FA
LENSES MANUAL

机器视觉镜头产品手册

CATALOG
目录

ABOUT US

UNI Optics is an ISO 9001 certified company that continuously provides customer-oriented optimized machine vision solutions combining R&D, manufacturing and marketing service.

We're accumulated rich experience in R&D, technical support and manufacturing section, with our strong technical strength, we can provide customers not only high-quality FA lens, line scan lens, SWIR lens, telecentric lens, but also offer professional customized OEM and ODM optical design service.

Our lenses are widely used in machine vision, factory automation, logistics automation, ITS, life science, 3D scanner, medical equipment, day&night security, IP surveillance, video conferencing, motion capture, and other high-tech industries.

As a one-stop optical system solution provider, we will be the key to your success.

福建优恩立科技光电是一家ISO9001认证公司。我们专注于中高端光学镜头，集自主研发设计，生产制造，营销及客户持续服务为导向的国家高新技术企业。

我们在研发、技术支持和制造方面积累了丰富的经验，凭借我们强大的技术实力，我们不仅可以为客户提供高品质的FA镜头、线扫描镜头、短波红外镜头、远心镜头，还可以提供专业的定制OEM和ODM光学设计服务。

我们的镜头广泛应用于机器视觉、工厂自动化、物流自动化、智能交通、生命科学、3D扫描、医疗设备、日夜安防、IP监控、视频会议、动作捕捉等高科技行业。

作为一站式光学系统解决方案提供商，我们将是您成功的关键。

Taurus Series Compact Machine Vision Lens

Taurus系列紧凑型工业镜头

·Developed for 2/3" image format
·Compact and lightweight design
·Low distortion
·High relative illumination
·Focus and iris fixed with screw
·Customized available

·适用于2/3英寸成像靶面
·紧凑轻量化设计
·超低光学畸变
·高相对照度
·配有聚焦、光圈锁定螺丝
·可提供定制服务

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小 工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA0614C	6	1/2	C	1.4	67.38°X 56.14°X43.60°	-1.10%	0.2	Φ32.5X36.65
UN-TFA08516C	8.5	2/3	C	1.6	65.81°X54.74°X42.44°	-0.50%	0.1	Φ36.5X45.61
UN-TFA0921C	9	2/3	C	2.1	35.49°X29.15°X21.74°	0.10%	0.3	Φ30.5X31.82
UN-TFA1218C	12	2/3	C	1.8	49.25°X40.27°X30.75°	0.10%	0.1	Φ29X40.45
UN-TFA1618C	16	2/3	C	1.8	37.94°X30.75°X23.31°	0.10%	0.1	Φ29X40.45
UN-TFA2520C	25	2/3	C	2.0	24.81°X19.96°X15.04°	0.10%	0.1	Φ29X41
UN-TFA3518C	35	2/3	C	1.8	17.86°X 14.33°X10.77°	-0.08%	0.1	Φ36.5X53.78
UN-TFA5020C	50	2/3	C	2.0	12.55°X 10.06° X7.55°	-0.07%	0.2	Φ36.5X44.6

Aries Series Line Scan Lens

Aries系列线扫描镜头

·Developed for 32mm big frame sensor
·Large Aperture, up to F2.4
·High relative illumination
·Lens for 2K, 4K, 8K line scan camera
·Excellent optical performance, uniform imaging of center and edge

·适用于32mm大幅面传感器
·大通光设计，光圈可达F2.4
·高相对照度，保证图像光亮比
·兼容2K、4K、8K主流线阵相机
·高均匀性，视场内中心与周边
　成像均匀性高

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小 工作距离 MOD (m)	尺寸 Dimension (mm)
UN-ALS354K	35	43	T	2.5	63°(H)	1.00%	0.3	Φ60X41.06
UN-ALS50TM42	50	30	T	2.4	32.1°X26.8°X18.1°	1.00%	0.4	Φ53.4X46.42
UN-ALS50J01	50	30	T	4.0	32.1°X26.8°X18.1°	1.00%	0.4	Φ46.4X33.85
UN-ALS502K01	50	30	T	1.8	32.3°X26°X19.7°	-0.03%	0.2	Φ46.4X29.42
UN-ALS508K01	50	40	T	2.6	41°X33.7°X25.5°	-0.80%	0.5	Φ45.6X38.75
UN-ALS858K	85	38	T	2.8	23.1°X16.8°X9.1°	-0.15%T	0.6	Φ58.5X59.87

