



# 技 術 資 料

## TECHNICAL BULLETIN

- 東レプラスチック光ファイバ -  
- TORAY POLYMER OPTICAL FIBER -

### PJU-FB1000

東レ株式会社  
Toray Industries, Inc.

## 目次 Contents

添付 (Appendix)

. 規格表 (Specifications)	.....
. 技術資料 (Technical Bulletin)	
1 . 光学特性 (Optical Properties)	
( 1 ) 透光性 (Spectral Attenuation)	.....
( 2 ) 長さ依存性 (Transmitted Rate by Length)	..... -
2 . 物理特性 (Physical Properties)	
( 1 ) 引張強度 (Tensile Strength)	.....
( 2 ) 曲げ特性 (Static Bending)	.....
( 3 ) 静置荷重特性 (Compressive Load)	..... -
( 4 ) 落下衝撃特性 (Cyclic Drop Impacts)	..... -
( 5 ) 屈曲特性 (Cyclic Bending)	..... -
( 6 ) 捻回特性 (Cyclic Twists)	..... -
( 7 ) 伸び特性 (Elongation)	..... -
3 . 温度特性 (Thermal Properties)	
( 1 ) 低温特性 (Durability to Low Temperature)	..... -
( 2 ) 高温特性 (Durability to High Temperature)	.....
( 3 ) 高温高湿特性 (Durability to Heating with Moisture)	.....
( 4 ) ヒートショック特性 (Thermal Impacts)	..... -
( 5 ) 耐候性 (Weather-proof)	..... -
( 6 ) 収縮率 (Heat Shrinkage)	.....
4 . 耐薬品性 (Chemical Resistance)	
( 1 ) 硫酸 (Sulfuric Acid) (34.6wt%)	..... -
( 2 ) 水酸化ナトリウム (Sodium Hydroxide) (10wt%)	..... -
( 3 ) エンジンオイル (Engine oil)	..... -
( 4 ) 海水 (Sea Water) (5wt%)	..... -
5 . その他 (Others)	..... -

---

### 注意:

これは技術資料です。本記載のデータは正確ですが、製品を保証するものではありません。また、本製品をもとにした2次製品とは特性の異なる場合があります。

### ATTENTION:

This is technical bulletin; the data herein is accurate as regards our product, but no warranty. There is a possibility that data of their product made of our product are different from the data herein.

# SPECIFICATIONS

PRODUCT CODE : PJU-FB1000

I T E M					UNIT	SPECIFICATIONS		
						MIN.	AVE.	MAX.
STRUCTURE	CABLE	CORD	FIBER	CORE MATERIAL	-	POLYMETHYL METHACRYLATE		
				CORE DIAMETER	μ m	935	980	1025
				CLADDING MATERIAL	-	FLUORINATED POLYMER		
				CLADDING DIAMETER	μ m	955	1000	1045
				NUMERICAL APERTURE	-	-	0.63	-
			NUMBER OF FIBER		FIBERS	-		
			SHEATH MATERIAL		-	-		
			SHEATH COLOR		-	-		
			CORD DIAMETER		mm	-	-	-
			CORD WIDTH		mm	-	-	-
		TENSIONMEMBER		-	-			
		JACKET MATERIAL		-	-			
		JACKET COLOR		-	-			
		CABLE DIAMETER		mm	-	-	-	
AVAILABLE TEMPERATURE RANGE PERMANENT USE						-55	-	85
OPTICAL PROPERTIES			ATTENUATION (at 650nm)		dB/m	-	-	0.15
PHYSICAL PROPERTIES			TENSILE STRENGTH (YIELD POINT)		N	58	-	-
			ALLOWABLE BENDING RADIUS		mm	9	-	-

