PR/PT/FR/FT Plastic fiber optics

◆ Order Information:

Bending Resistance Fiber Type (Reflective)
Bending Resistance Fiber Type (Thrubeam type)
Reflective type
Thrubeam type

High precision...0.25mm/1.0Ω
High precision...0.25mm/1.25Ω
Precision......0.3mm/1.0Ω
Precision......0.5mm/2.0Ω
Precision......0.5mm/1.25Ω
Precision......0.75mm/1.25Ω
Standard.......1.0mm/2.0Ω
Standard.......1.0mm/1.3Ω
Long sensing range...1.5mm/2.0Ω
Coaxial......0.25mm x 16/1.0mm x 1
Coaxial......0.25mm x 100.5mm x 1
Multiple-core...0.25mm x 6/0.25 x 1
Multiple-core...0.25mm x 4/1.0Ω
Multiple-core...0.25mm x 4/2.2Ω
Multiple-core...0.25mm x 10/1.3Ω
Multiple-core...0.25mm x 16/2.0Ω
Multiple-core...0.25mm x 32/2.8Ω
115 Heat resistant...1.0mm/2.0Ω
Flexible R2 fiber....1.0mm/2.0Ω
Flexible R2 fiber....1.0mm/1.3Ω
Flexible R1 fiber...0.5mm/1.0Ω
Flexible R1 fiber...0.5mm/2.0Ω

Head diameter M6
Head diameter Ø5
Head diameter M4, Ø4
Head diameter M3, Ø3
Head diameter Ø2
Head diameter Ø1, Ø1

Q Sensing end tip without thread
U Curved Sensing end tip
D Side view
KC Fiber assemblies with SUS sheathing

Without Sleeve
I Sleeve Length 10mm
S Sleeve Length 20mm
M Sleeve Length 40mm
L Sleeve Length 90mm
SI Sleeve Length by customer design

05 Fiber Length 500 mm
10 Fiber Length 1000 mm
20 Fiber Length 2000 mm
30 Fiber Length 3000 mm
Plastic fiber optics

FR/FT TYPE
Plastic Fiber Optics

Fiber customized for special dimension

Application / 應用例

Detecting rutpure of thin film
缺口斷裂檢測

Detecting dropping objects
檢測不規則產品掉落

Detecting the unseated IC
/ 檢測IC是否翻開

Detecting the pin of IC
/ 檢測IC pin 腳

Detecting the passing of products
on line / 隨線檢測產品通過

To detect the level of liquids
/ 液位檢測
## Plastic fiber optics

### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Setting distance (FZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR-620</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-I</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-F</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-F1</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-F2</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-6F</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-MH33</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td>FR-620-KS5</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C / 70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
</tbody>
</table>

*4# : M6 : Touched Lock Washer O11
Width Across Flats 10mm, Thickness 2.5mm*
# Plastic fiber optics

## Specifications / 规格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Setting distance (FZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>FRY-620-I</td>
<td>Flexible</td>
<td>70mm</td>
<td>-40°C to +70°C</td>
<td>R2</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td></td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø1.0 fiber optic core x 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.6 SUS304</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø3.8 M6 P0.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø5.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nickel plated brass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR-520</td>
<td>Free cut</td>
<td>Standard</td>
<td>90mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø1.0 fiber optic core x 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.6 SUS304</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø5.0 SUS303</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRC-520</td>
<td>Free cut</td>
<td>Coaxial</td>
<td>70mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø1.0 fiber optic core x 1 (emitter)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.265 fiber optic core x 16 (receiver)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø3.0 SUS303</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRC-520-I</td>
<td>Free cut</td>
<td>Coaxial</td>
<td>70mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø1.0 fiber optic core x 1 (emitter)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.265 fiber optic core x 15 (receiver)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø3.0 SUS303</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>FRA-420</td>
<td>Precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>Ø1.25</td>
<td>Ø0.25</td>
</tr>
<tr>
<td></td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.25 fiber optic core x 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø3.6 M4 P0.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø3.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø1.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

※: M6 - Toothed Lock Washer Ø11
Width Across Flats: 10mm, Thickness: 2.5mm

※: M4 - Toothed Lock Washer Ø8.3
Width Across Flats: 8mm, Thickness: 2.5mm
<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Operating temperature</th>
<th>Maximum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRA-420-I</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRB-420</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRC-420</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td>Reflective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRC-420-I</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRC-420-8</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRC-420-8BC</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRD-420</td>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

※: M4: Toothed Lock Washer O8.3
Width Across Flats 8mm, Thickness 2.5mm
### Plastic Fiber Optics

#### Specifications / 规格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Seating distance (EZT)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRD-420-I</td>
<td>Free cut</td>
<td>O1.25 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>O0.5</td>
</tr>
<tr>
<td>FRE-420</td>
<td>Free cut</td>
<td>O1.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>O0.25</td>
</tr>
<tr>
<td>FRE-420-I</td>
<td>Free cut</td>
<td>O0.75 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>O0.5</td>
</tr>
<tr>
<td>FRE-420</td>
<td>Free cut</td>
<td>O1.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>O0.25</td>
</tr>
<tr>
<td>FRJ-420</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>O0.5</td>
</tr>
<tr>
<td>FRJ-420</td>
<td>Free cut</td>
<td>O1.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>O0.25</td>
</tr>
</tbody>
</table>

