Longwave Infrared Thermal Imaging Camera Products Catalog

Features

- Real Time Analysis
- Saving One Shot Image
- Several ROI Alarms
- Color Alarm(Isotherm)
- Recording Video Clip(avi)
- Hot/Cold Spot Tracker
- Temperature Data for All Pixels
- Various Color Palettes
- Scheduler

CX300 · CX600

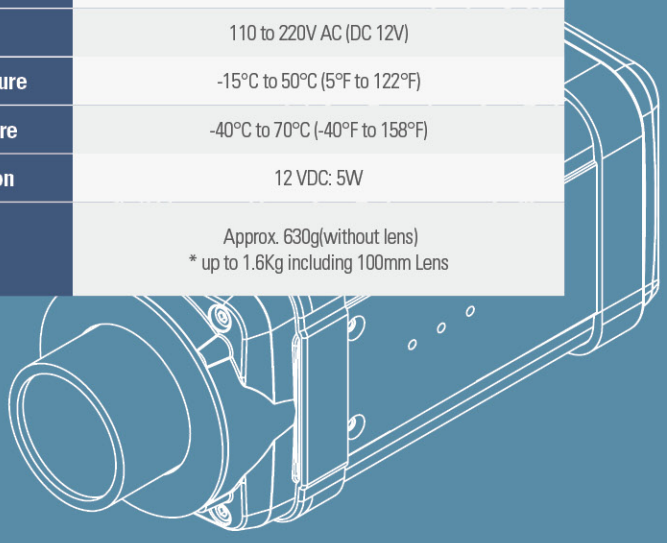
CX320 · CX640

E instruments group
www.eigroup.biz

Specifications for Radiometric(Thermography)

CX320		CX640
384 x 288	Resolution	640 x 480
110,592 All Pixels	Effective Resolution Measurement Spot	307,200 All Pixels
LWIR, Uncooled A-Si Microbolometer <80mK @ f/1, 60Hz, 300K	Detector Type Thermal Sensitivity(NETD)	LWIR, Uncooled A-Si Microbolometer <75mK(Optional 55mK) @ f/1, 50Hz, 300K
8 to 14 µm	Spectral Range	8 to 14 µm
99.9%	Operability	99.9%
-20°C(-4°F) to 120°C(248°F), up to 650°C(1,202°F)	Measurement Range	-20°C(-4°F) to 120°C(248°F), up to 650°C(1,202°F)
25 µm	Pixel Pitch	17 µm
2 x & 4 x Digital Zoom	Zoom	2 x & 4 x Digital Zoom
Manual, Motorized (Optional)	Focus	Manual, Motorized (Optional)
NTSC : 60Hz, PAL : 50Hz	Frame Rate	50Hz
10/100 base, TCP, DHCP COX proprietary RAW streaming (Radiometric Data)	Ethernet	10/100 base, TCP, DHCP COX proprietary RAW streaming (Radiometric Data)
2 ROI Alarms trigger via Camera Controller, 30 ROI Alarms trigger via Thermal Imaging Analyzer	Alarm	2 ROI Alarms trigger via Camera Controller, 30 ROI Alarms trigger via Thermal Imaging Analyzer
13 Color Palettes/Image Filter/Spot/Area/Isotherm/ Storage Image(jpg) and Recording Video Clip(avi)/ All pixels temperature data/SDK for programmer	Function	13 Color Palettes/Image Filter/Spot/Area/Isotherm/ Storage Image(jpg) and Recording Video Clip(avi)/ All pixels temperature data/SDK for programmer
AGC, BDE, NUC(1Min/5Min/10Min/30Min/1Hour/Off), On-Screen Menu	Image Setting	AGC, BDE, NUC(1Min/5Min/10Min/30Min/1Hour/Off), On-Screen Menu
NTSC/PAL Compatible RS485 Communication (PELCO-D Protocol), Standard BNC connector	System	NTSC/PAL Compatible RS485 Communication(PELCO-D Protocol), Standard BNC connector
< 20 Seconds	Start-up	< 20 Seconds
Outdoor Housing equipped with Germanium window (Encapsulation : IP 66), High Temp. Detection Mode up to 650°C(1,202°F), Motorized lens, Optical Zoom lens	Optional	Outdoor Housing equipped with Germanium window (Encapsulation : IP 66), High Temp. Detection Mode up to 650°C (1,202°F), Motorized lens, Optical Zoom lens
183x 77.6 x 67.6 mm	Dimensions(L.W.H)	183 x 77.6 x 67.6 mm
110 to 220V AC (DC 12V)	Input Voltage	110 to 220V AC (DC 12V)
-15°C to 50°C (5°F to 122°F)	Operating Temperature	-15°C to 50°C (5°F to 122°F)
-40°C to 70°C (-40°F to 158°F)	Storage Temperature	-40°C to 70°C (-40°F to 158°F)
12 VDC: 5W	Power Consumption	12 VDC: 5W
Approx. 630g (without lens) * up to 1.6Kg including 100mm Lens	Weight	Approx. 630g(without lens) * up to 1.6Kg including 100mm Lens

