ESKA™ High-performance Plastic Optical Fiber: GK-40

Manufactured by Mitsubishi Rayon Co., Ltd.

Marketed and sold by Mitsubishi International Corporation

May, 2001

Structure		
Core Material	Polymethyl-Methacrylate Resin (PMMA)	
Cladding Material	Fluorinated Polymer	
Core Refractive Index	1.49	
Numerical Aperture	0.5	
Refractive Index Profile	(Step Index)	
Attenuation (db/m)	0.15	
Approximate Weight (g/m)	1.0	
	Unit	Typical
Core Diameter	μm	980
Overall Diameter	μm	1000
Fiber Diameter Tolerance	+/- 6%	

Packaging	
Spool Length (m)	5,250
N weight on spool (kg)	6.6
Spool Weight (kg)	1.4
Carton Size	315 X 315 X 215
Carton G Weight (kg)	8.0
Fiber Code	GK40
Cable Code	GH4001/4002

Applications: Sensing

GK grade fibers are typically used for sensing temperatures, speed, liquidity levels and positioning. In addition, medical applications are popular, as are applications where tight bends are required.

Performance		Criteria for Acceptance and/or Test Conditions	Unit	Values
Temperature Range		No deterioration in optical properties *	°C	-55 -- 85
Operating Temperature Under Conditions of High Humidity		No deterioration in optical properties [95% RH] **	°C	=<75
Optical Properties	Transmission Loss	650nm collimated light (standard conditions) [10m – 1m cutback]	dB/km	=<150
Mechanical Character-istics	Minimum Bend Radius	Loss increment =< 0.5dB [Quarter bend]	mm	=>20
	Tensile Strength	Tensile force at yield point [JIS C 6861]	N	=>65

Notes: Performance tested in conditions cooler than 25°C unless otherwise indicated

* Attenuation change <10% after 1000 hours

** Attenuation change <10% after 1000 hours, except when due to absorbed water

ESKA™ High-performance Plastic Optical Fiber: SK-10

Manufactured by Mitsubishi Rayon Co., Ltd.

Marketed and sold by Mitsubishi International Corporation

May, 2001

Structure		
Core Material	Polymethyl-Methacrylate Resin (PMMA)	
Cladding Material	Fluorinated Polymer	
Core Refractive Index	1.49	
Numerical Aperture	0.5	
Refractive Index Profile	(Step Index)	
Attenuation (db/m)	0.3	
Approximate Weight (g/m)	0.06	
	Unit	Typical
Core Diameter	µm	240
Overall Diameter	µm	250
Fiber Diameter Tolerance	+/- 9.2%	

Packaging	
Spool Length (m)	12,000
N weight on spool (kg)	1.4
Spool Weight (kg)	0.68
Carton Size	286 X 286 X 130
Carton G Weight (kg)	1.6
Fiber Code	SK
Cable Code	SH1001
Master Carton	12 Spools

Applications: Sensing

SK grade fibers are typically used for sensing temperatures, speed, liquidity levels and positioning. In addition, medical and general illumination are popular applications

Performance		Criteria for Acceptance and/or Test Conditions	Unit	Values
Temperature Range		No deterioration in optical properties *	°C	-55 -- 70
Operating Temperature Under Conditions of High Humidity		No deterioration in optical properties [95% RH] **	°C	=<60
Optical Properties	Transmission Loss	650nm collimated light (standard conditions) [10m – 1m cutback]	dB/km	=<300
Mechanical Character-istics	Minimum Bend Radius	Loss increment =< 0.5dB [Quarter bend]	mm	=>5
	Tensile Strength	Tensile force at yield point [JIS C 6861]	N	=>3

Notes: Performance tested in conditions cooler than 25°C unless otherwise indicated

* Attenuation change <10% after 1000 hours

** Attenuation change <10% after 1000 hours, except when due to absorbed water

ESKA™ Plastic Fiber Optic & Cable General Technical Information

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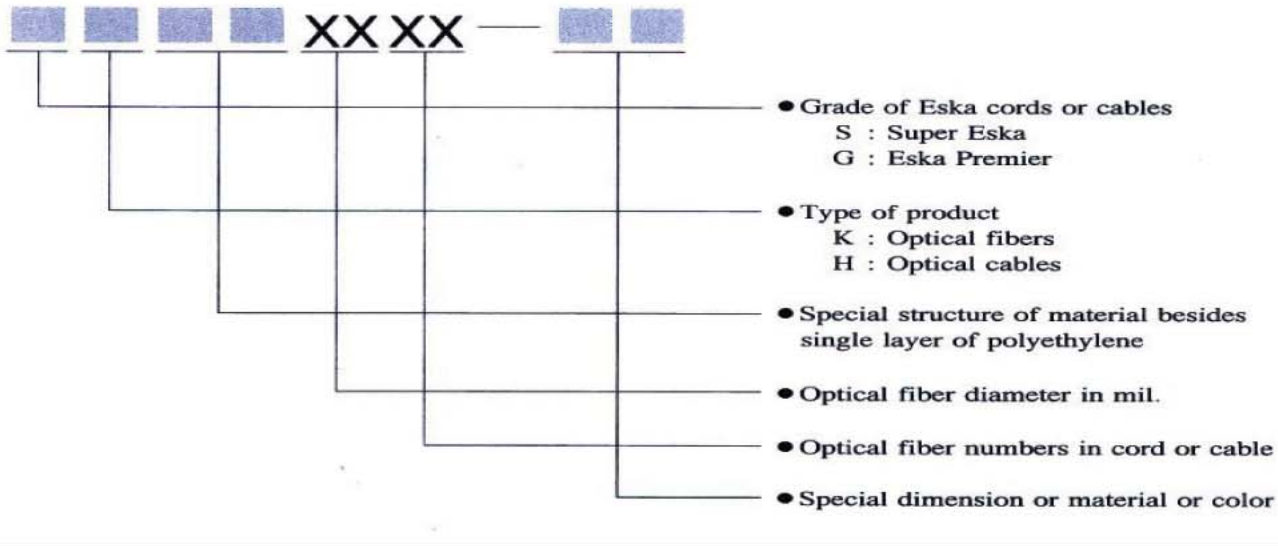
Product Line-up

