



相机产品目录 **Camera**

AVALDATA IMAGING PRODUCTS

短波红外相机 & 高光谱相机



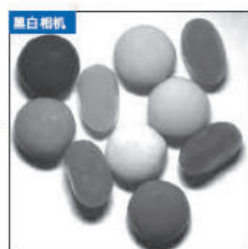
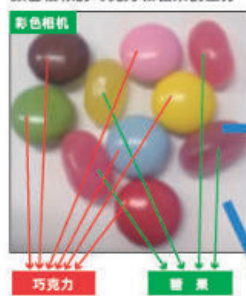
SWIR Camera

短波红外线是一种电磁波，是人类无法看见的光，其波长比可见光更长。虽然短波红外线本身没有颜色或热的特性，但它非常容易被物体吸收。

此外，短波红外线也是太阳光中所含的一种安全光源。当将包含短波红外线的光照射到被摄体上时，由于被摄体（如皮肤、水分、蔬果、药品、包装材料及电子元件）在物质成分上的差异，会产生不同的光反射与吸收特性，并以图像的形式呈现出来。

短波红外线技术的应用被广泛期待于多个领域，例如：农产品的新鲜度判定、食品中的异物检测、药品成分分析、生体组织的检测与观察等医疗相关领域。

颜色相似的巧克力和糖果的区分



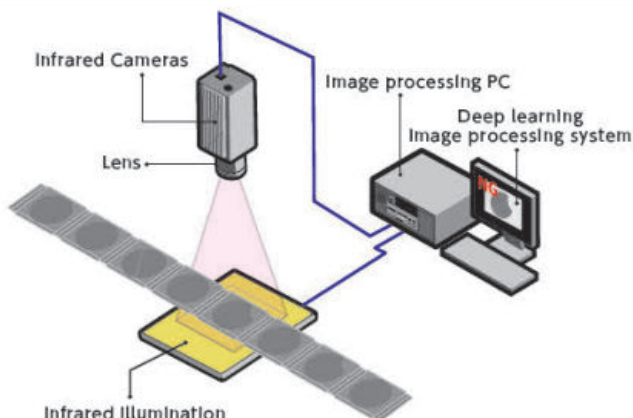
因表面的彩色涂层的影响，难以区分巧克力和糖果



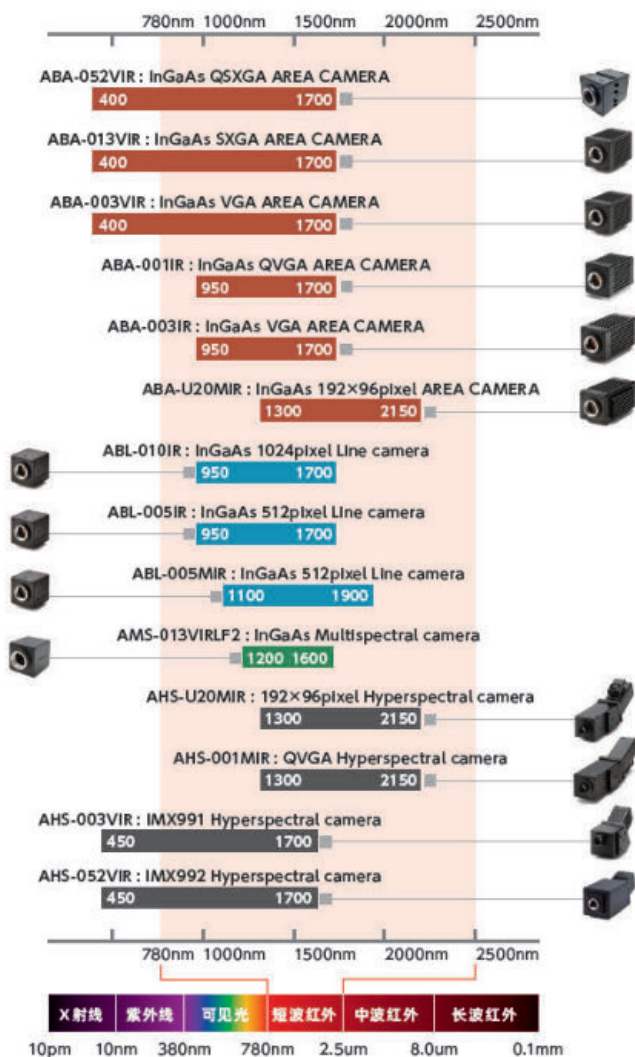
不管涂层的颜色，都能分辨巧克力（灰色）和糖果（黑色）

我们从短波外相机到镜头、光源、图像采集卡，为您提供完整的一体化解决方案。

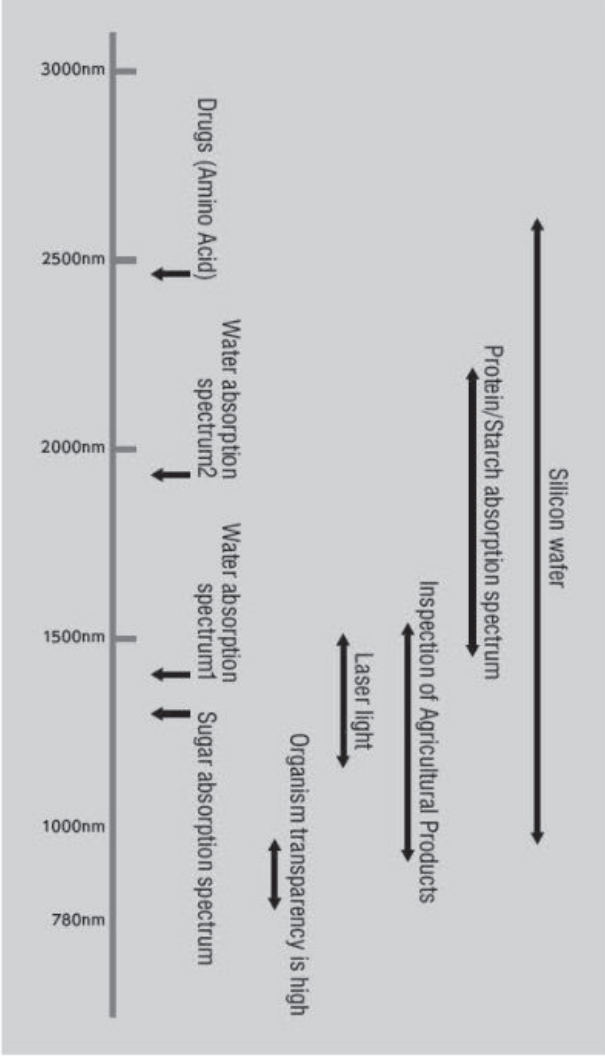
基于红外线相机的构成示例



短波红外线相机的系列产品



【参考】被摄体在短波红外线区域的吸收率



搭载5.2MP尺寸的InGaAs传感器，
可从可见光到短波红外波段实现高分辨率和高精细成像。

5.2MP 短波红外线面阵相机

ABA-052VIR

与以往的短波红外相机相比，「ABA-052VIR」的像素尺寸缩小了约52%，
而有效像素数量则为传统产品的4倍。

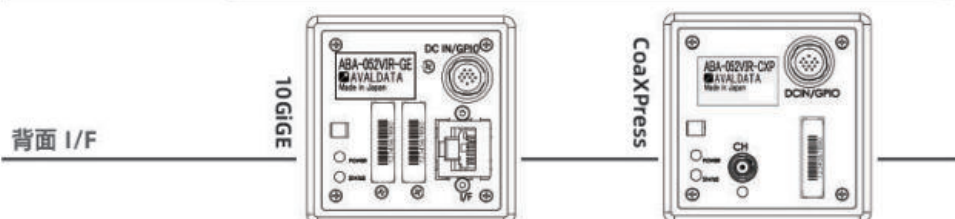
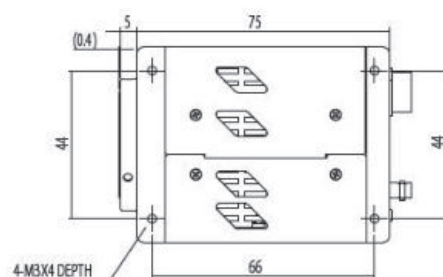
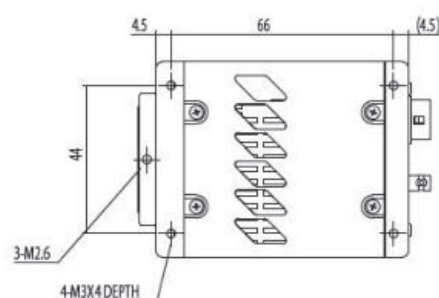
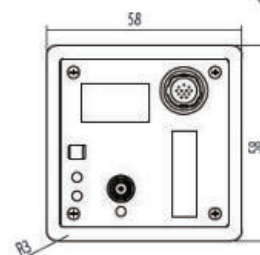
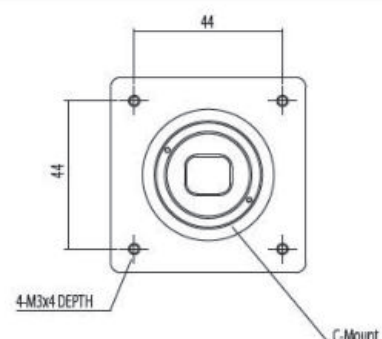
在显微镜等高倍率环境下进行成像时，能够获得更高精细度的图像，
并且与传统产品保持相同像素分辨率的情况下，可以实现更宽广的视野，
有助于缩短检测和测量所需的节拍时间。



