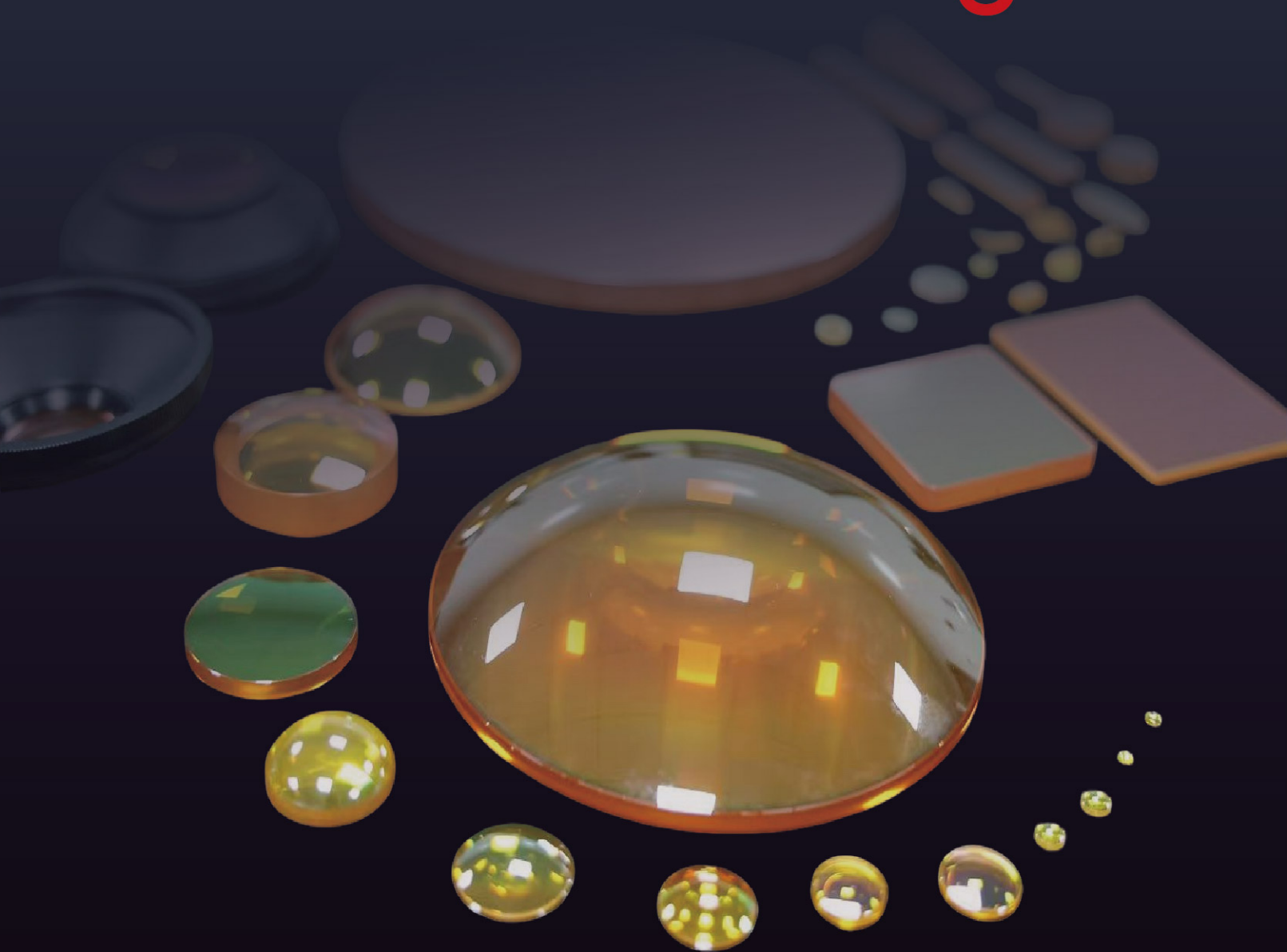




Product Catalog



中国·江苏
CHINA · JIANGSU

Company Introduction

企业介绍

江苏天核初芯科技有限公司 Jiangsu THOI Technology Co.,Ltd.



中国长三角经济区江苏省常州市

The Changzhou City of Jiangsu Province
in the Yangtze River Delta Economic Zone of China

具备研发、定制和批量生产能力的红外光学镜片加工的源头工厂。

A source factory with R&D, customization and mass production capabilities for infrared optical lens processing.

