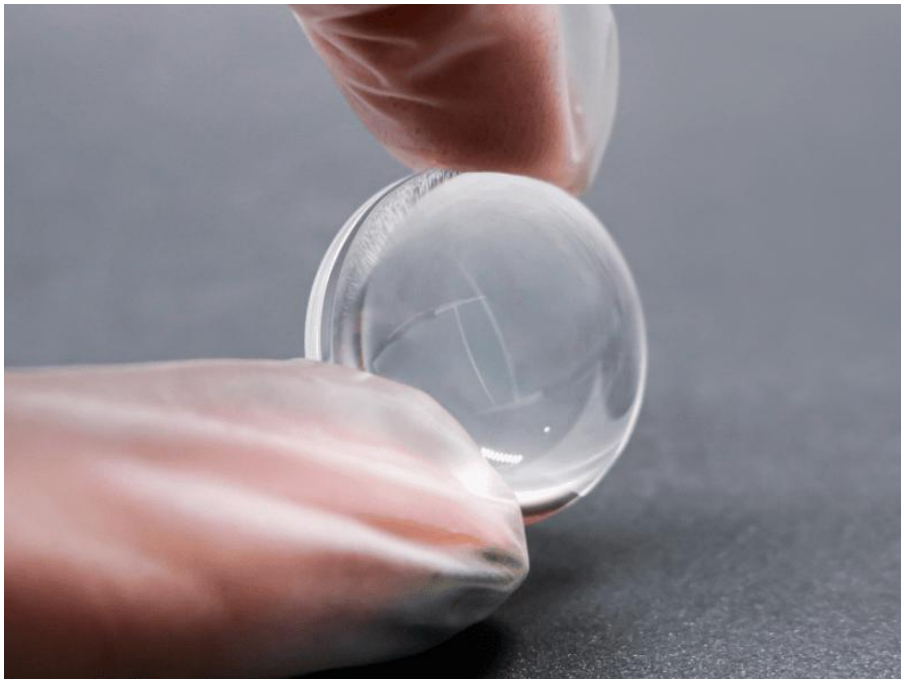
IR 抛光氟化钙 CaF2 平凸正透镜（直径 40mm 焦距 440mm)



描述

氟化钙在紫外到中红外（250nm~7um）之间都有很高的透射率，所以广泛被用于制造棱镜，透镜，窗片，氟化钙透镜具有低折射率，高激光损伤阈值，低同轴与径向应力双折射特性，适合于准分子激光器使用，或者集成于红外系统上。且氟化钙也备有低可溶性，也可抵抗恶劣环境。氟化钙的抛光面可以工作数年之久，氟化钙的硬度是氟化钡的两倍，而且抗热冲击能力更强。

产品特点

透射波长范围广， 低折射率，高透射率，高损伤阈值，低可溶性

产品型号

CAF40LENS440

应用领域

中红外QCL激光器 | 中红外激光光路搭建

核心参数

规格尺寸	焦距F.L.	曲率	透镜等级
40mm	440mm @ 3μm	187（±2%）	IR 平凸

详细参数

名称	参数
透射范围	0.13~10um
折射率	1.39908 at 5um
反射损耗	5.4% at 5um
吸收系数	$7.8\times10^{-4}cm^{-1}$@2.7um
吸收峰	35um
dn/dT	-10.6×10^{-6}/℃
dn/du=0	dn/du=0
密度	3.18g/cc

熔点	1360℃
导热率	9.71$Wm^{-1}K^{-1}$
热膨胀	18.85×10^{-6}/℃
硬度	Knoop 158.3
比热容	854J $Kg^{-1}K^{-1}$
介电常数	6.76 at 1MHz
杨氏模量	75.8GPa
剪切模量	33.77GPa
体积模量	82.71GPa
弹性系数	C_{11}=164 ,C_{12}=53 ,C_{44}=33.7
表现弹性极限	36.54MPa
泊松比	0.26
溶解度	0.0017g/100g with，20 ℃
分子量	78.08