ABA-052VIR Specification

Model		ABA-052VIR-GE	ABA-052VIR-CXP
Image sensor		Effectivepixel : 2560H×2048V Pixel size : 3.45μm×3.45μm Effective image size : 8.83mm×7.07mm, TEC1 cooling system	
Interface		10Gigabit Ethernet (10GBASE-T)	CoaXPress (CXP-12 Single)
Sensitivity wavelength		400nm ~ 1700nm	
Pixel clock interval		74.25MHz	
Frame rate	8bit	130.9 fps (max)	130.9 fps (max)
	10bit	85.8 fps (max)	120.8 fps (max)
	12bit	70.9 fps (max)	70.9 fps (max)
Exposure time	8bit	8μsec~10msec (SettingRange : 8μsec~9.99sec)	
	10bit	8μsec~10msec (SettingRange : 8μsec~9.99sec)	
	12bit	13μsec~10msec (SettingRange : 13μsec~9.99sec)	
Shutter mode		Global shutter method	
S/N		47dB	
Gain		0dB~+12dB (Setting Range : 0dB~30dB)	
Black level		0LSB~127LSB adjustable (10bit)	
Main function		Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defect, shading), ROI, binning, and field upgrade function.	
Image output		8 / 10 / 12bit	
Power		Input voltage range : DC +12V~DC +24V±1V PoCXP : DC+18.5V~+26V Power consumption : 13W(Typ) ※When using external DC +24V power supply	
Lens mount		C-mount 2/3 inch	
Operating temp / humidity		+0℃~+45℃ / 20~80% (non-condensing)	
Storage temp / humidity		-15℃~+65℃ / 20~80% (non-condensing)	
Peltier setting temperature		-30℃~+60℃ factory setting 15℃	
Dimenstion		58(W)×58(H)×75(D)mm (Excluding mount and protruding parts)	
Weight		430g	
Compliance		RoHS2	
Specification		GigE Vision®, GenICam™, GenICam™ GenTL Compliance	
Camera update tool		SightCam	
Compatible cable		CAT6A-compatible LAN cable	CoaXPress microBNC cable
SDK		For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)	

External dimensions



Area Camera

感应波段范围为400nm至1700nm
采用索尼公司生产的图像传感器IMX990

短波红外线SXGA相机 ABA-013VIR

搭载了索尼公司生产的InGaAs SWIR图像传感器IMX990，
实现了从可见光（400nm）到短波红外光（1700nm）的宽波段无缝成像。
有效像素约为134万，支持1280(H)×1024(V)的高分辨率拍摄，
是一款“宽波段·高灵敏度”的短波红外线面阵相机。

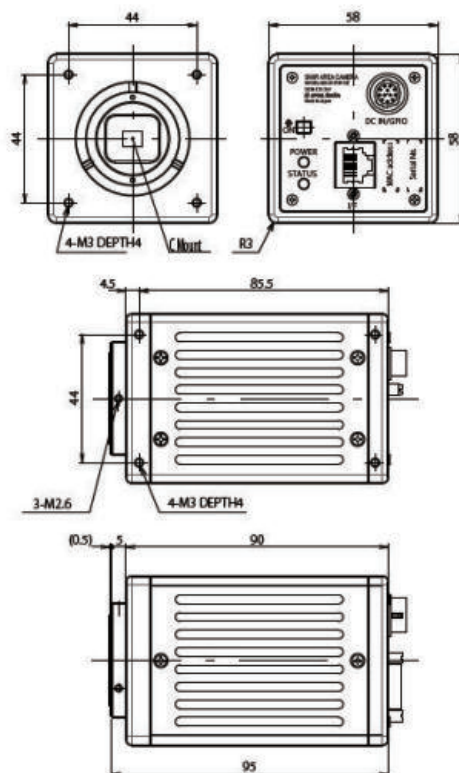


GigE Vision Link
GENICAM

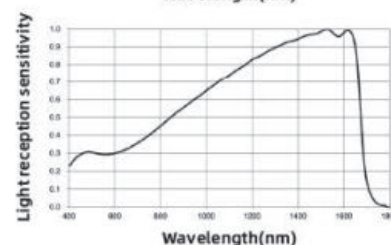
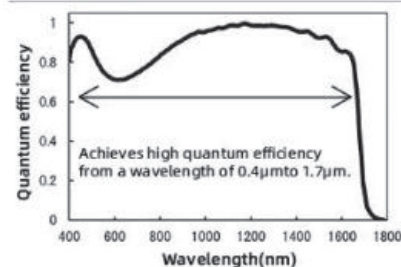
ABA-013VIR Specification

Model		ABA-013VIR-CL	ABA-013VIR-GE	ABA-013VIR-CXP
Interface		Camera Link (SDR)	Gigabit Ethernet(1000BASE-T)	CoaXPress (CXP-3 Single)
Image sensor		Effective pixel : 1280H×1024V, Pixel size : 5μm×5μm Effective image size : 6.4mm×5.12mm, TEC1 cooling system		
Sensitivity wavelength		400nm~1700nm		
Pixel clock interval		74.25MHz Data rate : 18.5625MHz		
Frame rate	8bit	60.00FPS(max) @GigE 134.73FPS(max) @Camera Link @CoaXPress		
	10bit	30.00FPS(max) @GigE 125.26FPS(max) @Camera Link @CoaXPress		
	12bit	30.00FPS(max) @GigE 71.52FPS(max) @Camera Link @CoaXPress		
Exposure time		6μsec~10msec (Setting range : 6μsec to 9.99sec)		
Read noise		200e-		
Shutter mode		Global shutter method		
S/N		54dB		
Gain		0dB~+12dB		
Black level		0 LSB~127 LSB adjustable (10bit)		
Main function		Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defect, shading), ROI, binning, and field upgrade function.		
Image output		8 / 10 / 12bit		
Power		Input voltage range : DC+12V~DC+24V ±1V PoCXP : DC+18.5V~+26V Power consumption : 7W		
Lens mount		C-mount 1/2 inch		
Operating temp/humidity		0℃~+45℃ / 20~80% (non-condensing)		
Storage temp/humidity		-15℃~+65℃ / 20~80% (non-condensing)		
Peltier setting temperature		5℃~+35℃ / 20~80% (Use within the operating temperature range)		
Dimension		58mm×58mm×90mm (Excluding mount and protruding parts)		
Weight		400g		
Compliance		RoHS2, CE		
Specification		Hyper Terminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL	
Camera update tool		SightCam		
Compatible cable		Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable	CoaXPress DIN cable
SDK		For imaging / communication : SDK-AcapLib2 (Model: AZP-ACAP-02)		