Application Field

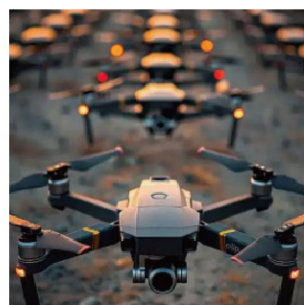
应用领域



高能激光系统
High-energy laser systems



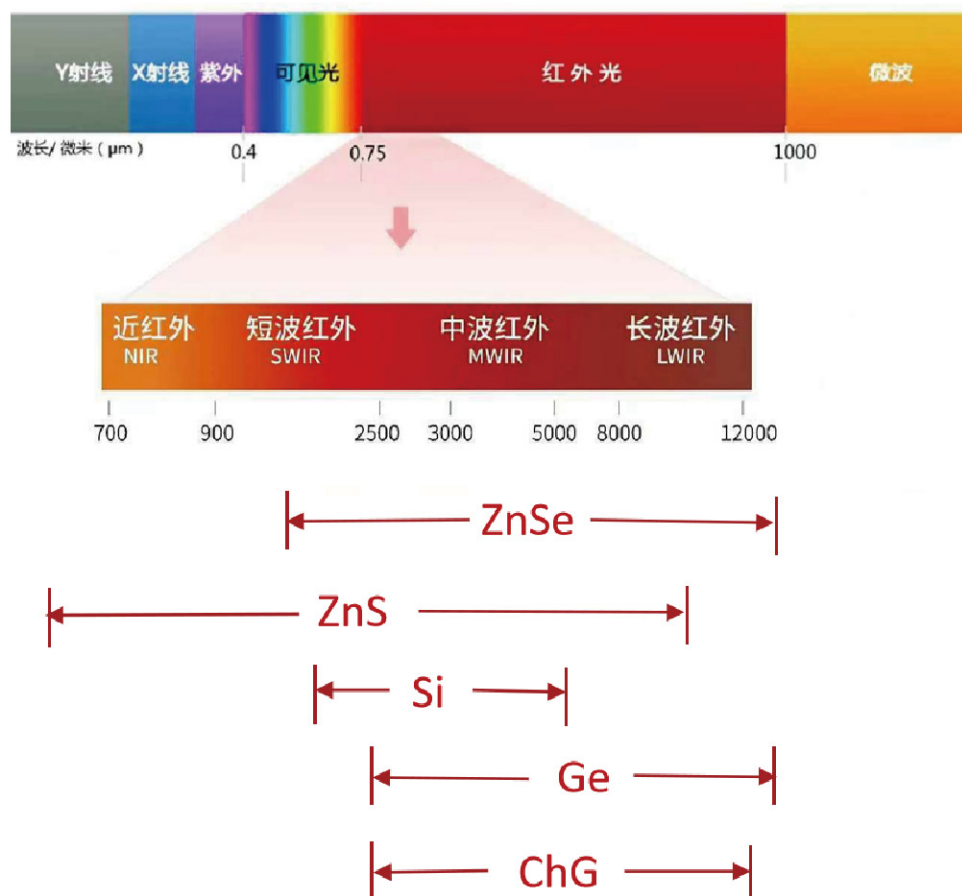
多光谱应用领域
Multispectral application



高分辨率成像系统
High-resolution imaging system



新能源汽车
New energy vehicle



Enterprise Qualification

企业资质

深耕光学行业20+年

20+ Years of Dedication to the Optics Industry

一家专注加工硒化锌的中国企业

A Chinese Company Specialized in Zinc Selenide Processing



光学冷加工实验室
Optical Processing Laboratory

THOI®

Testing Equipment

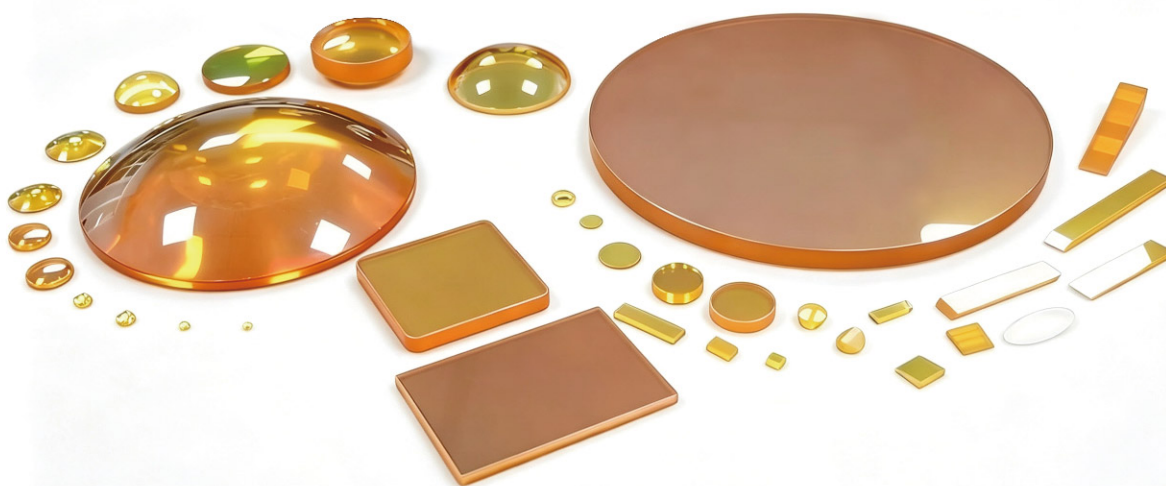
检测设备



Product Introduction

产品介绍

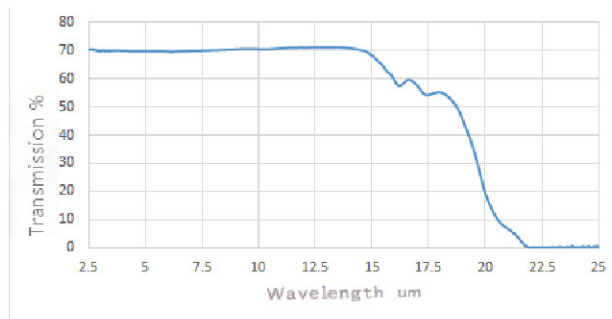
硒化锌 (Zinc Selenide, ZnSe)



● 核心应用领域 Applications

硒化锌材料广泛应用于激光系统及红外光学全场景, 核心用途包括: 工业与医疗设备、热成像与安防等领域。

Zinc selenide (ZnSe) finds broad application in laser equipment and diverse infrared optical systems. Key applications include industrial and medical devices, thermal imaging, monitoring systems and more.



— 材料透过率(Material transmittance) —

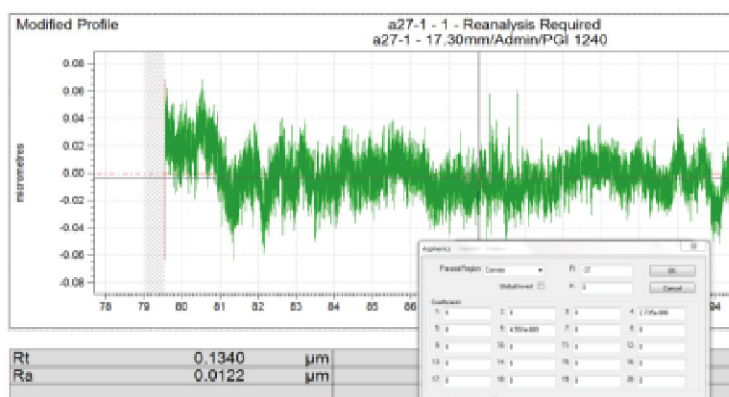
● 产品形态 Product Forms

窗口片 (平面矩形 / 圆形)、各类透镜 (平凸、双凸、弯月等)、棱镜、楔角、非球镜、异形光学元件。

Windows (rectangular / circular), Lenses (plano-convex, biconvex, meniscus, etc.), Prisms, Wedges, Wedge windows, Aspherical lenses, Special-shaped optical components.

Characteristic	Spec.	Remark
DIA	$\phi 2\sim 400\text{mm}$	/
S/D	20/10	1300 Lux
PV	$1/8 \lambda @ 632.8\text{nm}$	Zygo
IRR	$0.1 \lambda @ 632.8\text{nm}$	Zygo
RMS	$\lambda/50 @ 632.8\text{nm}$	Zygo
Parallelism/Center Error	3 arc sec / 30 arc sec	/

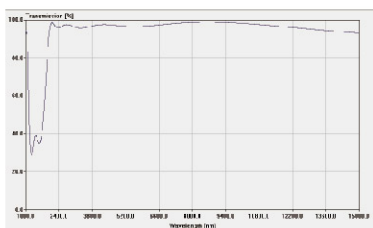
● 衍射光学元件 Diffractive Optical Element (PV $0.1340\mu\text{m}$; RMS $0.01\mu\text{m}$)



