

## 长波通二向色镜/分束器

### 特性

- 二向色镜用作吸收损耗极小的长波通滤光片
- 四种尺寸：Ø1/2 英寸、Ø1 英寸、Ø2 英寸或 25 mm x 36 mm
- 硬膜易于操作和清洁
- 耐紫外和化学损伤

QXKJ 的二向色镜/分光镜根据波长将光束分为透射光和反射光。长波通二向色镜高反射小于截止波长的光束，高透射大于截止波长的光束。我们也提供短波通二向色镜，高反射大于截止波长的光束，高透射小于截止波长的光束。

我们的二向色镜有多种截止波长可供选择，范围从 425 到 1800 nm，具体列于右边的选择指南。它们在指定波段的绝对透射率 >85%，绝对反射率 >90%(请见下方的典型曲线图)。它们设计用于 45° 入射角，并具有 4 种尺寸：Ø1/2 英寸、Ø1 英寸、Ø2 英寸和 25 mm x 36 mm。

如应用标签中所示，这些光学元件也能用于合束应用，将波长(或波长范围)小于截止波长的光束与波长(或波长范围)大于截止波长的光束合成一束光。它们还常用于分离颜色不同但空间叠加的光。

这些光学元件的一个表面镀有二向色膜，另一个表面镀有增透膜。我们建议按照右上图的指示方向使用光学元件。在圆形光学元件上，箭头指向的表面上镀有增透膜；在矩形光学元件上，刻有型号的表面上镀有二向色膜。

对于热敏应用，QXKJ 还提供热镜和冷镜。

### 应用

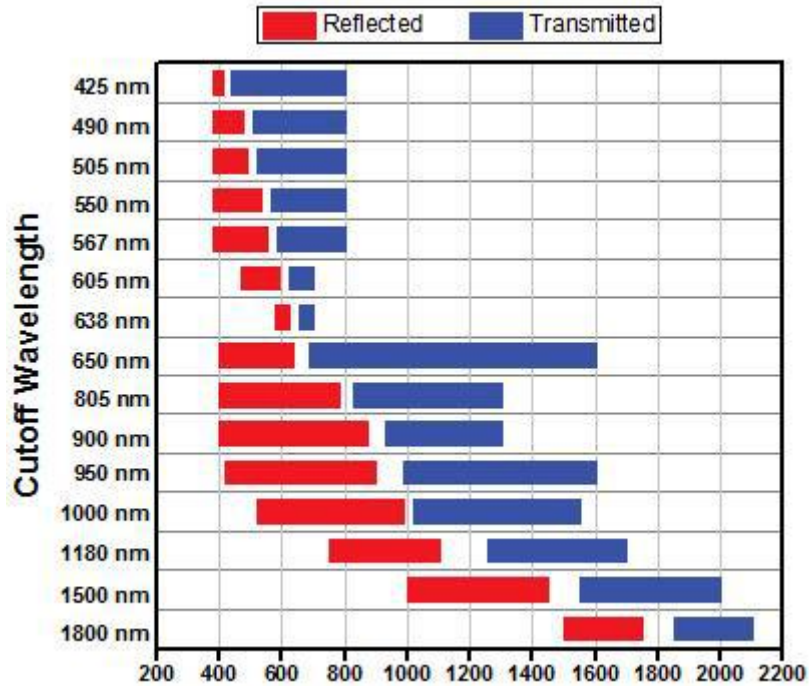
长波通二向色镜通常用于荧光显微镜中。激发光经二向色镜反射进入物镜，发射的荧光(比激发光的波长要长)透过二向色镜进入科研相机或者光电倍增管(PMT)。后向反射或者由样品散射的激发光将再次被二向色镜反射，防止其进入到相机或者光电倍增管中形成杂散信号。

### 表面质量和耐用性

QXKJ 的二向色镜/分束器是在紫外熔融石英衬底上使用离子束溅射镀膜，在工作波长范围内具有良好的透明度，几乎没有自发荧光，且拥有很低的热膨胀系数，这使得它们非常适合从紫外到近红外的应用。这些硬膜的划痕-麻点规格为 40-20，可以像一般玻璃一样进行清洗和处理。与软膜不同，硬膜几乎不受湿度的影响，并能承受高辐照强度，即使长时间暴露于紫外光下，也没有明显的变质或烧伤。关于这些滤光片的损伤阈值详情，请见损伤阈值标签。