External dimensions



Quantum efficiency / Light reception sensitivity



感光波段范围为400nm至1700nm,
采用了索尼公司生产的图像传感器IMX991。

短波红外线VGA相机

ABA-003VIR

搭载了索尼公司生产的InGaAs SWIR图像传感器IMX991,
实现了从可见光 (400nm) 到短波红外 (1700nm) 的
宽波段无缝成像。

有效像素约为30万, 支持640(H)×512(V)的高分辨率拍摄,
是一款“宽波段·高灵敏度”的短波红外线面阵相机。

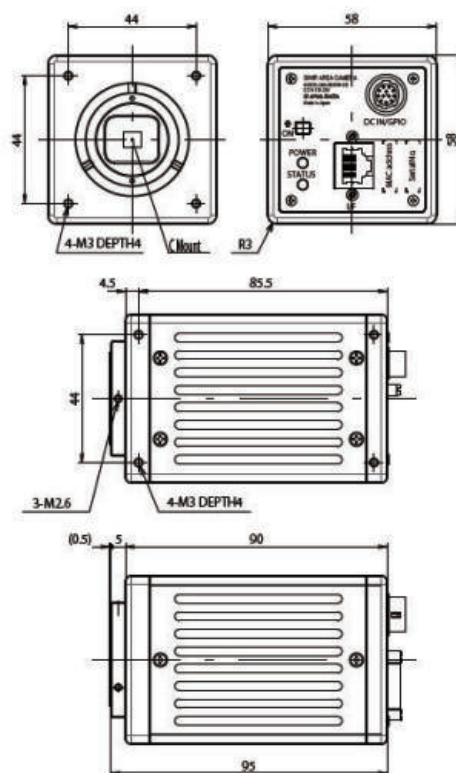


GigE Vision GenICam
GENICAM

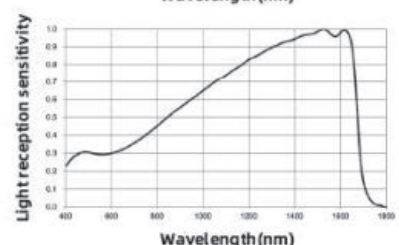
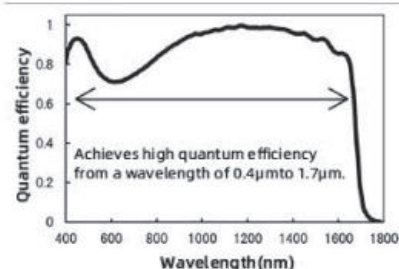
ABA-003VIR Specification

Model		ABA-003VIR-CL	ABA-003VIR-GE	ABA-003VIR-CXP
Interface		Camera Link (SDR)	Gigabit Ethernet (1000BASE-T)	CoaXPress (CXP-3 Single)
Image sensor		Effective pixel : 640H×512V, Pixel size : 5μm×5μm Effective image size : 3.2mm×2.56mm, TEC1 cooling system		
Sensitivity wavelength		400nm~1700nm		
Pixel clock interval		74.25MHz Data rate : 18.5625MHz		
Frame rate	8bit	240.00FPS (max) @GigE 258.80FPS (max) @Camera Link @CoaXPress		
	10bit	120.00FPS (max) @GigE 240.61FPS (max) @Camera Link @CoaXPress		
	12bit	120.00FPS (max) @GigE 137.39FPS (max) @Camera Link @CoaXPress		
Exposure time		6μsec~10msec (Setting range : 6μsec to 9.99sec)		
Read noise		200e-		
Shutter mode		Global shutter method		
S/N		54dB		
Gain		0dB~+12dB		
Black level		0LSB~127LSB adjustable (10bit)		
Main function		Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), ROI, field upgrade function		
Image output		8 / 10 / 12bit		
Power		Input voltage range : DC+12V ~ DC+24V ±1V PoCXP : DC+18.5V~+26V Power consumption : 7W		
Lens mount		C-mount 1/2 inch		
Operating temp / humidity		0℃~+45℃ / 20~80% (non-condensing)		
Storage temp / humidity		-15℃~+65℃ / 20~80% (non-condensing)		
Peltier setting temperature		5℃~+35℃ / 20~80% (Use within the operating temperature range)		
Dimension		58mm x 58mm x 90mm (Excluding mount and protruding parts)		
Weigh		400g		
Compliance		RoHS2, CE		
Specification		Hyper Terminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL	
Camera update tool		SightCam		
Compatible cable		Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable	CoaXPress DIN cable
SDK		For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)		

External dimensions



Quantum efficiency / Light reception sensitivity



Area Camera

感光波段范围为950nm至1700nm，
采用InGaAs VGA传感器。

短波红外线VGA相机

ABA-003IR

ABA-003IR是一款使用1个VGA分辨率、
像素尺寸为20微米、感光范围在950nm至
1700nm之间的InGaAs传感器的单板式
短波红外 (SWIR) 相机。

该相机能够捕捉使用现有可见光普通相机
无法拍摄的物体变化或成分。



感光波段范围为950nm至1700nm，
采用InGaAs QVGA传感器。

短波红外线QVGA相机

ABA-001IR

ABA-001IR是一款使用1个QVGA分辨
率、像素尺寸为20微米、感光范围在
950nm至1700nm之间的InGaAs传感器
的单板式短波红外 (SWIR) 相机。



ABA-003IR Specification

ABA-003IR-CL	ABA-003IR-GE
Camera Link (SDR)	Gigabit Ethernet (1000BASE-T)
Effective pixel : 640H×512V Pixel size : 20μm×20μm Effective image size : 12.8mm×10.24mm, TEC2 cooling system	
950nm~1700nm	
25MHz	
62FPS (MAX) / At 1 μs exposure time	
1us~10ms	
Global shutter method	
1μV/e-	
55dB	
0dB~+12dB	
Adjustable from 0 LSB to 127 LSB (at 10bit)	
Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), field upgrade function	
8 / 10 / 12 / 14bit	
Input voltage range : DC +12V ±1V Power consumption : 7W	
C-mount 1 inch	
0℃~+45℃ / 20~80% (non-condensing)	
-15℃~+65℃ / 20~80% (non-condensing)	
5℃~+35℃ / 20~80% (Use within the operating temperature range)	
58mm×58mm×115mm (Excluding mount and protruding parts)	
675g	665g
RoHS2, CE	
HyperTerminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL
SightCam	
Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable
For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)	

ABA-001IR Specification

ABA-001IR-CL	ABA-001IR-GE
Camera Link (SDR)	Gigabit Ethernet (1000BASE-T)
Effective pixel : 320H×256V Pixel size : 20μm×20μm Effective image size : 6.40mm×5.12mm, TEC2 cooling system	
950nm~1700nm	
25MHz	
228FPS (MAX) / At 1 μs exposure time	
1us~10ms	
Global shutter method	
1μV/e-	
55dB	
0dB~+12dB	
Adjustable from 0 LSB to 127 LSB (at 10bit)	
Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), field upgrade function	
8 / 10 / 12 / 14bit	
Input voltage range : DC +12V ±1V Power consumption : 7W	
C-mount 1 inch	
0℃~+40℃ / 20~80% (non-condensing)	
-15℃~+65℃ / 20~80% (non-condensing)	
5℃~+35℃ / 20~80% (Use within the operating temperature range)	
58mm×58mm×90mm (Excluding mount and protruding parts)	
567g	560g
RoHS2, CE	
HyperTerminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL
SightCam	
Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable
For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)	

Back side



Back side



感光波段范围为1300nm至2150nm，
采用InGaAs 192×96像素面阵传感器。

中波红外线面阵相机 ABA-U20MIR

这是一款采用1个分辨率为192×96、像素尺寸为50微米、
感光波段范围在1300nm至2150nm之间的InGaAs面阵传感器的
单板式中波红外 (SWIR) 相机。