Application	Lighting	Sensing	Industrial Data Com	High Bandwidth	Heat Resistance
Grade	ESKA™	SUPER ESKA™	ESKA PREMIER™	ESKA MEGA™	ESKA™ for high temperatures
Fiber Code	CK	SK	GK	Not available	Not available
Cable Code	Not available	SH	GH	MH	BH
Refractive Index	1.49	1.49	1.49	1.49	1.49
Numerical Aperture	0.5	0.5	0.5	0.3	0.58
Temperature Range	-55℃ ~ 70℃	-55℃ ~ 70℃	-55℃ ~ 85℃	-55℃ ~ 85℃	-55℃ ~ 105℃
Sample Item	CK40	SK40	GK40	MH4001	BH4001
Attenuation[1]	<0.20dB/m	0.15dB/m	<0.15dB/m	<0.16dB/m	<0.20dB/m

1 Attenuation is measured at 650nm collimated light. Note that attenuation and some other specifications described here will change based on the diameter of the fiber and the material used for the cable jacket

Product Code Designations



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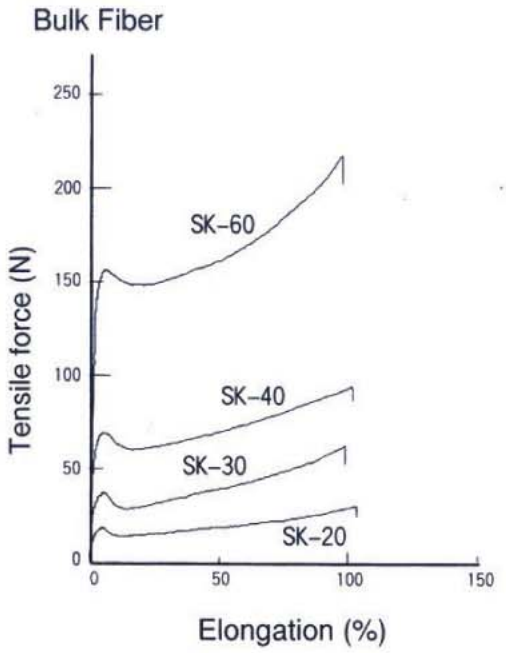
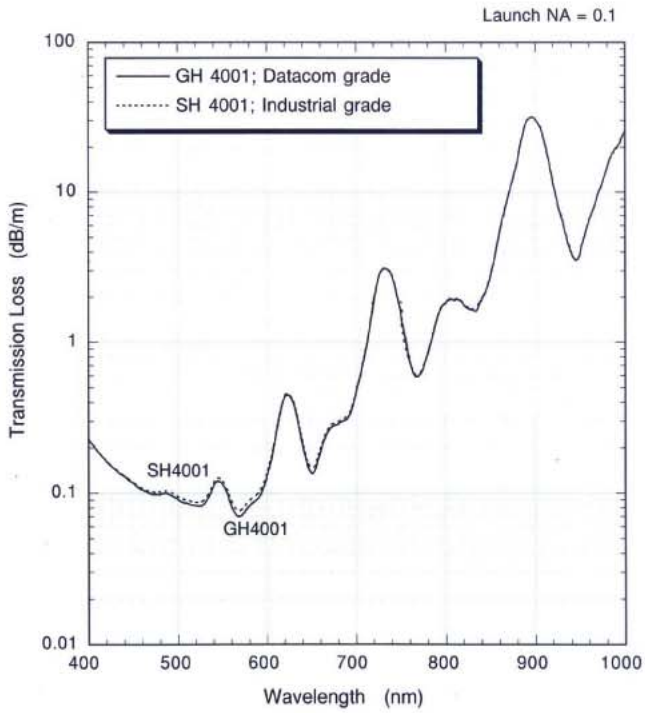
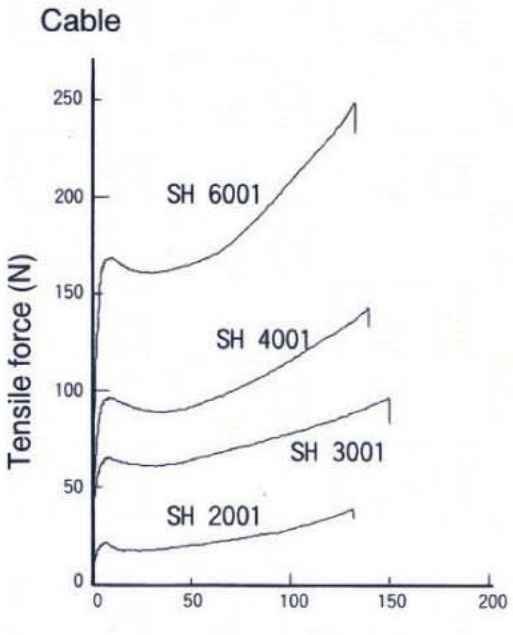
Tensile Characteristics: Bulk Fiber



Typical Transmission Loss Spectrum Launch NA=0.1



Tensile Characteristics: Cable



Bending Loss