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■ 安全使用注意事项

- 请在使用前认真阅读说明书，正确使用本产品。
- 请在记载的电源、电压下正确使用本产品。

FA

Factory Automation Lenses



SPACECOM
CCTV LENSES

ANNIVERSARY
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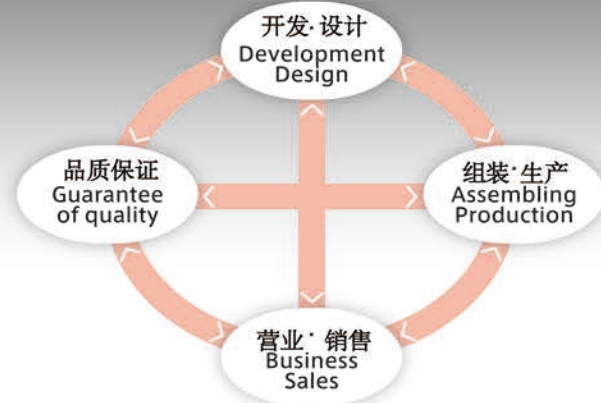
Jun. 2018

Best Good Partner SPACE

近年，以FA镜头为代表的机器视觉等图像处理领域的技术发展突飞猛进，为迎合市场需求，SPACE开发了很多新产品，并提出了很多开发计划。最大化发挥生产型公司特色，灵活调整，以对应特殊镜头定制服务。利用独特的研磨技术、镀膜技术、ED玻璃、非球面镜头等技术，为顾客提供具有唯一性的产品。

SPACE Inc. develops and proposes the best machine vision lenses for the image processing field, typified by FA, which has accelerated technical innovation rapidly in recent years.

With taking advantage of its characteristics of integrated production and adaptability, SPACE Inc. can produce a custom-made lens. And it is also possible for SPACE Inc. to provide a one-of-a-kind lens by means of unique polishing and coating technology in conjunction with high-end lens elements like ED glass and aspherical lens.



SPACE株式会社始终贯彻在公司内部对镜头的开发、设计、生产、营业、销售、品质保证进行管理。It is development, design and fabrication, business of the lens in the space Co., Ltd. I manage it until sale, a guarantee of quality in an office throughout.

品质/环境策略

SPACE株式会社自1998年创立以来，就获得品质管理系统 (QMS) 认证，秉承“品质第一”的理念，提供满足客户需求的产品。并在2015年又获得环境管理体系 (EMS) 认证，构筑起综合管理体系。今后，SPACE株式会社还将继续积极地致力于环境和安全的完善工作。

Action to quality and environment

SPACE Inc. has been certified by Quality Management System (QMS) from 1998 and supplying products matching customer needs with a strong commitment to quality first principle.

Furthermore in 2015 SPACE Inc. was certified by Environmental Management System (EMS) and structured integrated management system.

SPACE Inc. continues to work toward improvements of quality, environment and safety.



关于定制产品

我司发挥公司一贯的生产特长，可以根据各种各样的定制需求进行开发、设计和生产。会与客户进行个别的商讨，提供最适合使用的产品。
俊泰行 (北京) 通信技术有限公司 全国咨询热线: 400-808-2117 邮箱: info@chuntai.net.cn

To offer an optimal and user-friendly product, we discuss with customer on detail specifications. Please feel free to contact us!

【产品实例】

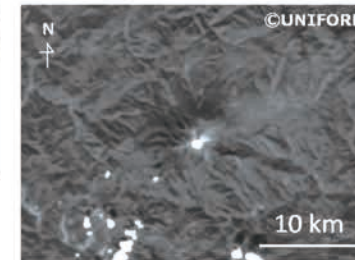
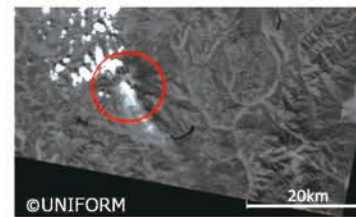
【Case history on Custom-Made products】



MARCURY 2.7倍电动变焦镜头

在车牌识别系统上大有功效。光学上修正由于温度变化引起的焦点偏移。能装进小型护罩的小而多功能的产品，规格参数记载在本目录的P12页。本产品可以配合客户所使用的相机的参数，而在光学上进行专用设计。

MARCURY 2.7x Motorized Zoom Lens
Used for license plate recognition
Made optical design to correct focus shift during temperature changes
Made optical design to correct focus shift during temperature changes
The specification on this product is shown on page 12.
Possible to make optical design specifically for camera used with.



Ontake volcano in eruption

搭载在和歌山大学宇宙教育研究所的超小型微型UNIFORM-1上，在真空条件也能使用的经过特殊加工的镜头。同样的镜头也用来进行过【森林火灾的检测】和【火山喷发的紧急摄影】。

Customer: Wakayama University Institute for Education on SPACE
Specially processing lens can be used under vacuum is loaded with microsatellite UNIFORM-1.
Application used this lens:
detection of forest fires
emergency photography of volcanic eruption

图标说明

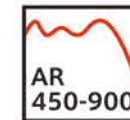
W 锁扣结构



双锁扣结构可以使focus、IRIS完全固定，并强化其耐振性。另外，为了避免干扰，螺丝孔开了三处 (120°) 可供选择。

Focus and Iris is firmly fixed and enhanced aseismic capacity with Double Lock function

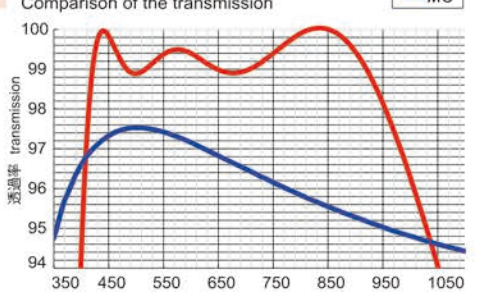
AR 多层镀膜



提高从可见光至近红外光范围的透过率。

High transmission maintains from visible ray to near infrared by AR multi coating

透过率的比较



镜头的分辨率

详细请确认右边的表格。

Details are shown in right table

图像尺寸	Image Size	1/3"	1/2"	1/1.8"	2/3"	1/1.2"	1"	1.1"
视角(H)mm	Angle View(H)	4.8	6.4	7.18	8.8	10.72	12.8	14.1
视角(V)mm	Angle View(V)	3.6	4.8	5.32	6.6	8.04	9.6	10.6
分辨率	Resolution	像素 The number of pixel						
12.0μm	120,000	213,333	265,261	403,333	598,533	853,333	1,037,917	
11.0μm	142,810	253,884	315,683	480,000	712,304	1,015,537	1,235,207	
10.0μm	172,800	307,200	381,976	580,800	861,888	1,228,800	1,494,600	
9.0μm	213,333	379,259	471,575	717,037	1,064,059	1,517,037	1,845,185	
8.0μm	270,000	480,000	596,838	907,500	1,346,700	1,920,000	2,335,313	
7.0μm	352,653	626,939	779,543	1,185,306	1,758,955	2,507,755	3,050,204	
6.0μm	480,000	853,333	1,061,044	1,613,333	2,394,133	3,413,333	4,151,667	
5.0μm	691,200	1,228,800	1,527,904	2,323,200	3,447,552	4,915,200	5,978,400	
4.5μm	853,333	1,517,037	1,886,301	2,868,148	4,256,237	6,068,148	7,380,741	
4.0μm	1,080,000	1,920,000	2,387,350	3,630,000	5,386,800	7,680,000	9,341,250	
3.5μm	1,410,612	2,507,755	3,118,171	4,741,224	7,035,820	10,031,020	12,200,816	
3.0μm	1,920,000	3,413,333	4,244,178	6,453,333	9,576,533	13,653,333	16,606,667	
2.5μm	2,764,800	4,915,200	6,111,616	9,292,800	13,790,208	19,660,800	23,913,600	