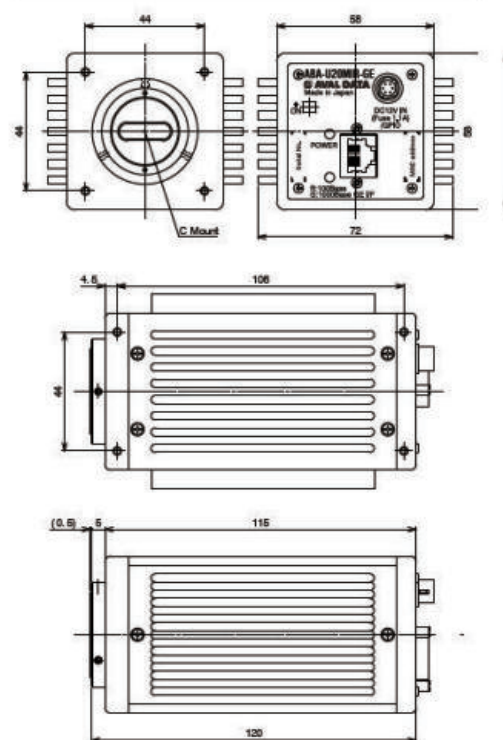
可用于检测使用现有可见光普通相机无法拍摄的物体变化或成分。



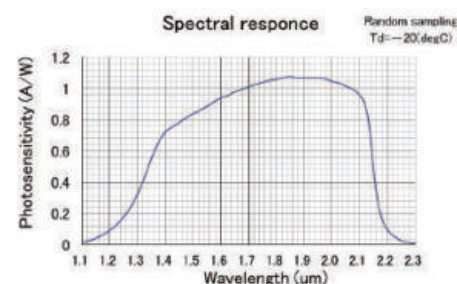
■ ABA-U20MIR Specification

Model	ABA-U20MIR-GE
Interface	Gigabit Ethernet (1000BASE-T)
Image sensor	Effective pixel : 192H×96V Pixel size : 50μm×50μm Effective image size : 9.6mm×4.8mm, TEC2 cooling system
Sensitivity wavelength	1300nm~2150nm
Pixel clock Interval	40MHz
Frame rate	867FPS(MAX) / At 1 μs exposure time
Exposure time	1us~1ms
Shutter mode	Global shutter method
Read noise	1.6μV/e-
S/N	50dB
Gain	0dB~+12dB
Black level	0 LSB to 127 LSB adjustable (10bit)
Main function	Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defect, shading), field upgrade function.
Image output	8/10/12/14 bit
Power	Input voltage range : DC +12V ±1V Power consumption : 9W
Lens mount	C-mount 1inch
Operating temp / humidity	0°C~+30°C / 20~80% (non-condensing)
Storage temp / humidity	-25°C~+60°C / 20~80% (non-condensing)
Dimensions	72mm×58mm×115mm (Excluding mount and protruding parts)
Weight	710g
Compliance	RoHS2
Standard	GigE Vision®, GenICam™, GenICam™ GenTL
Camera update tool	SightCam
SDK	For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)

External dimensions



Light reception sensitivity



Back side

GigE



Line Camera

感光波段范围为950nm至1700nm,
采用InGaAs 1024像素线阵传感器。

短波红外线线阵相机

ABL-010IR

这是一款使用1024像素、像素尺寸为12.5微米、
感光波段范围在950nm至1700nm之间的
InGaAs线阵传感器的短波红外 (SWIR) 相机。

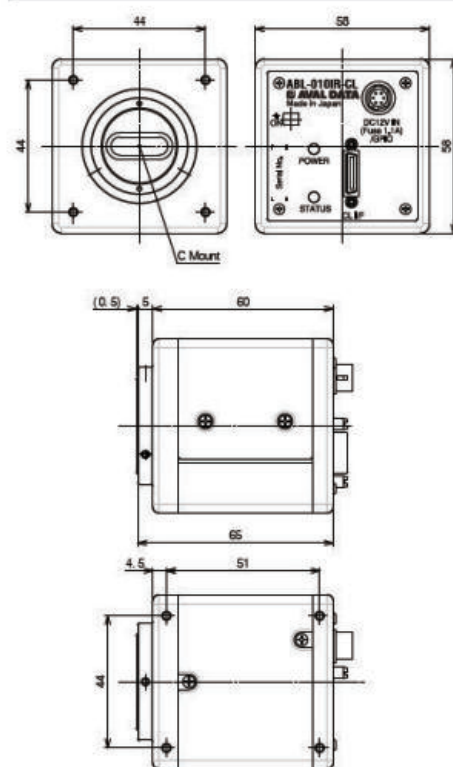


GigE Vision
Link
GEN<I>CAM

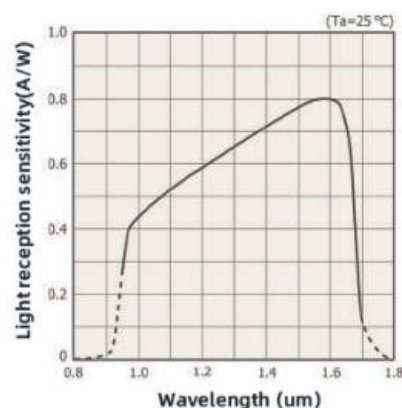
ABL-010IR Specification

Model	ABL-010IR-HS-CL	ABL-010IR-GE
Interface	Camera Link (SDR)	Gigabit Ethernet (1000BASE-T)
Image sensor	Effective pixel : 1024 Pixel size : 12.5 μ m $\times$ 12.5 μ m InGaAs line sensor Effective image size : 12.8mm x 0.0125mm, Non-cooling system	
Sensitivity wavelength	950nm~1700nm	
Pixel clock interval	15MHz	
Frame rate	40KHz (MAX) / Exposure time 21 μ s	
Exposure time	10 μ s~1ms	
Read noise	1070nV/e-	
S/N	58dB	
Gain	0dB~+12dB	
Black level	0 LSB to 127 LSB adjustable (10bit)	
Main function	Status LED, external trigger, various corrections (DSNU, PRNU, pixel defect, shading), field upgrade function	
Image output	8 / 10 / 12bit	
Power	Input voltage range : DC +12V $\pm$ 1V Power consumption : 4W	
Lens mount	C-mount 1 inch	
Operating temp / humidity	0 $^{\circ}$ C~+40 $^{\circ}$ C / 20~80% (non-condensing)	
Storage temp / humidity	-20 $^{\circ}$ C~+70 $^{\circ}$ C / 20~80% (non-condensing)	
Dimensions	58mm $\times$ 58mm $\times$ 60mm (Excluding mount and protruding parts)	
Weight	264g	268g
Compliance	RoHS2, CE	
Standard	HyperTerminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL
Camera update tool	SightCam	
Compatible cable	Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable
SDK	For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)	

External dimensions



Light reception sensitivity



Back side



感应波段范围: 950nm 至 1700nm
采用 InGaAs 512 像素线阵传感器

短波红外线线阵相机 ABL-005IR

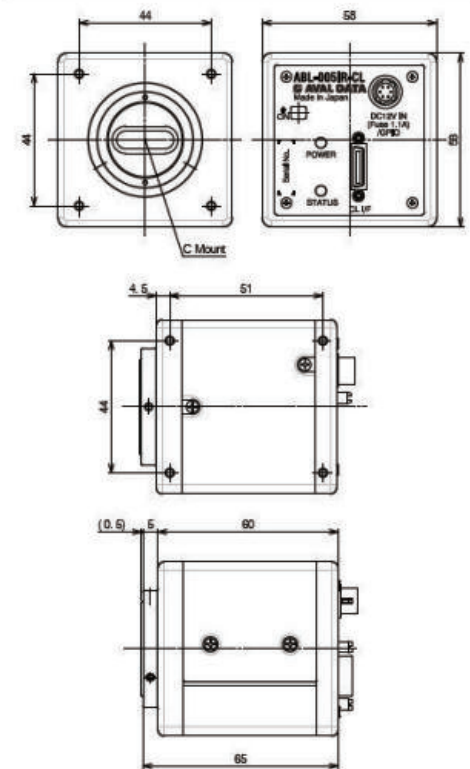
ABL-005IR是一款短波红外 (SWIR) 相机,
采用512像素、像素尺寸为25微米的InGaAs线阵传感器,
对950nm至1700nm波段具有良好的感应度。
该产品具有出色的性价比, 适合导入至工厂等场所的检测设备中。