类型/结构	立方裂解
反射损耗	5.4% at 5um

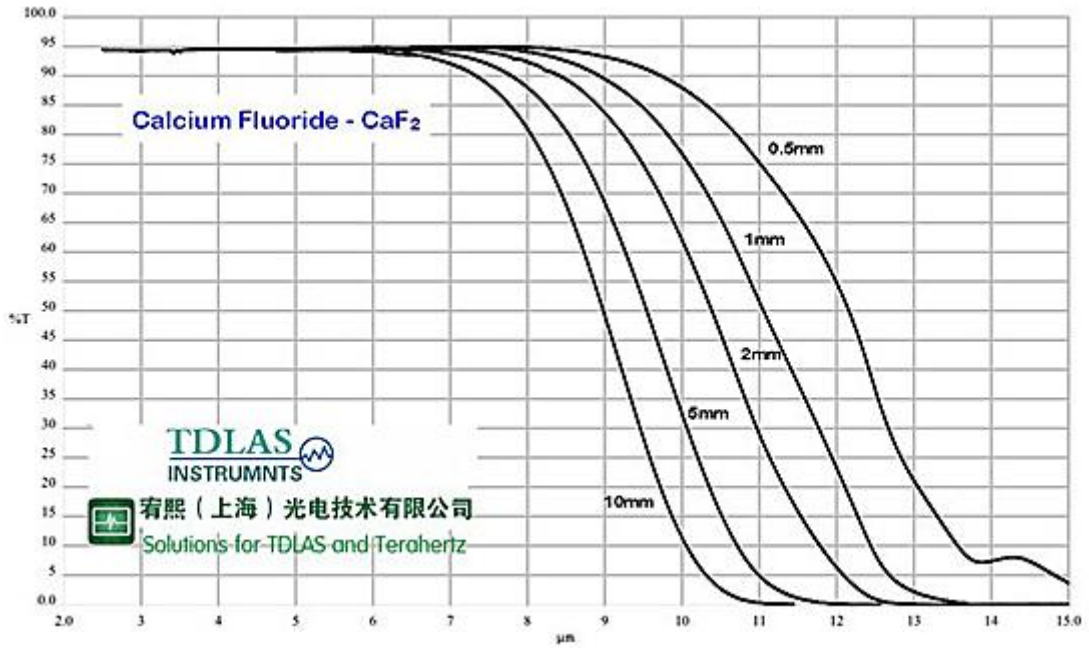
折射率:(No=Ordinary Ray 普通射线）

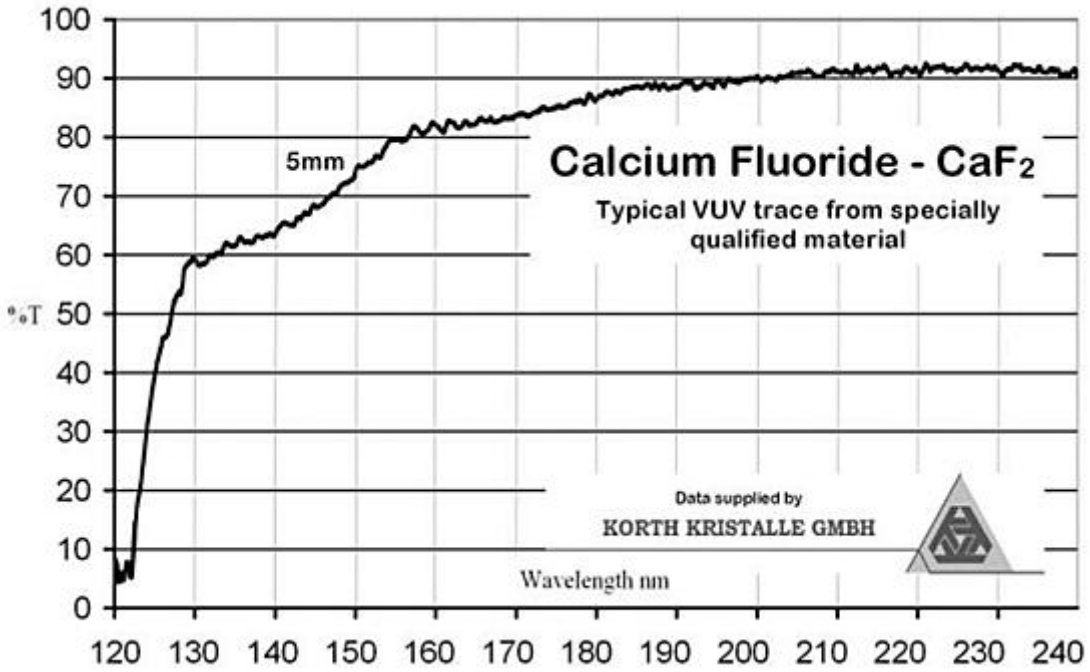
um	No	um	No	um	No
0.54	2.6754	0.58	2.6312	0.62	2.5994
0.66	2.5755	0.7	2.5568	0.74	2.5418
0.78	2.5295	0.82	2.5193	0.86	2.5107
0.90	2.5034	0.94	2.4971	0.98	2.4916
1.0	2.4892	1.4	2.4609	1.8	2.4496
2.2	2.4437	2.6	2.4401	3.0	2.4376
3.4	2.4356	3.8	2.4339	4.2	2.4324
4.6	2.4309	5.0	2.4295	5.4	2.4281
5.8	2.4266	6.2	2.4251	6.6	2.4235
7.0	2.4218	7.4	2.4201	7.8	2.4183