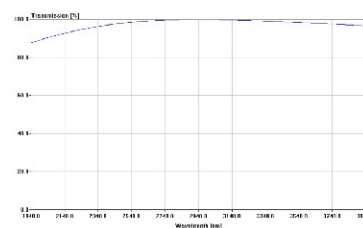
● 镀膜 Coating



— BBAR@8-12 μm —



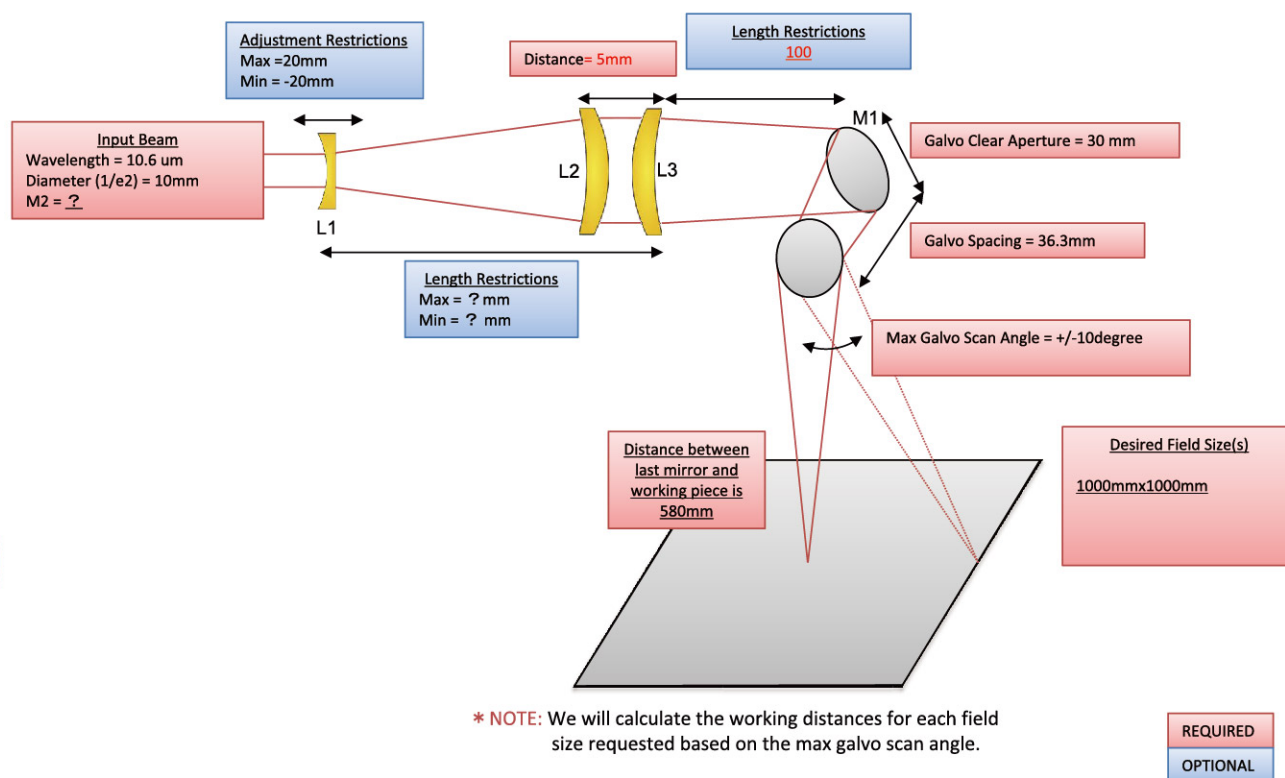
— BBAR@2-14 μm —



— AR@2.94 μm —

● 二氧化碳三轴激光打标镜头组件 CO₂ Three-axis Laser Marking Lens Assembly

三维动态产品信息/Information

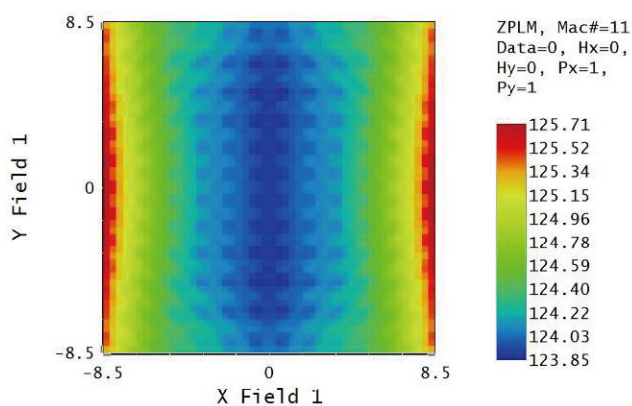
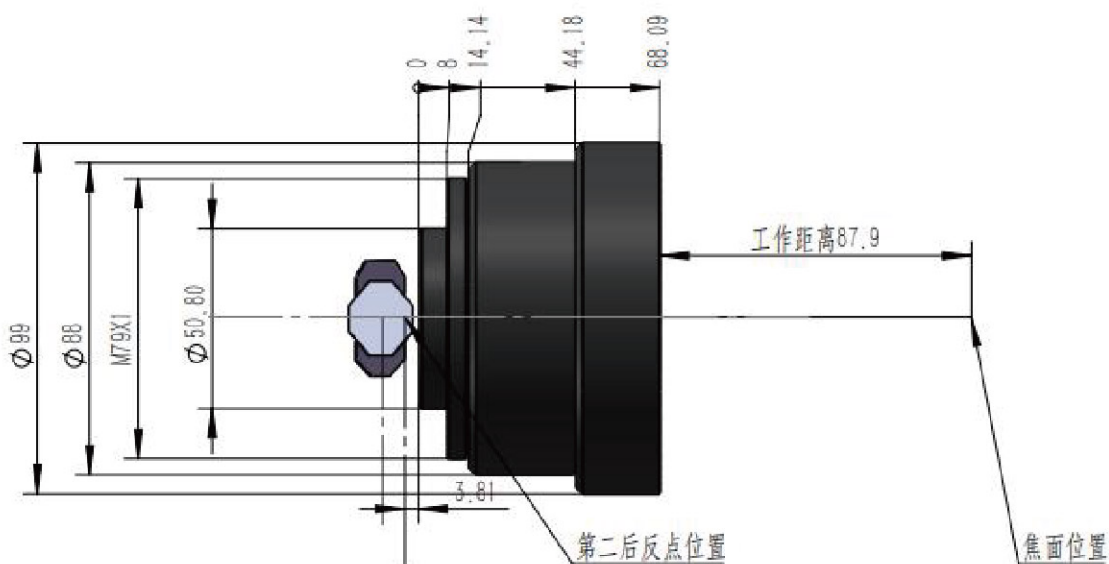


产品参数/Product Parameters

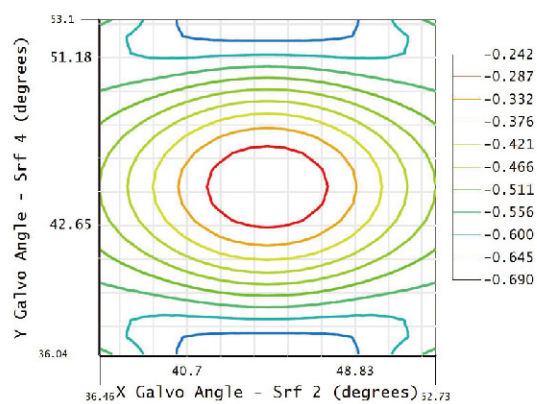
型号/Spec.	有效口径/CA	幅面范围/Scan field	典型光斑/Beam diameter
C30(CO ₂ Laser)	30	200X200-800X800	150 μ m@200x200
C50(CO ₂ Laser)	50	300X300-800X800	150 μ m@300x300
C70(CO ₂ Laser)	70	300X300-800X800	110 μ m@300x300

● 二氧化碳两轴激光打标镜头组件 CO₂ Two-axis Laser Marking Lens Assembly

F-θ Lens SL3-9.3-60-90-14



— 光斑分布图/Spot Diagram —



— 场曲分布图/Field Curvature Diagram —

F-θ Lens SL3-9.3-60-90-14

激光器信息/Laser information	
波长/Wavelength (μm)	9.300
激光功率/Laser power (w)	< 500
M2 光束质量/M2 beam quality	1.000
振镜输入光束直径 1/e ² pts.	10 or 14
振镜上的输入全光束直径/Full beam diameter (mm)	10 or 14

扫描镜规格说明/Specifications for scanning mirror	
有效焦距 /EFL (mm)	90.000
工作距离/Working distance (mm)	87.900
最大允许远心角/Max. angle (deg)	<3
扫描方形视场/Scanning square field of view (mm)	CA10mm:55x55 / CA14mm:50x50
扫描镜元件个数/Number of lenses	3.000