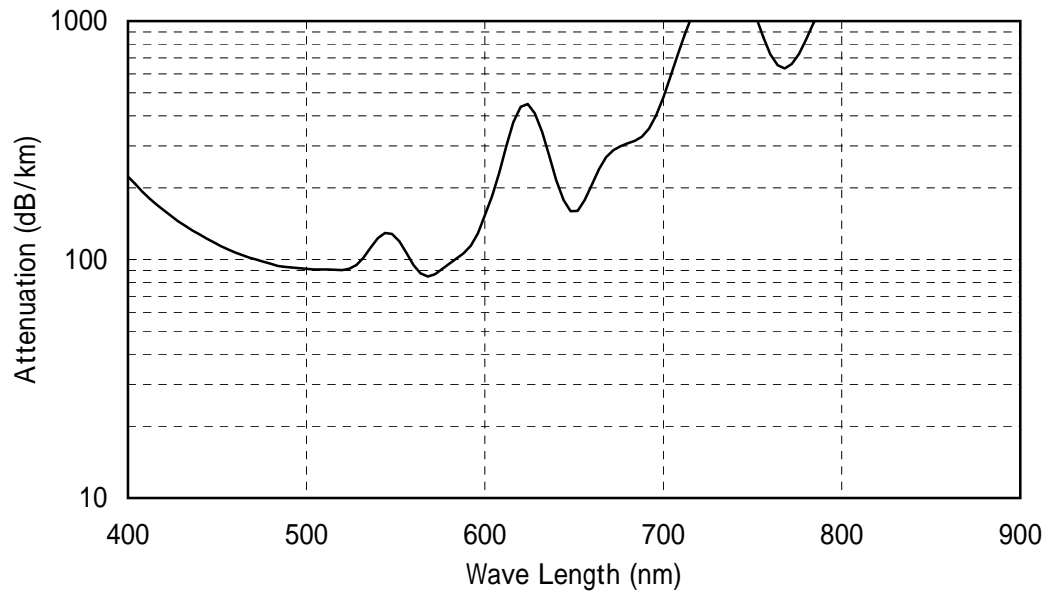
SF03271-2

# 1.(1)透光性 (SPECTRAL ATTENUATION)

< サンプル名 (Product Code) >

PJU - FB1000

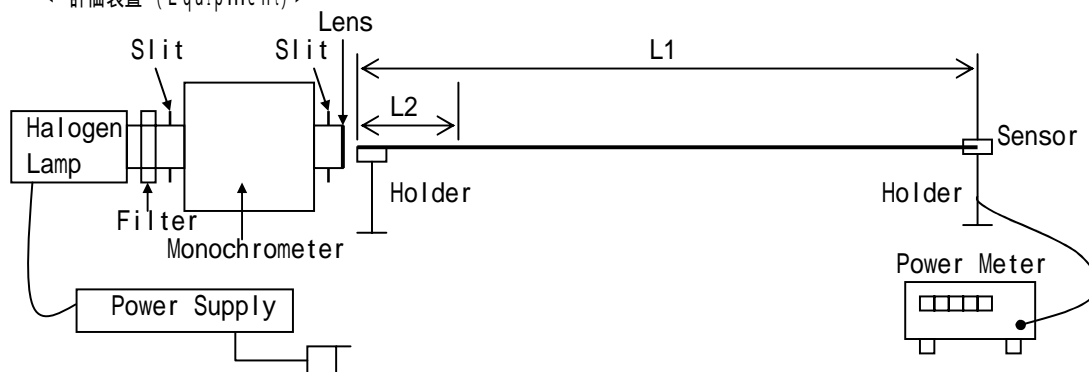
< 評価結果 (Result) >



< 評価条件 (Test Condition) >

Measuring Method : Cut Back Method (30m/2m)  
 Temperature : 25 (R.T.)  
 Light Source : Halogen Lamp  
 Launch NA : 0.25

< 評価装置 (Equipment) >



$$\text{Attenuation Loss (dB/m)} = (P1 - P2) / (L2 - L1)$$

L1, L2 : Sample Length (m)

