

RasaAndishan Moj Pardaz

رسا اندیشان موج پرداز (دانش بنیان)



طراح و سازنده انواع آشکارسازهای خطی و دوربین های تصویربرداری

- Robust & Reliable Hardware & Software Architecture
- Multi Interface Connectivity (USB2.0,USB3.0,Ethernet)
- Cross Platform - Linux & windows Application Support
- Plugin Based API and Sophisticated FlowGraph Structure
- VariousSDK(C#,C++,MATLAB,VB.Net,Python,LabVIEW)Included

شرکت دانش بنیان رسا اندیشان موج پرداز، فعالیت رسمی خود را از سال ۱۳۹۱ با مشارکت و هم اندیشی تنی چند از فارغ التحصیلان دانشگاه های معتبر کشور در رشته های الکترونیک، الکترواپتیک، مکانیک و کامپیوتر آغاز نمود و با تلاش شبانه روزی و دانش فنی کارشناسان نخبه خود، موفق به طراحی و ساخت اولین دوربین اسکن خطی در سال ۱۳۹۲ گردید. پس از آن روز به روز به کیفیت و تعداد دوربین های رسا اندیشان افزوده شده است و به گفته برخی از مشتریان هم اینک دوربین های رسا اندیشان قابل مقایسه با نمونه های مشابه خارجی شده است.

از جمله کاربردهای دوربین های خطی می توان به تجهیزات عکس پايانی (PhotoFinish)، حس گرهای خورشیدی (Sun Sensor)، بارکد خوان ها، اسکنرها، تجهیزات دسته بندی (Sorting)، طیف سنج (Spectrometer)، دستگاه های سنجش ضخامت، فاصله، زاویه، رنگ و لرزش اشاره کرد. در سال ۱۳۹۵ طراحی و ساخت دوربین های دوبعدی در دستور کار شرکت قرار گرفت و تاکنون چندین دوربین ناحیه ای به لیست محصولات شرکت افزوده شده است. سرعت سنجی ذرات (PIV)، برهم نگاری دیجیتال تصویر (DIC)، کنترل ترافیک، تشخیص چهره و بینایی ماشین از جمله کاربردهای دوربین های ناحیه ای می باشد. **با مراجعه به وبسایت رسا اندیشان همواره از جدیدترین محصولات ساخت شرکت مطلع خواهید شد.** تاکنون موفق به کسب اعتماد تعداد زیادی از دانشگاه ها، شرکت های خصوصی و فعالان عرصه صنعت، در استفاده از محصولات رسا اندیشان شده ایم. **این اعتماد تنها، تنها و تنها سرمایه ماست** که در حفظ و پاسداری از آن تمام تلاش خود را انجام خواهیم داد.



Overview

The RA-ALSTS-5000 is a pipe Automatic Laser Seam Tracking System developed by RasaAndishan that specially developed for the pain points of the spiral and straight pipe industry based on Machine Vision.

It can meet the needs of the current spiral and straight pipe production automation transformation and can solve various spiral pipe welding of different specifications and different pipe diameters. The appearance of the weld bead is continuous, without sharp turns, and the internal and external welds have a high degree of alignment.

It can avoid the problem of welding deviation and save the cost of repair welding. It can reduce the labor intensity of staff, improve the level of production automation, and reduce labor costs.

Realize the automation transformation of the existing automatic special machine equipment, replace labor, increase consistency and stability, reduce labor intensity, reduce labor costs, and improve product quality.