### 长通二向色镜选择指南





### 长波通二向色镜/分束器：截止波长 425 nm

Specificationsa	
Cutoff Wavelength	425 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	440 - 800 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	380 - 410 nm

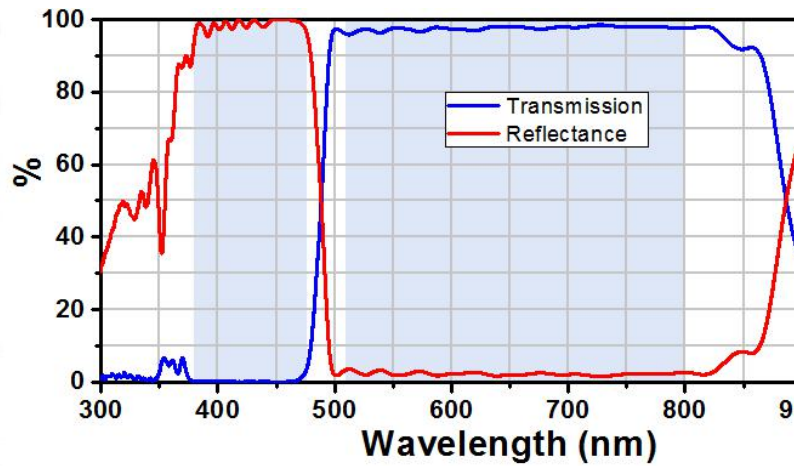
- 右图中阴影区域表示二向色镜/分束镜规定的透射和反射波段，在此范围内保证性能满足规格。阴影区域之外的性能可能因批次不同而不同，所以无法保证。

Specifications	
Type	Longpass
Cutoff Wavelength	425 nm
Transmission Banda	440 - 800 nm
Reflection Bandb	380 - 410 nm
AR Coating Rangedc	400 - 800 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig

**Specifications**

Transmitted Wavefront Error	$\lambda/4$ @ 633 nm Over Clear Aperture
Damage Threshold	1.50 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø250 $\mu$ m)
Substrate Material	UV Fused Silica

长波通二向色镜/分束器: 截止波长 **490 nm**



**Specificationsa**

Cutoff Wavelength	490 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	505 - 800 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	380 - 475 nm

**Specifications**

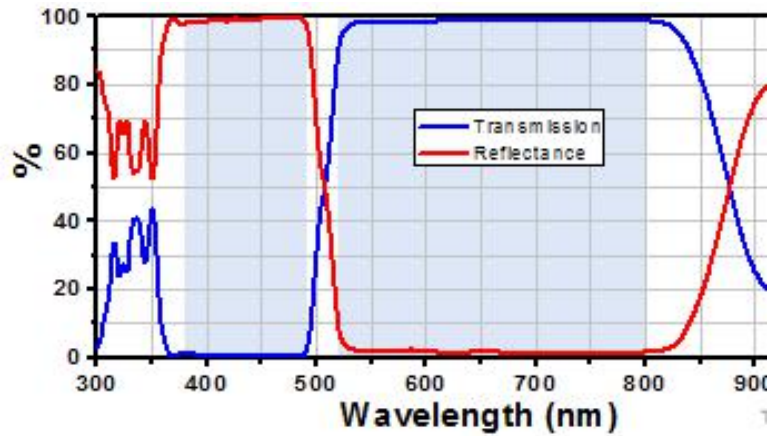
Type	Longpass
Cutoff Wavelength	490 nm
Transmission Banda	505 - 800 nm
Reflection Bandb	380 - 475 nm

Specifications	
AR Coating Rangedc	400 - 800 nm
Size	Ø1/2"
Clear Aperture	>Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	< $\lambda/4$ @ 633 nm Over Clear Aperture
Damage Threshold	1.00 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø538 µm)
Substrate Material	UV Fused Silica