* M4: Toothed Lock Washer 08.3
  Width Across Flats 5mm, Thickness 2.5mm
# Plastic fiber optics

## Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (FZ1)</th>
<th>Operating temperature</th>
<th>Maximum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FRW-420</td>
<td></td>
<td>Flexible</td>
<td>20mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>O1.0</td>
<td>O0.5</td>
</tr>
<tr>
<td>M4</td>
<td>FRW-420-I</td>
<td></td>
<td>Flexible</td>
<td>20mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>O1.0</td>
<td>O0.5</td>
</tr>
<tr>
<td></td>
<td>FRZ-420</td>
<td></td>
<td>Flexible</td>
<td>70mm</td>
<td>-40°C to +70°C</td>
<td>R2</td>
<td>O1.3</td>
<td>O1.0</td>
</tr>
<tr>
<td>M3</td>
<td>FRA-320</td>
<td></td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>O1.25</td>
<td>O0.25</td>
</tr>
<tr>
<td></td>
<td>FRA-320-I</td>
<td></td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>O1.25</td>
<td>O0.25</td>
</tr>
<tr>
<td></td>
<td>FRC-320</td>
<td></td>
<td>Coaxial</td>
<td>30mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>O1.25</td>
<td>O0.5</td>
</tr>
</tbody>
</table>

* M4: Toothed Lock Washer O8.3 Width Across Flats 8mm, Thickness 2.5mm
* M3: Toothed Lock Washer O6.4 Width Across Flats 5mm, Thickness 2.2mm
### Plastic fiber optics

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing Distance</th>
<th>Temperature</th>
<th>Minimum Bending Radius</th>
<th>Fiber Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRC-320-I</td>
<td>Free cut</td>
<td><img src="image" alt="Diagram" /></td>
<td>Coaxial</td>
<td>30mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
</tr>
<tr>
<td>FRC-310-35FA</td>
<td>Free cut</td>
<td><img src="image" alt="Diagram" /></td>
<td>Coaxial</td>
<td>30mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
</tr>
<tr>
<td>FRC-310-35FZ</td>
<td>Free cut</td>
<td><img src="image" alt="Diagram" /></td>
<td>Coaxial</td>
<td>30mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
</tr>
<tr>
<td>M3</td>
<td>FRC7-310-FA</td>
<td><img src="image" alt="Diagram" /></td>
<td>Coaxial</td>
<td>20mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
</tr>
<tr>
<td>FRC4-310</td>
<td>Free cut</td>
<td><img src="image" alt="Diagram" /></td>
<td>Coaxial</td>
<td>7mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.10</td>
</tr>
<tr>
<td>FRC4-310-H13</td>
<td>Free cut</td>
<td><img src="image" alt="Diagram" /></td>
<td>Coaxial</td>
<td>7mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.10</td>
</tr>
<tr>
<td>FRD-320</td>
<td>Free cut</td>
<td><img src="image" alt="Diagram" /></td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
</tr>
</tbody>
</table>

*Footnote: M3: Toothed Lock Washer O6.4*  
Width Across Plate 5mm, Thickness 2.2mm
## Plastic fiber optics

### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (EZ1)</th>
<th>Operate temperature</th>
<th>Minimum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRD-320-I</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
<td>0.05</td>
</tr>
<tr>
<td>FRE-320</td>
<td>Free cut</td>
<td>O0.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>0.10</td>
<td>0.025</td>
</tr>
<tr>
<td>FRE-320-I</td>
<td>Free cut</td>
<td>M3 P0.5</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>0.10</td>
<td>0.025</td>
</tr>
<tr>
<td>FRJ-320</td>
<td>Free cut</td>
<td>O0.75 fiber optic core x 2</td>
<td>Precision</td>
<td>6mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.125</td>
<td>0.075</td>
</tr>
<tr>
<td>FRS-320</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.10</td>
<td>0.05</td>
</tr>
<tr>
<td>FRS-320-I</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.10</td>
<td>0.05</td>
</tr>
</tbody>
</table>