Overview

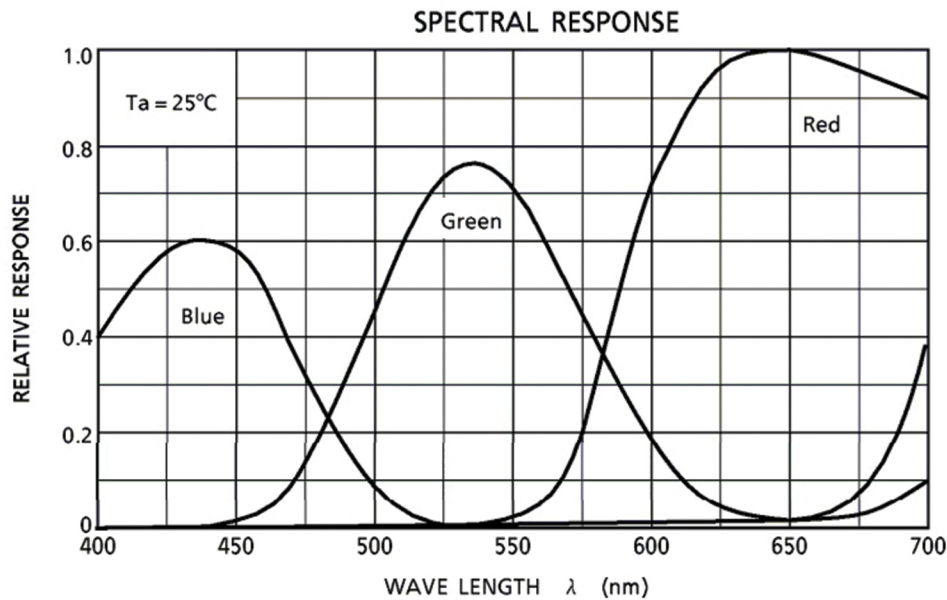
PhotoFinish is a USB3.0 Line Scan Camera that incorporates a CCD array Very convenient Adjustment of the Finish line, Easy Mirror Adjustment, use of LuxBoost technology to improve the Image Quality in different Light Conditions, Focusing and Shutter Control of all Canon lenses through the Camera are some of the Special Features of this Native System.

GUI Features

Operates up to 4 PhotoFinish Systems Simultaneously without loss of any data.
Cross Platform Software with Auto-Detection of Compatible PhotoFinish Systems.
Smoothing, FPN Correction, PRNU Correction, Shading Correction, Background Subtract.
Best Responsiveness by Separate Threads of Data Acquisition, Processing and Monitoring.
Zooming, Panning, Cursor Definition, Normal And Advanced Scanner.

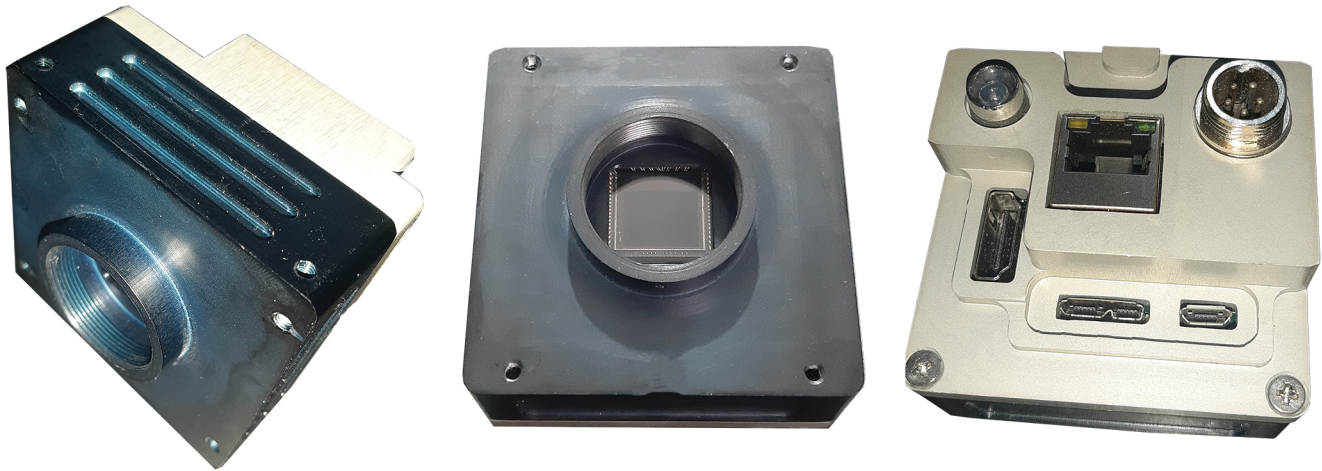
Application

The Photofinish System is designed for Sports Competitions such as Car racing, Horse Riding, Cycling and Running.