**长波通二向色镜/分束器：截止波长 505 nm**

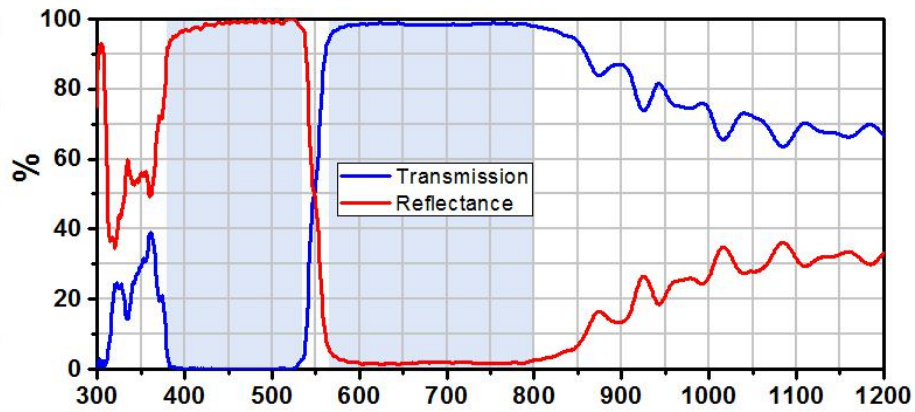
Specificationsa	
Cutoff Wavelength	505 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	520 - 800 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	380 - 490 nm

Specifications	
Type	Longpass
Cutoff Wavelength	505 nm
Transmission Banda	520 - 800 nm
Reflection Bandb	380 - 490 nm
AR Coating Rangedc	400 - 800 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	$\lambda/4$ @ 633 nm Over Clear Aperture
Damage Threshold	1.50 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø250 µm)
Substrate Material	UV Fused Silica



**长波通二向色镜/分束器：截止波长 550 nm**

Specificationsa	
Cutoff Wavelength	550 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	565 - 800 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	380 - 533 nm
Specifications	
Type	Longpass
Cutoff Wavelength	550 nm
Transmission Banda	565 - 800 nm
Reflection Bandb	380 - 535 nm
AR Coating Ranged	400 - 800 nm
Size	Ø1/2"
Clear Aperture	>Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	<λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	0.50 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø538 μm)
Substrate Material	UV Fused Silica

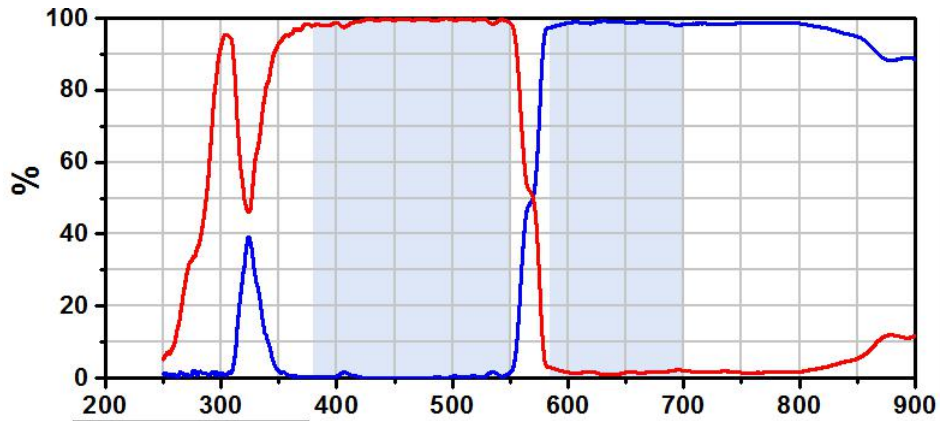


长波通二向色镜/分束器：截止波长 **567 nm**

Specificationsa	
Cutoff Wavelength	567 nm
Transmission Band (Tabs > 85%, Tavg > 90%)	584 - 800 nm
Reflection Band (Rabs > 90%, Ravg > 95%)	380 - 550 nm

Specifications	
Type	Longpass
Cutoff Wavelength	567 nm
Transmission Banda	584 - 800 nm
Reflection Bandb	380 - 550 nm
AR Coating Ranged	400 - 800 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	1.50 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø250 μm)
Substrate Material	UV Fused Silica