8.2	2.4163	8.6	2.4143	9.0	2.4122
9.4	2.4100	9.8	2.4077	10.2	2.4053
10.6	2.4028	11.0	2.4001	11.4	2.3974
11.8	2.3945	12.2	2.3915	12.6	2.3883
13.0	2.3850	13.4	2.3816	13.8	2.3781
14.2	2.3744	14.6	2.3705	15.0	2.3665
15.4	2.3623	15.8	2.3579	16.2	2.3534
16.6	2.3487	17.0	2.3438	17.4	2.3387
17.8	2.3333	18.2	2.3278		

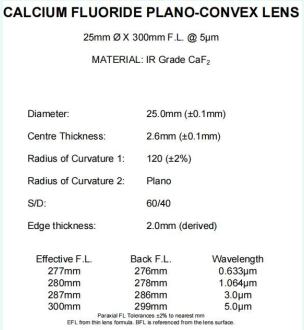
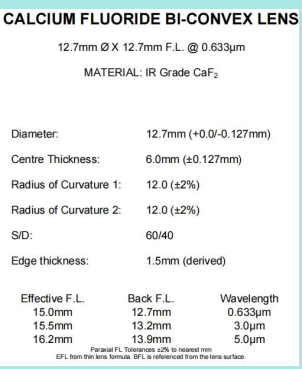
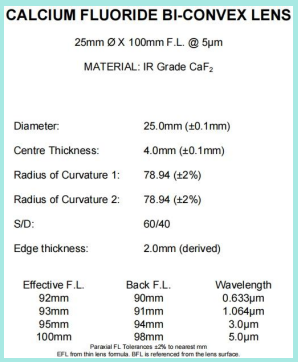
特性曲线

光谱透射图

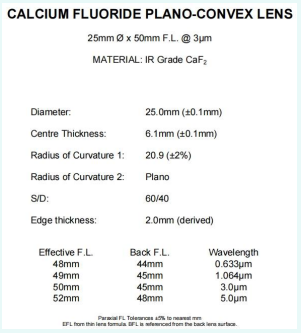
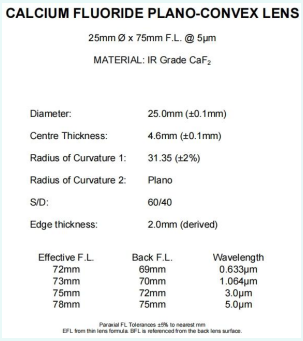
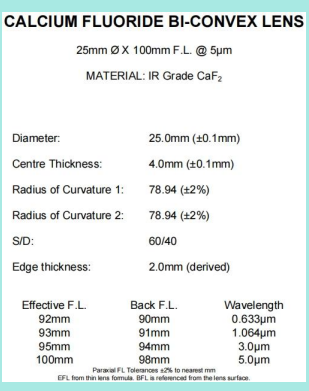

Calcium Fluoride - CaF2
0.5mm
1mm
2mm
5mm
10mm
%T
μm
TDLAS INSTRUMNTS
宥熙（上海）光电技术有限公司
Solutions for TDLAS and Terahertz