Specification

PhotoFinish System	
Sensor Type	Color Linear CCD Array
Spectral Response	350-1100 nm
CCD Pixel Size	10.5 μm x 10.5 μm
Pixel Height	10.5 μm
Pixel Width	10.5 μm
Effective Pixels	2700 x 3
Effective Length	2700 x 10.5 μm = 28.35 mm
Max Pixel Frequency	16.66 MHz
Max Line Rate	2990 Hz @ Free Running Mode
Min Exposure Time	334 μs
Max Exposure Time	65 ms
Exposure Resolution	1 μs
Pixel Color Depth	24 bit - 16 Million Colors
Brightness Coefficient	-/+ 300 mV - 512 Analog Steps
Contrast Coefficient	64V/V - 64 Analog Steps
Advanced Spec	
Positioning Resolution	0.003 Degree
Positioning Accuracy	0.03 Degree
Pan Rotation Technology	Stepper Motor plus Driver
Tilt Rotation Technology	GearBox DC Motor plus Driver
LuxBoost Technology	Hardware and Software Sophisticated Algorithm
Finish Line Adjustment	Easy Innovation Electromechanical Method
Mirror Adjustment	Fast Scanning Electromechanical Method
Lens Support	All Electrical Canon Lens with Focusing and Shutter Control
General Spec	
Interface Power	High Speed USB 3.0 (3.2 Gbit/s) 220Vac Plug - 0.5A
Weight PCB Dimension	8.7 Kgr 40 cm x 30 cm x 25 cm
Temperature Range	0 to + 60 ($^{\circ}\text{C}$)



RA-ASC-5000I



Overview

RA-ASC-5000I is a USB3.0 Bus Powered Area Scan Camera that incorporates a 2592 x 2048 Pixels CMOS array with Pixel Size of 4.8 μm by 4.8 μm .

It is capable of detecting light in the 400 - 1100 nm range.

The Frame rate of This Color Area scan camera is up to 60 Hz.

This camera Supports External Triggering at rate of up to 60 Hz.

GUI Features

Operates up to 2 Cameras Simultaneously without loss of data.

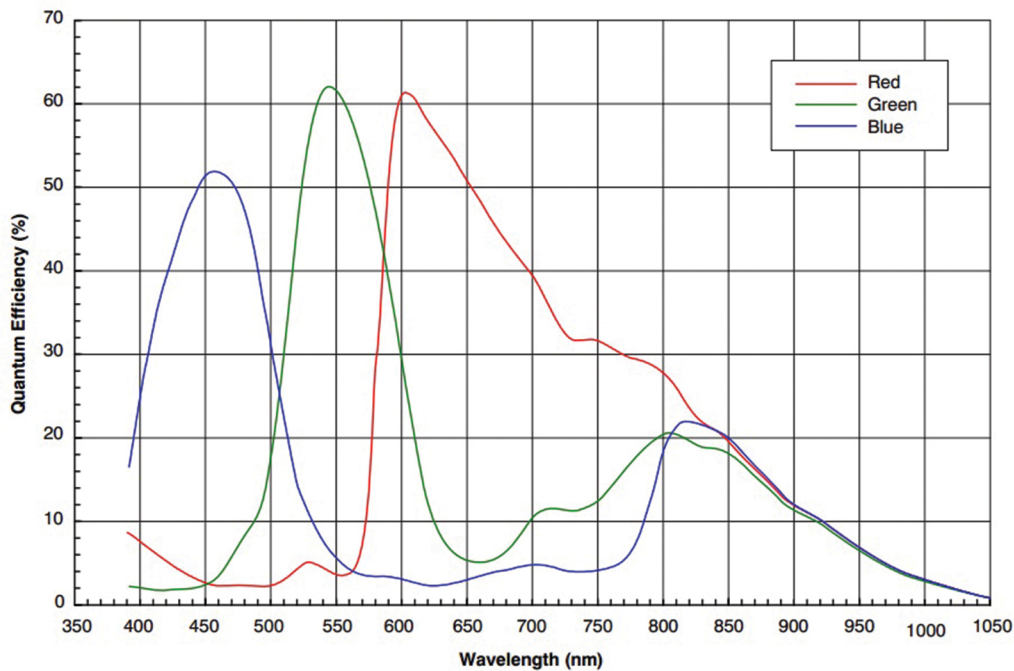
Cross Platform Software with Auto-Detection of Compatible Cameras.