※ M3: Toothed Lock Washer O6.4
Width Across Flats 5mm, Thickness 2.2mm
<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Setting distance (FZT)</th>
<th>Temperature</th>
<th>Minimum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3</td>
<td>FRW-320</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 2</td>
<td>Flexible</td>
<td>5mm</td>
<td>-40°C +70°C</td>
<td>R1</td>
<td>01.0</td>
</tr>
<tr>
<td></td>
<td>FRA-320-Q</td>
<td>Free cut</td>
<td>O0.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C +70°C</td>
<td>R10</td>
<td>01.25</td>
</tr>
<tr>
<td></td>
<td>FRA-320-Q(H/0)</td>
<td>Free cut</td>
<td>O0.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C +70°C</td>
<td>R10</td>
<td>01.25</td>
</tr>
<tr>
<td></td>
<td>FRB-320-Q</td>
<td>Free cut</td>
<td>O1.0 fiber optic core x 2</td>
<td>Standard</td>
<td>80mm</td>
<td>-55°C +70°C</td>
<td>R25</td>
<td>01.3</td>
</tr>
<tr>
<td></td>
<td>FRC-320-Q</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 1(emitter)</td>
<td>Coaxial</td>
<td>30mm</td>
<td>-55°C +70°C</td>
<td>R15</td>
<td>01.25</td>
</tr>
<tr>
<td></td>
<td>FRC-320-JQ</td>
<td>Free cut</td>
<td>O0.25 fiber optic core x 10(receiver)</td>
<td>Coaxial</td>
<td>30mm</td>
<td>-55°C +70°C</td>
<td>R15</td>
<td>01.25</td>
</tr>
<tr>
<td></td>
<td>FRD-320-Q</td>
<td>Free cut</td>
<td>O0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C +70°C</td>
<td>R15</td>
<td>01.25</td>
</tr>
</tbody>
</table>

* M3 : Toothed Lock Washer G6.4
Width Across Flats: 5mm, Thickness: 2.2mm
# Plastic Fiber Optics

## Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Splicing distance (FZ)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRE-320-Q</td>
<td>Free cut</td>
<td></td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>01.0</td>
</tr>
<tr>
<td>FRE-320-IQ</td>
<td>Free cut</td>
<td></td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>01.0</td>
</tr>
<tr>
<td>FRJ-320-Q</td>
<td>Free cut</td>
<td></td>
<td>Precision</td>
<td>60mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>01.25</td>
</tr>
<tr>
<td>FRS-320-Q</td>
<td>Free cut</td>
<td></td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>01.0</td>
</tr>
<tr>
<td>FRS-320-IQ</td>
<td>Free cut</td>
<td></td>
<td>Precision</td>
<td>25mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>01.0</td>
</tr>
<tr>
<td>FRW-320-Q</td>
<td>Free cut</td>
<td></td>
<td>Flexible</td>
<td>20mm</td>
<td>-55°C to +70°C</td>
<td>R1</td>
<td>01.0</td>
</tr>
<tr>
<td>FRW-320-IQ</td>
<td>Free cut</td>
<td></td>
<td>Flexible</td>
<td>20mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>01.0</td>
</tr>
</tbody>
</table>
## Plastic fiber optics

### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (FZ1)</th>
<th>Operating temperature</th>
<th>Maximum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø3</td>
<td>FRZ-320-Q Free cut</td>
<td>Ø1.0 fiber optic core x 2</td>
<td>Flexible</td>
<td>70 mm</td>
<td>-40°C</td>
<td>R2</td>
<td>Ø1.3</td>
<td>Ø1.0</td>
</tr>
<tr>
<td></td>
<td>FRC-210-22X (Brass) Free cut</td>
<td>Ø0.5 fiber optic core x 1 (emitter) Ø0.25 fiber optic core x 0 (receiver)</td>
<td>Coaxial</td>
<td>30 mm</td>
<td>-55°C</td>
<td>R15</td>
<td>Ø2.2</td>
<td>Ø0.25 x 1 Ø0.25 x 9</td>
</tr>
<tr>
<td></td>
<td>FRE-220 Free cut</td>
<td>Ø0.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5 mm</td>
<td>-55°C</td>
<td>R10</td>
<td>Ø1.0</td>
<td>Ø0.25</td>
</tr>
<tr>
<td>Ø2</td>
<td>FRE-220-I Free cut</td>
<td>Ø0.25 fiber optic core x 2</td>
<td>High precision</td>
<td>5 mm</td>
<td>-55°C</td>
<td>R10</td>
<td>Ø1.0</td>
<td>Ø0.25</td>
</tr>
<tr>
<td></td>
<td>FRS-220 Free cut</td>
<td>Ø0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25 mm</td>
<td>-55°C</td>
<td>R15</td>
<td>Ø1.0</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FRS-220-I Free cut</td>
<td>Ø0.5 fiber optic core x 2</td>
<td>Precision</td>
<td>25 mm</td>
<td>-55°C</td>
<td>R15</td>
<td>Ø1.0</td>
<td>Ø0.5</td>
</tr>
</tbody>
</table>
### Plastic fiber optics