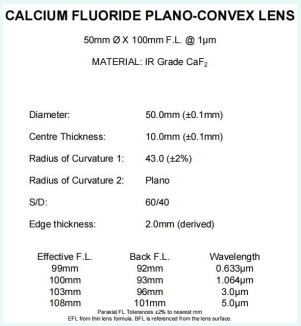
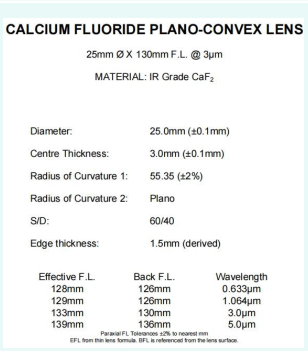
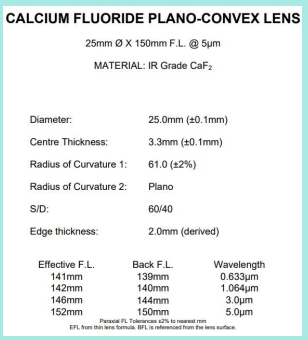
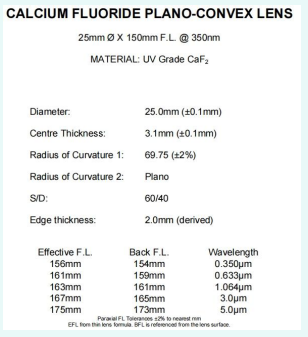

Calcium Fluoride - CaF2
Typical VUV trace from specially qualified material
5mm
%T
Wavelength nm
Data supplied by
KORTH KRISTALLE GMBH

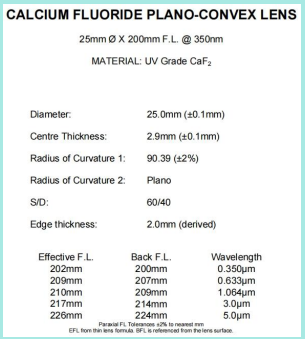
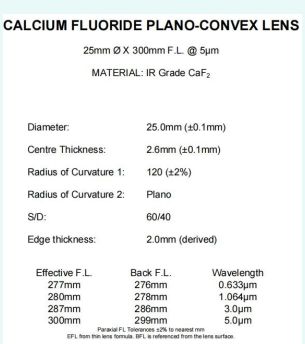
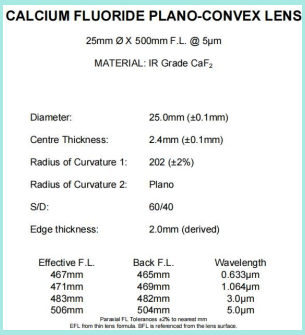
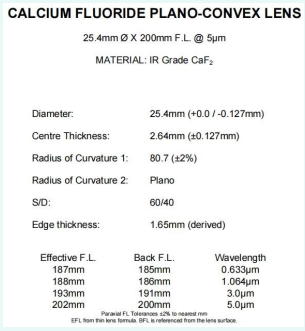
订购信息

订购型号	规格	曲率	焦距	CaF2等级	参数
CAF12.7L ENS10U	12.7mm Ø	10.16 (±2%)	10mm @ 300nm	UV 双凸	
CAF12.7L ENS12	12.7mm Ø	12.0 (±2%)	12.7mm @ 5µm	IR 双凸	
CAF12.7L ENS12U	12.7mm Ø	12.0 (±2%)	12mm @ 300nm	UV 双凸	
CAF12.7L ENS100	12.7mm Ø	40.32 (±2%)	100mm @ 5µm	IR 平凸	