PLEIADES II

大靶面规格对应定焦镜头系列百万像素相机
对应300万-1000万像素 低失真率

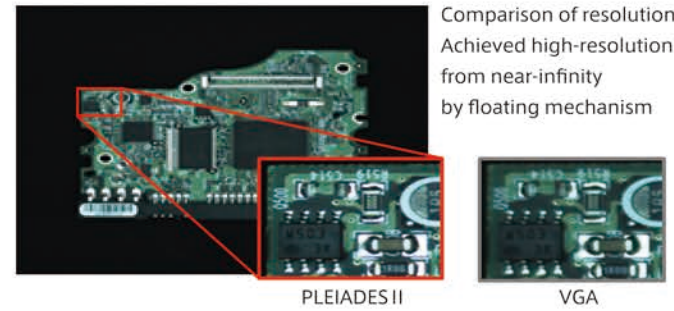
适用于：高精度检测、机器视觉、工业检测、
科研、智能AI

Large size format fixed focal lenses.
Mega-pixel camera correspondence.
Low Distortion.

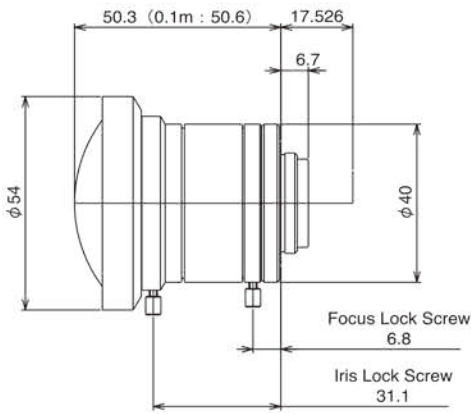


分辨率比较举例

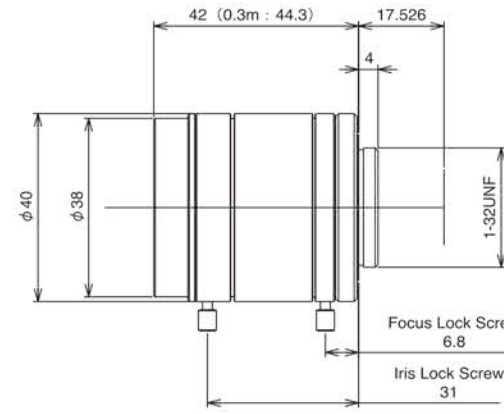
采用浮动结构，可以实现从接近~无限远距离的高分辨率



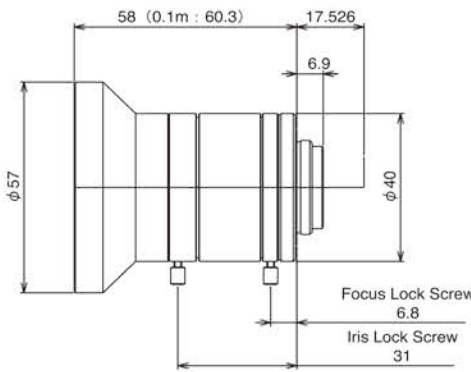
PLEIADES II
VHF25M-MP, VHF35M-MP
也可对应1.1英寸传感器(3.5 μm)
VHF25M-MP and VHF35M-MP is
corresponding to 1.1 inch sensor (3.45um)



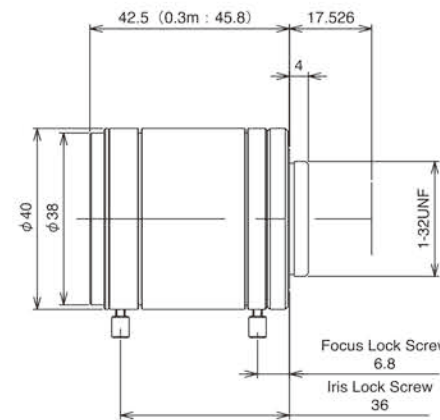
VHF6M-MP	
图像尺寸 Image Size:	1" (φ16mm)
焦距 Focal Length:	6mm
光圈范围 F No.:	F1.8~22
视角(H×V) Angle of View:	1" 1/1.2" 2/3"
	95.1×78.7° 85.3×68.2° 73.5×57.4°
	1/1.8" 1/2" 1/3"
	62.1×47.8° 55.9×42.8° 42.8×32.4°
最近物距 M.O.D:	0.1m
分辨率 Resolution:	6.4 μm
TV 畸变率 TVDistortion:	near 2.4% far -0.4%
滤镜尺寸 Filter Size:	-
接口 Mount:	C
重量尺寸 Weight·Size:	185g·φ54×50.3mm



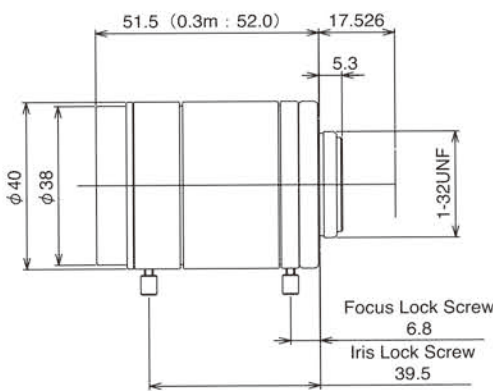
VHF16M-MP	
图像尺寸 Image Size:	1" (φ16mm)
焦距 Focal Length:	16mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	1" 1/1.2" 2/3"
	44.5×33.8° 37.6×28.5° 31.1×23.5°
	1/1.8" 1/2" 1/3"
	25.6×19.2° 22.8×17.1° 17.1×12.9°
最近物距 M.O.D:	0.3m
分辨率 Resolution:	5.0 μm
TV 畸变率 TVDistortion:	near -0.9% far -0.8%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量尺寸 Weight·Size:	120g·φ40×42mm



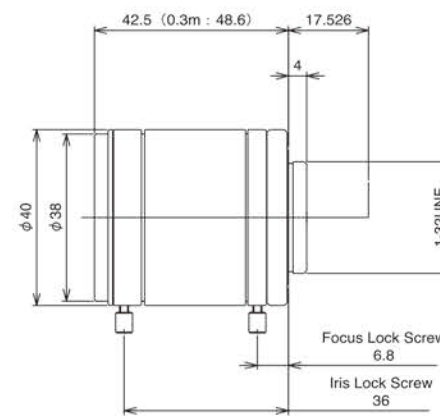
VHF8M-MP	
图像尺寸 Image Size:	1" (φ16mm)
焦距 Focal Length:	8mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	1" 1/1.2" 2/3"
	79.7×62.9° 69.2×53.7° 58.3×44.6°
	1/1.8" 1/2" 1/3"
	48.5×36.9° 43.4×32.9° 32.9×24.8°
最近物距 M.O.D:	0.1m
分辨率 Resolution:	6.4 μm
TV 畸变率 TVDistortion:	near -2.3% far -1.1%
滤镜尺寸 Filter Size:	55mm P0.75
接口 Mount:	C
重量尺寸 Weight·Size:	200g·φ57×58mm



VHF25M-MP	
图像尺寸 Image Size:	1.1" (φ17.4mm)
焦距 Focal Length:	25mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	1.1" 1" 1/1.2"
	31.9×24.1° 29.0×21.9° 24.4×18.4°
	2/3" 1/1.8" 1/2"
	20.1×15.1° 16.5×12.3° 14.6×11.0°
最近物距 M.O.D:	0.3m
分辨率 Resolution:	3.5 μm
TV 畸变率 TVDistortion:	near -0.5% far -0.7%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量尺寸 Weight·Size:	119g·φ40×42.5mm