振镜的规格说明/Specifications for the vibrating mirror	
两块振镜之间的距离/M1-M2 (mm)	16.000
Y 方向振镜到扫描镜的距离/M2-lens center (mm)	12.000
振镜的通过口径/Clear aperture of mirror (mm)	10 or 14
输入扫描角度(光学扫描角)/END Angle (deg)	14 x 14

根据以上参数理论上计算得到聚焦光斑规格说明/Specification for focusing spot	
聚焦光斑大小(1/e ²)/Spot size range (μm)	0.16/0.11(轴上点)
整个视场范围内的光斑偏离度/Spot deviation (%)	5.600
椭圆度/Ovalness (Max/Min)(%)	125/96.000

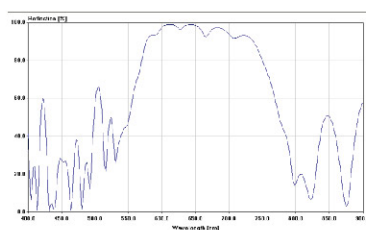
● 扩束镜 Beam Expander

Multiple 倍数	1.5	2	2.5	3	4	4	5	6	8
END 输入通光口径	12	12	9	9	9	9	9	9	9
EXD 输出通光口径	14	14	19	19	19	19	19	20	20
Thread 螺纹连接	M22×0.75	M22×0.75	M22×0.75	M22×0.75	M22×0.75	M22×0.75	M22×0.75	M22×0.75	M22×0.75

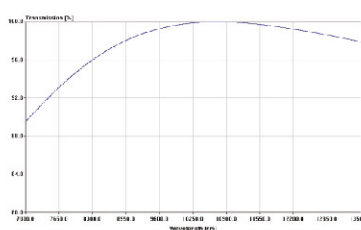
● 扫描场镜 F-θLens

Focal Length 焦距(mm)	73	100	160	230	254	300	330	450	592/562
Lens Diameter 镜片直径 (mm)	48	36/48	36/48	48	48	48	48	48/56/60	48/60
Design Scope 设计范围 (mm ²)	50×50	70×70	110×110	140×140	175×175	210×210	250×250	300×300	400×400
Actual Scope 实际范围 (mm ²)	60×60	80×80	130×130	170×170	190×190	230×230	265×265	320×320	420×420
Clear Aperture 通光孔径	43	32/43	32/43	43	43	43	43	43/53/56	43/56
Focus Size 弥散圆(mm)	0.15	0.20	0.20	0.35	0.40	0.45	0.50	0.60	0.70
Entrance Diameter 入射光直径	<16	<8/<16	<8/<16	<16	<16	<16	<16	<16/<22	<16/<22
Thread 螺纹连接	M85×1	M85×1	M85×1	M85×1	M85×1	M85×1	M85×1	M85×1	M85×1

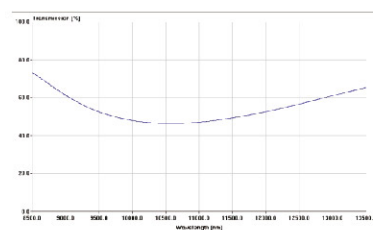
● 镀膜 Coating



— R>98% @ 633nm —



— AR@ 10.6 / 9.3μm —



— T 50% / R50% @10.6μm —

注: 所有镀膜曲线均默认以陪镀片实测为标准, 陪镀片为双平片, 厚度1-2mm。

Note: All coating curves are default based on measured data of 1-2mm thick plane-parallel witness coupons.

Product Introduction

产品介绍

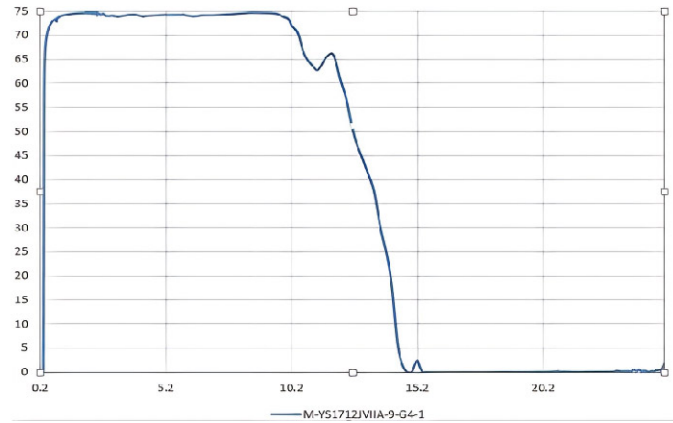
硫化锌 (Zinc Sulfide, ZnS)



● 核心应用领域 Applications

基于光学与机械性能优势, 硫化锌光学元件广泛应用于: 红外天文卫星、安防与车载夜视、工业与科研设备等多个领域。

Benefiting from excellent optical and mechanical properties, ZnS optical components are widely used in astronomical observation optics, security monitoring and automotive night vision, industrial and scientific research equipment, and other areas.



— 材料透过率(Material transmittance) —

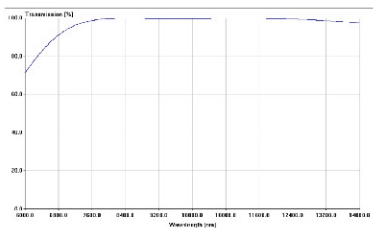
● 产品形态 Product Forms

窗口片(平面矩形 / 圆形)、各类透镜(平凸、双凸、弯月等)、棱镜、楔角、非球镜、异形光学元件。

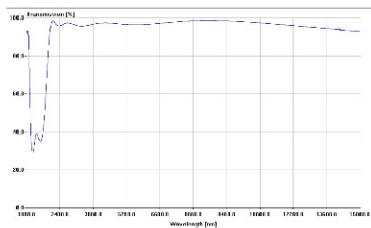
Windows (rectangular / circular), Lenses (plano-convex, biconvex, meniscus, etc.), Prisms, Wedges, Wedge windows, Aspherical lenses, Special-shaped optical components.

Characteristic	Spec.	Remark
DIA	φ5-300mm	/
S/D	20/10	1300 Lux
PV	1/8 λ@632.8nm	Zygo
IRR	0.1 λ@632.8nm	Zygo
RMS	λ/40@632.8nm	Zygo
Parallelism/Center Error	3 arc sec /30 arc sec	/