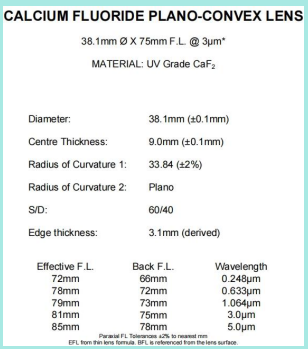
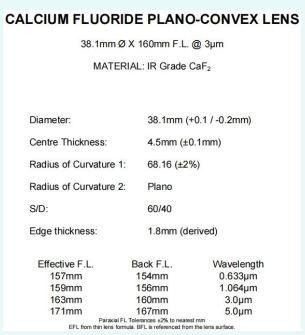
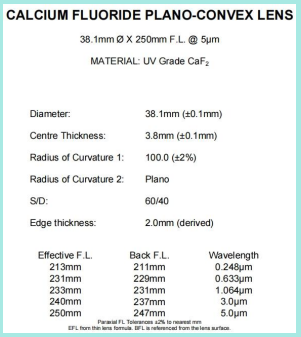
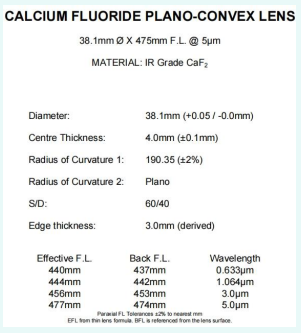
CAF16LE NS90	16.0mm Ø	73.90 (±2%)	90mm @ 3μm	IR 双凸	**CALCIUM FLUORIDE BI-CONVEX LENS** 16mm Ø X 90mm F.L. @ 3μm MATERIAL: IR Grade CaF_2 Diameter: 16.0mm (±0.1mm) Centre Thickness: 3.0mm (±0.1mm) Radius of Curvature 1: 73.90 (±2%) Radius of Curvature 2: 73.90 (±2%) S/D: 60/40 Edge thickness: 2.0mm (derived) Effective F.L. / Back F.L. / Wavelength 86mm / 85mm / 0.633μm 86mm / 85mm / 1.064μm 89mm / 88mm / 3.0μm 93mm / 92mm / 5.0μm Paraxial FL Tolerances ±5% to nearest mm EFL from thin lens formula. BFL is referenced from the lens surface.
CAF18.5L ENS26	18.5mm Ø	12.6 (±2%)	26mm @ 3μm	IR 平凸	**CALCIUM FLUORIDE PLANO-CONVEX LENS** 18.5mm Ø X 26mm F.L. @ 3μm MATERIAL: IR Grade CaF_2 Diameter: 18.7mm (±0.25mm) Centre Thickness: 5.0mm (±0.2mm) Centration 3 Arc Minutes Radius of Curvature 1: 12.6 (±2%) Radius of Curvature 2: Plano S/D: 60/40 Edge thickness: 1.0mm (derived) Effective F.L. / Back F.L. / Wavelength 29.1mm / 25.6mm / 0.633μm 30.2mm / 26.6mm / 3.0μm 31.6mm / 28.0mm / 5.0μm Paraxial FL Tolerances ±2% to nearest mm EFL from thin lens formula. BFL is referenced from the lens surface.
CAF20LE NS50	20mm Ø	19.95 (±2%)	50mm @ 5μm	IR 平凸	**CALCIUM FLUORIDE PLANO-CONVEX LENS** 20mm Ø x 50mm F.L. @ 5μm MATERIAL: IR Grade CaF_2 Diameter: 20.0mm (±0.1mm) Centre Thickness: 4.0mm (±0.1mm) Radius of Curvature 1: 19.95 (±2%) Radius of Curvature 2: Plano S/D: 60/40 Edge thickness: 1.3mm (derived) Effective F.L. / Back F.L. / Wavelength 46mm / 43mm / 0.633μm 47mm / 44mm / 1.064μm 48mm / 45mm / 3.0μm 50mm / 47mm / 5.0μm Paraxial FL Tolerances ±5% to nearest mm EFL from thin lens formula. BFL is referenced from the back lens surface.
CAF25LE NS25U	25mm Ø	21.53 (±2%)	25mm @ 350nm	UV 双凸	**CALCIUM FLUORIDE BI-CONVEX LENS** 25mm Ø X 25mm F.L. @ 0.35μm MATERIAL: UV Grade CaF_2 Diameter: 25.0mm (+0.0/-0.1mm) Centre Thickness: 10mm (±0.1mm) Radius of Curvature 1: 21.53 (±2%) Radius of Curvature 2: 21.53 (±2%) S/D: 60/40 Edge thickness: 2.0mm (derived) Effective F.L. / Pr.Plane F.L. / Back F.L. / Wavelength 26.0mm / 25.0mm / 22.2mm / 0.35μm 26.8mm / 23.0mm / 0.633μm Paraxial FL Tolerances ±5% EFL from thin lens formula. BFL is referenced from the lens surface.
CAF25LE NS25	25mm Ø	20.80 (±2%)	25.4mm @ 3μm	IR 双凸	**CALCIUM FLUORIDE BI-CONVEX LENS** 25mm Ø X 25.4mm F.L. @ 3μm MATERIAL: IR Grade CaF_2 Diameter: 25.0mm (+0.0/-0.1mm) Centre Thickness: 10mm (±0.1mm) Radius of Curvature 1: 20.80 (±2%) Radius of Curvature 2: 20.80 (±2%) S/D: 60/40 Edge thickness: 1.6mm (derived) Effective F.L. / Pr.Plane F.L. / Back F.L. / Wavelength 25.9mm / 22.2mm / 0.633μm 26.2mm / 22.4mm / 1.064μm 26.8mm / 25.4mm / 23.0mm / 3.0μm 28.0mm / 24.1mm / 5.0μm Paraxial FL Tolerances ±5% EFL from thin lens formula. BFL is referenced from the lens surface.