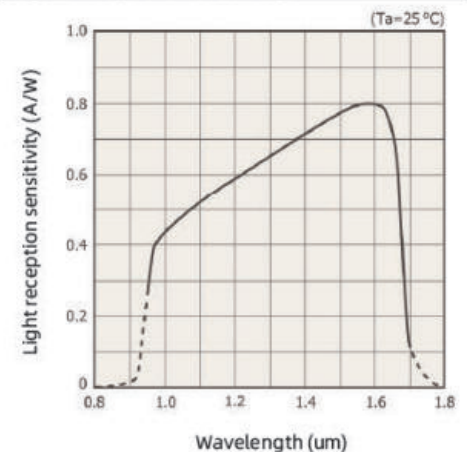
■ ABL-005IR Specification

Model	ABL-005IR-CL	ABL-005IR-GE
Interface	Camera Link (SDR)	Gigabit Ethernet (1000BASE-T)
Image sensor	Effective pixel : 512 Pixel size : $25\mu\text{m} \times 25\mu\text{m}$ InGaAs line sensor Effective image size : $12.8\text{mm} \times 0.025\text{mm}$, Non-cooling system	
Sensitivity wavelength	950nm~1700nm	
Pixel clock interval	5MHz	
Frame rate	8.13KHz (MAX) / Exposure time $10\mu\text{s}$	
Exposure time	$10\mu\text{s} \sim 1\text{ms}$	
Read noise	Standard sensitivity mode : 160 nV/e-, High sensitivity mode : 930 nV/e-	
S/N	58dB	
Gain	0dB~+12dB	
Black level	0 LSB to 127 LSB adjustable (10bit)	
Main function	Status LED, external trigger, various corrections (DSNU, PRNU, pixel defect, shading), field upgrade function	
Image output	8 / 10 / 12 bit	
Power	Input voltage range : DC +12V $\pm 1\text{V}$ Power consumption : 4W	
Lens mount	C-mount 1 inch	
Operating temp / humidity	$0^\circ\text{C} \sim +40^\circ\text{C}$ / 20 ~ 80% (non-condensing)	
Storage temp / humidity	$-20^\circ\text{C} \sim +70^\circ\text{C}$ / 20 ~ 80% (non-condensing)	
Dimensions	58mm $\times$ 58mm $\times$ 60mm (Excluding mount and protruding parts)	
Weight	300g	278g
Compliance	RoHS2, CE	
Standard	HyperTerminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL
Camera update tool	SightCam	
Compatible cable	Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable
SDK	For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)	

External dimensions



Light reception sensitivity



Back side



Line Camera

感应波段范围：1100nm 至 1900nm

采用 InGaAs 512 像素线阵传感器

中波红外线线阵相机

ABL-005MIR

这是一款具备短波红外段感光特性 (1100nm~1900nm, 峰值为1750nm)

的相机, 搭载了512像素的InGaAs线阵传感器,

支持Gigabit Ethernet和Camera Link接口。

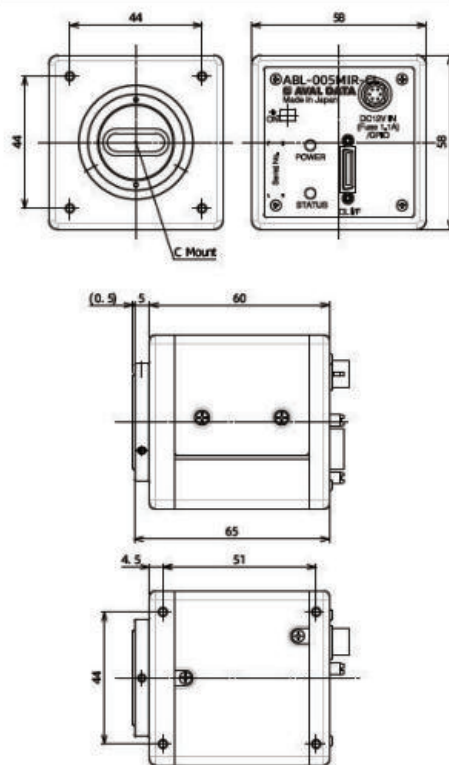
与ABL-005IR型号相比, 该型号在长波段方向的感应度有所提升。



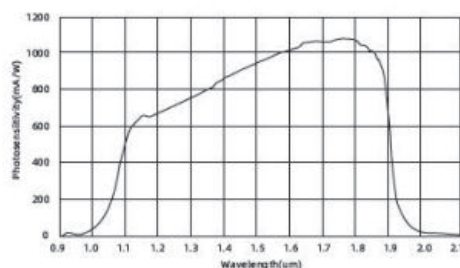
ABL-005MIR Specification

Model	ABL-005MIR-CL	ABL-005MIR-GE
Interface	Camera Link	Gigabit Ethernet (1000BASE-T)
Image sensor	Effective pixel : 512 Pixel size : 25μm×25μm InGaAs line sensor Effective image size : 12.8mm x 0.025mm, Non-cooling system	
Sensitivity wavelength	1100nm~1900nm	
Pixel clock interval	5MHz	
Frame rate	8.13KHz(MAX) / Exposure time 10μs	
Exposure time	10μs~1ms	
Read noise	Standard sensitivity mode : 160 nV/e-, High sensitivity mode : 930 nV/e-	
S/N	50dB	
Gain	0dB~+12dB	
Black level	0 LSB to 127 LSB adjustable (10bit)	
Main function	Status LED, external trigger, various corrections (DSNU, PRNU, pixel defect, shading), field upgrade function	
Image output	8 / 10 / 12bit	
Power	Input voltage range : DC +12V ±1V Power consumption : 4W	
Lens mount	C-mount 1 inch	
Operating temp / humidity	0°C ~ +40°C / 20 ~ 80% (non-condensing)	
Storage temp / humidity	-20°C ~ +70°C / 20 ~ 80% (non-condensing)	
Dimensions	58mm×58mm×60mm (Excluding mount and protruding parts)	
Weight	300g	278g
Compliance	RoHS	
Standard	HyperTerminal or compliant software	GigE Vision®, GenICam™, GenICam™ GenTL
Camera update tool	SightCam	
Compatible cable	Camera Link SDR cable	CAT5E, CAT6 compatible LAN cable
SDK	For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)	

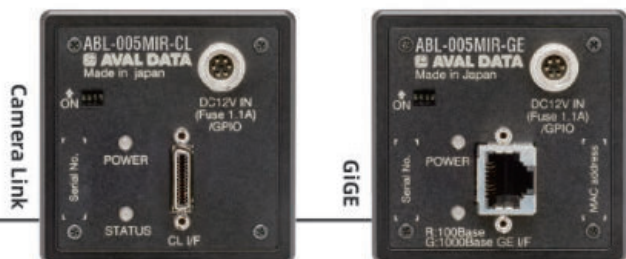
External dimensions



Light reception sensitivity



Back side



Multispectral Camera

可同时捕捉短波红外线图像中4个波长的多波段相机

短波红外4个波段分光相机

AMS-013VIRLF2

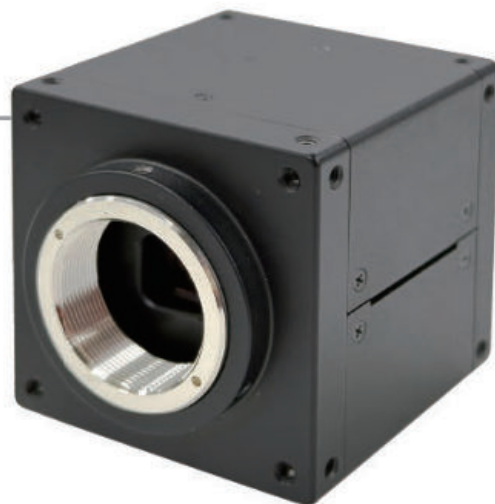
AMS-013VIRLF2 是一款多波段相机，

搭载索尼公司生产的 InGaAs ViSWIR 图像传感器 IMX990，

并在传感器前方配备了带通滤光片。

该型号为高精度、高分辨率的高端产品，像素尺寸为5μm，

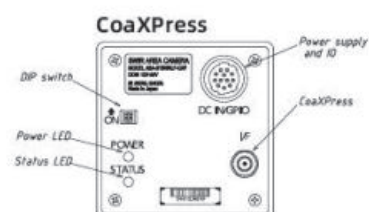
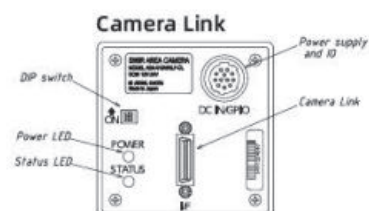
可实现对 1200nm、1300nm、1450nm、1600nm 波段的光谱分离。