#### Specifications / 规格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (EZ1)</th>
<th>Operate temperature</th>
<th>Minimum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRC7-110-Q2D</td>
<td>Ø0.25 fiber optic core x 1 (emitter)</td>
<td>Coaxial</td>
<td>20mm</td>
<td>-55°C to 70°C</td>
<td>R15</td>
<td>Ø1.0 x 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ø1.5</td>
<td>FRC4-110</td>
<td>Ø0.25 fiber optic core x 2 (emitter)</td>
<td>Multiple core</td>
<td>7mm</td>
<td>-55°C to 70°C</td>
<td>R15</td>
<td>Ø1.0 x 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 2 (receiver)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRC4-110-H10</td>
<td>Ø0.25 fiber optic core x 2 (receiver)</td>
<td>Multiple core</td>
<td>7mm</td>
<td>-55°C to 70°C</td>
<td>R15</td>
<td>Ø1.0 x 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR-10ML-20</td>
<td>Free cut</td>
<td>Ø2.5 x 9 Emitter, Ø2.5 x 9 Receiver</td>
<td>Multiple core</td>
<td>25mm</td>
<td>-55°C to 70°C</td>
<td>R25</td>
<td>Ø1.25 x 9</td>
<td></td>
</tr>
<tr>
<td>Other Type</td>
<td>FR-15MLD-20</td>
<td>Free cut</td>
<td>3M2 P0.5 (thread)</td>
<td>Multiple core</td>
<td>20mm</td>
<td>-55°C to 70°C</td>
<td>R25</td>
<td>Ø1.25 x 9</td>
</tr>
<tr>
<td></td>
<td>Array Fiber</td>
<td>Ø2.5 x 9 Emitter, Ø2.5 x 9 Receiver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR-20ML-20</td>
<td>Free cut</td>
<td>Ø2.65 x 16 Emitter, Ø2.65 x 16 Receiver</td>
<td>Multiple core</td>
<td>70mm</td>
<td>-55°C to 70°C</td>
<td>R25</td>
<td>Ø2.2 x 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Array Fiber</td>
<td>2M2 P0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR-20MLS-20</td>
<td>Free cut</td>
<td>Ø2.65 x 10 Emitter, Ø2.65 x 10 Receiver</td>
<td>Multiple core</td>
<td>60mm</td>
<td>-55°C to 70°C</td>
<td>R25</td>
<td>Ø2.2 x 10</td>
<td></td>
</tr>
</tbody>
</table>
## Plastic fiber optics

### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Setting distance (FZT)</th>
<th>Operate temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FR-30ML-20</strong></td>
<td></td>
<td></td>
<td>Multiple core</td>
<td>70mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Φ0.265 x 16</td>
</tr>
<tr>
<td>Free cut Array Fiber</td>
<td>Side view fiber</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FR-50ML-20</strong></td>
<td></td>
<td></td>
<td>Multiple core</td>
<td>70mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Φ0.265 x 16</td>
</tr>
<tr>
<td>Free cut Array Fiber</td>
<td>Side view fiber</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FR-20ML-20</strong></td>
<td></td>
<td></td>
<td>Flexible</td>
<td>70mm</td>
<td>-40°C to +70°C</td>
<td>R2</td>
<td>Φ0.22 x 0.10</td>
</tr>
<tr>
<td>Free cut Array Fiber</td>
<td>Side view fiber</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FRW-FU42-20</strong></td>
<td></td>
<td></td>
<td>Flexible</td>
<td>1-16mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>Φ0.10 x 0.05</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FRD-FU501-20</strong></td>
<td></td>
<td></td>
<td>Precision</td>
<td>-</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Φ0.125 x 0.05</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pipe : Φ4-Φ26
# Plastic fiber optics

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (EZ1)</th>
<th>Temperature Range</th>
<th>Maximum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRJ-9310-20</td>
<td>Free cut</td>
<td></td>
<td>PC Type</td>
<td></td>
<td>-55°C to +70°C</td>
<td>R15/R40</td>
<td>0.125</td>
<td>0.75</td>
</tr>
<tr>
<td>FRW-K10-20</td>
<td>Free cut</td>
<td></td>
<td>Flexible</td>
<td>5-10mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>FRB-38V-20</td>
<td>Free cut</td>
<td></td>
<td>Standard</td>
<td>1-6mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>1.3</td>
<td>1.0</td>
</tr>
<tr>
<td>FRH-38H-20</td>
<td>Free cut</td>
<td></td>
<td>Heat Resistant</td>
<td>5-10mm</td>
<td>-55°C to +105°C</td>
<td>R25</td>
<td>2.2</td>
<td>1.0</td>
</tr>
<tr>
<td>FRY-67TZ-20</td>
<td>Free cut</td>
<td></td>
<td>Flexible</td>
<td>70mm</td>
<td>-40°C to +70°C</td>
<td>R2</td>
<td>2.2</td>
<td>1.0</td>
</tr>
<tr>
<td>FRW-11-20</td>
<td>Free cut</td>
<td></td>
<td>Flexible</td>
<td>20mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>FRX-50-SMA</td>
<td></td>
<td></td>
<td>Long sensing range</td>
<td>-55°C to +70°C</td>
<td>R40</td>
<td>2.2</td>
<td>1.5</td>
<td></td>
</tr>
</tbody>
</table>
### Plastic fiber optics

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing Distance (FZ1)</th>
<th>Operating Temperature</th>
<th>Minimum Bending radius</th>
<th>Fiber Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FT-620</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-5°C to +70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td></td>
<td>FT-620-I</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-5°C to +70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td></td>
<td>FTX-620</td>
<td>Ø1.5 fiber optic core x 1</td>
<td>Long sensing range</td>
<td>700mm</td>
<td>-5°C to +70°C</td>
<td>R40</td>
<td>Ø2.2 Ø1.5</td>
</tr>
<tr>
<td></td>
<td>FTX-620-6F</td>
<td>Ø1.5 fiber optic core x 1</td>
<td>Long sensing range</td>
<td>700mm</td>
<td>-5°C to +70°C</td>
<td>R40</td>
<td>Ø2.2 Ø1.5</td>
</tr>
<tr>
<td></td>
<td>FTY-620</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Flexible</td>
<td>300mm</td>
<td>-40°C to +70°C</td>
<td>R2</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td></td>
<td>FTY-620-I</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Flexible</td>
<td>300mm</td>
<td>-40°C to +70°C</td>
<td>R2</td>
<td>Ø2.2 Ø1.0</td>
</tr>
<tr>
<td></td>
<td>FT-520</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-5°C to +70°C</td>
<td>R25</td>
<td>Ø2.2 Ø1.0</td>
</tr>
</tbody>
</table>

