.36	0.27	0.18	0.04	0.04	0	0

Bending radius 360° (Typical)

R [mm]	4	6	8	10	20	25	30	40
Light power [%]	75	82	87	90	95	97	97	97
Attenuation Loss (dB)	1.25	0.86	0.60	0.46	0.22	0.14	0.13	0.13