Gemini Series SWIR Lens

Gemini系列短波红外镜头

·Developed for 1" image format
·Wavelength: 900-1700nm
·Large Aperture, up to F1.4
·Compact and lightweight design

·适用于1英寸成像靶面
·900-1700nm镀膜波长设计
·大通光设计，光圈可达1.4
·外观紧凑小巧

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小 工作距离 MOD (m)	尺寸 Dimension (mm)
UN-GSWIR0814C	8	2/3	C	1.4	61°X54.8°X42.8°	-1.43%	0.1	Φ52X42.28
UN-GSWIR1214C	12	1	C	1.4	66.5°X54.8°X42.5°	-1.30%	0.1	Φ52X66.57
UN-GSWIR1614C	16	1	C	1.4	54°X43.8°X33.4°	-0.6%	0.3	Φ54X63.00
UN-GSWIR2514C	25	1	C	1.4	61.93°X52.21°X40.1°	-0.96%	0.3	Φ36.5X54.91
UN-GSWIR3514C	35	1	C	1.4	26.2°X20.8°X14.6°	-0.59%	0.3	Φ36.5X46.73
UN-GSWIR5014C	50	1	C	1.4	18.4°X14.5°X11°	-0.60%	0.5	Φ47.2X55.58

Taurus Series 3-8MP C mount Lens

Taurus经济型3-8MP工业镜头

·Compact and lightweight design
·High cost effective
·Focus and iris fixed with screw

·紧凑轻量化设计
·高性价比
·配有聚焦、光圈锁定螺丝

Libra Series Vari-focal C mount Lens

Libra变焦系列工业镜头

·Compact, lightweight and durable
·Excellent corner brightness
·Excellent cost performance

·紧凑、轻量化和耐用设计
·优异的边缘亮度
·超高性价比

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小 工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA04528-5MP	4.5	1/1.8	C	2.8	89.0°X81.9°X52.3°	-1.20%	0.1	Φ44X42.37
UN-TFA1614C-3MP	16	2/3	C	1.4	37.7°X30.45°X22.9°	-0.95%	0.3	Φ34X33
UN-TFA2514C-3MP	25	2/3	C	1.4	24.8°X19.9°X15.1°	0.26%	0.25	Φ34X35
UN-TFA3514C-8MP	35	2/3	C	1.4	17.8°X14.3°X10.8°	-0.06%	0.25	Φ36X51.8

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小 工作距离 MOD (m)	尺寸 Dimension (mm)
UN-LFA1236C-2MP	12-36	2/3	C	2.8	W:50.9°X41.3°X31.3° T:17.1°X13.9°X10.5°	W:-3.43% T:2.30%	W: 0.15m-∞ T: 0.45m-∞	Φ36X54
UN-LFA1236C-10MP	12-36	2/3	C	2.8	W:50.9°X41.3°X31.3° T:17.1°X13.9°X10.5°	W:-3.43% T:1.44%	W: 0.15m-∞ T:0.45m-∞	Φ45X63.9
UN-LFA1050-8MP	10-50	1/1.8	C	2.8	W:48.5°X38.9°X28.8° T:10.0°X8.1°X6.0°	W:-5.32% T:1.82%	W: 0.10m-∞ T:0.25m-∞	Φ37X57.26

Taurus Series 10MP 2/3" Format Machine Vision Lens

Taurus系列1000万像素 2/3"靶面工业镜头

·High image contract
·High brightness uniformity
·Suitable for 2.4u sensor
·Resolution up to 10MP
·Compact, lightweight and durable

·高图像对比度
·高亮度均匀性
·适用于像元2.4u相机
·最高可达1000万像素
·紧凑、轻量化和耐用设计

Taurus Series 10MP 1.0" Format Machine Vision Lens

Taurus系列1000万像素1" 靶面工业镜头

·High image contract
·High brightness uniformity
·Suitable for 2.4u sensor
·Resolution up to 10MP
·Compact, lightweight and durable