VHF12.5M-MP	
图像尺寸 Image Size:	1" (φ16mm)
焦距 Focal Length:	12.5mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	1" 1/1.2" 2/3"
	55.7×42.7° 47.3×36.0° 39.3×29.7°
	1/1.8" 1/2" 1/3"
	32.4×24.4° 28.9×21.7° 21.7×16.4°
最近物距 M.O.D:	0.3m
分辨率 Resolution:	5.0 μm
TV 畸变率 TVDistortion:	near -1.5% far -1.4%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量尺寸 Weight·Size:	160g·φ40×51.5mm

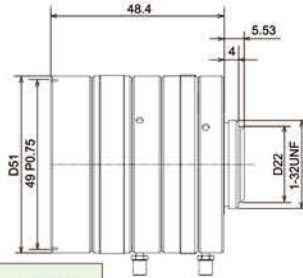
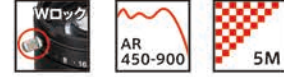


VHF35M-MP	
图像尺寸 Image Size:	1.1" (φ17.4mm)
焦距 Focal Length:	35mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	1.1" 1" 1/1.2"
	22.9×17.2° 20.9×16.0° 17.5×13.1°
	2/3" 1/1.8" 1/2"
	14.4×10.8° 11.8×8.8° 10.5×7.9°
最近物距 M.O.D:	0.3m
分辨率 Resolution:	3.5 μm
TV 畸变率 TVDistortion:	near -0.4% far -0.3%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量尺寸 Weight·Size:	129g·φ40×42.5mm

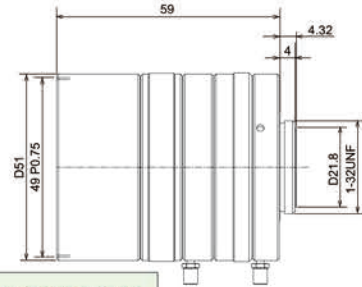
PYXIS

2/3英寸 5百万像素定焦镜头系列
低失真率 AR多功能涂层
滑动接口结构 光圈棘轮结构

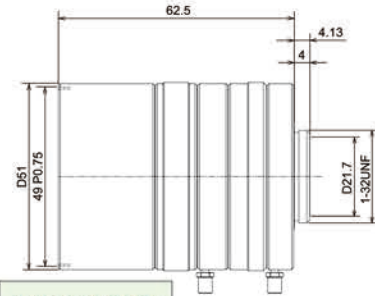
适用于：高精度检测、机器视觉、
工业检测、科研、智能AI



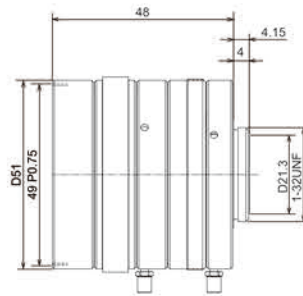
JHF8M-5MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	8mm
光圈范围 F No.:	F2.8~22
视角(H×V) Angle of View:	57.9×45.0°
最近物距 M.O.D.:	0.1m
分辨率 Resolution:	3.45 μm
TV畸变率 TVDistortion:	near -0.44% far 0.08%
滤镜尺寸 Filter Size:	49mm P0.75
接口 Mount:	C
重量,尺寸 Weight-Size:	200g·φ51×48.4mm



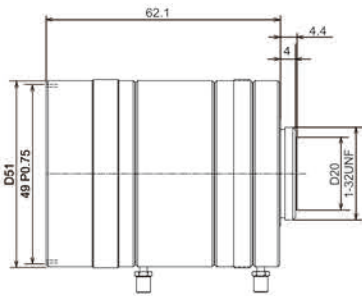
JHF12M-5MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	12mm
光圈范围 F No.:	F1.8~22
视角(H×V) Angle of View:	40.3×30.8°
最近物距 M.O.D.:	0.15m
分辨率 Resolution:	3.45 μm
TV畸变率 TVDistortion:	near -0.22% far 0.10%
滤镜尺寸 Filter Size:	49mm P0.75
接口 Mount:	C
重量,尺寸 Weight-Size:	240g·φ51×59mm



JHF16M-5MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	16mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	30.8×23.3°
最近物距 M.O.D.:	0.2m
分辨率 Resolution:	3.45 μm
TV畸变率 TVDistortion:	near -0.01% far 0.17%
滤镜尺寸 Filter Size:	49mm P0.75
接口 Mount:	C
重量,尺寸 Weight-Size:	240g·φ51×62.5mm



JHF25M-5MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	25mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	20.0×15.0°
最近物距 M.O.D.:	0.2m
分辨率 Resolution:	3.45 μm
TV畸变率 TVDistortion:	near 0.02% far 0.11%
滤镜尺寸 Filter Size:	49mm P0.75
接口 Mount:	C
重量,尺寸 Weight-Size:	180g·φ51×48mm

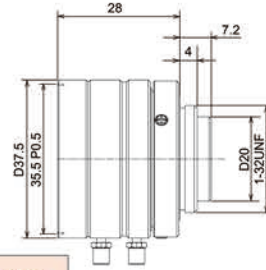


JHF35M-5MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	35mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	14.3×10.8°
最近物距 M.O.D.:	0.25m
分辨率 Resolution:	3.45 μm
TV畸变率 TVDistortion:	near -0.01% far 0.03%
滤镜尺寸 Filter Size:	49mm P0.75
接口 Mount:	C
重量,尺寸 Weight-Size:	230g·φ51×62mm

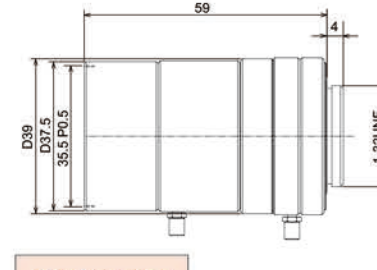
VELA

2/3英寸 3百万像素定焦镜头系列
低失真率 双锁扣结构

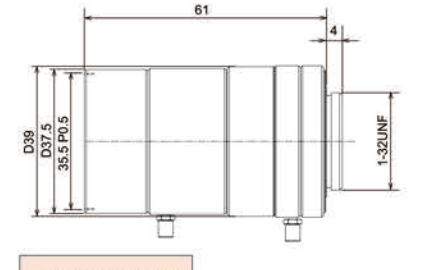
适用于：高精度检测、机器视觉、
工业检测、科研、智能AI



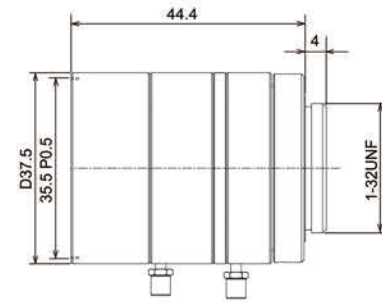
JHF8M-MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	8mm
光圈范围 F No.:	F1.4~Close
视角(H×V) Angle of View:	56.7×43.8°
最近物距 M.O.D.:	0.1m
分辨率 Resolution:	4.5 μm
TV畸变率 TVDistortion:	near -1.24% far -0.48%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量,尺寸 Weight-Size:	80g·φ37.5×28mm