Recording @ Predefined Counts, Time, Cache Size and Capture Size.

Best Responsiveness by Separate Threads of Data Acquisition, Processing and Monitoring.

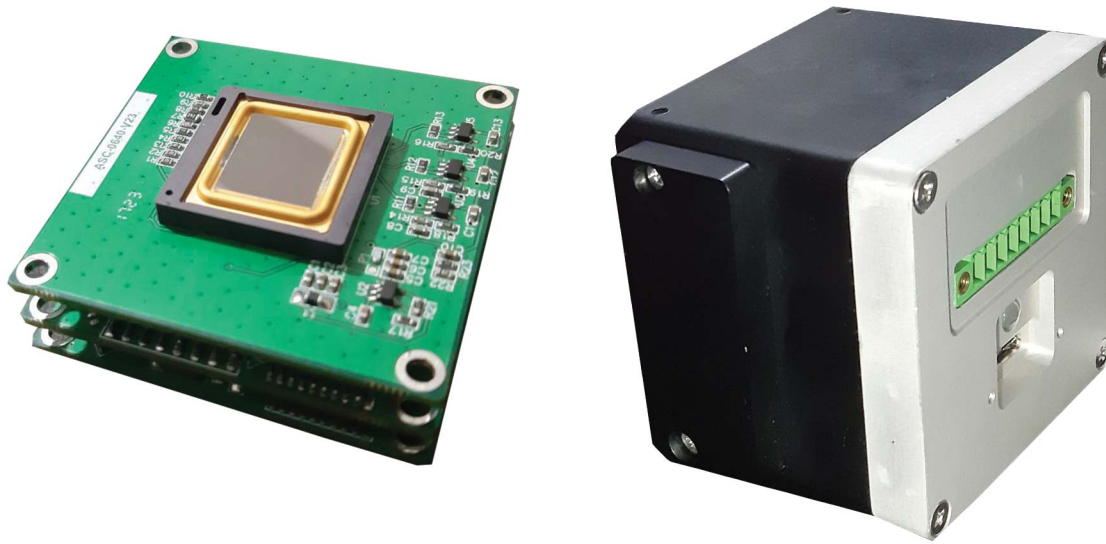
Application

RA-ASC-5000I is Designed for Applications in Optics, Imaging, Biology, Industrial Process Control, Particle Image Velocimetry(PIV) and General Laboratory Use.



Specification

RA-ASC-5000I	
Sensor Type	Color CMOS Area Image Sensor
Light Spectrum	Visible
Pixel Size	4.8 um x 4.8 um
Pixel Height	4.8 um
Pixel Width	4.8 um
Effective Pixels	2592 x 2048
Image Resolution	5 MP
Image Size (HxV)	12.44 x 9.8 (mm)
Max Pixel Frequency	320 MHz
Max Frame Rate	up to 60 fps @ 5 MP
Shutter Type	PipeLine Global Shutter
Exposure Control	✓
AOI Support	✓
Frame Rate @ AOI	470 fps @ 640x480 Pixels 1200 fps @ 96 pixels x 96 pixels
Max Trigger Rate	up to 60 fps @ 5 MP
Color Depth	8 Bit per Pixel
Brightness Coefficient	512 Analog Steps
Contrast Coefficient	1024 Analog Steps
Trigger Signal	TTL 5 V and 3.3 V
Trigger Mode	Free Running, Software Trigger, Hardware Trigger
Hardware Trig Polarity	Rising Edge, Falling Edge, Both Edges, High Level, Low Level
Trigger Factor	0 To 65535
Max Power Usage	4 Watt No External Power Requirements
Min Trigger Pulse Length	30 ns
Trigger Delay	0 to 16 Min - in 1 us Steps
Interface	Super Speed USB 3.0 (3.22 Gbit/s)
Weight Dimension	190 gr (Without Lens) 60 mm x 60 mm x 40 mm
Temperature Range	- 30 to + 70 (°C)