* Specifications and design are subject to change without notice.



CX series

Nomenclature

Radiometric(Thermography)	No Radiometric (Surveillance)

Standard lens : 20mm Manual Focus lens

CX 320
- Radiometric Version
- Resolution
- Model Type
- CX : Fixed
- 384 × 288 or 320 × 240
- ※20mm Manual Focus lens

CX 300M
- 20mm Motorized Focus lens
- No Radiometric Version
- Model Type
- CX : Fixed
- Resolution
- 384 × 288

CX 320-50
- lens type : 50mm Manual Focus lens
- Radiometric Version
- Model Type
- CX : Fixed
- Resolution
- 384 × 288 or 320 × 240

CX 300-12M
- 12mm Motorized Focus lens
- No Radiometric Version
- Model Type
- CX : Fixed
- Resolution
- 384 × 288

CX 640-75M
- 75mm Motorized Focus lens
- Radiometric Version
- Model Type
- CX : Fixed
- Resolution
- 640 × 480

CX 600-100
- 100mm Manual Focus lens
- No Radiometric Version
- Model Type
- CX : Fixed
- Resolution
- 640 × 480

※ X OO : No Radiometric Version

Camera Field Of View (FOV)

camera

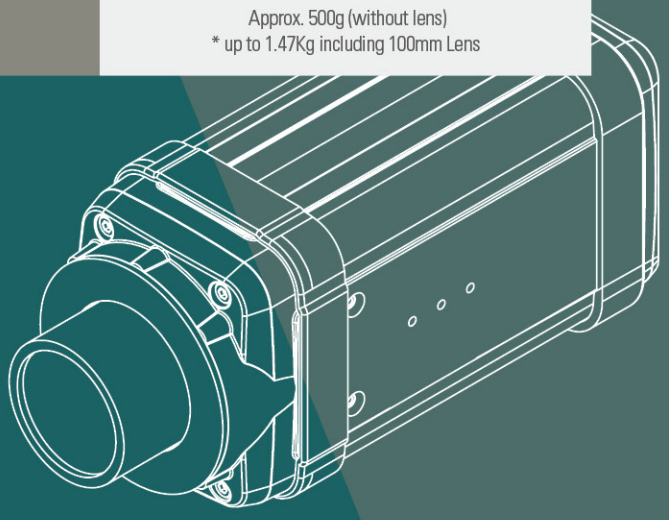
Distance

camera	Lens		50m	100m	200m	300m	400m	500m	1000m
			Target size(m)						
320 * 240 camera	8mm	Row	46.37	92.73	185.46	278.19	370.92	463.65	927.30
		Column	35.88	71.75	143.51	215.26	287.02	358.77	717.54
	12mm	Row	32.18	64.35	128.70	193.05	257.40	321.75	643.50
		Column	24.50	49.00	98.00	147.00	195.98	244.98	489.96
	20mm	Row	19.74	39.48	78.96	118.44	157.92	197.40	394.79
		Column	14.89	29.78	59.56	89.33	119.11	148.89	297.78
	35mm	Row	11.38	22.76	45.52	68.28	91.03	113.79	227.58
		Column	8.55	17.10	34.20	51.30	68.40	85.50	171.01
	50mm	Row	7.98	15.97	31.93	47.90	63.86	79.83	159.66
		Column	5.99	11.99	23.97	35.96	47.94	59.93	119.86
	75mm	Row	5.33	10.66	21.31	31.97	42.63	53.28	106.57
		Column	4.00	8.00	15.99	23.99	31.98	39.98	79.96
	100mm	Row	4.00	8.00	15.99	23.99	31.98	39.98	79.96
		Column	3.00	6.00	12.00	17.99	23.99	29.99	59.98
384 * 288 camera	8mm	Row	54.04	108.08	216.17	324.25	432.34	540.42	1080.84
		Column	42.29	84.57	169.14	253.71	338.28	422.85	845.71
	12mm	Row	38.05	76.10	152.20	228.30	304.41	380.51	761.01
		Column	29.15	58.29	116.58	174.87	233.17	291.46	582.91
	20mm	Row	23.55	47.11	94.22	141.33	188.44	235.54	471.09
		Column	17.81	35.62	71.24	106.86	142.47	235.54	356.19
	35mm	Row	13.63	27.26	54.52	81.78	109.03	178.09	272.59
		Column	10.25	20.50	41.00	61.50	82.00	136.29	205.00
	50mm	Row	9.57	19.14	38.28	57.42	76.57	95.71	191.41
		Column	7.19	14.38	28.75	43.13	57.50	71.88	143.75
	75mm	Row	6.39	12.78	25.57	38.35	51.13	63.91	127.83
		Column	4.80	9.59	19.19	28.75	38.37	47.96	95.93
	100mm	Row	4.80	9.59	19.19	28.78	38.37	47.96	95.93
		Column	3.60	7.20	14.39	21.59	28.79	35.98	71.97
640 * 480 camera	8mm	Row	59.72	119.44	238.87	358.31	477.74	597.18	1194.35
		Column	47.16	94.32	188.65	282.97	377.29	471.62	943.23
	12mm	Row	42.56	85.12	170.25	255.37	340.50	425.62	851.24
		Column	32.77	65.55	131.10	196.64	262.19	327.74	655.48
	20mm	Row	26.56	53.12	106.23	159.35	212.46	265.58	531.15
		Column	20.12	40.25	80.50	120.74	160.99	201.24	402.48
	35mm	Row	15.42	30.84	61.68	92.52	123.36	154.19	308.39
		Column	11.60	23.21	46.42	69.63	92.84	116.05	232.10
	50mm	Row	10.84	21.67	43.35	65.02	86.70	108.37	216.75
		Column	8.14	16.28	32.57	48.85	65.14	81.42	162.84
	75mm	Row	7.24	14.48	28.96	43.44	57.93	72.41	144.81
		Column	5.43	10.87	21.74	32.61	43.48	54.35	108.69
	100mm	Row	5.43	10.87	21.74	32.61	43.48	54.35	108.69
		Column	4.08	8.16	16.31	17.99	32.62	40.78	81.55

Specifications for No Radiometric(Surveillance)