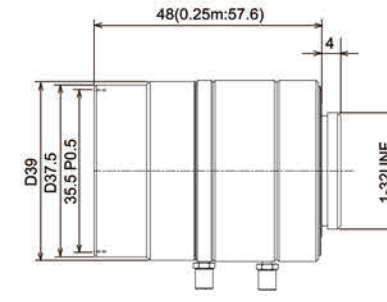
JHF12M-MP2	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	12mm
光圈范围 F No.:	F1.8~22
视角(H×V) Angle of View:	40.3×30.8°
最近物距 M.O.D.:	0.15m
分辨率 Resolution:	4.5 μm
TV畸变率 TVDistortion:	near -0.22% far 0.10%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量,尺寸 Weight-Size:	160g·φ39.5×59mm



JHF16M-MP2	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	16mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	30.8×23.3°
最近物距 M.O.D.:	0.2m
分辨率 Resolution:	4.5 μm
TV畸变率 TVDistortion:	near -0.01% far 0.17%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量,尺寸 Weight-Size:	180g·φ39.5×61mm



JHF25M-MP	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	25mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	20.0×15.0°
最近物距 M.O.D.:	0.2m
分辨率 Resolution:	4.5 μm
TV畸变率 TVDistortion:	near 0.02% far 0.11%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量,尺寸 Weight-Size:	106g·φ37.5×44.4mm

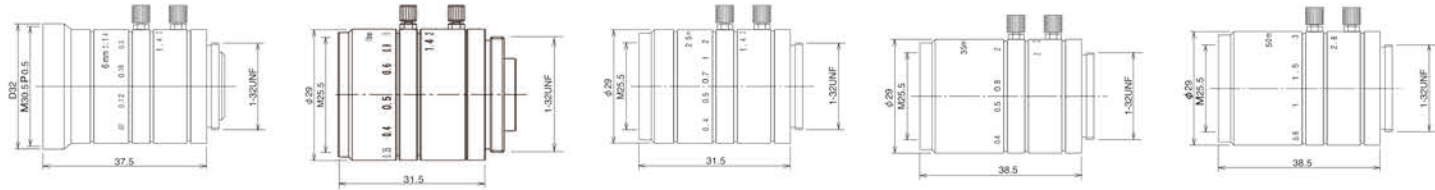


JHF35M-MP2	
图像尺寸 Image Size:	2/3" (φ11mm)
焦距 Focal Length:	35mm
光圈范围 F No.:	F1.4~22
视角(H×V) Angle of View:	14.3×10.8°
最近物距 M.O.D.:	0.25m
分辨率 Resolution:	4.5 μm
TV畸变率 TVDistortion:	near -0.01% far 0.03%
滤镜尺寸 Filter Size:	35.5mm P0.5
接口 Mount:	C
重量,尺寸 Weight-Size:	145g·φ39.5×48(MAX57.6)mm

φ29

φ29mm 百万像素定焦镜头系列
φ29mm Megapixel Fixed Focal Lenses

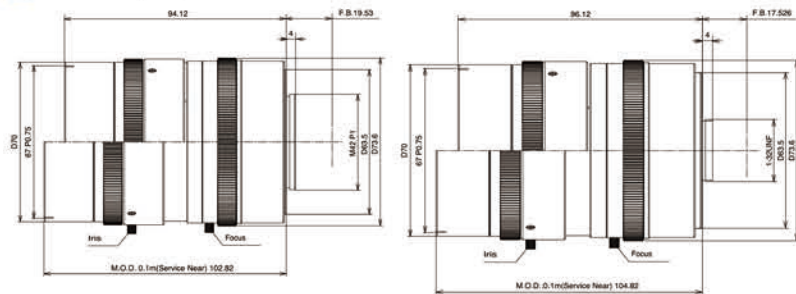
适用于：高精度检测、机器视觉、
工业检测、科研、智能AI



型号 Model	HHF6M	EHF16M	JHF25M	JHF35M	JHF50M
图像尺寸 Format Size	1/2"	1/1.8"	2/3"	2/3"	2/3"
接口 Mount	C	C	C	C	C
焦点 (mm) Focal Length	6	16	25	35	50
光圈范围 F No.	F1.4-16	F1.4-16	F1.4-22	F2.0-22	F2.8-22
最近物距 (mm) M.O.D	200	300	250	250	500
视角 Angle of View	57.4×44.3°	24.0×18.0°	20.1×15.1°	14.3×10.5°	10.0×7.5°
分辨率 Resolution	6.3μm	5μm	5μm	5μm	5μm
TV畸变率 TV Distortion	至近(at near) -1.24% 无限(at far) -0.48%	至近(at near) -0.22% 无限(at far) 0.10%	至近(at near) -0.01% 无限(at far) 0.17%	至近(at near) 0.02% 无限(at far) 0.11%	至近(at near) -0.01% 无限(at far) 0.03%
重量(g) Weight	66	45	45	55	55

F0.8

F0.8 超大光圈，适用于：高速相机，低照度
F0.8 High speed camera cctv lenses



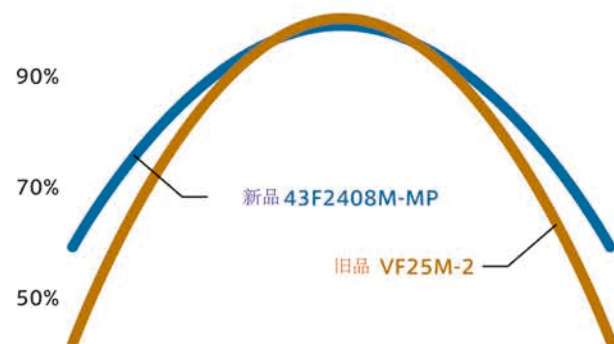
型号 Model	43F2408M-MP
图像尺寸 Format Size	4/3"
接口 Mount	M42 P1.0
焦距 (mm) Focal Length	24
光圈范围 F No.	F0.8-16
最近物距 (mm) M.O.D	0.15m(S.N.0.1m)
视角 Angle of View	17.3×13.5°
分辨率 Resolution	12μm
TV畸变率 TV Distortion	至近(at near) -1.24% 无限(at far) -0.48%
重量(g) Weight	890

型号 Model	43F2409M-MP
图像尺寸 Format Size	4/3"
接口 Mount	C
焦距 (mm) Focal Length	24
光圈范围 F No.	F0.9-16
最近物距 (mm) M.O.D	0.15m(S.N.0.1m)
视角 Angle of View	17.3×13.5°
分辨率 Resolution	12μm
TV畸变率 TV Distortion	至近(at near) -0.22% 无限(at far) 0.10%
重量(g) Weight	890

图像整体的光亮比非常少，适合生物领域的镜头。
是对应大幅相机用的，大幅面您也可以有效使用。

Optimum lens for biology field due to very bright
Available with large format camera.