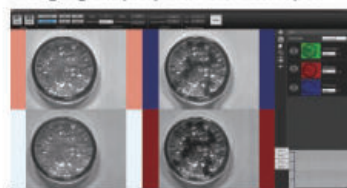
AMS-013VIRLF2 Specification

Model		AMS-013VIRLF2-GE	AMS-013VIRLF2-CL	AMS-013VIRLF2-CXP
Image sensor		Effective pixel : 1280H×128V (Up to 32 lines per band) Pixel size : 5μm×5μm Effective image size : 6.4mm×0.64mm		
Interface		Gigabit Ethernet(1000BASE-T)	Camera Link(SDR)	CoaXPress(CXP-3)
Sensitivity wavelength		Band1 1200nm (Half width cloth 90nm) Band2 1300nm (Half width cloth 70nm) Band3 1450nm (Half width cloth 110nm) Band4 1600nm (Half width cloth 160nm)		
Imaging method		Line scan method		
Pixel clock cycle		74.25MHz Data rate 18.5625MHz		
Frame rate	8bit	1500FPS (max)	1760FPS (max)	1760FPS (max)
	10bit	824FPS (max)	1760FPS (max)	1760FPS (max)
	12bit	848FPS (max)	1005FPS (max)	1005FPS (max)
Exposure time		6μsec~10msec (Setting range : 6μsec to 9.99sec)		
Shutter method		Global shutter method		
S/N		54dB		
Read noise		200e-		
Gain		0dB~+12dB		
Main functions		Status LED, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), ROI, field upgrade function		
Image output		8 / 10 / 12bit		
Synchronization		Internal synchronization		
Power		Input voltage range : DC+12V~DC+24V ±1V PoCXP : DC+18.5V~+26V Power consumption : 4.6W ※When using DC +12V		
Lens mount		Cmount 1/2 inch format or larger		
Operating temp / humidity		+0℃~+45℃ / 20~80% (non-condensing)		
Storage temp / humidity		-15℃~+65℃ / 20~80% (non-condensing)		
Dimensions		53(W)×53(H)×53(D)mm (Excluding mount and protruding parts)		
Weight		220g		
Compliance		RoHS2, CE		
Camera update tool		SightCam		
SDK		Gigabit Ethernet(1000BASE-T)	Camera Link	CoaXPress
		For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02)		
		GigE Vision®, GenlCam™, GenlCam™ GenTL Compliance	HyperTerminal or compliant software	GigE Vision®, GenlCam™, GenlCam™ GenTL Compliance

Back side



Imaging display screen example



Multi-band camera evaluation viewer: MSight

Hyperspectral Camera

采用索尼公司图像传感器的高光谱相机

高光谱成像相机

AHS-052VIR

搭载索尼独有技术研发的「IMX992」，
这是一款采用业界最高分辨率※图像传感器实现的
高精度工业用高光谱相机。

通过2560像素的线阵，可对从可见光区域的450nm到
短波红外线区域的1700nm波段进行光谱分离，
并以1680个波段获取完整的光谱信息。

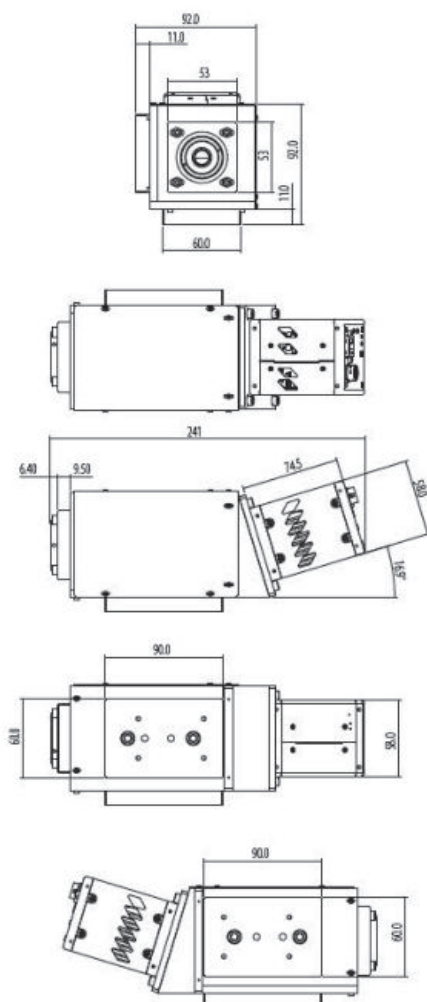
※在使用化合物半导体InGaAs（铟镓砷）制造的工业用SWIR图像传感器中，根据索尼公司调查（截至2023年11月），该分辨率为世界最高。



■ AHS-052VIR Specification

Model	AHS-052VIR-GE	
Image sensor	Effective pixel : 2560H (Spatial)×1680V (Spectral) Pixel size : 3.45μm×3.45μm InGaAs sensor, 1-stage electronic cooling	
Interface	10Gigabit Ethernet (10GBASE-T)	
Sensitivity wavelength	450nm~1700nm	
Number of detection bands	1680bands	
Wavelength resolution	4.66nm ※Theoretical value	
Imaging method	Push-broom method (line scan method)	
Frame rate	8bit 145.99FPS(max) 10bit 104.63FPS(max) 12bit 85.68FPS(max)	
Exposure time	8bit	8μsec~10msec (Adjustable range : 8μsec~9.99sec)
	10bit	8μsec~10msec (Adjustable range : 8μsec~9.99sec)
	12bit	13μsec~10msec (Adjustable range : 13μsec~9.99sec)
Pixel clock cycle	74.25MHz	
S/N	47dB	
Gain	0dB~+12dB (Configurable range : 0dB~30dB)	
Black level	Adjustable from 0 LSB to 127 LSB(in 10 bit mode)	
Main functions	Status LED, internal cooling mechanism, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), ROI, field upgrade function, wavelength selection, binning	
Image output	8 / 10 / 12bit	
Lens mount	C-mount 2/3 inch	
Peltier set temperature	-30℃~+60℃ set to 15℃ at shipment (However, it should be used within the operating temperature range)	
Operating temp / humidity	+0℃~+45℃ 20~80% (non-condensing)	
Storage temp / humidity	-15℃~+65℃ 20~80% (non-condensing)	
Power	Input voltage range : DC +12V to +24V ±1V Power consumption : 13W (typ) ※When using external power DC +24V	
Dimensions	92(W)×92(H)×241(D)mm(Excluding mount and protruding parts)	
Weight	2.0kg (typ.)	
Compliance	RoHS2	
Standard	GigE Vision®, GenICam™, GenICam™ GenTL	
Camera update tool	SightCam	
Cable (video output)	LAN cable compatible with CAT6A and CAT7 (optional)	
SDK	For imaging / communication : SDK-AcapLib2 (Model : AZP-ACAP-02) Hysight : Viewer for hyperspectral cameras	

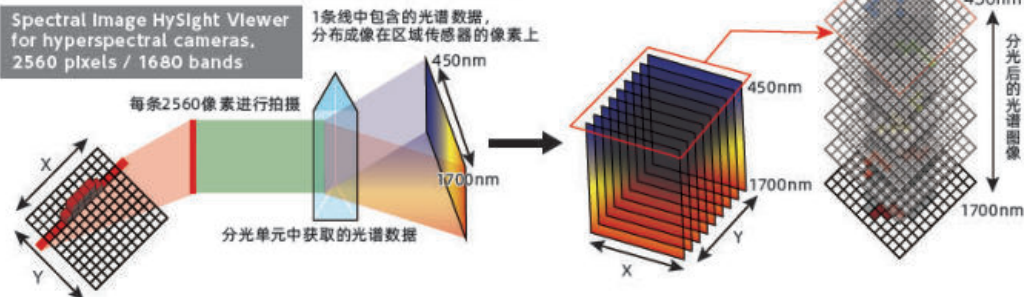
External dimensions



Viewer for hyperspectral cameras



Spectral Image HySight Viewer for hyperspectral cameras, 2560 pixels / 1680 bands



采用索尼公司图像传感器的高光谱相机

高光谱成像相机

AHS-003VIR

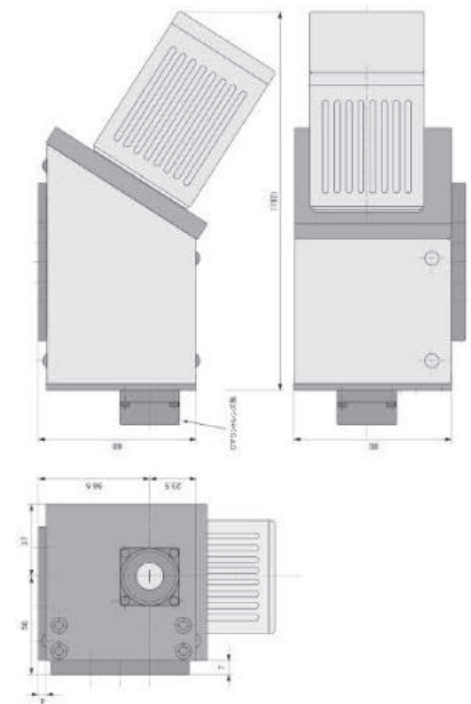
高光谱相机是一种能够同时获取XY坐标的二维空间数据和波长轴数据（光谱信息）的相机。AHS-003VIR通过640像素的线阵，对450nm~1700nm的波段进行光谱分离，并以512个波段的光谱信息进行采集。