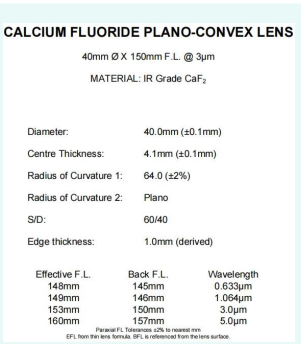
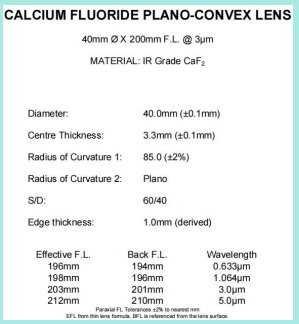
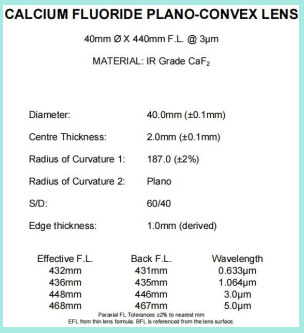
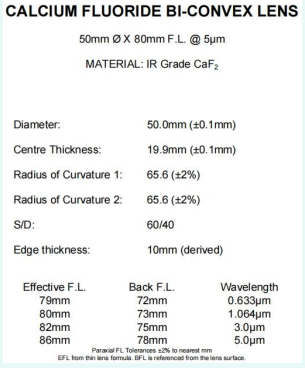
CAF25LE NS50B	25mm Ø	39.1 (±2%)	50mm @ 5μm	IR 双凸	
CAF25LE NS50	25mm Ø	20.9 (±2%)	50mm @ 5μm	IR 平凸	
CAF25LE NS50U	25mm Ø	22.96 (±2%)	50mm @ 350nm	UV 平凸	
CAF25LE NS75	25mm Ø	31.35 (±2%)	75mm @ 5μm	IR 平凸	
CAF25LE NS100B	25mm Ø	78.94 (±2%)	100mm @ 3μm	IR 双凸	

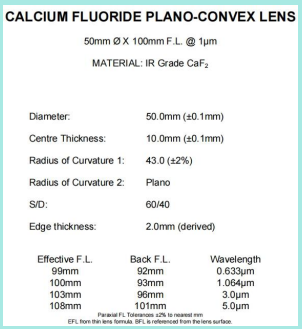
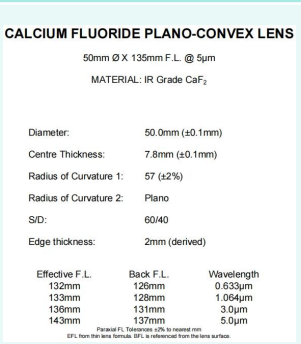
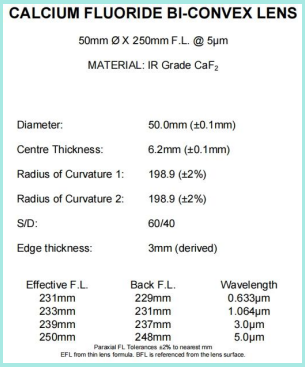
CAF25LE NS100	25mm Ø	43.73 (±2%)	100mm @ 3μm	IR 平凸	
CAF25LE NS100U	25mm Ø	43.73 (±2%)	100mm @ 350nm	UV 平凸	
CAF25LE NS130	25mm Ø	55.35 (±2%)	130mm @ 3μm	IR 平凸	
CAF25LE NS150	25mm Ø	61.0 (±2%)	150mm @ 5μm	IR 平凸	
CAF25LE NS150U	25mm Ø	69.75 (±2%)	150mm @ 350nm	UV 平凸	