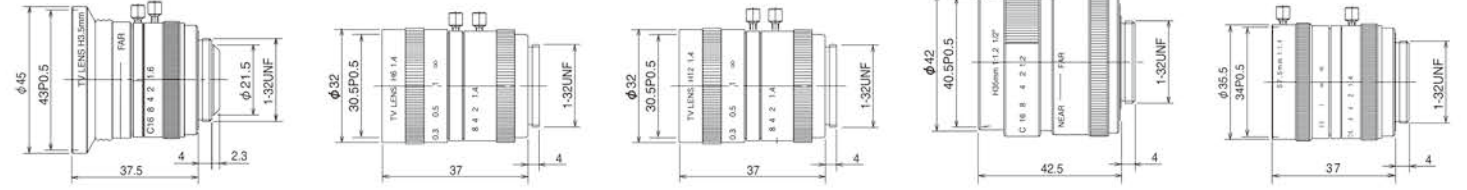
周边光量比



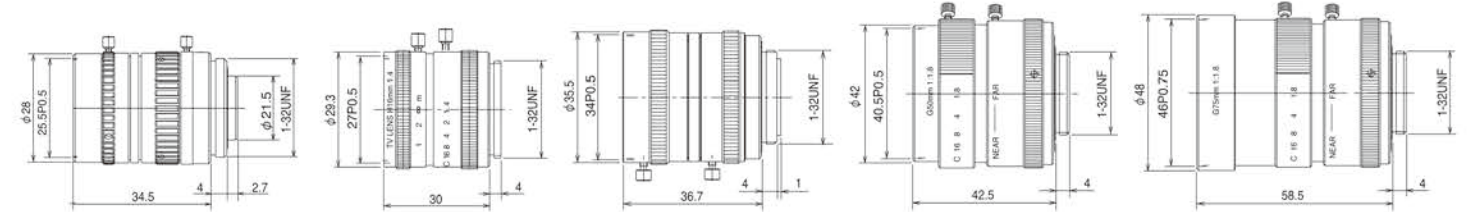
VGA

SPACECOMFA标准镜头 (640x512像素)。

适用于：高精度检测、机器视觉、工业检测、
科研、智能AI



型号 Model	HF3.5M-2	HF6M-2	HF12M-2	H35 1.2	JF7.5M-2
图像尺寸 Format Size	1/2"	1/2"	1/2"	1/2"	2/3"
接口 Mount	C	C	C	C	C
焦距 (mm) Focal Length	3.5	6	12	35	7.5
光圈范围 F No.	F1.6-C	F1.4-C	F1.4-C	F1.2-C	F1.4-C
最近物距 (mm) M.O.D	100	200	300	1000	200
视角 Angle of View	84.9×68.9°	56.1×43.6°	29.9×22.6°	10.4×7.8°	60.8×47.5°
重量(g) Weight	90	70	65	145	90

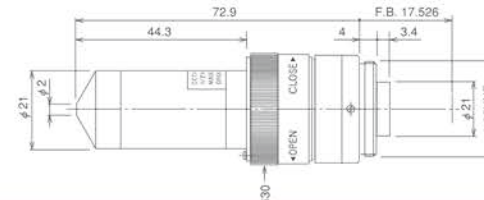


型号 Model	JF8M-2	JF16M-2	VF25M-2	G50 1.8	G75 1.8
图像尺寸 Format Size	2/3"	2/3"	1"	1"	1"
接口 Mount	C	C	C	C	C
焦距 (mm) Focal Length	8	16	25	50	75
光圈范围 F No.	F1.4-C	F1.4-C	F1.4-C	F1.8-C	F1.8-C
最近物距 (mm) M.O.D	200	400	500	700	800
视角 Angle of View	62.0×46.8°	30.7×23.3°	28.7×21.7°	14.5×10.9°	9.7×7.3°
重量(g) Weight	60	45	90	145	245

Pinhole Lens

前端的镜头直径像针孔一样只有2mm。
可以埋在各种场所，作为隐藏相机使用。

A pinhole lens is characterized by its small front lens, only 2mm in diameter.
The lens can be used with a hidden camera embedded in various places.

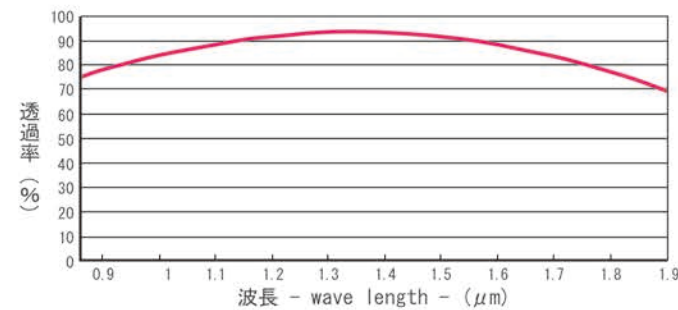


型号 Model	H38P
图像尺寸 Format Size	1/2"
接口 Mount	C
焦距 (mm) Focal Length	3.8
光圈范围 F No.	F2.4-C
最近物距 (mm) M.O.D	1000
视角 Angle of View	80.2×64.6°
重量(g) Weight	75

SWIR 短波红外线对应镜头

- 900~1700nm通过短波红外领域 (640x512像素) 实现高灵敏度及高品质画面。
- 通过SPACE社内镀膜技术, 实现透过率峰值达到95%以上。
- 图像失真率低, 最适合FA领域图像处理用。

Deliver high level image quality with VGA (642×512 pixel) under short wavelength infrared (900-1700nm)
In-house coating technique, maximum transmittance rate can reach up to 95%.
Low distortion helps better performance in optical inspection.



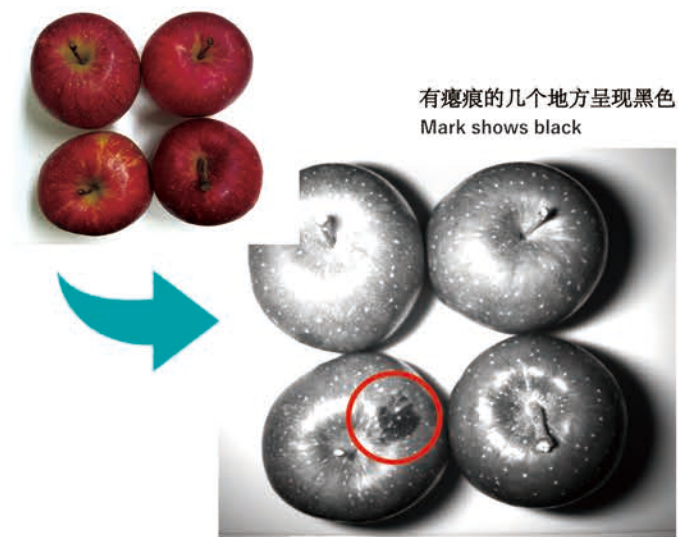
图像示例 Example

PLEIADESII SWIR 系列 +InGaAs 相机 +1450nm LED照明
PLEIADES -II SWIR series + InGaAs camera + 1420nm Led lighting

< 塑料用品 Plastic case >



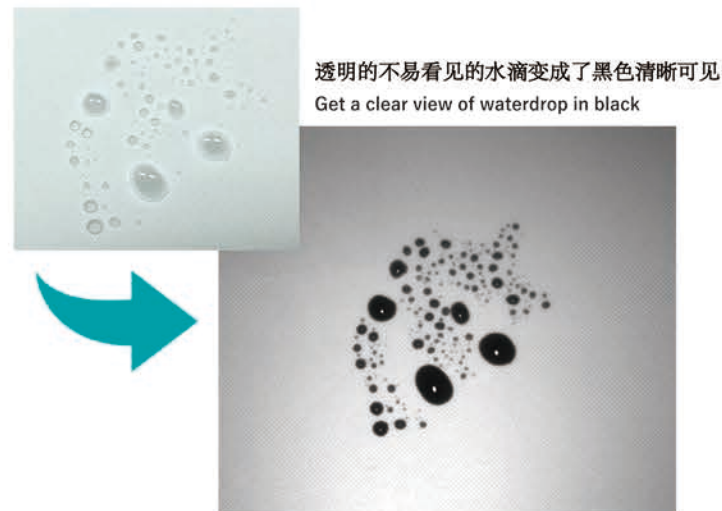
< 水果的疤痕 Mark of fruit >



< 点心的包装 Package of snack >



< 水的可视化 Visualization of water >



SWIR 短波红外线对应镜头

型号 Model	VHF6M SWIR	VHF8M SWIR	VHF12.5M SWIR	VHF16M SWIR	VHF25M SWIR	VHF35M SWIR
图像尺寸 Format Size	1"	1"	1"	1"	1.1"	1.1"
接口 Mount	C	C	C	C	C	C
焦点 (mm) Focal Length	6	8	12.5	16	25	35
光圈范围 F No.	F1.8-22	F1.4-22	F1.4-22	F1.4-22	F1.4-22	F1.4-22
最近物距 (mm) M.O.D	100	100	300	300	300	300
视角 Angle of View	95.1×78.7°	79.7×62.9°	55.7×42.7°	44.5×33.8°	31.9×24.1°	22.9×17.2°
TV畸变率 TV Distortion	至近(at near) 2.4% 无限(at far) -0.4%	至近(at near) -2.3% 无限(at far) -1.1%	至近(at near) -1.5% 无限(at far) -1.4%	至近(at near) -0.9% 无限(at far) -0.8%	至近(at near) -0.5% 无限(at far) -0.7%	至近(at near) -0.4% 无限(at far) -0.3%
重量 Weight	185	200	155	120	119	129