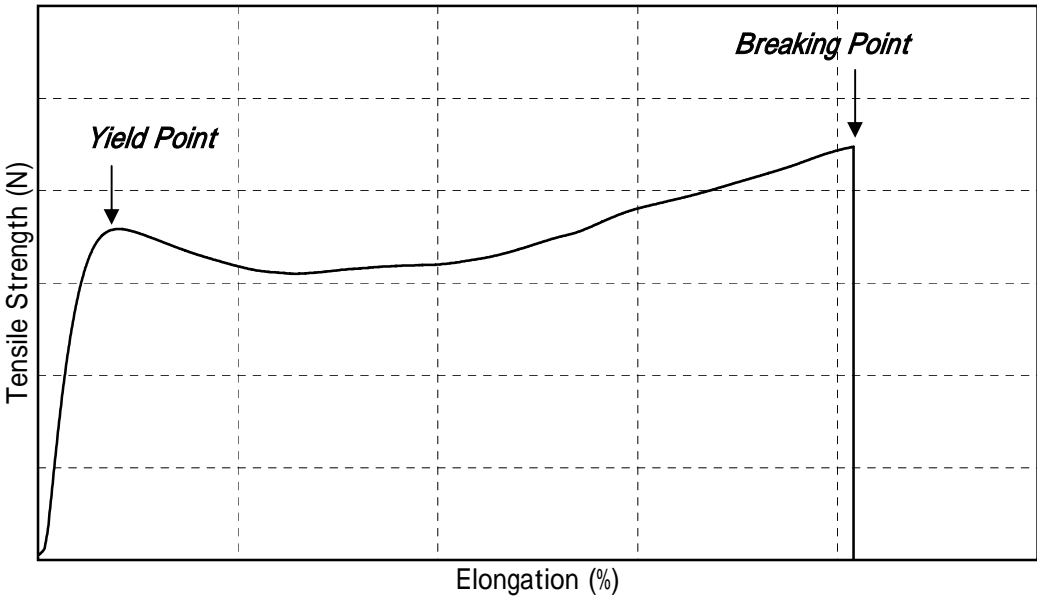
P1 : Transmitted Light Power at Cord Length L1 (dBm)

P2 : Transmitted Light Power at Cord Length L2 (dBm)

< 特記 (Remarks) >

2.(1)引張強度 (TENSILE STRENGTH)

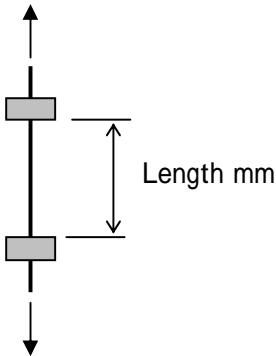
< サンプル名 (Product Code) > P J U - F B 1 0 0 0  
< 評価結果 (Result) >



Yield Point	Strength (N)	70
	Elongation (%)	8.2
Breaking Point	Strength (N)	106
	Elongation (%)	108

< 評価条件 (Test Condition) >  
Temperature : 25 (R.T.)  
Sample Length : 200mm  
Tensile Speed : 100mm/min