RA-ASC-0640I



Overview

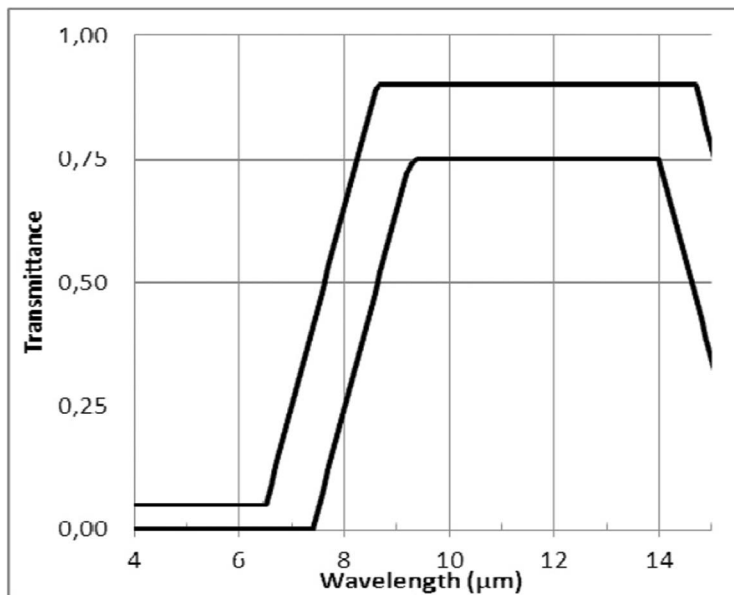
RA-ASC-0640I is a USB3.0 Bus Powered Thermal Camera that incorporates a 640 x 480 Pixels Micro-Bolometer Technology with 17 μm Pixel Pitch. It is capable of detecting light in the 8 - 14 μm LWIR range. The Frame rate of This cost effective Thermal camera is up to 40 Hz. This camera Supports External Triggering at rate of up to 40 Hz.

GUI Features

- Operates up to 6 Cameras Simultaneously without loss of any data
- Cross Platform Software with Auto-Detection of Compatible Cameras
- Recording @ Predefined Counts, Time, Cache Size and Capture Size
- Best Responsiveness by Separate Threads of Data Acquisition, Processing and Monitoring

Application

RA-ASC-0640I is Designed for UAVs, UGVs, Robotics, Handheld Thermal Imaging, Temperature Measurement, Surveillance, Security and Military Applications.



Spectral response of the sensors

Specification

RA-ASC-0640I	
Sensor Type	Thermal Image Sensor
Light Spectrum	LWIR (8-14 um)
Pixel Size	17 um x 17 um
Pixel Height	17 um
Pixel Width	17 um
Effective Pixels	640 x 480
Image Resolution	300 KP
Image Size (HxV)	10.88 x 8.2 (mm)
Max Pixel Frequency	16 MHz
Max Frame Rate	up to 40 fps @ 300 KP
Shutter Type	Global Shutter
Exposure Control	✓
AOI Support	✓
Frame Rate @ AOI	80 fps @ 320x240 Pixels
Max Trigger Rate	up to 40 fps @ 300 KP
Color Depth	8 Bit per Pixel
Brightness Coefficient	512 Analog Steps
Contrast Coefficient	1024 Analog Steps
Trigger Signal	TTL 5 V and 3.3 V
Trigger Mode	Free Running, Software Trigger, Hardware Trigger
Hardware Trig Polarity	Rising Edge, Falling Edge, Both Edges, High Level, Low Level
Trigger Factor	0 To 65535
Max Power Usage	2.5 Watt No External Power Requirements
Min Trigger Pulse Length	30 ns
Trigger Delay	0 to 16 Min - in 1 us Steps
Interface	Super Speed USB 3.0 (113 Mbit/s)
Weight Dimension	190 gr (Without Lens) 63 mm x 63 mm x 53 mm
Temperature Range	- 20 to + 60 (°C)