CAF25LE NS200U	25mm Ø	90.39 (±2%)	200mm @ 350nm	UV 平凸	
CAF25LE NS300	25mm Ø	120.0 (±2%)	300mm @ 5µm	IR 平凸	
CAF25LE NS500	25mm Ø	202.02 (±2%)	500mm @ 5µm	IR 平凸	
CAF25.4L ENS200	25.4mm Ø	80.7 (±2%)	200mm @ 5µm	IR 平凸	

CAF27LE NS50	27mm Ø	43.10 (±2%)	50mm @ 3μm	IR 双凸	**CALCIUM FLUORIDE BI-CONVEX LENS** 27mm Ø X 50mm F.L. @ 3μm MATERIAL: IR Grade CaF_2 Diameter: 27.0mm (±0.1mm) Centre Thickness: 6.4mm (±0.1mm) Radius of Curvature 1: 43.10 (±2%) Radius of Curvature 2: 43.10 (±2%) S/D: 60/40 Edge thickness: 2.1mm (derived) Effective F.L. / Back F.L. / Wavelength 51mm / 48.7mm / 0.633μm 51mm / 49.2mm / 1.064μm 53mm / 50.5mm / 3.0μm 55mm / 52.8mm / 5.0μm Paraxial FL Tolerances ±2% to nearest mm EFL from thin lens formula. BFL is referenced from the lens surface.
CAF30LE NS70	30mm Ø	57.00 (±2%)	70mm @ 4μm	IR 双凸	**CALCIUM FLUORIDE BI-CONVEX LENS** 30mm Ø X 70mm F.L. @ 5μm MATERIAL: IR Grade CaF_2 Diameter: 30.0mm (±0.1mm) Centre Thickness: 6.0mm (±0.1mm) Radius of Curvature 1: 57.0 (±2%) Radius of Curvature 2: 57.0 (±2%) S/D: 60/40 Edge thickness: 2.0mm (derived) Effective F.L. / Back F.L. / Wavelength 67mm / 65mm / 0.633μm 67mm / 65mm / 1.064μm 69mm / 67mm / 3.0μm 72mm / 70mm / 5.0μm Paraxial FL Tolerances ±2% to nearest mm EFL from thin lens formula. BFL is referenced from the lens surface.
CAF31.5L ENS60	31.5mm Ø	27.50 (±2%)	60mm @ 3μm	IR 平凸	**CALCIUM FLUORIDE PLANO-CONVEX LENS** 31.5mm Ø X 60mm F.L. @ 3μm MATERIAL: IR Grade CaF_2 Diameter: 31.5mm (±0.1mm) Centre Thickness: 6.8mm (±0.1mm) Radius of Curvature 1: 27.5 (±2%) Radius of Curvature 2: Plano S/D: 60/40 Edge thickness: 1.8mm (derived) Effective F.L. / Back F.L. / Wavelength 64mm / 59mm / 0.633μm 64mm / 59mm / 1.064μm 65mm / 61mm / 3.0μm 69mm / 64mm / 5.0μm Paraxial FL Tolerances ±2% to nearest mm EFL from thin lens formula. BFL is referenced from the lens surface.
CAF38.1L ENS75	38.1mm Ø	33.84 (±2%)	75mm @ 4.5μm	IR 平凸	**CALCIUM FLUORIDE PLANO-CONVEX LENS** 38.1mm Ø X 75mm F.L. @ 3μm MATERIAL: IR Grade CaF_2 Diameter: 38.1mm (±0.1mm) Centre Thickness: 9.0mm (±0.1mm) Radius of Curvature 1: 33.84 (±2%) Radius of Curvature 2: Plano S/D: 60/40 Edge thickness: 3.1mm (derived) Effective F.L. / Back F.L. / Wavelength 78mm / 72mm / 0.633μm 79mm / 73mm / 1.064μm 81mm / 75mm / 3.0μm 85mm / 78mm / 5.0μm Paraxial FL Tolerances ±2% to nearest mm EFL from thin lens formula. BFL is referenced from the lens surface.