* M6: Toothed Lock Washer O11
  Width Across Flats 10mm, Thickness 2.5mm
# Plastic fiber optics

## Specifications / 规格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (FZ1)</th>
<th>Optimum temperature</th>
<th>Maximum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT-520-I</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>FT-520-S</td>
<td></td>
<td>Ø1.5 fiber optic core x 1</td>
<td>Long sensing range</td>
<td>700mm</td>
<td>-55°C to +70°C</td>
<td>R40</td>
<td>Ø2.2</td>
<td>Ø1.5</td>
</tr>
<tr>
<td>FT-520-M</td>
<td></td>
<td>Ø2.0 fiber optic core x 1</td>
<td>Long sensing range</td>
<td>700mm</td>
<td>-55°C to +70°C</td>
<td>R40</td>
<td>Ø2.2</td>
<td>Ø1.5</td>
</tr>
<tr>
<td>FT-420-I</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>FT-420-S</td>
<td></td>
<td>Ø1.5 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>FT-420-M</td>
<td></td>
<td>Ø2.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>FT-420-KS26</td>
<td></td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
</tbody>
</table>

*NOTE: M4: Toothed Lock Washer Ø8.3
With Across Flats 3mm, Thickness 2.5mm*
### specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (F21)</th>
<th>Operate temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT-420-F</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C → +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
</tr>
<tr>
<td>FT-420-F1</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C → +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
</tr>
<tr>
<td>FT-420-6F</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C → +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
</tr>
<tr>
<td>FT-420-38G</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C → +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
</tr>
<tr>
<td>M4</td>
<td>FTA-420</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>30mm</td>
<td>-55°C → +70°C</td>
<td>R10</td>
<td>Ø1.25</td>
</tr>
<tr>
<td>FTA-420-I</td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>30mm</td>
<td>-55°C → +70°C</td>
<td>R10</td>
<td>Ø1.25</td>
</tr>
<tr>
<td>FTB-420</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>400mm</td>
<td>-55°C → +70°C</td>
<td>R25</td>
<td>Ø1.3</td>
</tr>
<tr>
<td>FTE-420</td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>30mm</td>
<td>-55°C → +70°C</td>
<td>R10</td>
<td>Ø1.0</td>
</tr>
</tbody>
</table>

* *M4*: Toothed Lock Washer Ø8.3

*Width Across Flats 8mm, Thickness 2.5mm*
# Plastic fiber optics

## Specifications / 规格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (FZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FTH-420</td>
<td>Ø1.0 fiber optic core x 1 M4 P0.7 / Head diameter</td>
<td>Heat Resistant</td>
<td>600mm</td>
<td>-55°C +105°C</td>
<td>R25 O2.2 Ø1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTH-420-I</td>
<td>Ø1.0 fiber optic core x 1 M4 P0.7 / Nickel plated brass</td>
<td>Heat Resistant</td>
<td>600mm</td>
<td>-55°C +105°C</td>
<td>R25 O2.2 Ø1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTH-420-F1</td>
<td>Ø1.0 fiber optic core x 1 M4 P0.7 / Head diameter</td>
<td>Heat Resistant</td>
<td>600mm</td>
<td>-55°C +105°C</td>
<td>R25 O2.2 Ø1.0</td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>FT52-420</td>
<td>Ø0.5 fiber optic core x 1 M4 P0.7 / Head diameter</td>
<td>Precision</td>
<td>150mm</td>
<td>-55°C +70°C</td>
<td>R15 O2.2 Ø0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FT54-420</td>
<td>Ø0.5 fiber optic core x 1 M4 P0.7 / Head diameter</td>
<td>Precision</td>
<td>150mm</td>
<td>-55°C +70°C</td>
<td>R15 Ø1.0 Ø0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FT54-420-I</td>
<td>Ø0.5 fiber optic core x 1 M4 P0.7 / Nickel plated brass</td>
<td>Precision</td>
<td>150mm</td>
<td>-55°C +70°C</td>
<td>R15 Ø1.0 Ø0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTX-420</td>
<td>Ø1.5 fiber optic core x 1 M4 P0.7 / Head diameter</td>
<td>Long sensing range</td>
<td>700mm</td>
<td>-55°C +70°C</td>
<td>R40 O2.2 Ø1.5</td>
<td></td>
</tr>
</tbody>
</table>

* M4 : Toothed Lock Washer Ø8.3
  Width Across Flats 8mm, Thickness 2.5mm
## Plastic fiber optics

### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Setting distance (FZ1)</th>
<th>Operate temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-40°C +70°C</td>
<td>R2</td>
<td>OD</td>
</tr>
<tr>
<td>FTY-420</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Flexible</td>
<td>300mm</td>
<td></td>
<td></td>
<td>O2.2</td>
</tr>
<tr>
<td>M4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-40°C +70°C</td>
<td>R2</td>
<td>O2.2</td>
</tr>
<tr>
<td>FTY-420-3SG</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Flexible</td>
<td>300mm</td>
<td></td>
<td></td>
<td>O2.2</td>
</tr>
<tr>
<td>M3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-55°C +70°C</td>
<td>R25</td>
<td>O2.2</td>
</tr>
<tr>
<td>FT-320</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td></td>
<td></td>
<td>O2.2</td>
</tr>
<tr>
<td>M3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-55°C +70°C</td>
<td>R25</td>
<td>O2.2</td>
</tr>
</tbody>
</table>

※ M4: Toothed Lock Washer 08.3
Width Across Flats 8mm, Thickness 2.5mm

※ M3: Toothed Lock Washer 06.4
Width Across Flats 5mm, Thickness 2.2mm
<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (EZ1)</th>
<th>Operate temperature</th>
<th>Maximum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT-320-T004</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>0.22</td>
<td>0.10</td>
</tr>
<tr>
<td>FTA-320</td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>30mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>0.125</td>
<td>0.025</td>
</tr>
<tr>
<td>FTA-320-I</td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>30mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>0.125</td>
<td>0.025</td>
</tr>
<tr>
<td>M3</td>
<td></td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>400mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>0.13</td>
<td>0.10</td>
</tr>
<tr>
<td>FTB-320</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>400mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>0.13</td>
<td>0.10</td>
</tr>
<tr>
<td>FTB-320-T30</td>
<td>Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Standard</td>
<td>400mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>0.13</td>
<td>0.10</td>
</tr>
<tr>
<td>FTC4-320</td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 4</td>
<td>Multiple core</td>
<td>100mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.10</td>
<td>0.025 x 4</td>
</tr>
<tr>
<td>FTC4-320-H10(79)</td>
<td>Free cut</td>
<td>Ø0.25 fiber optic core x 4</td>
<td>Multiple core</td>
<td>100mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>0.10</td>
<td>0.025 x 4</td>
</tr>
</tbody>
</table>

※ M3: Toothed Lock Washer Ø6.4
Width Across Flats 3mm, Thickness 2.2mm
## Plastic fiber optics

### Specifications 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (FZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTD-320</td>
<td>Free cut</td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.25, Ø0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.5, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5, Ø0.75, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.28, Ø1.25, Ø1.0, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2, Ø2.8, Ø4, Ø2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

※: M3 : Toothed Lock Washer Ø6.4
Width Across Flats 5mm, Thickness 2.2mm
### Plastic fiber optics

#### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (EZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTS2-320</td>
<td></td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C +70°C</td>
<td>R15</td>
<td>Ø2.2</td>
<td>Ø0.5</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| FTS2-320-I |        |                     | Precision  | 130mm                  | -55°C +70°C           | R15                    | Ø2.2| Ø0.5 |
| Free cut   |        |                     |            |                        |                       |                        |     |      |

| FTS3-320-7F|        |                     | Precision  | 130mm                  | -55°C +70°C           | R15                    | Ø1.0| Ø0.5 |
| Free cut   |        |                     |            |                        |                       |                        |     |      |

| FTW-320    |        |                     | Flexible   | 80mm                   | -40°C +70°C           | R1                     | Ø1.0| Ø0.5 |
| Free cut   |        |                     |            |                        |                       |                        |     |      |

| FTW-320-I  |        |                     | Flexible   | 80mm                   | -40°C +70°C           | R1                     | Ø1.0| Ø0.5 |
| Free cut   |        |                     |            |                        |                       |                        |     |      |

| FTW2-320   |        |                     | Flexible   | 80mm                   | -40°C +70°C           | R1                     | Ø1.0| Ø0.5 |
| Free cut   |        |                     |            |                        |                       |                        |     |      |

※ M3: Toothed Lock Washer Ø6 4
Width Across Flats 3mm, Thickness 2.2mm
### Plastic fiber optics

<table>
<thead>
<tr>
<th>Specifications / 规格表</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td><strong>FTX-320</strong></td>
</tr>
<tr>
<td><strong>FTY-320</strong></td>
</tr>
<tr>
<td><strong>FTY-320-I</strong></td>
</tr>
<tr>
<td><strong>FT-320-Q</strong></td>
</tr>
<tr>
<td><strong>FT-320-IQ</strong></td>
</tr>
<tr>
<td><strong>FT-320-D-T14L</strong></td>
</tr>
</tbody>
</table>

