

## IR 级抛光氟化钡 BaF<sub>2</sub> 窗片 方形 0.15–12μm 20x10x1mm



### 产品描述

氟化钡能很好应用于光谱组件。氟化钡通常适用于无源 IR 波段（8~14 μm）的应用，通常用作热成像的窗片。对于相同厚度，比氟化钙的透射范围进一步延伸到 IR 中大约 1mm。主要用于 IR 应用，并注意到具有 IR 抛光的视窗可能在由低纯度 BaF<sub>2</sub> 晶体制成的 VUV 中具有受限的透射性能。氟化钡通过真空 Stockbarger 技术生长。与 CaF<sub>2</sub> 不同，BaF<sub>2</sub> 不以天然状态存在，并且所有材料必须化学合成，使得 BaF<sub>2</sub> 生产相对昂贵。氟化钡容易裂开，对热冲击非常敏感。它抛光好可以蚀刻。不是所有的晶体都是由 zui 高等级的化学品制造的；对于 IR 级光学器件，较低规格是足够的并且降低了成本，然而在 UV 和 VUV 中的透射受到限制。zui 高纯度的氟化钡 VUV 材料可以被认为是快闪烁级。

### 产品型号

BAFP20-10-1

### 应用领域

快速闪烁体材料

热成像窗片

高能物理实验

### 核心参数

| 工作波长      | 规格尺寸      |
|-----------|-----------|
| 0.15-12μm | 20x10x1mm |

## 详细参数

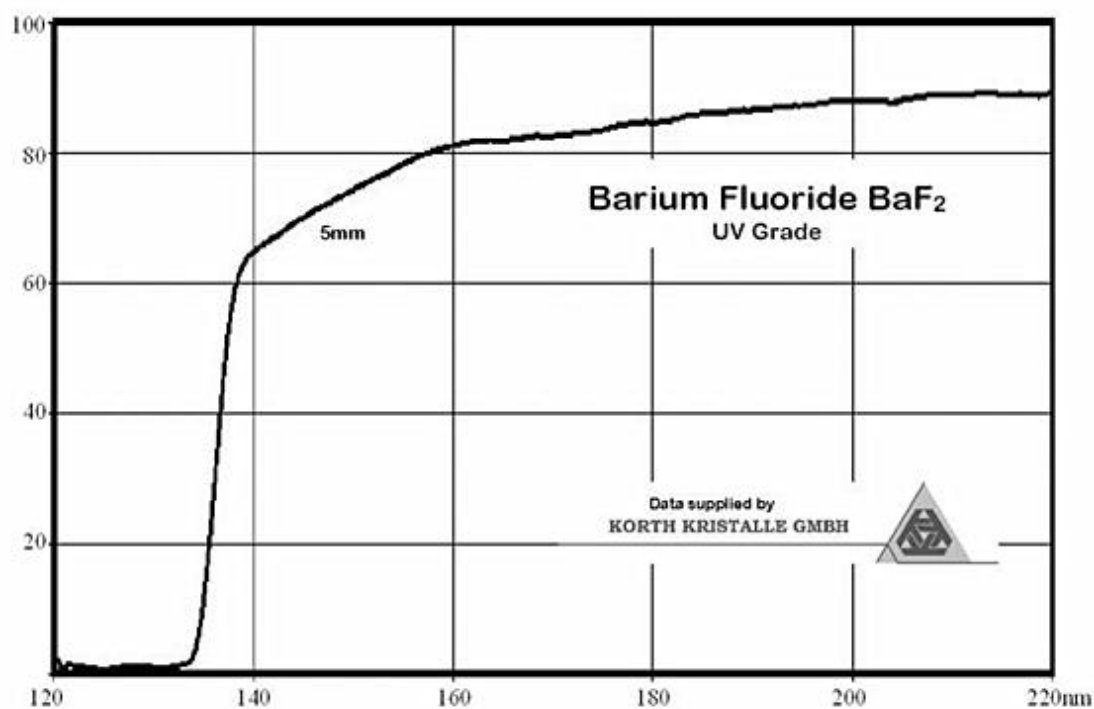
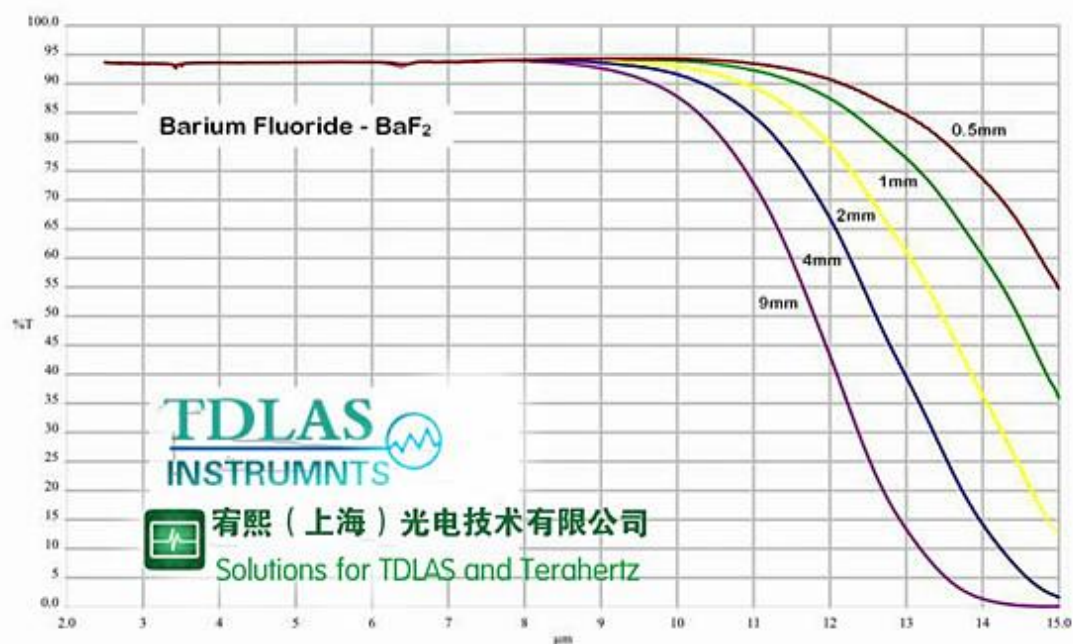
|              |                                                 |
|--------------|-------------------------------------------------|
| 透射波段范围:      | 0.15~12μm (注意: IR 级可能在 UV 下的性能受限)               |
| 折射率:         | 1.45@5μm                                        |
| 反射损耗:        | 6.5% at 5% (2 个表面)                              |
| 吸收系数:        | $3.2 \times 10^{-4} \text{cm}^{-1}$ @6μm        |
| 吸收峰:         | 47μm                                            |