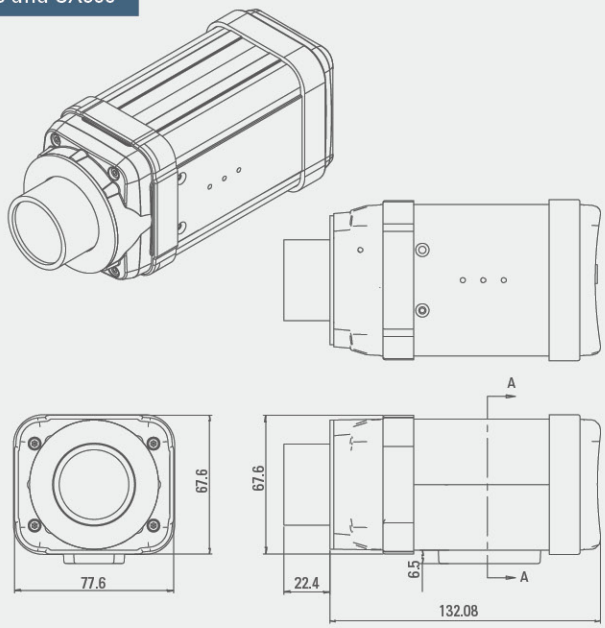
CX300		CX600
384 x 288	Resolution	640 x 480
110,592	Effective Resolution	307,200
LWIR, Uncooled A-Si Microbolometer <80mK @ f/1, 60Hz, 300K	Detector Type Thermal Sensitivity(NETD)	LWIR, Uncooled A-Si Microbolometer <75mK(Optional 55mK) @ f/1, 50Hz, 300K
8 to 14 µm	Spectral Range	8 to 14 µm
99.9%	Operability	99.9%
-20°c to 300°c	Scence Temperature Range	-20°c to 300°c
25 µm	Pixel Pitch	17 µm
2 x & 4 x Digital Zoom	Zoom	2 x & 4 x Digital Zoom
Manual, Motorized (Optional)	Focus	Manual, Motorized (Optional)
60Hz	Frame Rate	50Hz
10 colors palettes (Gray/Iron/Rain_v1,2,3/Half_gray/Yellow /MidGrey/Fire/BlueRed)	Color Variation	10 colors palettes (Gray/Iron/Rain_v1,2,3/Half_gray/Yellow /MidGrey/Fire/BlueRed)
Brightness(-10 to 10), Contrast(-10 to 10), Invert, Mirror, Flip on/off Hot/Cold Indicator, Center Indicator on/off	Function	Brightness(-10 to 10), Contrast(-10 to 10), Invert, Mirror, Flip on/off Hot/Cold Indicator, Center Indicator on/off
Off/Sharpen1/Sharpen2/NR1/NR2	Image Filter	Off/Sharpen1/Sharpen2/NR1/NR2
NTSC/PAL Compatible NUC(1Min/5Min/10Min/30Min/1Hour/Off) RS485 Communication (PELCO-D Protocol) HDMI Supported	System	NTSC/PAL Compatible NUC(1Min/5Min/10Min/30Min/1Hour/Off) RS485 Communication(PELCO-D Protocol) HDMI Supported