**Note:** M3 : Toothed Lock Washer 06.4

Width Across Flats 5mm, Thickness 2.2mm
## Plastic fiber optics

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Setting distance (FZ1)</th>
<th>Operate temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FTE-320-H10Q</td>
<td></td>
<td>High precision</td>
<td>30mm</td>
<td>-50°C to +20°C</td>
<td>R10</td>
<td>Ø0.0.25</td>
</tr>
<tr>
<td></td>
<td>FTH-305-D</td>
<td></td>
<td>Heat resistant</td>
<td>600mm</td>
<td>-55°C to +165°C</td>
<td>R25</td>
<td>Ø2.2</td>
</tr>
<tr>
<td></td>
<td>FTS-320-Q</td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FTS-320-IQ</td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FT2-320-Q</td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FT2-320-IP</td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FT2-320-Q(0.7)</td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FT2-320-Q(0.8)</td>
<td></td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø0.5</td>
</tr>
</tbody>
</table>

Diagram:
- FTS-320-IQ: Free cut
- FTS-320-SQ: Side view fiber
- FTS-320-MQ: (by customer design)
### Plastic fiber optics

#### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (EZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTW2-320-S15Q(Cu)</td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Ø0.9 Ø3 SUS303 Ø2.2 Ø3.5 Cu</td>
<td>Flexible</td>
<td>800mm</td>
<td>-55°C ~ +70°C</td>
<td>R1</td>
<td>Ø2.2</td>
<td>Ø0.5</td>
</tr>
<tr>
<td>FTW2-305-21 Free cut</td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Ø0.9 Ø3 SUS303 Ø2.2 Ø3.5 Cu</td>
<td>Flexible</td>
<td>800mm</td>
<td>-55°C ~ +70°C</td>
<td>R1</td>
<td>Ø2.2</td>
<td>Ø0.5</td>
</tr>
<tr>
<td>O3</td>
<td>FTX-320-Q Free cut</td>
<td>Ø1.5 fiber optic core x 1</td>
<td>Long sensing range</td>
<td>700mm</td>
<td>-55°C ~ +70°C</td>
<td>R40</td>
<td>Ø2.2</td>
<td>Ø1.5</td>
</tr>
<tr>
<td>FTY-320-Q Free cut</td>
<td>Ø1.0 fiber optic core x 1</td>
<td>Ø0.9 Ø3 SUS303 Ø2.2</td>
<td>Flexible</td>
<td>400mm</td>
<td>-40°C ~ +70°C</td>
<td>R2</td>
<td>Ø2.2</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>O2</td>
<td>FTA-220 Free cut</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>90mm</td>
<td>-55°C ~ +70°C</td>
<td>R10</td>
<td>Ø1.25</td>
<td>Ø0.5</td>
</tr>
<tr>
<td>O2</td>
<td>FTB-220 Free cut</td>
<td>Ø0.25 fiber optic core x 1</td>
<td>Standard</td>
<td>400mm</td>
<td>-55°C ~ +70°C</td>
<td>R25</td>
<td>Ø1.3</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>O2</td>
<td>FTC4-220 Free cut</td>
<td>Ø0.25 fiber optic core x 4</td>
<td>Multiple core</td>
<td>100mm</td>
<td>-55°C ~ +70°C</td>
<td>R15</td>
<td>Ø1.0</td>
<td>Ø0.25 x 4</td>
</tr>
<tr>
<td>O2</td>
<td>FTD-220 Free cut</td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C ~ +70°C</td>
<td>R15</td>
<td>Ø1.25</td>
<td>Ø0.5</td>
</tr>
<tr>
<td>FTW2-310-32 Free cut</td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Ø0.8 Ø2.47 SUS304 Ø2.2</td>
<td>Precision</td>
<td>35mm</td>
<td>-55°C ~ +70°C</td>
<td>R15</td>
<td>Ø1.25</td>
<td>Ø0.5</td>
</tr>
</tbody>
</table>
## Plastic fiber optics

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (FZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ø0.25 fiber optic core x 1</td>
<td>High precision</td>
<td>340mm</td>
<td>-55°C to +70°C</td>
<td>R10</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>FTE-220</td>
<td>Free cut</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td>FTJ-220</td>
<td>Free cut</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td>O2</td>
<td>FT5-220</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>O1.5</td>
<td>FTC4-120</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.25 fiber optic core x 4</td>
<td>Multiple core</td>
<td>100mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td></td>
<td>FTC4-120-H10</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5 fiber optic core x 4</td>
<td>Multiple core</td>
<td>100mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>O1.5</td>
<td>FT5-120-H10</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Precision</td>
<td>130mm</td>
<td>-55°C to +70°C</td>
<td>R15</td>
<td>Ø1.0</td>
</tr>
<tr>
<td>O1.5</td>
<td>FT5-120</td>
<td>Ø2.0</td>
<td>10.5</td>
<td>15</td>
<td>2000</td>
<td>Ø4</td>
<td>Ø2.2</td>
</tr>
</tbody>
</table>