< 評価装置 (Equipment) >



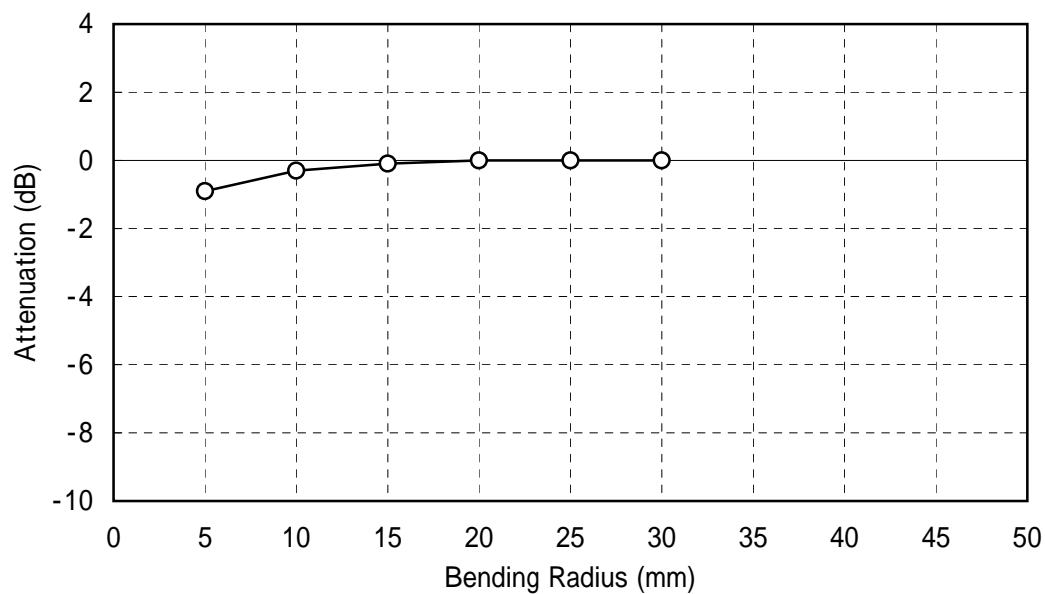
< 特記 (Remarks) >

## 2.(2)曲げ特性 (STATIC BENDING)

< サンプル名 (Product Code) >

PJU - FB1000

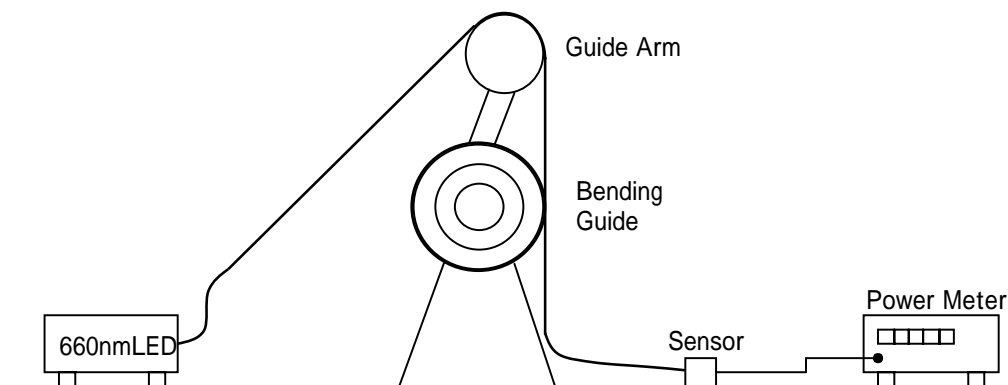
< 評価結果 (Result) >



< 評価条件 (Test Condition) >

Temperature : 25 (R.T.)  
Light Source : 660nm LED  
Bending Angle : 360°

< 評価装置 (Equipment) >



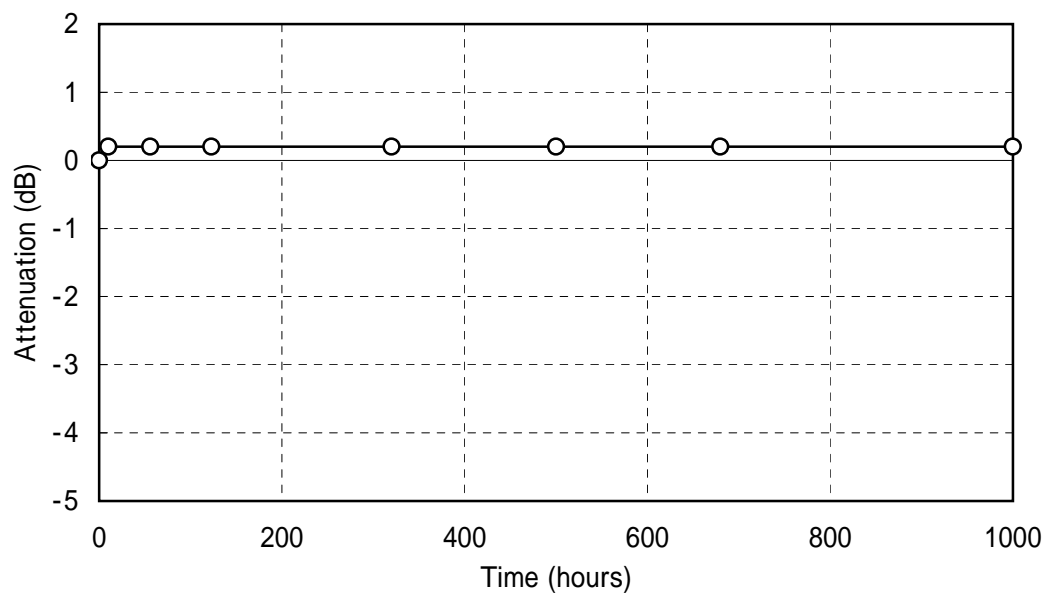
< 特記 (Remarks) >

### 3.(2)高温特性 (DURABILITY TO HIGH TEMPERATURE)

< サンプル名 (Product Code) >