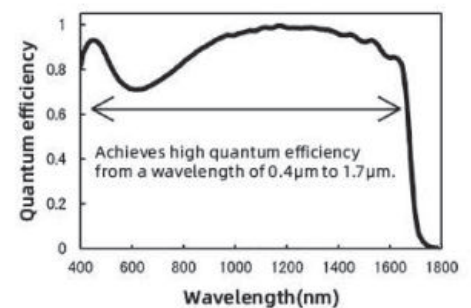
AHS-003VIR Specification

Model	AHS-003VIR-CL	AHS-003VIR-GE
Image sensor	Effective pixel : 640 (Spatial)×512 (Spectral) Pixel size : 5um×5um InGaAs : Cooled InGaAs Sensor	
Sensitivity wavelength	450nm~1700nm	
Spectral resolution	18.8nm	
Interface	Camera Link (SDR)	Gigabit Ethernet(1000BASE-T)
Operating method	Push broom type(line scan)	
Lens mount	C-mount 1/4 inch	
Line rate	Max Line rate 220.00FPS ※Full band @GiGE / 8bit 240.61FPS ※Full band @Camera Link / 8bit 2767.00FPS ※8bands @Camera Link / 8bit	
Exposure time	6μsec~10msec (Setting range : 6μsec to 9.99sec)	
Gain	X1 to x4 (approximately 0dB to +12dB)	
Black level	0LSB~127LSB Reversible (10bit)	
Main function	Status LED, External trigger, Correction function (DSNU, PRNU, Defect pixel, Shading), field upgrade, band option	
PRNU	Brightness correction for pixel-level non-uniformity	
DSNU	Darkness correction for pixel-level non-uniformity	
Pixel defect correction	Black pixel, White pixel correction, mask function	
Shading correction	Flat shading correction ON-OFF	
Interface	GigE Vision / Camera Link	
Synchronous mode	Internal / External synchronous mode	
Image output	8 / 10 / 12bit	
Power	Input voltage : DC+12V~+24±1V Power consumption : DC +12V , 7W(typ)	
Operating temp/humidity	0℃~45℃ / 20~80% (Non-Condensing)	
Storage temp/humidity	-15℃~+65℃ / 20~80% (Non-Condensing)	
Dimension (DxWxH)	87mm×120mm×192mm (Connector part not included)	
Weight	1250g (typ.)	
Compliance	RoHS2	
Standard	Hyper terminal or standard software	GiGE Vision®, GenICam™, GenICam™ GenTL
Camera update tool Cable(video output)	Camera Link SDR Cable	LAN cable compatible with CAT5E and CAT6
SDK	For imaging / communication : SDK-AcapLib2 (Model name : AZP-ACAP-02) HySight : Viewer for hyperspectral cameras	

External dimensions



Quantum efficiency



Hyperspectral Camera

支持非破坏性成像的光谱分析

QVGA高光谱成像相机

AHS-001MIR

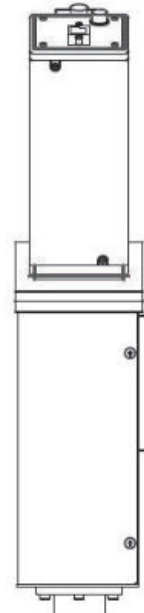
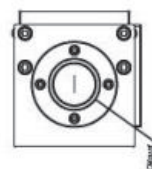
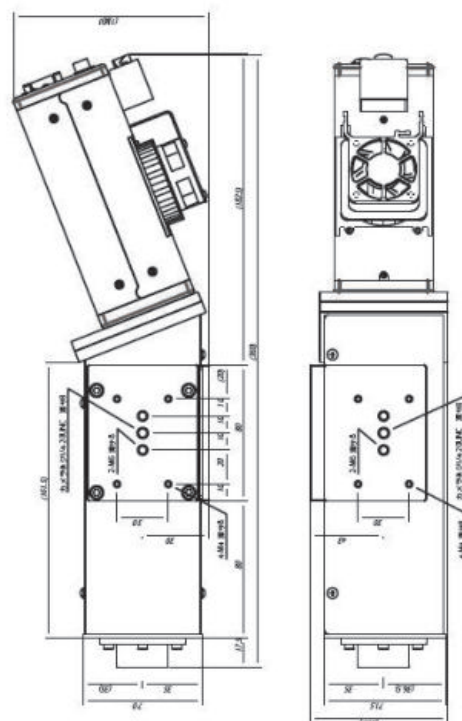
这是一款可同时获取XY坐标的二维空间信息与波长轴数据（光谱信息）的相机。AHS-001MIR 通过320像素的线阵，对1300nm~2150nm的波段进行光谱分离，并以256个波段获取完整的光谱信息。



AHS-001MIR Specification

Model	AHS-001MIR-CL	AHS-001MIR-GE
Image sensor	Effective pixel : 320H (Spatial)×256V (Spectral) Pixel size : 20μm×20μm InGaAs sensor, 2-stage electronic cooling	
Sensitivity wavelength	1300nm~2150nm	
Spectral resolution	9.84nm *Theoretical value	
Interface	Camera Link(SDR)	Gigabit Ethernet (1000BASE-T)
Spectral dispersion	196.1nm / mm	
Operating method	Push-broom method (line scan method)	
Lens mount	C-mount 1/2 inch	
Frame rate	507 fps (max) / with an exposure time of 1 μsec	
Exposure time	1us~1ms	
Gain	×1~×4 (about 0dB ~ +12dB)	
Black level	0LSB~127LSB Reversible (10bit)	
Main function	Status LED, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), field upgrade function	
PRNU	Brightness correction for pixel-level non-uniformity	
DSNU	Darkness correction for pixel-level non-uniformity	
Shading correction	Internal / external synchronization	
Image output	8 / 10 / 12 / 14 bit	
Power	Input voltage : DC12V ±1V / Cooling unit DC12V ±1V Power consumption : 18W (typ) / Cooling unit 29.6W (typ)	
Peltier setting temperature	Operating temperature range: -30° C to +60° C, with default setting at 0° C at the time of shipment (to be used within the operating temperature range).	
Operating temp / humidity	+5°C~+30°C / 20~80% (non-condensing)	
Storage temp / humidity	-5°C~+60°C / 20~80% (non-condensing)	
Dimension (DxWxH)	80.5mm×115mm×360mm (Excluding mount and protruding parts)	
Weight	2100g	
Compliance	RoHS2	
Standard	Hyper terminal or standard software	GigE Vision®, GenICam™, GenICam™ GenTL
Camera update tool	SightCam	
SDK	For imaging / communication : SDK-AcapLib2 (Model name : AZP-ACAP-02) HySight : Viewer for hyperspectral cameras	

External dimensions



支持非破坏性成像的光谱分析

高光谱成像相机

AHS-U20MIR

这是一款可同时获取XY坐标的二维空间信息与波长轴数据（光谱信息）的相机。AHS-U20MIR 通过192像素的线阵，对1300nm~2150nm波段进行光谱分离，并以96个波段获取光谱信息。