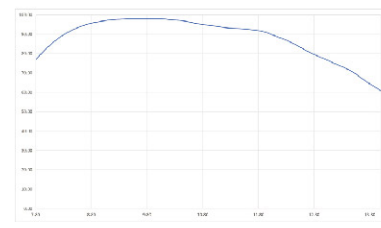
● 镀膜 Coating



— BBAR@8-12μm —



— BBAR@2-14μm —



— HD+AR @7.8-14μm —

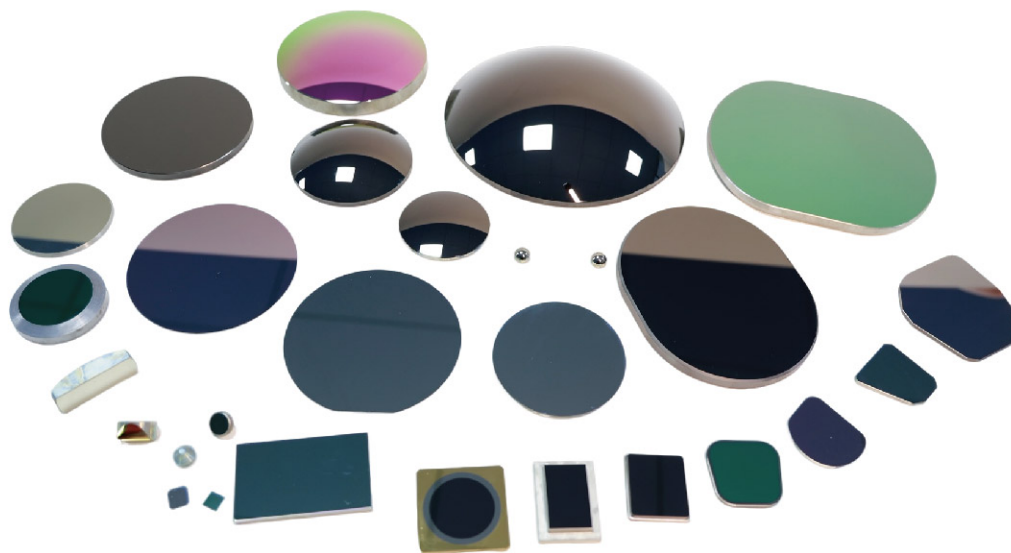
注: 所有镀膜曲线均默认以陪镀片实测为标准, 陪镀片为双平片, 厚度1-2mm。

Note: All coating curves are default based on measured data of 1-2mm thick plane-parallel witness coupons.

Product Introduction

产品介绍

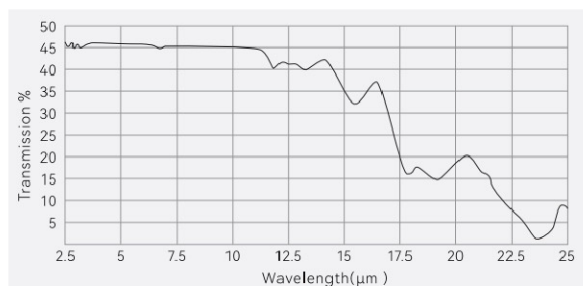
锗 (Germanium, Ge)



● 核心应用领域 Applications

依托优异的红外光学与物理性能, 锗材料广泛应用于全场景红外光学系统: 红外成像与安防、激光光学系统、窗口、输出耦合镜的理想材料、红外检测设备的光学元件等。

Featuring outstanding infrared optical and physical performance, germanium serves as an ideal material for full-scenario infrared optical systems, including infrared imaging & security, laser systems, optical windows and output couplers, as well as optical components for scientific research and infrared testing instruments.



— 材料透过率(Material transmittance) —

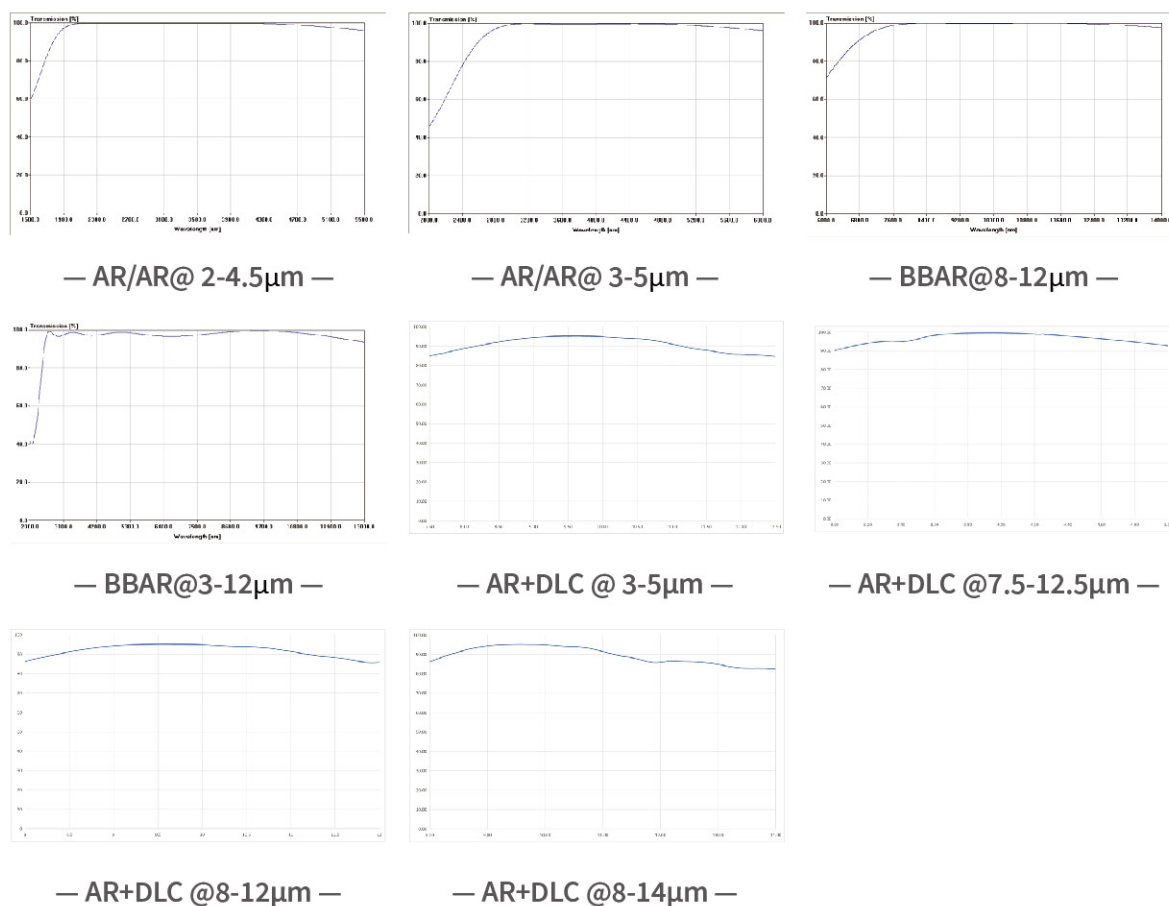
● 产品形态 Product Forms

窗口片 (平面矩形 / 圆形)、各类透镜 (平凸、双凸、弯月等)、棱镜、楔角、非球镜、异形光学元件。

Windows (rectangular / circular), Lenses (plano-convex, biconvex, meniscus, etc.), Prisms, Wedges, Wedge windows, Aspherical lenses, Special-shaped optical components.