PJU - FB1000

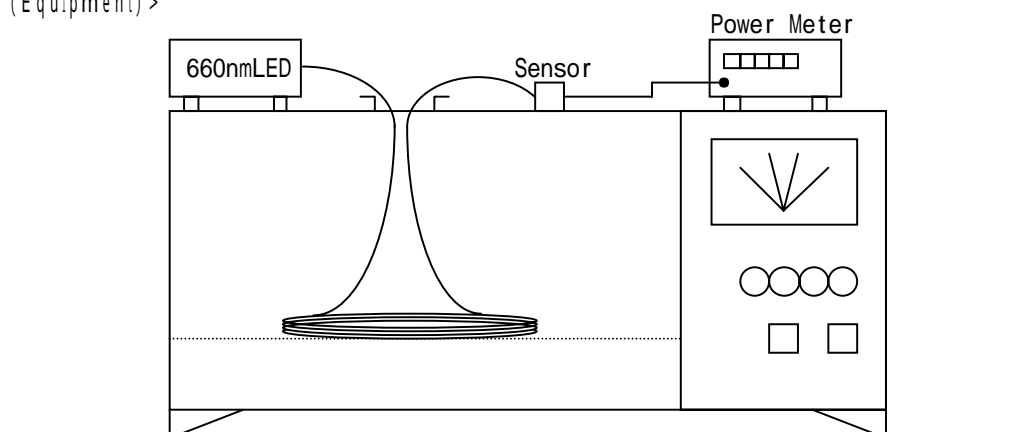
< 評価結果 (Result) >



< 評価条件 (Test Condition) >

Temperature : 85  
Light Source : 660nm LED  
Sample Length : 30m

< 評価装置 (Equipment) >



< 特記 (Remarks) >

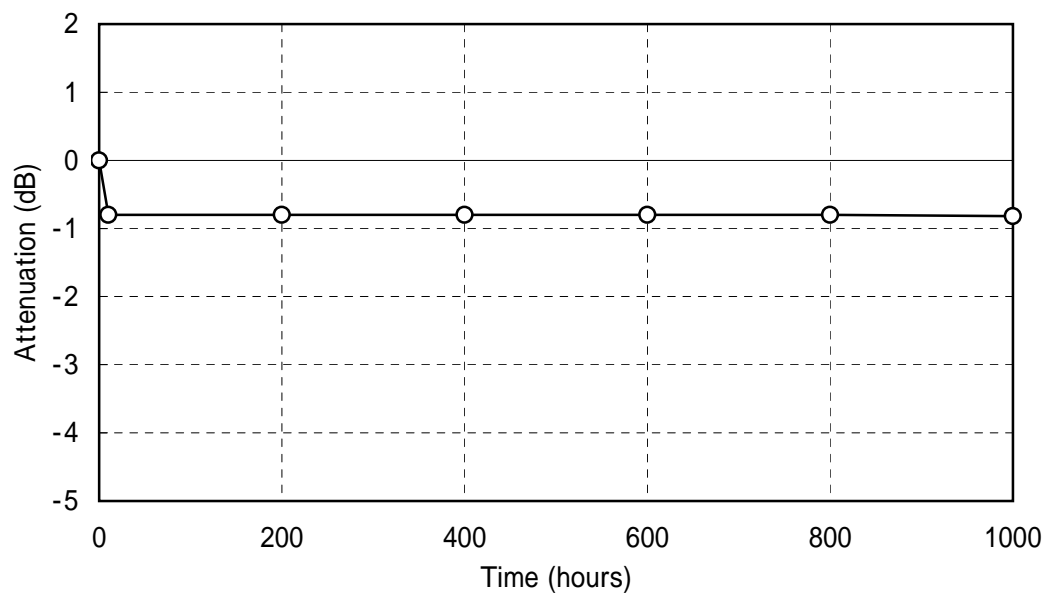
### 3.(3)高温湿熱特性 (DURABILITY TO HEATING

### WITH MOISTURE)

< サンプル名 (Product Code) >

PJU - FB1000

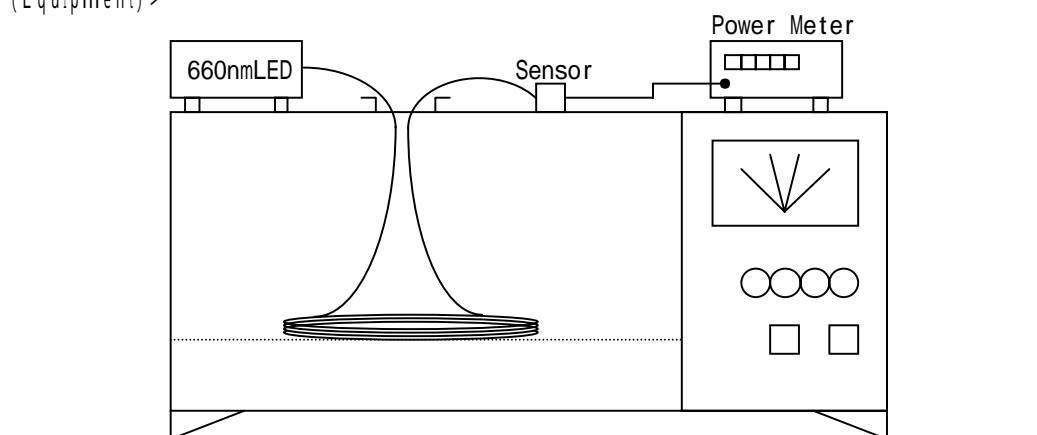
< 評価結果 (Result) >



< 評価条件 (Test Condition) >

Temperature : 70  