·高图像对比度
·高亮度均匀性
·适用于像元2.4u相机
·最高可达1000万像素
·紧凑、轻量化和耐用设计

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA0828C-10MP	8	2/3	C	2.8	72.9°X57.6°X44.8°	-0.02%	0.05	Φ35X39.70
UN-TFA1228C-10MP	12	2/3	C	2.8	50.6°X40.3°X30.7°	-0.70%	0.10	Φ32X42.10
UN-TFA1628C-10MP	16	2/3	C	2.8	37.8°X33.6°X19.2°	-0.53%	0.10	Φ28X37.47
UN-TFA2528C-10MP	25	2/3	C	2.8	24.9°X21.7°X12.2°	-0.11%	0.20	Φ28X28.07
UN-TFA3528C-10MP	35	2/3	C	2.8	17.9°X15.4°X8.8°	-0.10%	0.20	Φ28X36.17
UN-TFA5028C-10MP	50	2/3	C	2.8	12.57°X10.08°X7.57°	0.094%	0.30	Φ29X55.30

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA1220L-10MP	12	1	C	2.0	67.6°X56.7°X43.5°	-0.80%	0.1	Φ41X62.60
UN-TFA1620L-10MP	16	1	C	2.0	53.94°X43.92°*33.45°	-0.70%	0.1	Φ36.4X45.90
UN-TFA2518L-10MP	25	1	C	1.8	36.21°X29.08°X21.86°	-0.49%	0.2	Φ33X35.70
UN-TFA3520L-10MP	35	1	C	2.0	26.10°X20.83°X15.72°	0.28%	0.2	Φ34.7X35.20
UN-TFA5020L-10MP	50	1	C	2.0	18.38°X14.70°X10.98°	-0.013%	0.3	Φ41.4X48.10
UN-TFA7528L-10MP	75	1	C	2.8	12.3°X9.7°X7.4°	0.72%	0.5	Φ43X60.40

Taurus Series 20MP 1.1" Format Machine Vision Lens

Taurus系列2000万像素1.1"靶面工业镜头

·High relative illumination and high contrast
·Low distortion and excellent corner brightness
·High resolution
·Compatible with 1" and 1.1" 20MP camera

·高相对照度及对比度
·底畸变及优异的边缘亮度
·极佳解析力
·可适配1'' 和1.1'' 2000万相机

Taurus Series 12MP 4/3" Format Machine Vision Lens

Taurus 1200万像素4/3"靶面工业镜头

·High relative illumination and high contrast
·Low distortion and excellent corner brightness
·High resolution
·Compatible with 4/3" 12MP camera

·高相对照度及对比度
·底畸变及优异的边缘亮度
·极佳解析力
·可适配4/3'' 1200万相机

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA1228L-20MP	12	1.1	C	2.8	70.6°x59.2°x45.4°	-0.85%	0.10	Φ41X62.6
UN-TFA1628L-20MP	16	1.1	C	2.8	58.6°X46.88°X35.16°	-0.73%	0.10	Φ36.4X45.9
UN-TFA2528L-20MP	25	1.1	C	2.8	39.46°X31.56°X23.6°	-0.59%	0.15	Φ33X36.5
UN-TFA3528L-20MP	35	1.1	C	2.8	28.18°X22.54°X16.9°	0.37%	0.20	Φ34.7X35.2
UN-TFA5028L-20MP	50	1.1	C	2.8	19.96°X15.96°X11.96°	-0.060%	0.25	Φ41.4X48.3

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA1220X-12MP	12	4/3	C	2.0	89.1°X75.6°X61.2°	-2.05%	0.15	Φvv79.8X83.8
UN-TFA1620X-12MP	16	4/3	C	2.0	73.0°X61.0°X47.3°	-1.93%	0.1	Φ60.2X85.9
UN-TFA2518X-12MP	25	4/3	C	1.8	49.8°X40.6°X31.1°	-0.64%	0.15	Φ47.3X82.7
UN-TFA3520X-12MP	35	4/3	C	2.0	36.8°X29.7°X22.5°	-0.52%	0.2	Φ48.5X64.3
UN-TFA5020X-12MP	50	4/3	C	2.0	26.0°X21.0°X15.8°	-0.13%	0.3	Φ48X67

Taurus Series 12MP 1.1" Format Machine Vision Lens

Taurus 1200万像素1.1"靶面工业镜头

·High relative illumination and high contrast
·Low distortion and excellent corner brightness
·High resolution
·Compatible with 1" and 1.1" 12MP camera

·高相对照度及对比度
·底畸变及优异的边缘亮度
·极佳解析力
·可适配1'' 和1.1'' 1200万相机

Capricorn Series V mount Line Scan Lens

Capricorn 系列V口线扫镜头

·Covering a wide working distance range
·Very low distortion and high resolution
·Lockable distance and aperture settings