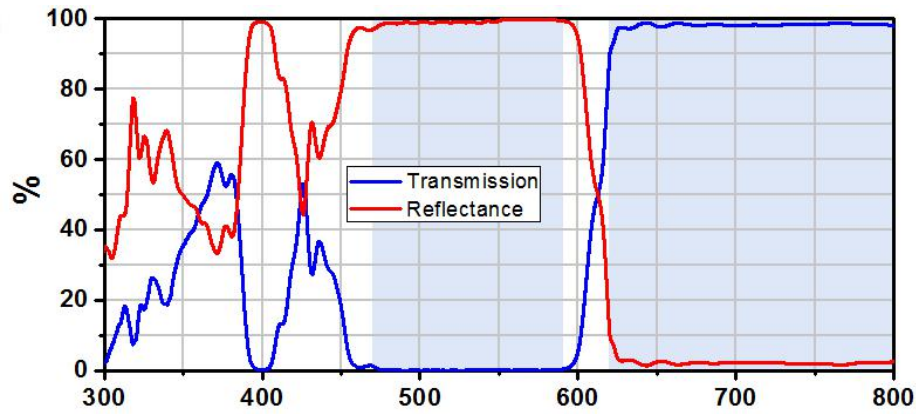


长波通二向色镜/分束器：截止波长 **605 nm**

Specificationsa	
Cutoff Wavelength	605 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	620 - 800 nm
Reflection Band (R <sub>abs</sub> > 90%)	470 - 590 nm

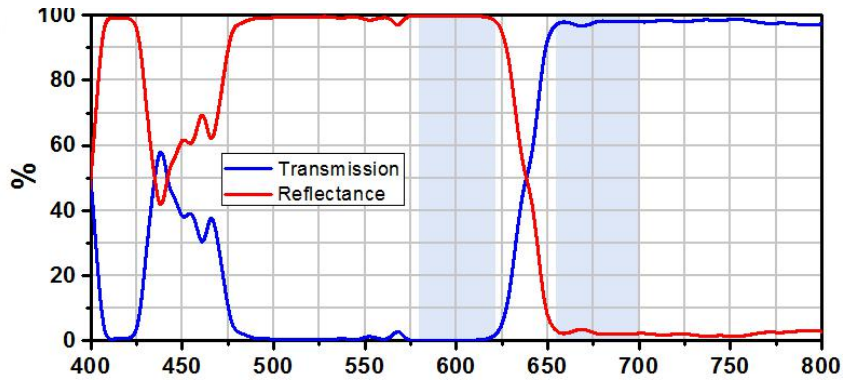
Specifications	
Type	Longpass
Cutoff Wavelength	605 nm
Transmission Banda	620 - 800 nm
Reflection Bandb	470 - 590 nm
AR Coating Ranged	400 - 800 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	1.50 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø250 μm)
Substrate Material	UV Fused Silica



长波通二向色镜/分束器：截止波长 **638 nm**

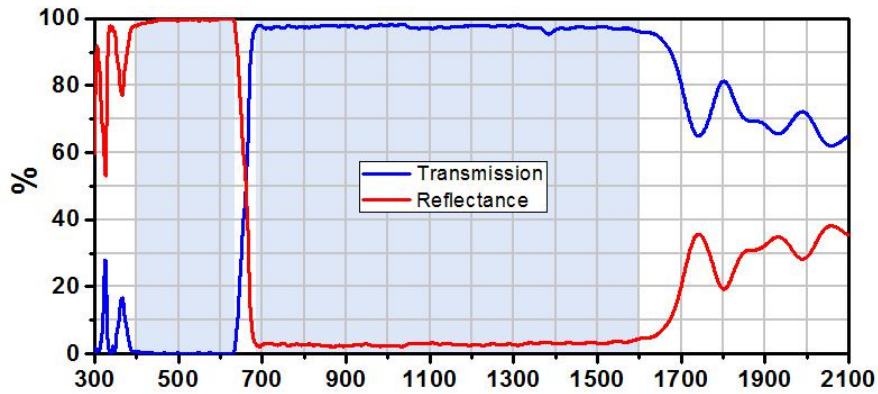
Specificationsa	
Cutoff Wavelength	638 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	655 - 700 nm
Reflection Band (R <sub>abs</sub> > 90%)	580 - 621 nm
Specifications	
Type	Longpass
Cutoff Wavelength	638 nm
Transmission Banda	655 - 700 nm
Reflection Bandb	580 - 621 nm
AR Coating Ranged	400 - 800 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	1.50 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø250 μm)
Substrate Material	UV Fused Silica