RasaAndishan Cameras Comparison Table

MODEL	RA-LSC-1402I	RA-LSC-1103I	RA-LSC-1209I	RA-LSC-0511I
Resolution (HxV)	256 x 1	1500 x 1	2048 x 1	2048 x 1
Color mode	B & W	B & W	B & W	B & W
Pixel size	8 x 63.5 (μm)	5.5 x 64 (μm)	14 x 14 (μm)	14 x 200 (μm)
Pixel Distance	8 μm	5.5 μm	14 μm	14 μm
Line Width Space	63.5 μm	64 μm	14 μm	200 μm
Active Length	16.248mm	8.25 mm	28.672 mm	28.672 mm
Max Pixel Frequency	7.5 MHz	2 MHz	16.6 MHz	2 MHz
Max Line Frequency	27625 Hz	641 Hz	7945 Hz	950 Hz
Max Trig Frequency	13812 Hz	320 Hz	3973 Hz	475 Hz
CCD Dynamic Range	4000	200	2000	267
Electronic Shutter	X	✓	X	X
Exposure Control	✓	✓	✓	✓
Exposure Min	36 μs	10 μs	125 μs	1056 μs
Exposure Max	14.5 Min	14 Min	8.5 Min	35.5 Min
ADC Resolution	16 Bit	16 Bit	16 Bit	16 Bit
Contrast Adjust	✓	✓	✓	✓
Brightness Adjust	✓	✓	✓	✓
Adaptor Mount	M42	M42	M42 / EF	M42
Interface	USB2	USB2	USB2 / USB3	USB2
Temperature Range	0 to +70 (°C)	-25 to +60 (°C)	-25 to +65 (°C)	-10 to +60 (°C)

RasaAndishan Cameras Comparison Table

MODEL	RA-LSC-0551I	RA-LSC-0751I	RA-LSC-1205I	RA-LSC-3753I
Resolution (HxV)	2048 x 1	2048 x 1	2048 x 1	2088 x 1
Color mode	B & W	B & W	B & W	B & W
Pixel size	14 x 14 (μm)	14 x 14 (μm)	14 x 200 (μm)	14 x 14 (μm)
Pixel Distance	14 μm	14 μm	14 μm	14 μm
Line Width Space	14 μm	14 μm	200 μm	14 μm
Active Length	28.672 mm	28.672 mm	28.672 mm	29.232 mm
Max Pixel Frequency	4 MHz	5 MHz	2 MHz	2 MHz
Max Line Frequency	2376 Hz	2376 Hz	950 Hz	940 Hz
Max Trig Frequency	1188 Hz	1188 Hz	475 Hz	470 Hz
CCD Dynamic Range	6000	6000	400	375
Electronic Shutter	X	✓	✓	X
Exposure Control	✓	✓	✓	✓
Exposure Min	525 μs	1 μs	3 μs	1064 μs
Exposure Max	17.5 Min	14 Min	35.5 Min	35.5 Min
ADC Resolution	16 Bit	16 Bit	16 Bit	16 Bit
Contrast Adjust	✓	✓	✓	✓
Brightness Adjust	✓	✓	✓	✓
Adaptor Mount	M42 / EF	M42 / EF	M42	M42
Interface	USB2 / USB3	USB2 / USB3	USB2	USB2
Temperature Range	-10 to +55 (°C)	-10 to +55 (°C)	-25 to +60 (°C)	-25 to +65 (°C)