Relative Humidity : 90%  
Light Source : 660nm LED  
Sample Length : 30m

< 評価装置 (Equipment) >



< 特記 (Remarks) >

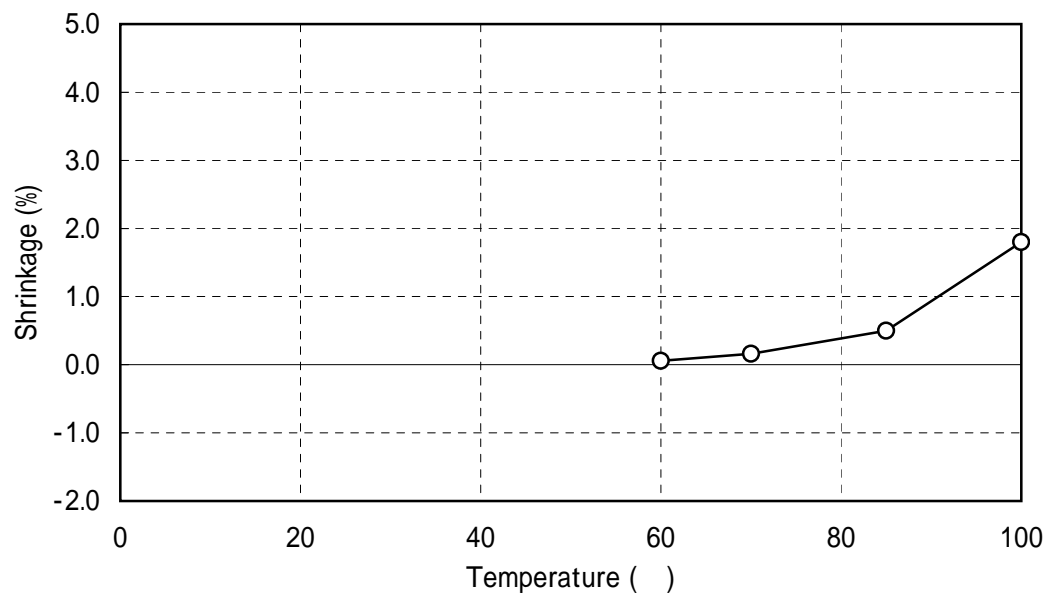


### 3.(6)収縮率 (SHRINKAGE)

< サンプル名 (Product Code) >

PJU - FB1000

< 評価結果 (Result) >



< 評価条件 (Test Condition) >

Treatment Time : 24h

Sample Length : 2m

$$\text{Shrinkage}(\%) = \left( 1 - \frac{\text{Shrunk Cord Length after 24 hours}}{\text{Cord Length before Shrink}} \right) \times 100$$

< 特記 (Remarks) >