型号 Model	JHF8M SWIR	JHF12M SWIR	JHF16M SWIR	JHF25M SWIR	JHF35M SWIR
图像尺寸 Format Size	2/3"	2/3"	2/3"	2/3"	2/3"
接口 Mount	C	C	C	C	C
焦点 (mm) Focal Length	8	12	16	25	35
光圈范围 F No.	F2.8-22	F1.8-22	F1.4-22	F1.4-22	F1.4-22
最近物距 (mm) M.O.D	100	150	200	200	250
视角 Angle of View	57.9×45.0°	40.3×30.8°	30.8×23.3°	20.0×15.0°	14.3×10.8°
TV畸变率 TV Distortion	至近(at near) -0.44% 无限(at far) 0.08%	至近(at near) -0.22% 无限(at far) 0.10%	至近(at near) -0.01% 无限(at far) 0.17%	至近(at near) 0.02% 无限(at far) 0.11%	至近(at near) -1.24% 无限(at far) -0.48%
重量(g) Weight	200	240	240	180	230

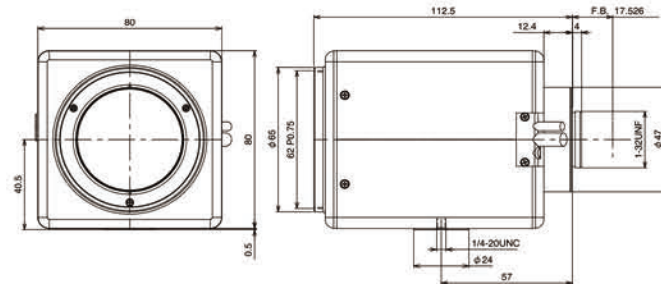
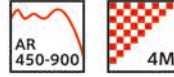


※ 也有其他可以对应SWIR的镜头。
如果您有别的镜头需要请联系我们。
Please contact us if you need other lens with SWIR coating.

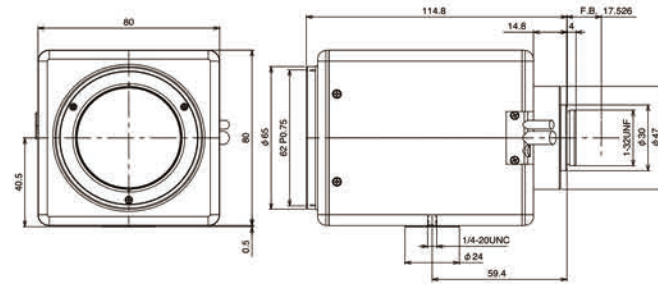
MARCURY

对应1英寸感应器的高清电动变焦镜头。变焦全程维持5.5 μm以上分辨率，可远程控制变焦、聚焦及光圈调节。

适用于：科研、高精度监测、人脸识别、智能AI
Zoom lens with 5.5 μm high resolving power in whole zooming area.
Zoom, Focus, and Iris is remote-controlled.



型号 Model	VZ2465R IR-MP	VZ2465R IR-MP PZF
图像尺寸 Format Size	1" (φ16.8)	1" (φ16.8)
接口 Mount	C-mount	C-mount
焦距 (mm) Focal Length	24~65mm	24~65mm
光圈范围 F No.	F2.0~Close	F2.0~Close
最近物距 (mm) M.O.D	7m	7m
分辨率 Resolution	5.5 μm (φ16.8)	5.5 μm (φ16.8)
滤镜尺寸 Filter Size	62mm P0.75	62mm P0.75
视角 Angle of View	WIDE 30.5×22.9° TELE 11.2×8.4°	WIDE 30.5×22.9° TELE 11.2×8.4°
重量(g) Weight	710g	710g
操作 Operation		
Zoom	Remote	Remote Preset
Focus	Remote	Remote Preset
Iris	Remote	Remote Preset

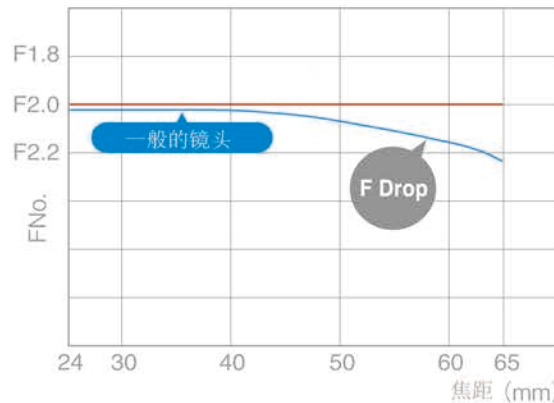


型号 Model	VZ3184R IR-MP	VZ3184R IR-MP PZF
图像尺寸 Format Size	1" (φ16.8)	1" (φ16.8)
接口 Mount	C-mount	C-mount
焦距 (mm) Focal Length	31~84mm	31~84mm
光圈范围 F No.	F2.6~Close	F2.6~Close
最近物距 (mm) M.O.D	7m	7m
分辨率 Resolution	5.5 μm (φ16.8)	5.5 μm (φ16.8)
滤镜尺寸 Filter Size	62mm P0.75	62mm P0.75
视角 Angle of View	WIDE 23.6×17.7° TELE 8.7×6.5°	WIDE 23.6×17.7° TELE 8.7×6.5°
重量(g) Weight	710g	710g
操作 Operation		
Zoom	Remote	Remote Preset
Focus	Remote	Remote Preset
Iris	Remote	Remote Preset

对应1英寸四百万像素的高分辨率性能

1英寸或1/1.2英寸的高性能CMOS图像尺寸上也没有暗角，主要用于车牌识别而开发的产品。因此随着夜间的近红外波长范围内的透过率提高（最高850nm）以及温度的变化，能在光学上矫正焦点偏移，在室外也性能优异。

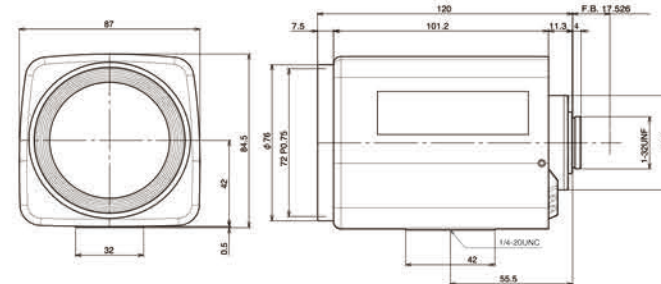
High resolution power compatible with 1 inch 4 Megapixel
Mainly developed for car number plate recognition and able to use for 1 inch or 1/1.2 inch CMOS image sensor without vignetting.
Corresponding to Day night camera and AR coating provides the best transmission at a wavelength of 850nm.
Furthermore, focus shift caused by temperature change is compensated by Optical correction. Best Suited for outdoor use!