长波通二向色镜/分束器：截止波长 **650 nm**

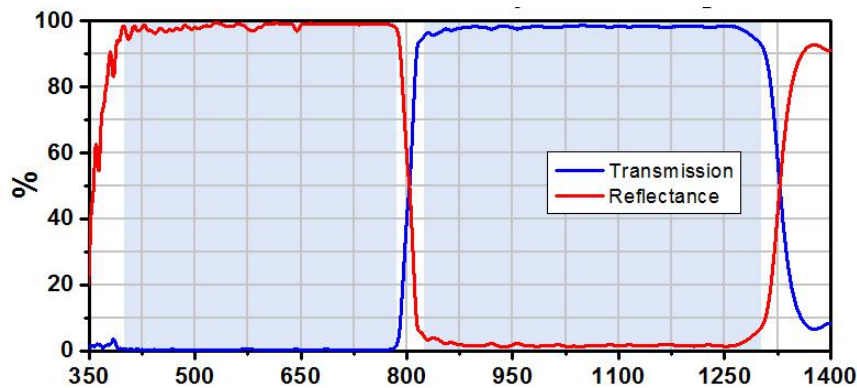
Specificationsa	
Cutoff Wavelength	650 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	685 - 1600 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	400 - 633 nm
Specifications	
Type	Longpass
Cutoff Wavelength	650 nm
Transmission Banda	685 - 1600 nm
Reflection Bandb	400 - 633 nm
AR Coating Ranged	665 - 1600 nm
Size	Ø1/2"
Clear Aperture	>Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	<λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	0.25 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø538 μm) 2.00 J/cm <sup>2</sup> (1064 nm, 10 Hz, 10 ns, Ø1.000 mm)
Substrate Material	UV Fused Silica



长波通二向色镜/分束器：截止波长 **805 nm**

Specificationsa	
Cutoff Wavelength	805 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	825 - 1300 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	400 - 785 nm

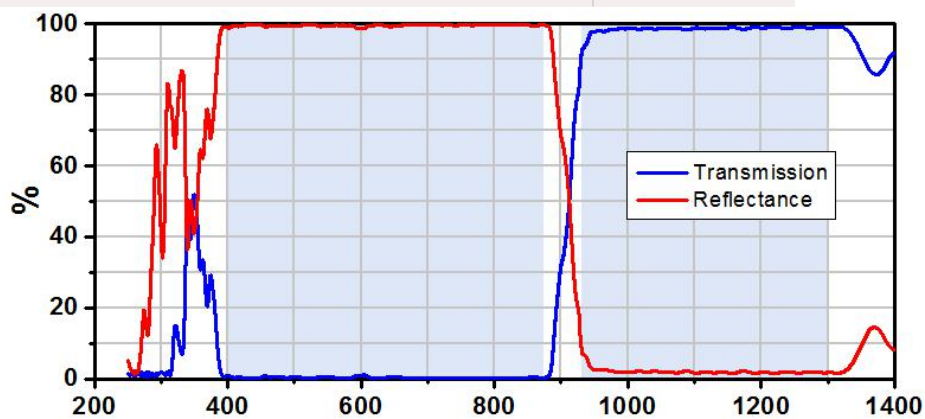
Specifications	
Type	Longpass
Cutoff Wavelength	805 nm
Transmission Banda	825 - 1300 nm
Reflection Bandb	400 - 785 nm
AR Coating Ranged	823 - 1300 nm
Size	Ø1/2"
Clear Aperture	>Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	<λ/4 @ 633 nm Over Clear Aperture
Substrate Material	UV Fused Silica



长波通二向色镜/分束器：截止波长 **900 nm**

Specificationsa	
Cutoff Wavelength	900 nm
Transmission Band (Tabs > 85%, Tavg > 90%)	932 - 1300 nm
Reflection Band (Rabs > 90%)	400 - 872 nm

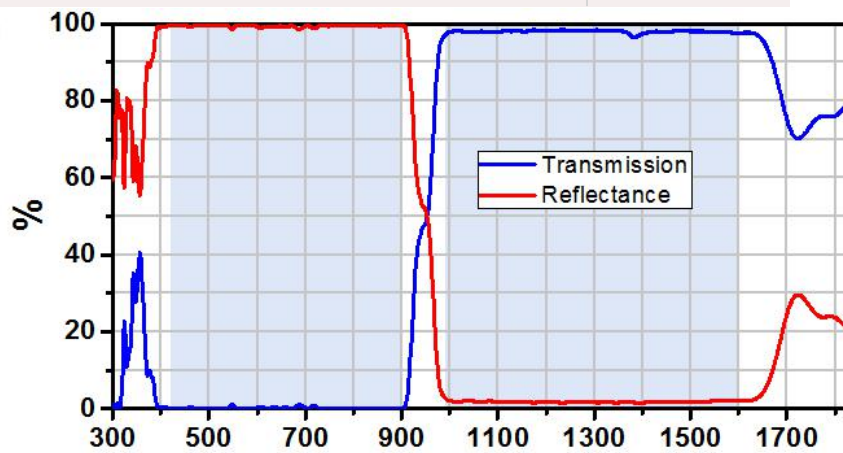
Specifications	
Type	Longpass
Cutoff Wavelength	900 nm
Transmission Banda	932 - 1300 nm
Reflection Bandb	400 - 872 nm
AR Coating Ranged	932 - 1700 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	1.00 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø250 μm) 6.50 J/cm <sup>2</sup> (1064 nm, 10 Hz, 12 ns, Ø250 μm)
Substrate Material	UV Fused Silica