·覆盖广泛的工作距离范围
·非常低的失真和高分辨率
·可锁定距离和光圈设置

Specification
参数选型

| 型号 Model No.	焦距 Focal length (mm)	靶面 Format (")	接口 Mount	光圈 Aperture (F/#)	视场角 FOV (DxHxV)	畸变 Distortion	最小工作距离 MOD (m)	尺寸 Dimension (mm)
UN-TFA1228L-12MP	12	1.1	C	2.8	72.26°X47.26°X60.46°	≤0.5%	0.10	Φ51X61.04
UN-TFA1620L-12MP	16	1.1	C	2.8	57.62°X36.65°X47.62°	≤0.8%	0.10	Φ37X62.07
UN-TFA2520L-12MP	25	1.1	C	2.8	39.6°X24.38°X32.13°	≤0.3%	0.10	Φ37X71.81
UN-TFA3520L-12MP	35	1.1	C	2.0	25.27°X15°X20.4°	≤-0.5%	0.20	Φ37X76.97
UN-TFA5020L-12MP	50	1.1	C	2.0	16.18°X9.77°X13°	≤0.3%	0.25	Φ37X72.24
UN-TFA7522L-12MP	75	1.1	C	2.2	13.04°X10.04°X7.84°	≤0.2%	0.40	Φ47X88.67

Specification
参数选型

型号 Model No.	焦距 Focal length (mm)	放大倍率 Magnification Range			光圈 Aperture (F/#)	分辨率 Resolution (lp/mm)	畸变 Distortion			尺寸 Dimension (mm)
		Min.	Best	Max.			Min.	Best	Max.	
UN-CLS454.0/V38	45	0.38x	0.17x	0.32x	4.0	50	0.15%	0.08%	0.22%	Φ47X29.50
UN-CLS604.0/M58	60	0.04x	0.17x	0.33x	4.0	50	0.14%	0.08%	0.23%	Φ53X32.50
UN-CLS904.5/M58	90	0.079x	0.17x	0.33x	4.5	50	0.13%	0.04%	0.10%	Φ53X31.00
UN-CLS954.5/V45	95	0.03x	0.07x	0.17x	4.5	50	0.12%	0.02%	0.17%	Φ54X39.86
UN-CLS963.5/V45	96	0.32x	0.35x	0.37x	3.5	100	0.09%	0.03%	0.06%	Φ55X68.47

Scorpio Telecentric Lens and Lens Accessories

Scorpio远心镜头和镜头配件

Specification 参数选型

型号 Model No.	工作距离 Working Distance	靶面 Format (")	接口 Mount	放大倍率 Magnification	视场角 FOV (DxHxV)	畸变 Distortion	最小 工作距离 MOD (m)	尺寸 Dimension (mm)
Scorpio Telecentric Lens								
UN-ST5528-5MP	55	2/3	C	0-0.5X	11.6°X9.3°X6.9°	0.42%	0.1	Φ54.2X75

Lenses Accessories

UN-EX2C	2X extenders for C Mount	UN-PE5	5mm Extension tube
UN-PE0.1	0.1mm Extension tube	UN-PE10	10mm Extension tube
UN-PE1	1mm Extension tube	UN-PE20	20mm Extension tube
UN-PE2	2mm Extension tube	UN-PE40	40mm Extension tube

Design Service
设计服务
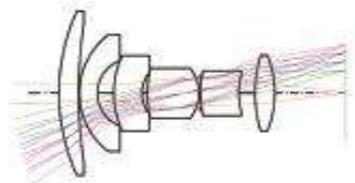
Optical design
光学设计

Mechanical design
机械件设计

MTF Test
传函测试

Performance Test
性能测试

UNI Optics respect customer needs and meets the actual application of customers as the design concept, helping customers improve and optimize the product performance with a complete imaging test system and performance test platform.

优恩立尊重客户需求，以满足客户实际应用为设计理念，帮助客户提升并优化产品性能，配备完善的成像测试系统以及性能测试平台助力客户产品更具市场竞争力。

一站式的解决方案
光学设计/机械设计/组装测试

UNI OPTICS is specialized in the sophisticated optical assembly. Our experienced engineering team is well familiar with a broad range of imaging lens assemblies and market applications. Our typical products and services include OEM&ODM objective lens, standard FA lens, small objective lens and endoscope adapters.