Characteristic	Spec.	Remark
DIA	Φ3-300mm	/
S/D	40/20	1300 Lux
PV	1/8 λ@632.8nm	Zygo
IRR	0.1 λ@632.8nm	Zygo
RMS	λ/50@632.8nm	Zygo
Parallelism/Center Error	10 arc sec /30 arc sec	/

● 镀膜 Coating



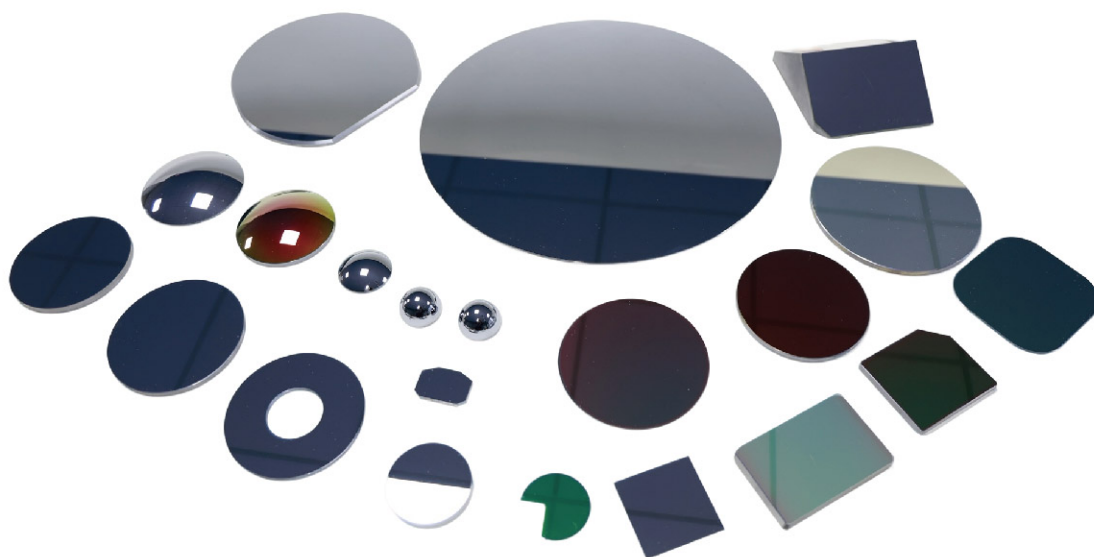
注: 所有镀膜曲线均默认以陪镀片实测为标准, 陪镀片为双平片, 厚度1-2mm。

Note: All coating curves are default based on measured data of 1-2mm thick plane-parallel witness coupons.

Product Introduction

产品介绍

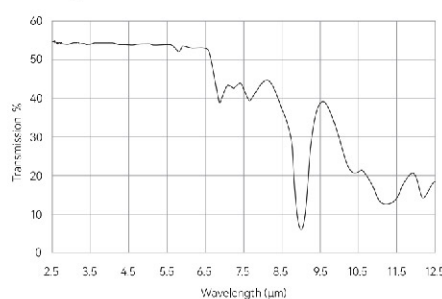
硅 (Silicon, Si)



● 核心应用领域 Applications

依托优异的中波红外光学性能,硅材料广泛应用:红外成像、中波红外光学系统、激光光学系统、红外光谱仪、环境监测设备等工业检测与科研装备的光学元件。

Relying on its excellent mid wave infrared optical performance, silicon materials are widely used as optical components in industrial testing and scientific research equipment such as infrared imaging, mid wave infrared optical systems, laser optical systems, infrared spectrometers, environmental monitoring equipment, etc.



— 材料透过率(Material transmittance) —

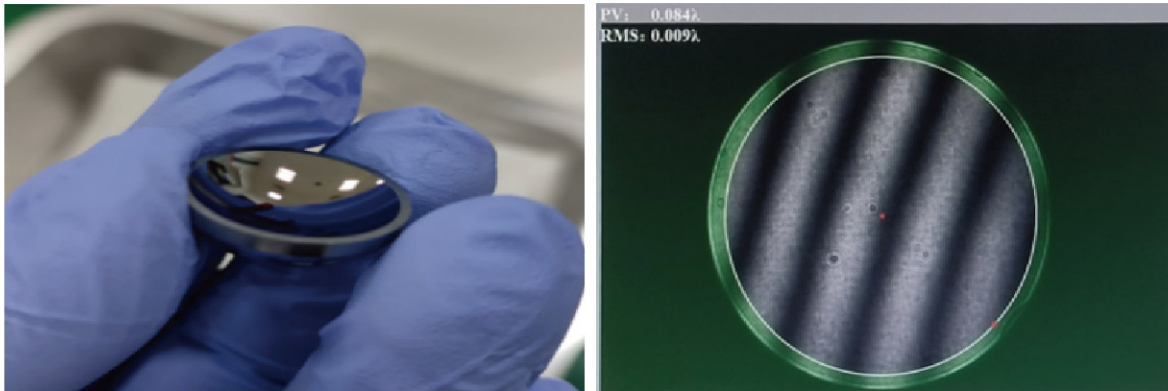
● 产品形态 Product Forms

窗口片 (平面矩形 / 圆形)、各类透镜 (平凸、双凸、弯月等)、棱镜、楔角、非球镜、异形光学元件。

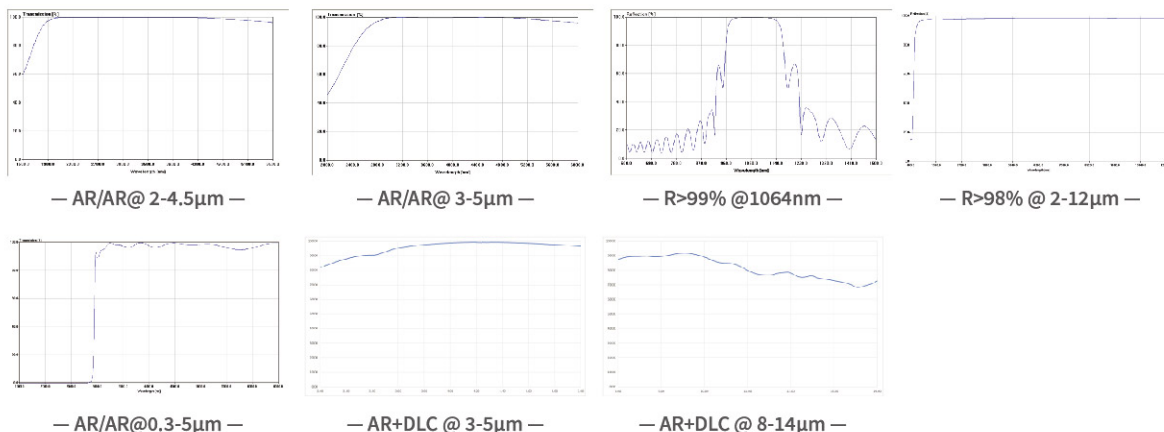
Windows (rectangular / circular), Lenses (plano-convex, biconvex, meniscus, etc.), Prisms, Wedges, Wedge windows, Aspherical lenses, Special-shaped optical components.