长波通二向色镜/分束器：截止波长 **950 nm**

Specificationsa	
Cutoff Wavelength	950 nm
Transmission Band (Tabs > 85%, Tavg > 90%)	990 - 1600 nm
Reflection Band (Rabs > 90%, Ravg > 95%)	420 - 900 nm

Specifications	
Type	Longpass
Cutoff Wavelength	950 nm
Transmission Banda	990 - 1600 nm
Reflection Bandb	420 - 900 nm
AR Coating Rangec	932 - 1700 nm
Size	Ø1/2"
Clear Aperture	>Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	< $\lambda/4$ @ 633 nm Over Clear Aperture
Damage Threshold	1.00 J/cm <sup>2</sup> (532 nm, 10 Hz, 10 ns, Ø538 µm) 4.00 J/cm <sup>2</sup> (1064 nm, 10 Hz, 10 ns, Ø1.000 mm)
Substrate Material	UV Fused Silica

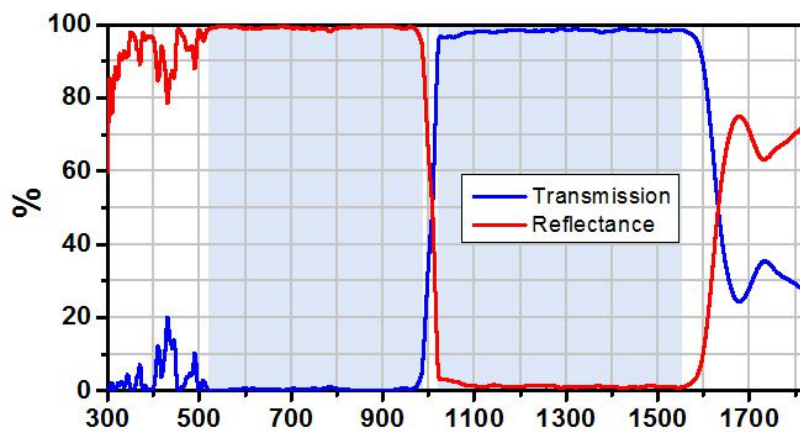


长波通二向色镜/分束器：截止波长 **1000 nm**

Specificationsa	
Cutoff Wavelength	1000 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	1020 - 1550 nm
Reflection Band (R <sub>abs</sub> > 90%, R <sub>avg</sub> > 95%)	520 - 985 nm

Specifications	
Type	Longpass
Cutoff Wavelength	1000 nm

Specificationsa	
Transmission Banda	1020 - 1550 nm
Reflection Bandb	520 - 985 nm
AR Coating Ranged	1020 - 1550 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	λ/4 @ 633 nm Over Clear Aperture
Substrate Material	UV Fused Silica