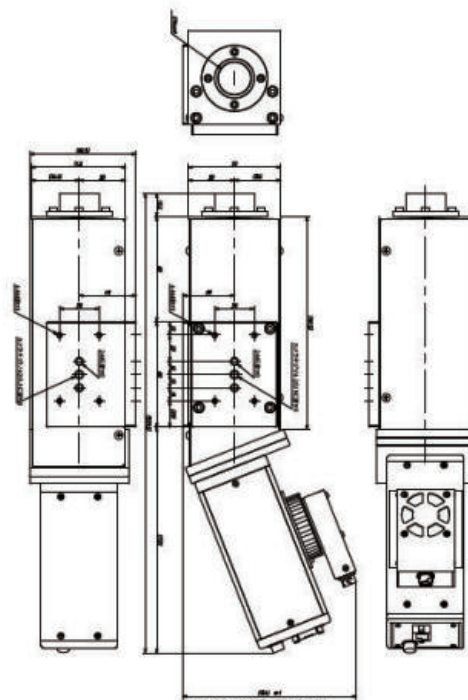


GiGE VISION GENICAM

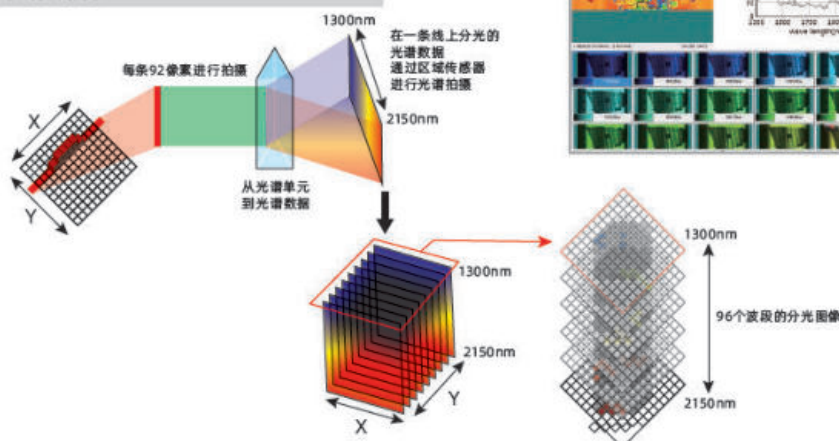
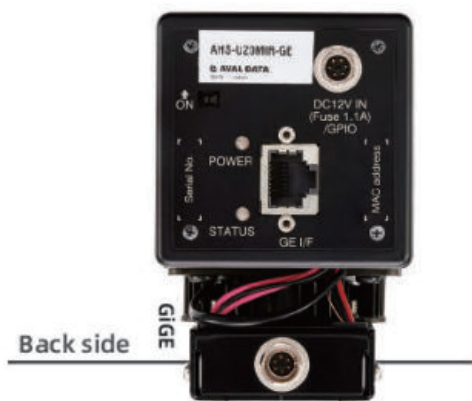
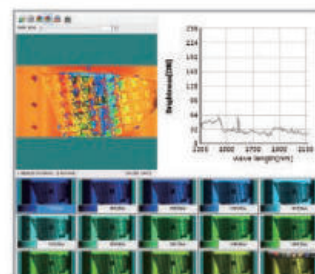
AHS-U20MIR Specification

Model	AHS-U20MIR
Image sensor	Effective pixel : 192H (Spatial)×96V (Spectral) Pixel size : 50μm×50μm InGaAs sensor, 2-stage electronic cooling
Sensitivity wavelength	1300nm~2150nm
Spectral resolution	9.8nm
Interface	Gigabit Ethernet (1000BASE-T)
Spectral dispersion	196.1nm / mm
Operating method	Push-broom method (line scan method)
Lens mount	C-mount 1 inch
Frame rate	867 FPS (MAX) / with an exposure time of 1 μs
Exposure time	1us~1ms
Gain	×1 to ×4 (approximately 0dB to +12dB)
Black level	Variable from LSB to 127 LSB (at 10bit)
Main function	Status LED, external trigger, various corrections (DSNU, PRNU, pixel defects, shading), field upgrade function
PRNU	Brightness correction for pixel-level non-uniformity
DSNU	Darkness correction for pixel-level non-uniformity
Shading correction	Internal / external synchronization
Image output	8 / 10 / 12 / 14 bit
Power	Input voltage : DC12V ±1V / Cooling unit DC12V ±1V Power consumption : 9W (typ) / Cooling unit 30W (typ)
Operating temp / humidity	10°C~+30°C / 20~80% (non-condensing)
Storage temp / humidity	-10°C~+60°C / 20~80% (non-condensing)
Dimension (DxWxH)	80.5mm×134mm×329.5mm (Excluding mount and protruding parts)
Weight	2500g
Compliance	RoHS
Standard	GiGE Vision®, GenICam™, GenICam™ GenTL
Camera update tool	SightCam
SDK	For imaging / communication : SDK-AcapLib2 (Model name : AZP-ACAP-02) HySight : Viewer for hyperspectral cameras

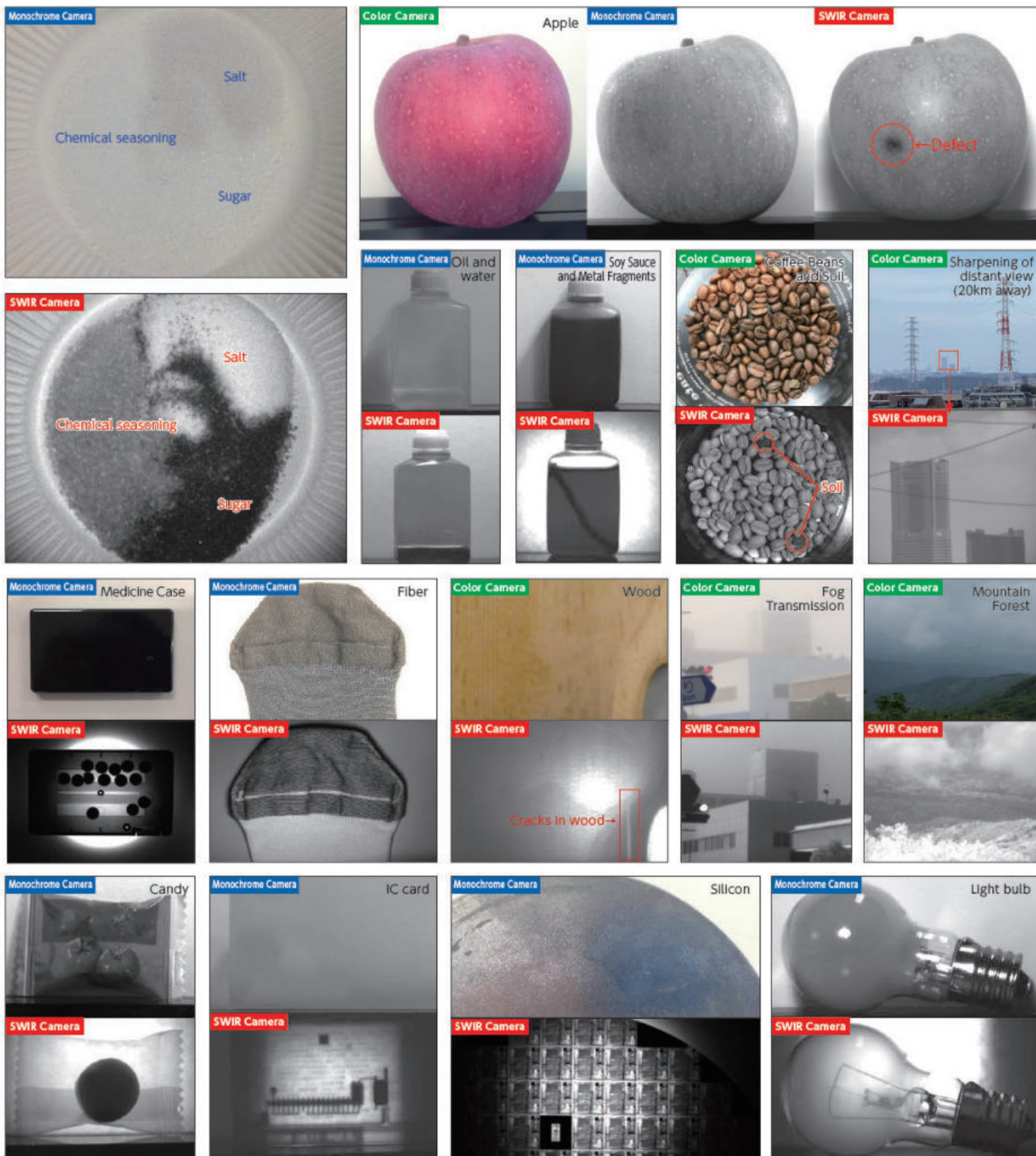
External dimensions



Spectral image : 192 pixels - 96 bands



Imaging sample using a near-infrared camera (Camera used: ABA-003IR)



AVAL GLOBAL Co.,Ltd

C-607, 338 Gwanggyojungang-ro, Suji-gu, Yongin-si, Gyeonggi-do, South Korea 16942

TEL +82-70-7019-1420 E-MAIL sales@aval-global.com URL www.aval-global.com

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