优恩立专注于精密光学组件。我们经验丰富的工程团队非常熟悉各种成像镜头组件和市场应用。我们的典型产品和服务包括定制镜头、标准工业镜头、小型物镜和内窥镜适配器。

Filters in Machine Vision System
机器视觉滤光片

Why filters
为什么使用滤光片？

There are many different types of filters in machine vision that can be utilized to improve or change the image of the object under inspection. Filtering provides a simple way to enhance the contrast of the image while blocking out unwanted illumination.

机器视觉中有许多不同类型的滤光片，可用来改善或改变被检测对象的成像效果。滤光片在阻挡不需要光波的同时提供了一种简单的办法增强成像的对比度。

Filters types
滤光片类型

|	
Bandpass filter	带通滤光片
Longpass filter	长波通滤光片
Shortpass filter	短波通滤光片
Neutral density filter	中性密度滤光片
Polarizing filter	偏振滤光片
Coated interference filter	镀膜干涉滤光片

Applications
滤光片应用

Machine Vision/Factory Automation	机器视觉/工厂自动化
Security and Surveillance	安全与监测
License Plate Recognition/ITS	车牌识别/智能交通系统
Medical and Life Science	医疗与生命科学
Agricultural Inspection	农业检测
Aerial Imaging	航空摄影
Motion Analysis	运动分析
Photography and Cinematography	摄影与电影摄影

Sizes-Standard Machine Vision Filters
滤光片标准尺寸
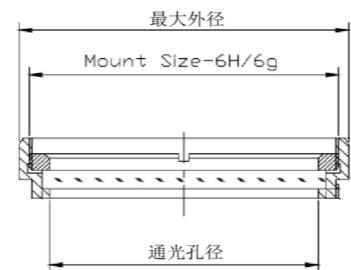
螺纹尺寸 Thread Size	C-mount	M22.5X0.5	M25.5X0.5	M27X0.5	M27X0.5	M30.5X0.5
外径∅ Diameter	25.4	24	27.5	29	29	32.5
通光孔径∅ Clear Aperture	19.5	18.5	21	23	23	26.5

螺纹尺寸 Thread Size	M34X0.5	M35.5X0.5	M37X0.75	M37.5X0.5	M40X0.5	M43X0.75	M46X0.75	M49X0.75	M52X0.75
外径∅ Diameter	36	37	39	39.5	42	45	48	51	54
通光孔径∅ Clear Aperture	30	31.5	33	33.5	36	39.5	41.5	44.5	47.5

螺纹尺寸 Thread Size	M55X0.75	M58X0.75	M62X0.75	M67X0.75	M72X0.75	M77X0.75	M82X0.75	M86 0.75
外径∅ Diameter	57	60	65	70	75	80	85	90
通光孔径∅ Clear Aperture	50.5	53.5	57.5	63.2	67.7	73	78.8	80

Band Pass Filters
带通滤光片

| 可见带通滤光片 Visible Bandpass Filter	
型号 Model No.	规格 Specification
UN-BP465	Blue Bandpass UV Block 465nm
UN-BP470	Blue Bandpass UV Block 470nm
UN-BP500	Green Blue Bandpass 500nm
UN-BP525	Light Green Bandpass 525nm
UN-BP530	Green Bandpass 530nm
UN-BP535	Green Bandpass 535nm
UN-BP590	Orange Bandpass 635nm
UN-BP635	Light Red Bandpass 635nm
UN-BP660	Dark Red Bandpass 660nm
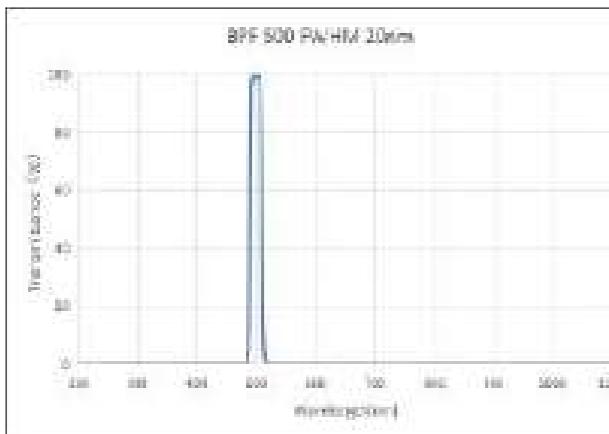
红外透可见截止型带通滤光片 IR Pass/Visible Blocking Bandpass Filter	
型号 Model No.	规格 Specification
UN-BP695	IR Bandpass 695nm
UN-BP735	IR Bandpass 735nm
UN-BP800	IR Bandpass 800nm
UN-BP850	IR Bandpass 850nm
UN-BP880	IR Bandpass 880nm
UN-BP950	IR Bandpass 950nm
UN-BP1000	IR Bandpass 1000nm
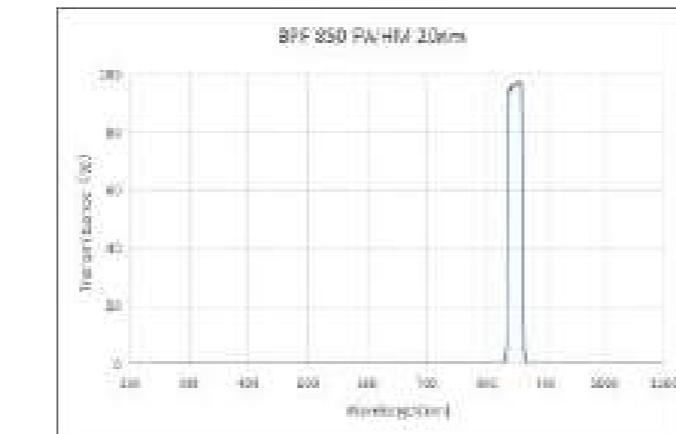
Long Pass Filters
长波通滤光片