CAPELLA

御夫座，是对应2/3英寸传感器的高像素6倍电动变焦镜头。可以对变焦、聚焦和光圈进行远程操作。而且由于搭载了作为位置感应器的POT，可以在PC上控制等灵活地控制。

High resolution 6X zoom lens for 2/3" sensor
Possible to remote-control zoom, focus and iris motor
Furthermore, possible to control flexibly like PC control by mounting potentiometers



型号 Model	HD1166R	HD1166R PZF
图像尺寸 Format Size	2/3"	2/3"
接口 Mount	C-mount	C-mount
焦距 (mm) Focal Length	11~66mm	11~66mm
光圈范围 F No.	F1.8~Close	F1.8~Close
最近物距 (mm) M.O.D	1.4m	1.4m
分辨率 Resolution	3.45 μm	3.45 μm
滤镜尺寸 Filter Size	72mm P0.75	72mm P0.75
视角 Angle of View	WIDE 43.3×33.0° TELE 7.7×5.8°	WIDE 43.3×33.0° TELE 7.7×5.8°
重量(g) Weight	700g	700g
操作 Operation		
Zoom	Remote	Remote Preset
Focus	Remote	Remote Preset
Iris	Remote	Remote Preset

实现解像力3.45 μm，特别是设想交通控制和车牌识别系统，考虑了有限距离15~30m范围内的最好的光学效果来设计。另外，整个变焦范围内F值不变。

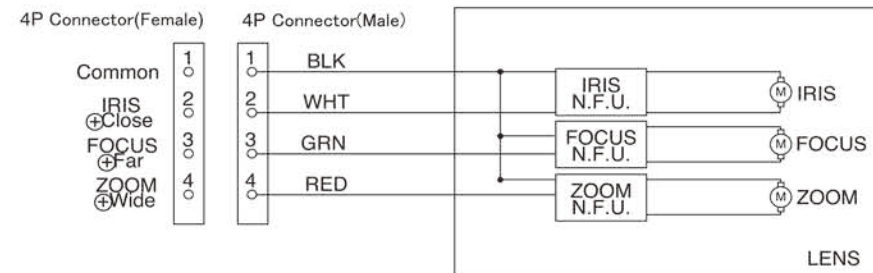
Actualized center resolution 3.45 μm and designed to give the best optical performance at finite distance 15-30m especially for the applications like traffic control and number plate recognition system.

通过AR多层镀膜化可使从可见光范围到近红外范围的透过率提高。把可视光范围当作对象的镀膜从成本上来说一般都会选择单层镀膜，CAPELLA却将AR多层镀膜当作标准来采用。因此夜间、IR照明下的近红外光范围的透过性能优异。通过我司独特的镀膜技术，也可根据客户的需求进行镀膜。如有意向，请联系我们。

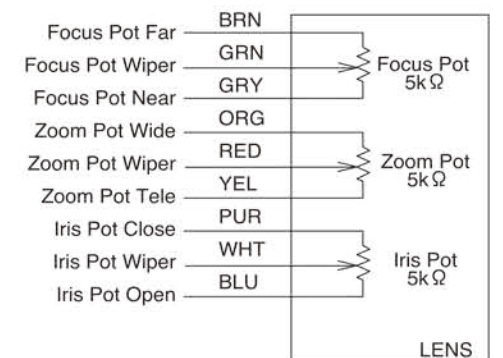
Improved transmittance from visible light to near-infrared light by AR multi-layer coating.
Normally single layer coating is applied to lenses for visible light due to cost. Meantime AR multi-layer coating is applied to CAPELLA as standard, so CAPELLA is superior in transmittance at near-infrared light at night.
Possible to coat lens elements according to customer's needs by SPACE original coating technology.

接线图 CIRCUIT DIAGRAM

■ Iris Remote Type



■ With Pot Type



OTHER

其他品种齐全的1英寸~1/1.8英寸的手动型或电动型等变焦镜头。
请根据使用用途和相机来选择。

You can choose suitable lens to your application from wide variety of SPACE lenses from 1/1.8" to 1" and of manual or motor controlled type.



手动变焦镜头

型号 Model	图像尺寸 Format Size	接口 Mount	焦距 (mm) Focal Length	光圈范围 F No.	最近物距(mm) M.O.D	视角 Angle of View
VZ16100M-MP	1"	C	16-100mm	F1.9-C	1.1m	43.6×33.4~7.3×5.5°
JZ1169M-MP	2/3"	C	11.5-69mm	F1.4-C	0.5m	41.9×32.0~7.3×5.5°
JZ1169DC-MP	2/3"	C	11.5-69mm	F1.4-C	0.3m	41.9×32.0~7.3×5.5°
HZ848M-MP	1/1.8"	C	8-48mm	F1.0-C	0.5m	43.6×33.4~7.7×5.7°
HZ848DC-MP	1/1.8"	C	8-48mm	F1.0-C	0.3m	43.6×33.4~7.7×5.7°



※ 以下是H6X8-1.0-II和H6X8的差异。请根据不同用途区分使用。

- 外观零件是金属或塑料 (树脂成型)
- 有无螺丝 (-II有螺丝)
- 最近物距
- 成本

※ Please use H6X8-1.0-II and H6X8 properly according to differences between them.

- Metal or plastic (resin molding) of exterior parts
- With or without locking screws (-II has locking screws.)
- M.O.D.
- Cost

电动变焦镜头

型号 Model	图像尺寸 Format Size	接口 Mount	焦距 (mm) Focal Length	光圈范围 F No.	最近物距(mm) M.O.D	视角 Angle of View
VZ16160R-MP	1"	C	16-160mm	F2.2-C	1.1m	43.6×33.4~4.6×3.4°
JZ95152R-MP	2/3"	C	9.5-152mm	F1.8-C	1.5m	49.7×38.3~3.2×2.5°
JZ10100R-MP	2/3"	C	10-100mm	F1.4-C	1.2m	47.5×36.5~5.0×3.8°
JZ1169R-MP	2/3"	C	11.5-69mm	F1.4-C	1.0m	41.9×32.0~7.3×5.5°
HZ8136R-MP	1/1.8"	C	8-136mm	F1.6-C	1.8m	43.6×33.4~2.7×2.2°
HEZ8585R-MP	1/1.8"	C	8.5-85mm	F1.6-C	1.2m	41.3×31.5~4.3×3.2°
HZ880R-MP	1/1.8"	C	8-80mm	F1.2-C	1.2m	43.6×33.4~4.6×3.4°
HZ848R-MP	1/1.8"	C	8-48mm	F1.0-C	1.0m	43.6×33.4~7.7×5.7°

配件

CB-3

电动变焦镜头专用的遥控盒。可以远程操作各动作。
Remote control box for exclusive use of zoom lenses to control each working part.