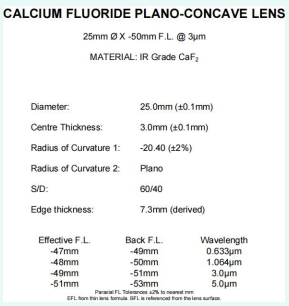
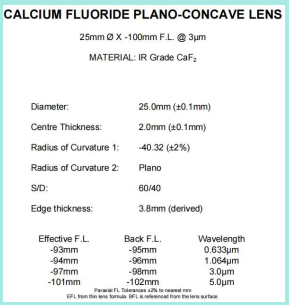
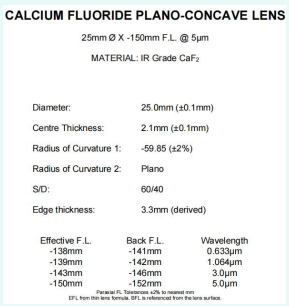
CAF38.1L ENS75U	38.1mm Ø	33.84 (±2%)	66mm @ 248nm	UV 平凸	
CAF38.1L ENS160	38.1mm Ø	68.16 (±2%)	160mm @ 3µm	IR 平凸	
CAF38.1L ENS250U	38.1mm Ø	100 (±2%)	215mm @ 248nm	UV 平凸	
CAF38.1L ENS475	38.1mm Ø	190.35 (±2%)	475mm @ 5µm	IR 平凸	
CAF40LE NS120	40mm Ø	50.25 (±2%)	120mm @ 3µm	UV 平凸	

CAF40LE NS150	40mm Ø	64 (±2%)	150mm @ 3μm	IR 平凸	
CAF40LE NS200	40mm Ø	85 (±2%)	200mm @ 3μm	IR 平凸	
CAF40LE NS330	40mm Ø	138 (±2%)	330mm @ 3μm	IR 平凸	
CAF40LE NS440	40mm Ø	187 (±2%)	440mm @ 3μm	IR 平凸	
CAF50LE NS80	50mm Ø	65.6 (±2%)	80mm @ 5μm	IR 平凸	

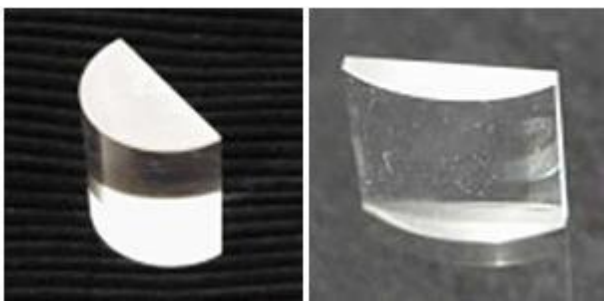
CAF50LE NS100	50mm Ø	43.0 (±2%)	100mm @ 1μm	IR 双凸	
CAF50LE NS135	50mm Ø	57.0 (±2%)	135mm @ 5μm	IR 平凸	
CAF50LE NS250	50mm Ø	198.9 (±2%)	250mm @ 5μm	IR 双凸	

CaF2 负透镜

订购信息:

订购型号	规格	曲率	焦距	CaF2 等级	参数
CAF25LE NS-50	25mm Ø	-20.40 (±2%)	-50mm @ 3μm	IR 平凹	
CAF25LE NS-100	25mm Ø	-40.32 (±2%)	-100mm @ 3μm	IR 平凹	
CAF25LE NS-150	25mm Ø	-59.85 (±2%)	-150mm @ 5μm	IR 平凹	

CaF2 柱面透镜:



订购信息:

订购型号	规格	曲率	焦距	CaF2 等级
CAF25-25LENS25C	25mm x 25mm 平凸半圆柱	12.5（±2%）	25mm @ 3μm	IR 平凸
CAF25-25LENS350C	25mm x 25mm	150（±2%）	350mm @ 3μm	IR 平凸