RasaAndishan Cameras Comparison Table

MODEL	RA-LSC-2113I	RA-LSC-1254I	RA-LSC-2253I	RA-LSC-0526I
Resolution (HxV)	2098 x 3	2500 x 1	2700 x 3	3000 x 1
Color mode	RGB	B & W	RGB	B & W
Pixel size	14 x 14 (μm)	5.25 x 64 (μm)	10.5 x 10.5 (μm)	7 x 200 (μm)
Pixel Distance	14 μm	5.25 μm	10.5 μm	7 μm
Line Width Space	14 μm 112 μm	64 μm	10.5 μm 42 μm	200 μm
Active Length	29.372 mm	13.125 mm	28.35 mm	21 mm
Max Pixel Frequency	5 MHz	2 MHz	16.6 MHz	1 MHz
Max Line Frequency	2326 Hz	385 Hz	2989 Hz	325 Hz
Max Trig Frequency	1163 Hz	192 Hz	1494 Hz	162 Hz
CCD Dynamic Range	6300	400	300	320
Electronic Shutter	✓	✓	X	✓
Exposure Control	✓	✓	✓	✓
Exposure Min	1 μs	10 μs	334 μs	1 μs
Exposure Max	14 Min	35.5 Min	14 Min	35.5 Min
ADC Resolution	8 Bit	16 Bit	8 Bit	16 Bit
Contrast Adjust	✓	✓	✓	✓
Brightness Adjust	✓	✓	✓	✓
Adaptor Mount	M42	M42	M42 / EF	M42
Interface	USB2	USB2	USB2 / USB3	USB2
Temperature Range	-10 to +60 (°C)	-25 to +60 (°C)	0 to +60 (°C)	-10 to +60 (°C)

RasaAndishan Cameras Comparison Table

MODEL	RA-LSC-1304I	RA-LSC-0553I	RA-LSC-0718I	RA-LSC-1707I
Resolution (HxV)	3648 x 1	5150 x 1	5363 x 3	3725 x 2
Color mode	B & W	B & W	RGB	B & W
Pixel size	8 x 200 (μm)	7 x 7 (μm)	8 x 8 (μm)	4.7 x 4.7 (μm)
Pixel Distance	8 μm	7 μm	8 μm	4.7 μm
Line Width Space	200 μm	7 μm	8 μm 64 μm	4.7 μm
Active Length	29.184 mm	36.05 mm	42.904 mm	35.015 mm
Max Pixel Frequency	1 MHz	5 MHz	5.5 MHz	7.5 MHz
Max Line Frequency	270 Hz	951 Hz	1020 Hz	1968 Hz
Max Trig Frequency	135 Hz	475 Hz	510 Hz	984 Hz
CCD Dynamic Range	300	6666	10670	1800
Electronic Shutter	✓	X	✓	X
Exposure Control	✓	✓	✓	✓
Exposure Min	1 μs	1051 μs	2 μs	508 μs
Exposure Max	71 Min	14.5 Min	14 Min	35.5 Min
ADC Resolution	16 Bit	16 Bit	16 Bit	16 Bit
Contrast Adjust	✓	✓	✓	✓
Brightness Adjust	✓	✓	✓	✓
Adaptor Mount	M42	M42	M42 / EF	M42 / EF
Interface	USB2	USB2	USB2 / USB3	USB2 / USB3
Temperature Range	-25 to +65 (°C)	-10 to +55 (°C)	-10 to +60 (°C)	0 to +60 (°C)