| dn / dT:     | $-15.2 \times 10^{-6} / ^\circ\text{C}$         |
| dn / dμ = 0: | 1.95μm                                          |
| 密度:          | 4.89g / cc                                      |
| 熔点:          | 1386°C                                          |
| 导热率:         | $11.72 \text{W m}^{-1} \text{K}^{-1}$ @ 286K    |
| 热膨胀:         | $18.1 \times 10^{-6} / ^\circ\text{C}$ @273K    |
| 硬度:          | Knoop 82 with 500g indenter                     |
| 比热容量:        | $410 \text{J Kg}^{-1} \text{K}^{-1}$            |
| 介电常数:        | 7.33 at 1MHz                                    |
| 杨氏模量 (E) :   | 53.07GPa                                        |
| 剪切模量 (G) :   | 25.4GPa                                         |
| 体积模量 (K) :   | 56.4GPa                                         |
| 弹性系数:        | $C_{11} = 89.2 \ C_{12} = 40.0 \ C_{44} = 25.4$ |
| 表观弹性极限:      | 26.9MPa (300psi)                                |
| 泊松比:         | 0.343                                           |
| 溶解性:         | 0.17g / 100g water, 23°C                        |
| 分子量:         | 175.36                                          |
| 类型/结构:       | 立方 CaF <sub>2</sub> , Fm3m, (111) 裂解            |

折射率: (No = Ordinary Ray 普通射线)