(by common design)
# Plastic fiber optics

**Specifications / 规格表**

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sealing distance (EZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>OD</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>FTW-120-H10 Free cut</td>
<td>Ø0.5 fiber optic core x 1</td>
<td>Flexible</td>
<td>50mm</td>
<td>-40°C to +70°C</td>
<td>R1</td>
<td>Ø1.0</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FT-10ML-20 Free cut Array fiber</td>
<td>Ø1.5, Ø3 x 10</td>
<td>Multiple core</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø0.265 x 16</td>
</tr>
<tr>
<td></td>
<td>FT-10MLD-20 Free cut Array fiber</td>
<td>Ø2.2, Ø3 x 10</td>
<td>Multiple core</td>
<td>150mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø0.265 x 16</td>
</tr>
<tr>
<td></td>
<td>FT-15MLD-20 Free cut Array fiber Side view fiber</td>
<td>Ø0.265 fiber optic core x 16</td>
<td>Multiple core</td>
<td>400mm</td>
<td>-55°C to +70°C</td>
<td>R25</td>
<td>Ø2.2</td>
<td>Ø0.265 x 16</td>
</tr>
<tr>
<td></td>
<td>FT-20ML-20 Array fiber</td>
<td>Ø0.25 fiber optic core x 32</td>
<td>Multiple core</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R60</td>
<td>Ø2.8</td>
<td>Ø0.25 x 32</td>
</tr>
<tr>
<td></td>
<td>FT-30ML-20 Array fiber Side view fiber</td>
<td>Ø3.2 x 2, Ø3.5</td>
<td>Multiple core</td>
<td>500mm</td>
<td>-55°C to +70°C</td>
<td>R60</td>
<td>Ø2.8</td>
<td>Ø0.25 x 32</td>
</tr>
</tbody>
</table>
## Plastic fiber optics

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Sensing distance (FZ1)</th>
<th>Operating temperature</th>
<th>Minimum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FT-50ML-20</td>
<td>Multiple core</td>
<td>300mm</td>
<td>-55°C  +70°C</td>
<td>R60</td>
<td>Ø2.8</td>
<td>Ø0.25 x 32</td>
</tr>
<tr>
<td></td>
<td>FTW-FU53-20</td>
<td>Flexible</td>
<td>40mm</td>
<td>-40°C  +70°C</td>
<td>R1</td>
<td>Ø1.0</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FTW-FU57-20</td>
<td>Flexible</td>
<td>45mm</td>
<td>-40°C  +70°C</td>
<td>R1</td>
<td>Ø1.0</td>
<td>Ø0.5</td>
</tr>
<tr>
<td></td>
<td>FTA-SU05-10</td>
<td>High precision</td>
<td>5mm</td>
<td>-55°C  +70°C</td>
<td>R10</td>
<td>Ø1.25</td>
<td>Ø0.25</td>
</tr>
<tr>
<td></td>
<td>FTA-SU10-10</td>
<td>High precision</td>
<td>10mm</td>
<td>-55°C  +70°C</td>
<td>R10</td>
<td>Ø1.25</td>
<td>Ø0.25</td>
</tr>
<tr>
<td></td>
<td>FTC32-12</td>
<td>Coaxial</td>
<td>750mm</td>
<td>-55°C  +70°C</td>
<td>R60</td>
<td>Ø2.8</td>
<td>Ø0.25 x 32</td>
</tr>
</tbody>
</table>
## Plastic fiber optics

### Specifications / 規格表

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Dimensions</th>
<th>Fiber Type</th>
<th>Operating temperature</th>
<th>Maximum bending radius</th>
<th>Fiber diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FTW2-475D-10</td>
<td>Flexible</td>
<td>1000</td>
<td>-55°C / +70°C</td>
<td>R1</td>
<td>Ø2.2 x Ø0.5</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td>0.51</td>
<td>Ø0.5</td>
<td>19.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTW2-11-10</td>
<td>Flexible</td>
<td>1000</td>
<td>-40°C / +70°C</td>
<td>R1</td>
<td>Ø2.2 x Ø0.5</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td>Ø0.5 fiber</td>
<td>15</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTW-10ML-10</td>
<td>Flexible</td>
<td>1000</td>
<td>-40°C / +70°C</td>
<td>R1</td>
<td>Ø1.0 x Ø0.5</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td>9.96</td>
<td>Ø0.5</td>
<td>9.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTX-70-FSC</td>
<td>Long sensing range</td>
<td>-55°C / +70°C</td>
<td>R40</td>
<td>Ø2.2 x Ø1.5</td>
<td></td>
</tr>
<tr>
<td>Side View Array Fiber</td>
<td></td>
<td>8.78</td>
<td>Ø1.5</td>
<td>33.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FY-11-10</td>
<td>Flexible</td>
<td>800mm</td>
<td>-55°C / +70°C</td>
<td>R2</td>
<td>Ø2.2 x Ø1.0</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td>7.25</td>
<td>Ø1.0</td>
<td>10.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FY-771Z-20</td>
<td>Flexible</td>
<td>250mm</td>
<td>-40°C / +70°C</td>
<td>R2</td>
<td>Ø2.2 x Ø1.0</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td>8.1</td>
<td>Ø2.2</td>
<td>7.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FY-U99-20</td>
<td>Flexible</td>
<td>9mm</td>
<td>-40°C / +70°C</td>
<td>R2</td>
<td>Ø2.2 x Ø1.0</td>
</tr>
<tr>
<td>Free cut</td>
<td></td>
<td>15.96</td>
<td>Ø4.5</td>
<td>6.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>