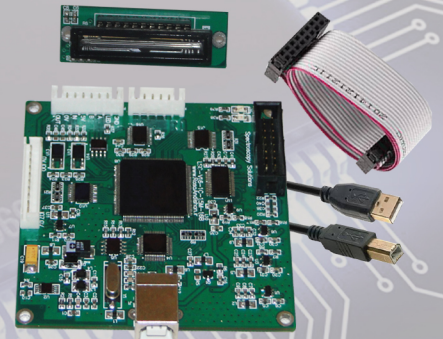
RasaAndishan Cameras Comparison Table

MODEL	RA-LSC-0532I	RA-LSC-2717I	RA-LSC-2950I	RA-LSC-2950P
Resolution (HxV)	3750 x 2	7500 x 3	10680 x 3	21360 x 1
Color mode	B & W	RGB B & W	RGB	B & W
Pixel size	7 x 7 (µm)	4.7 x 4.7 (µm)	2.8 x 4 (µm)	2.8 x 4 (µm)
Pixel Distance	7 µm	4.7 µm	4 µm	4 µm
Line Width Space	7 µm	4.7 µm 9.4 µm	2.8 µm 64 µm	2.8 µm
Active Length	52.5 mm	35.250 mm	42.720 mm	42.720 mm
Max Pixel Frequency	4 MHz	16.6 MHz	16.6 MHz	16.6 MHz
Max Line Frequency	1050 Hz	2170 Hz	760 Hz	760 Hz
Max Trig Frequency	525 Hz	1085 Hz	380 Hz	380 Hz
CCD Dynamic Range	8333	2000	7000	7000
Electronic Shutter	X	X	X	X
Exposure Control	✓	✓	✓	✓
Exposure Min	952 µs	460 µs	1315 µs	1315 µs
Exposure Max	17.5 Min	14.5 Min	14.5 Min	14.5 Min
ADC Resolution	16 Bit	16 Bit	16 Bit	16 Bit
Contrast Adjust	✓	✓	✓	✓
Brightness Adjust	✓	✓	✓	✓
Adaptor Mount	M42	M42 / EF	M42 / EF	M42 / EF
Interface	USB2	USB2 / USB3	USB2 / USB3	USB2 / USB3
Temperature Range	-25 to +65 (°C)	0 to +60 (°C)	0 to +60 (°C)	0 to +60 (°C)

RasaAndishan Cameras Comparison Table

MODEL	RA-ASC-0134I	RA-ASC-0234I	RA-ASC-9031I	RA-ASC-5000I
Sensor Type	CMOS	CMOS	CMOS	CMOS
Resolution (HxV)	1280 x 960	1920 x 1280	2592 x 1944	2592 x 2048
Resolution	1.2MP	2.3 MP	5 MP	5 MP
Color mode	BW/Color	BW/Color	BW/Color	BW/Color
Pixel size (HxV)	3.75 x 3.75 (µm)	3 x 3 (µm)	2.2 x 2.2 (µm)	4.8 x 4.8 (µm)
Sensor Size (HxV)	4.8 x 3.6 (mm)	5.76 x 3.6 (mm)	5.7 x 4.28 (mm)	12.44 x 9.8 (mm)
Max Pixel Frequency	90 MHz	150 MHz	95 MHz	320 MHz
Shutter Type	Global Shutter	Global Shutter	Rolling Shutter	Global Shutter
Interface	USB3.0	USB3.0	USB3.0	USB3.0
Frame Rate @ ResM	72 Hz	50 Hz	20 Hz	60 Hz
Light Spectrum	Visible	Visible	Visible	Visible
Exposure Control	✓	✓	✓	✓
AOI Support	✓	✓	✓	✓
Frame Rate @ AOI	up to 457 Hz	up to 488 Hz	up to 1000 Hz	up to 1200 Hz
ADC Resolution	8 Bit	8 Bit	8 Bit	8 Bit
Contrast Adjust	✓	✓	✓	✓
Brightness Adjust	✓	✓	✓	✓
Adaptor Mount	C / CS-Mount	C / CS-Mount	C / CS-Mount	C / CS-Mount
External Power	X	X	X	X
Temperature Range	-30 to +70 (°C)	-40 to +85 (°C)	-30 to +70 (C)	-30 to +70 (°C)

رسا اندیشان موج پرداز (دانش بنیان)



حکیمیه، میدان فجر، خیابان خرم، خیابان سحر، کوچه پگاه ۶، پلاک ۱۱، واحد ۷

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