TSZC-05

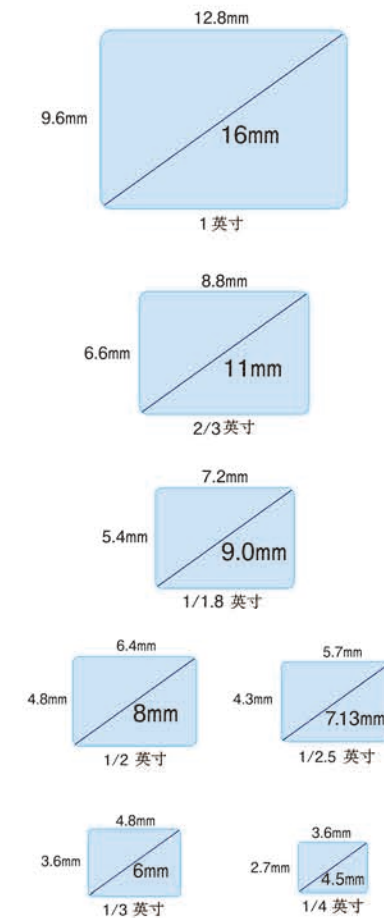
带预置位(PZF)电动变焦镜头的用来控制位置的控制器。
记忆镜头内部的POT值,分割可动范围,进行位置控制。通过USB或者RS-232C等串联信号来通信。
通过从PC等传送简单的指令,可以尽快将变焦镜头的位置移动到指定位置。
*镜头是带PZF的,需要用专用接线和连接器。

TSZC-05 is designed to control the position of the zoom lens.
The controller stores values of the potentiometer inside the zoom lens and divides the movement range to control the position.
For communication, USB or RS-232C serial communication is used.
By sending simple commands from a PC or other equipment, users can use this controller to quickly move the zoomlens to a specified position.
※The lens is with PZFI type so that dedicated wiring connector is necessary to operate.

SPACECOM的镜头技术

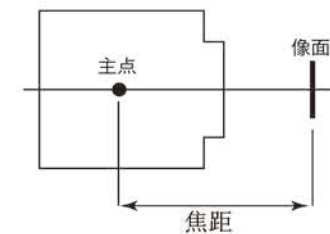
图像尺寸

镜头成像的大小,请参照所使用摄像机的图像传感器的尺寸。



焦距

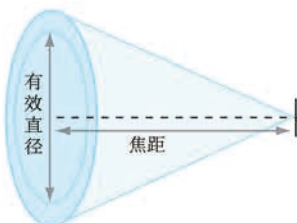
从镜头的主点到图像平面的距离长度我们称为焦距。这个数值越大看的越远,数值越小角度越宽。焦距与视角相关联运作。



F No.

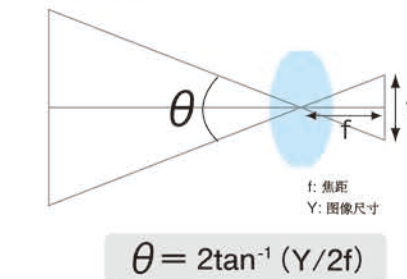
F No.是代表镜头透光量的单位。光圈值越小意味着镜头透光量越大。光圈值是由镜头的有效直径(窗户的大小)和焦距(房间的深度)计算比率来决定的。窗户大而房间深度浅的会比窗户小而房间深的户型更明亮。

$$F \text{ No.} = \text{焦距/有效直径}$$

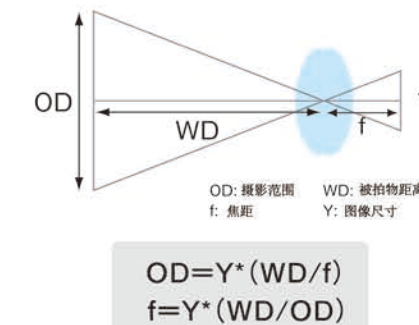


视角

视角表示的是将镜头的视图投影范围所呈现的角度大小。焦距越长,角度就越窄。而焦距越短,角度就越广。



摄影范围和焦距的计算

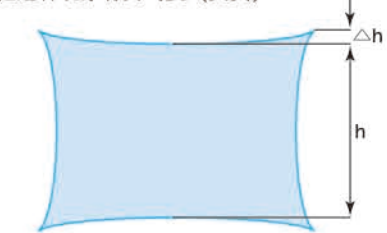


例1):当有一台1/3英寸的摄像机装有焦距为20mm的镜头物距为5m时,那么可以拍摄的范围是多少?
将Y=4.8mm(水平方向) WD=5×1000mm f=20mm 代入上述乘法公式可得OD=4.8×(5×1000/20)=1200mm
答案是:1200mm(1.2m)的范围内可以在整个监视器内的显示屏上显示。

例2):如果你想要用一台装有1/3英寸的摄像机拍摄一辆距离20m远的车,宽度约为2m,那么选择哪款镜头比较适合?
将Y=4.8mm, WD=20×1000mm, OD=2×1000mm 代入乘法公式可得f=4.8×(20×1000/2×1000)=48mm
答案是:选择焦距在f=48mm的镜头即可。

畸变(失真)

被拍对象的图像理想像点的位置发生偏移,导致相似性关系产生扭曲。这种情况下使得原有的矩形可能被扭曲成失真的枕状,我们把这种现象称为畸变(失真)。



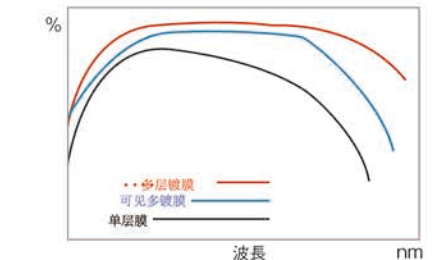
$$TV. \text{Dist}(\%) = \frac{\Delta h}{h} \times 100$$

分辨率

分辨率是用来评估图像成像的性能。使用专用仪器用来测量每1mm可以分辨多少线。解析就是白线和黑线的组成。重要的是从屏幕的中心到边缘始终保持一个恒定的分辨率。

镀膜

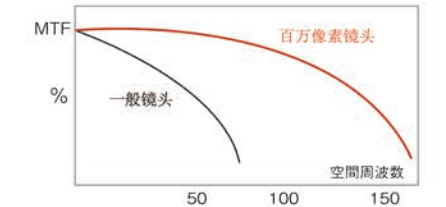
镜头表面会产生4-10%的反射光。多镜片数的变倍或者变焦镜头打向另一个透镜表面时可能会引起巨大的光损耗。更甚者在复杂的镜片内部由于反射光反射,从而产生耀斑和重影,是导致画面质量显著降低的原因。而通过镀膜可以减少反射并且可以达到保护镜头表面的效果。



SPACECOM部分镜头采用AR多层镀膜技术并且实现该膜在可见光和红外线之间的宽波长范围内具有高透射率。

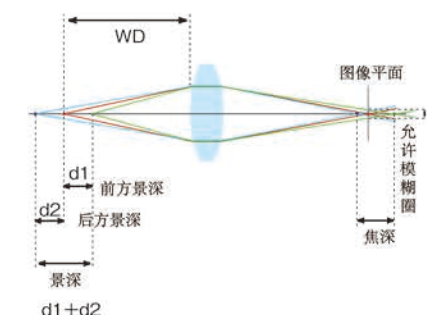
MTF

是Modulation Transfer Function的缩写。这是评价成像性能的一个方法,和分辨率的功能一样。一方面分辨率是“图像分解能力的界限值”,另一方面MTF是使成像对比在电气上数值化的一种方法。使用黑白模式使白黑的对比数值化。对比率高的情况,MTF的%就高。



景深

只要模糊物的尺寸不超过中心尺寸,我们就察觉不出图像模糊。就算理论上是模糊的但看起来焦点也未偏离。能被识别出来模糊的模糊物大小叫做“允许模糊圈”。根据图像感应器、监控器和摄影条件等允许模糊圈并不恒定。以下仅作为推测值。



主体距离 : WD
焦距 : f
F No. : F
允许模糊圈 : C

前方景深
 $d1 = (C \times F \times WD^2) / (f^2 + C \times F \times WD)$
后方景深
 $d2 = (C \times F \times WD^2) / (f^2 - C \times F \times WD)$
景深=d1+d2