可见长波通滤光片 Visible Longpass Filter	
型号 Model No.	规格 Specification
UN-LP470	Light Yellow Longpass 470nm
UN-LP500	Yellow Longpass 500nm
UN-LP515	Orange Longpass 515nm
UN-LP530	Orange Longpass 530nm
UN-LP550	Orange Longpass 550nm
UN-LP580	Red Orange Longpass 580nm
UN-LP590	Red Longpass 590nm
UN-LP630	Red Longpass 630nm
UN-LP660	Dark Red Longpass 660nm
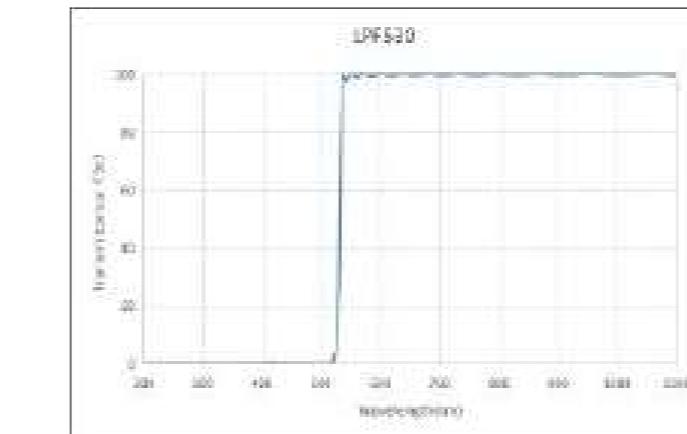
红外透可见截止型长波通滤光片 IR Pass/Visible Blocking Longpass Filter	
型号 Model No.	规格 Specification
UN-LP695	IR Longpass 695nm
UN-LP715	IR Longpass 715nm
UN-LP780	IR Longpass 780nm
UN-LP830	IR Longpass 830nm
UN-LP850	IR Longpass 850nm
UN-LP920	IR Longpass 920nm
UN-LP1000	IR Longpass 1000nm
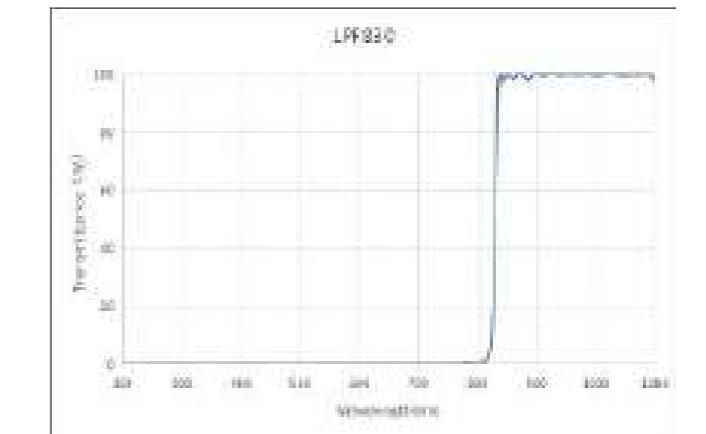
★UNI OPTICS

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