Characteristic	Spec.	Remark
DIA	$\phi 3 \sim 300\text{mm}$	/
S/D	40/20	1300 Lux
PV	$1/8 \lambda @ 632.8\text{nm}$	Zygo
IRR	$0.1 \lambda @ 632.8\text{nm}$	Zygo
RMS	$\lambda/50 @ 632.8\text{nm}$	Zygo
Parallelism/Center Error	10 arc sec / 30 arc sec	/

● 红外单晶硅 Infrared Grade Monocrystalline Silicon (PV 0.084 λ ; RMS $\lambda/111$)



● 镀膜 Coating



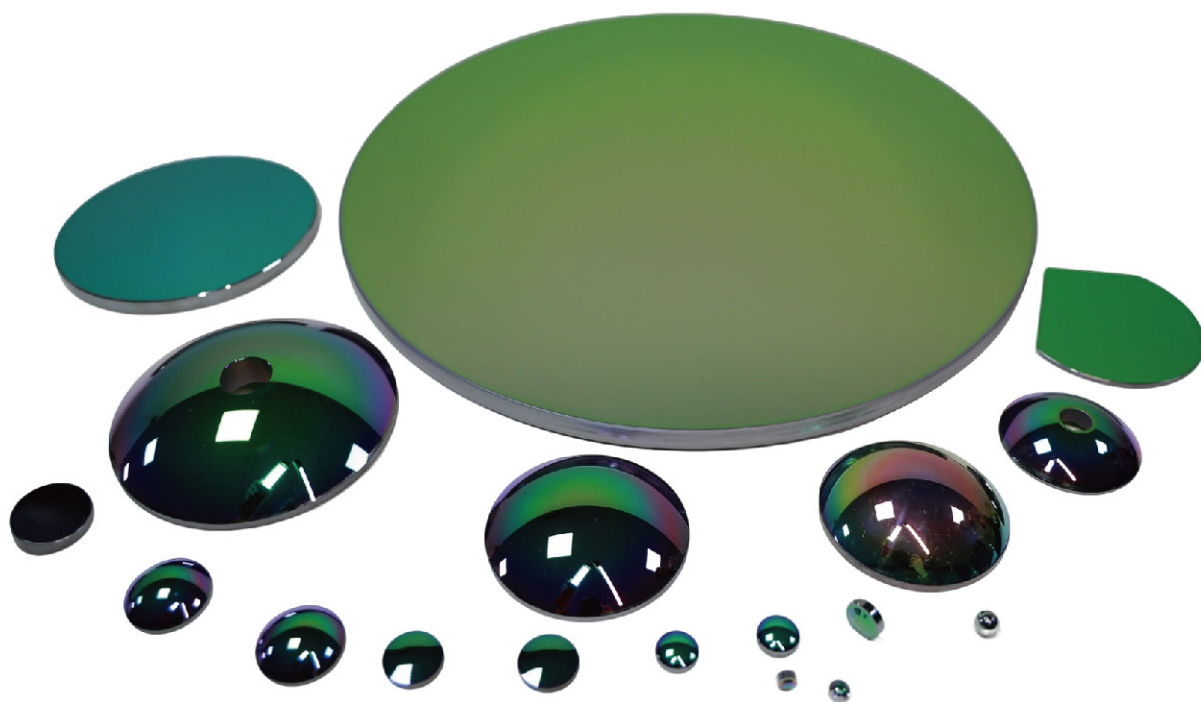
注: 所有镀膜曲线均默认以陪镀片实测为标准, 陪镀片为双平片, 厚度1-2mm。

Note: All coating curves are default based on measured data of 1-2mm thick plane-parallel witness coupons.

Product Introduction

产品介绍

硫系玻璃 (Chalcogenide Glass, ChG)

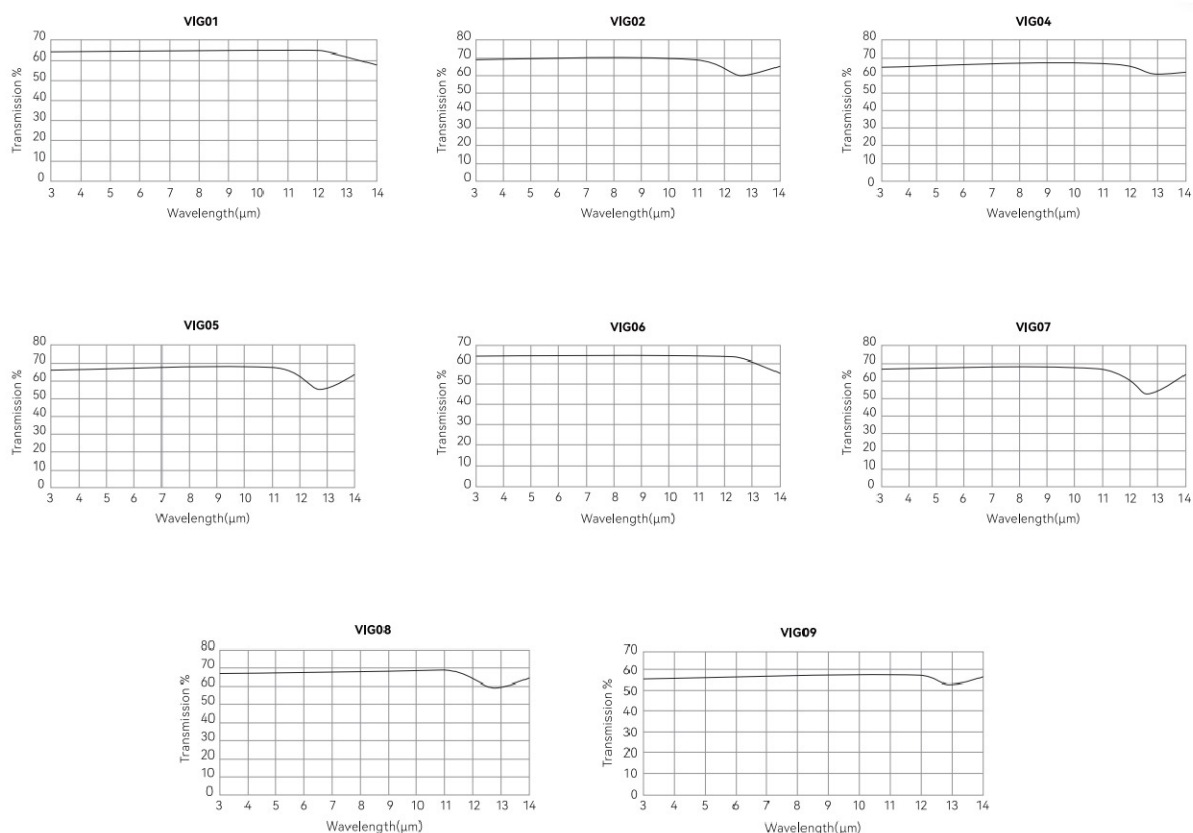


● 核心应用领域 Applications

依托独特的光学与热性能, 硫系玻璃应用覆盖多领域红外光学场景: 红外成像设备的镜头组件、工业热辐射测量设备、纤耦合、红外传感等红外光学应用场景。

With exceptional optical and thermal performance, chalcogenide glass is widely applied in diverse infrared optical scenarios: lens assemblies for infrared imaging, industrial thermal measurement instruments, fiber coupling, infrared sensing and other infrared optical applications.