< 2 Seconds	Start-up	< 2 Seconds
Outdoor Housing equipped Germanium window (Encapsulation : IP 66), Motorized lenses, Optical Zoom lens	Optional	Outdoor Housing equipped Germanium window (Encapsulation : IP 66), Motorized lenses, Optical Zoom lens
132.08 x 77.6 x 67.6 mm	Dimensions(L.W.H)	132.08 x 77.6 x 67.6 mm
110 to 220V AC (DC 12V)	Input Voltage	110 to 220V AC (DC 12V)
-15°C to 50°C (5°F to 122°F)	Operating Temperature	-15°C to 50°C (5°F to 122°F)
-40°C to 70°C (-40°F to 158°F)	Storage Temperature	-40°C to 70°C (-40°F to 158°F)
12 VDC : 5W	Power Consumption	12 VDC : 5W
Approx. 500g (without lens) * up to 1.47Kg including 100mm Lens	Weight	Approx. 500g (without lens) * up to 1.47Kg including 100mm Lens

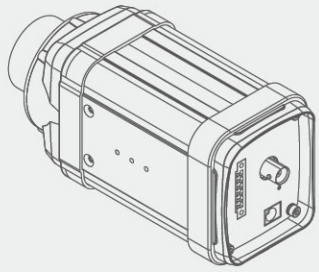
* Specifications and design are subject to change without notice.

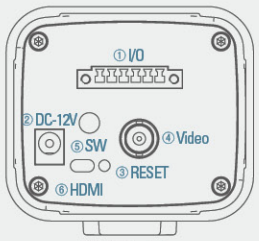


Mechanical Drawing

CX300 and CX600







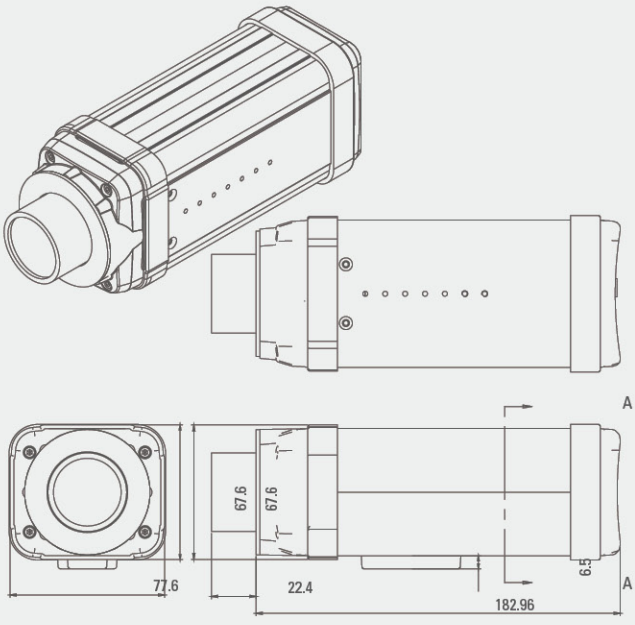
SECTION A-A

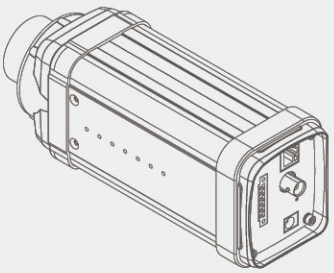
① Digital I/O ports

1	2
RS485	
RS485+	RS485-

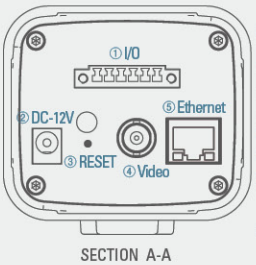
② Power cable for 12 VDC power in
③ Hardware reset button
④ Video cable with BNC connector for CVBS (composite video banking sync) output
⑤ Switch On Screen Menu
⑥ HDMI Port