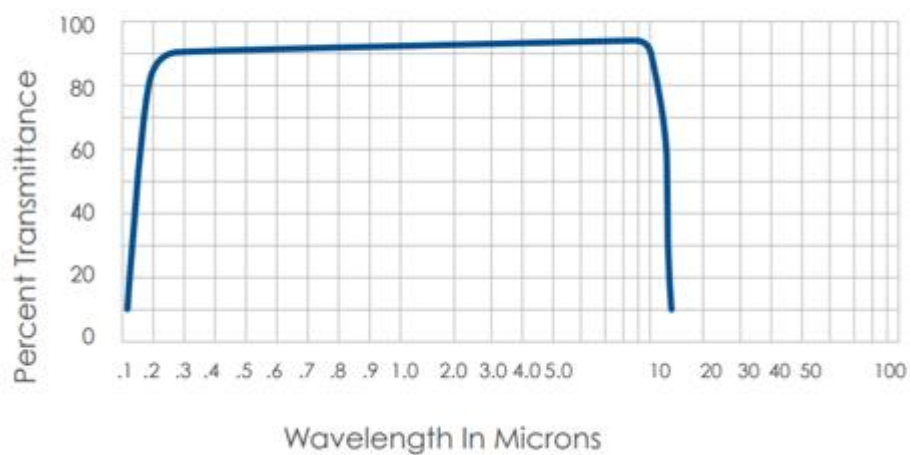
| $\mu\text{m}$ | No      | $\mu\text{m}$ | No     | $\mu\text{m}$ | No     |
|---------------|---------|---------------|--------|---------------|--------|
| 0.1408        | 1.8150  | 0.1452        | 1.7820 | 0.1477        | 1.7670 |
| 0.1500        | 1.6780  | 0.2000        | 1.557  | 0.2652        | 1.5122 |
| 0.2803        | 1.5066  | 0.2893        | 1.5039 | 0.2967        | 1.5019 |
| 0.3021        | 1.5004  | 0.3130        | 1.4978 | 0.3254        | 1.4952 |
| 0.3403        | 1.4925  | 0.3466        | 1.4915 | 0.3610        | 1.4894 |
| 0.3663        | 1.4887  | 0.4046        | 1.4844 | 0.5461        | 1.4759 |
| 0.5893        | 1.4744  | 0.6438        | 1.4730 | 0.6563        | 1.4727 |
| 0.7065        | 1.4718  | 0.8521        | 1.4699 | 0.8944        | 1.4694 |
| 1.0140        | 1.4685  | 1.1287        | 1.4678 | 1.3673        | 1.4667 |
| 1.5295        | 1.4661  | 1.6810        | 1.4656 | 1.7012        | 1.4655 |
| 1.9701        | 1.4647  | 2.3254        | 1.4636 | 2.6738        | 1.4623 |
| 3.2434        | 1.4602  | 3.4220        | 1.4594 | 5.1380        | 1.4501 |
| 5.5490        | 1.44732 | 6.2380        | 1.4422 | 6.6331        | 1.4390 |
| 7.0442        | 1.4353  | 7.2680        | 1.4331 | 9.7240        | 1.4051 |
| 10.346        | 1.3936  |               |        |               |        |

## 特性曲线

光谱透射曲线:



Transmittance  $\tau$  ( $\lambda$ ) vs. Wavelength  $\lambda$



## 订购信息

BaF2 圆形窗片:

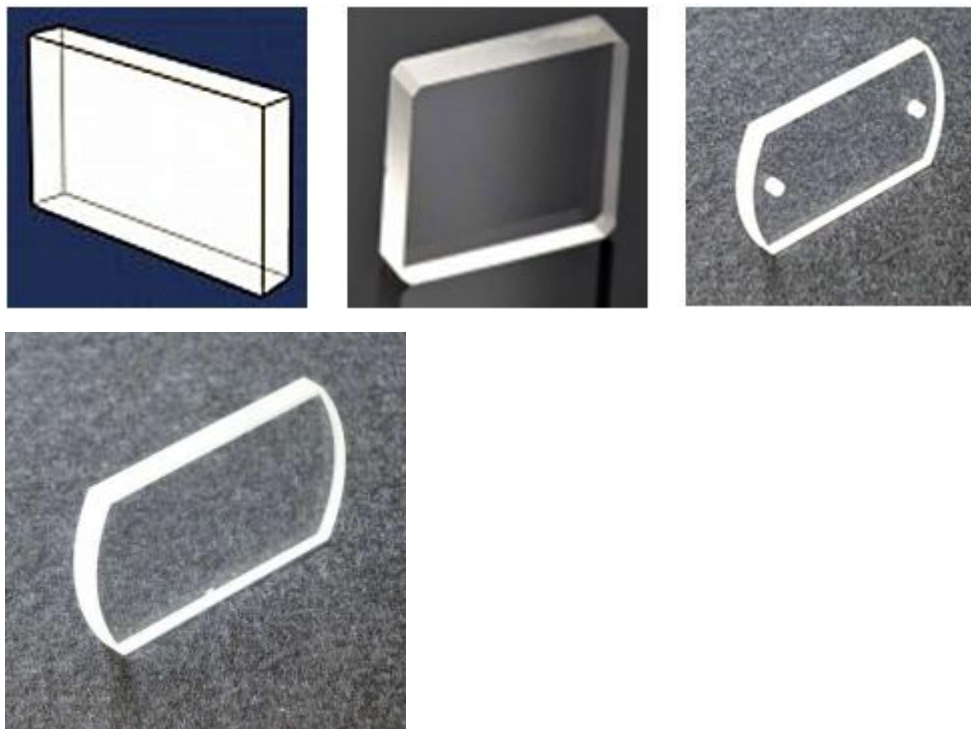


订购信息:

| 订购型号       | 产品规格                       | 直径          | 厚度           | 性质          |
|------------|----------------------------|-------------|--------------|-------------|
| BAFP10-0.5 | 10mm $\varnothing$ x 0.5mm | +0.0/-0.1mm | $\pm 0.1$ mm | IR polished |
| BAFP10-2   | 10mm $\varnothing$ x 2mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |
| BAFP12-2   | 12mm $\varnothing$ x 2mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |
| BAFP13-1   | 13mm $\varnothing$ x 1mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |
| BAFP13-2   | 13mm $\varnothing$ x 2mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |
| BAFP15-2   | 15mm $\varnothing$ x 2mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |
| BAFP16-1   | 16mm $\varnothing$ x 1mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |
| BAFP16-3   | 16mm $\varnothing$ x 3mm   | +0.0/-0.1mm | $\pm 0.1$ mm | IR Polished |

|              |                          |             |        |             |
|--------------|--------------------------|-------------|--------|-------------|
| BAFP19-2     | 19mm Ø x 2mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP20-1     | 20mm Ø x 1mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP20-2     | 20mm Ø x 2mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP22-0.5   | 22mm Ø x 0.5mm           | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25-1     | 25mm Ø x 1mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25-2     | 25mm Ø x 2mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25-3     | 25mm Ø x 3mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25-4     | 25mm Ø x 4mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25.4-0.5 | 25.4mm Ø x 0.5mm         | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25.4-1   | 25.4mm Ø x 1mm           | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25.4-2   | 25.4mm Ø x 2mm           | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25.4-4   | 25.4mm Ø x 4mm           | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25.4-5   | 25.4mm Ø x 5mm           | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP25.4-6   | 25.4mm Ø x 6mm           | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP30-1     | 30mm Ø x 1mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP30-2     | 30mm Ø x 2mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP32-3D    | 32mm Ø x 3mm 打孔(Drilled) | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP32-3     | 32mm Ø x 3mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP35-5     | 35mm Ø x 5mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP38-3     | 38mm Ø x 3mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP40-5     | 40mm Ø x 5mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP50-3     | 50mm Ø x 3mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP63-5     | 63mm Ø x 5mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |
| BAFP75-3     | 75mm Ø x 3mm             | +0.0/-0.1mm | ±0.1mm | IR Polished |

## BaF2 方形窗片



### 订购信息:

| 订购型号          | 产品规格                                | 性质          |
|---------------|-------------------------------------|-------------|
| BAFP10-10-1   | 10mm x 10mm x 1mm                   | IR polished |
| BAFP16-16-1.5 | 16mm x 16mm x 1.5mm                 | IR Polished |
| BAFP20-10-1   | 20mm x 10mm x 1mm                   | IR Polished |
| BAFP25-12-2   | 25mm x 12mm x 2mm                   | IR Polished |
| BAFP41-23-4D  | 41mm x 23mm x 4mm 端部呈圆形 打孔(Drilled) | IR Polished |
| BAFP41-23-4   | 41mm x 23mm x 4mm 端部呈圆形             | IR Polished |
| BAFP76-26-1   | 76mm x 26mm x 1mm 端部呈圆形             | IR Polished |

请注意，这些窗口有时是普通矩形，有时是从 41mm Ø 窗口切割而成，因此端部呈圆形。