● 材料透过率 Material Transmittance



● 材料参照表 Material Reference Table

玻璃组分 Glass composition	新华光 NHG	阳光和谐 NS	成都光明 CDGM	建材院 CNBM	Schoot	Umicore	Vitron	Amorphous
Ge33As12Se55	IRG201	NBU-IR6	HWS3	HW12	IRG22	GASIR-1	IG2	AMTIR-1
Ge22As20Se58	IRG202	NBU-IR8	HWS4	HW13		GASIR-2		
Ge20Sb15Se65	IRG203	NBU-IR1	HWS2					
Sn3Sb4As30Se63	IRG204	NBU-IR9		HW17				
Ge28Sb12Se60	IRG205	NBU-IR2	HWS1	HW15	IRG25	GASIR-5	IG5	AMTIR-3
As40Se60	IRG206	NBU-IR5	HWS6	HW16	IRG26		IG6	AMTIR-2
Ge10As40Se50	IRG207	NBU-IR7	HWS5	HW14	IRG24		IG4	
Ge30As13Se32Te25					IRG23		IG3	
Ge30As10Se60								
Ge-Te-Se As2S3	IRG209							
					IRG27			

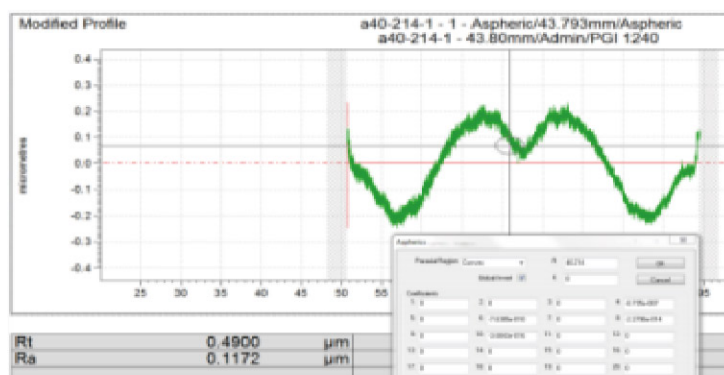
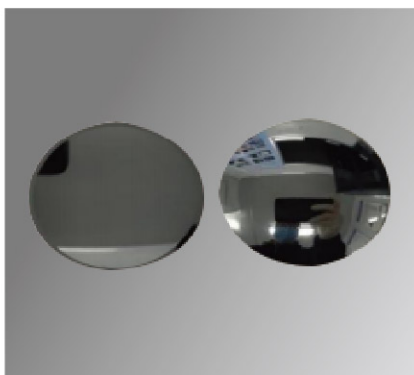
● 产品形态 Product Forms

窗口片 (平面矩形 / 圆形)、各类透镜 (平凸、双凸、弯月等)、棱镜、楔角、非球镜、异形光学元件。

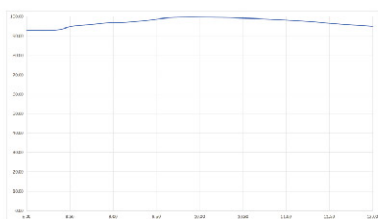
Windows (rectangular / circular), Lenses (plano-convex, biconvex, meniscus, etc.), Prisms, Wedges, Wedge windows, Aspherical lenses, Special-shaped optical components.

Characteristic	Spec.	Remark
DIA	φ3~260mm	/
S/D	40/20	700Lux
PV	1/6 λ@632.8nm	Zygo
IRR	0.3λ@632.8nm	Zygo
RMS	λ/30@632.8nm	Zygo
Parallelism/Center Error	15 arc sec /50 arc sec	/

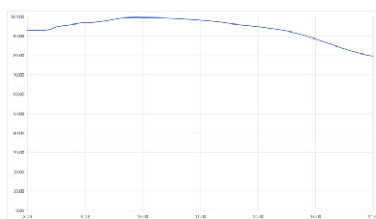
● 红外硫系玻璃IRG206 Chalcogenide Infrared Glass (PV 0.4μm, RMS 0.1μm, 口径:100mm)



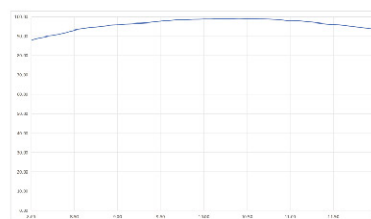
● 镀膜 Coating



— AR+AR @ 8-12μm —



— AR+AR @ 8-14μm —



— HD+AR @ 8-12μm —

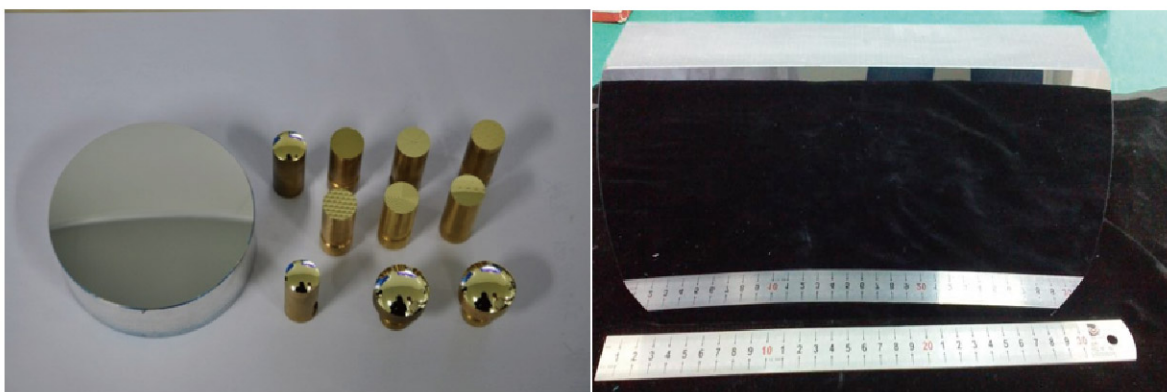
注: 所有镀膜曲线均默认以镀膜片实测为标准, 镀膜片为双平片, 厚度1-2mm。

Note: All coating curves are default based on measured data of 1-2mm thick plane-parallel witness coupons.

Product Introduction

其他产品

- 金属基非球面反射镜
Metal-Based Aspherical Mirrors



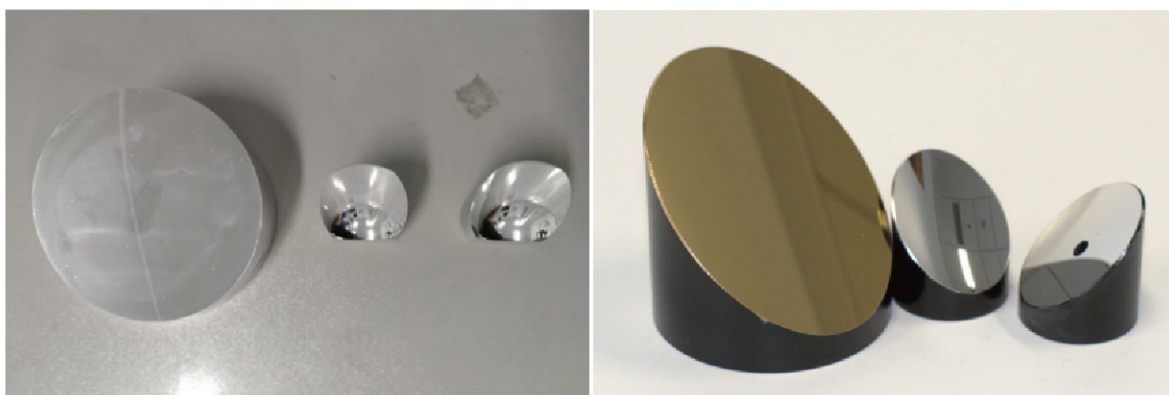
- 激光级AL6061T6表面改性离轴抛物面反射镜
Laser-Grade AL6061-T6 Surface-Modified Off-Axis Parabolic Mirrors



Product Introduction

其他产品

- **AL6061T6离轴抛物面反射镜**
AL6061T6 Off-Axis Parabolic Mirrors



- **AL-SiC铝基碳化硅离轴非球面反射镜**
Al-SiC Off-Axis Aspherical Mirrors



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