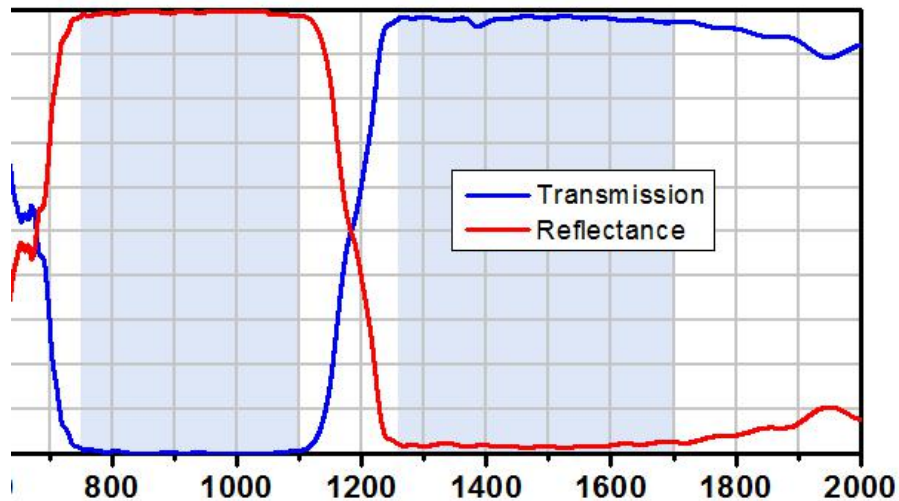


### 长波通二向色镜/分束器：截止波长 **1180 nm**

Specificationsa	
Cutoff Wavelength	1180 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	1260 - 1700 nm
Reflection Band (R <sub>abs</sub> > 90%)	750 - 1100 nm

Specifications	
Type	Longpass
Cutoff Wavelength	1180 nm
Transmission Banda	1260 - 1700 nm
Reflection Bandb	750 - 1100 nm
AR Coating Ranged	932 - 1700 nm
Size	Ø1/2"
Clear Aperture	≥Ø11.43 mm
Thickness	3.2 mm
Incident Angle	45°

Specificationsa	
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	$\lambda/4$ @ 633 nm Over Clear Aperture
Damage Threshold	5.00 J/cm <sup>2</sup> (1064 nm, 10 Hz, 12 ns, $\varnothing$ 250 $\mu$ m)
Substrate Material	UV Fused Silica



长波通二向色镜/分束器：截止波长 **1500 nm**

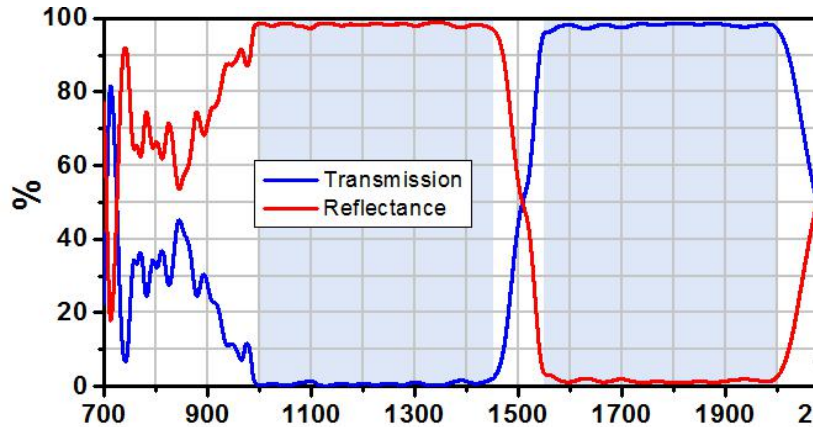
Specificationsa	
Cutoff Wavelength	1500 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	1550 - 2000 nm
Reflection Band (R <sub>abs</sub> > 90%)	1000 - 1450 nm

Specifications	
Type	Longpass
Cutoff Wavelength	1500 nm
Transmission Banda	1550 - 2000 nm
Reflection Bandb	1000 - 1450 nm
AR Coating Ranged	1550 - 2000 nm
Size	$\varnothing$ 1/2"
Clear Aperture	$\geq \varnothing$ 11.43 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	$\lambda/4$ @ 633 nm Over Clear Aperture

### Specificationsa

Substrate Material

UV Fused Silica



长波通二向色镜/分束器：截止波长 **1800 nm**

### Specificationsa

Cutoff Wavelength	1800 nm
Transmission Band (T <sub>abs</sub> > 85%, T <sub>avg</sub> > 90%)	1850 - 2100 nm
Reflection Band (R <sub>abs</sub> > 90%)	1500 - 1750 nm

### Specifications

Type	Longpass
Cutoff Wavelength	1800 nm
Transmission Banda	1850 - 2100 nm
Reflection Bandb	1500 - 1750 nm
AR Coating Ranged	1800 - 2100 nm
Size	Ø1"
Clear Aperture	≥Ø22.86 mm
Thickness	3.2 mm
Incident Angle	45°
Surface Quality	40-20 Scratch-Dig
Transmitted Wavefront Error	λ/4 @ 633 nm Over Clear Aperture
Damage Threshold	5.00 J/cm <sup>2</sup> (2050 nm, 62.5 Hz, 10 ns, Ø348 μm)
Substrate Material	UV Fused Silica