CX320 and CX640





SECTION A-A



SECTION A-A

① Digital I/O ports

1	2	3	4	5	6
RS485		Alarm 1		Alarm 2	
RS485+	RS485-	SW1 NO	SW1 COM	SW2 NO	SW2 COM

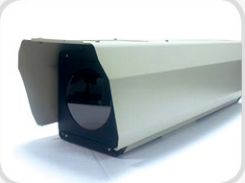
② Power cable for 12 VDC power in
③ Hardware reset button
④ Video cable with BNC connector for CVBS (composite video banking sync) output
⑤ Network cable with RJ45 connector for Ethernet connectivity

Module

Handy Cam

With 100mm lens

20mm lens Housing



100mm lens Housing

Lens Specifications

320 x 240 Resolution for NTSC mode

Focal Length(HxVxD)	Focusing Range	F / #
8mm (53.1°x41.1°x64°)	∞ ~ 30mm	0.8
12mm (36.9°x28.1°x45.2°)	∞ ~ 0.25m	1
20mm (22.6°x17.1°x28.1°)	∞ ~ 0.3m	1
27mm (16.9°x12.7x21.0°)	∞ ~ 0.4m	1
35mm (13.0°x9.8°x16.3°)	∞ ~ 0.5m	1
50mm (9.1°x6.9°x11.4°)	∞ ~ 2.5m	1
75mm (6.1°x4.6°x7.6°)	∞ ~ 5m	1
100mm (4.6°x3.4°x5.7°)	∞ ~ 5m	1

384 x 288 Resolution for PAL mode

Focal Length(HxVxD)	Focusing Range	F / #
8mm (61.9°x48.5°x73.7°)	∞ ~ 30mm	0.8
12mm (43.6°x33.4°x53.1°)	∞ ~ 0.25m	1
20mm (27°x20.4°x33.4°)	∞ ~ 0.3m	1
27mm (20.2°x15.2°x25.1°)	∞ ~ 0.4m	1
35mm (15.6°x11.7°x19.5°)	∞ ~ 0.5m	1
50mm (11°x8.2°x13.7°)	∞ ~ 2.5m	1
75mm (7.3°x5.5°x9.1°)	∞ ~ 5m	1
100mm (5.5°x4.1°x6.9°)	∞ ~ 5m	1

640 x 480 Resolution

Focal Length(HxVxD)	Focusing Range	F / #
8mm (68.4°x54°x80.7°)	∞ ~ 30mm	0.8
12mm (48.8°X27.6°X59.1°)	∞ ~ 0.25m	1
20mm (30.4°x23.1°x37.6°)	∞ ~ 0.3m	1
27mm (22.8°x17.2°x28.3°)	∞ ~ 0.4m	1
35mm (17.7°x13.3°x22°)	∞ ~ 0.5m	1
50mm (12.4°x9.3°x15.5°)	∞ ~ 2.5m	1
75mm (8.3°x6.2°x10.4°)	∞ ~ 5m	1
100mm (6.2°x4.7°x7.8°)	∞ ~ 5m	1

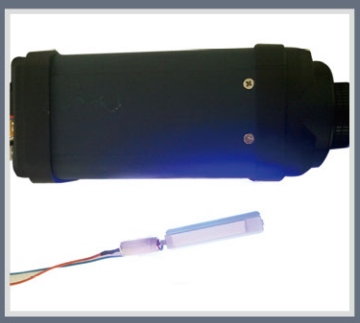
* More various lenses are available up to 250mm lens and optic zoom lens.

Pavement Inspection

Surveillance

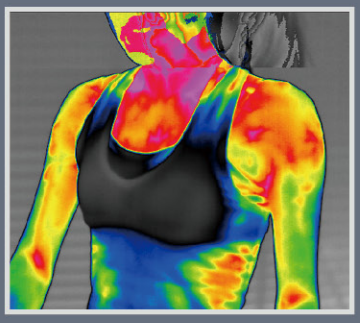
Application

Border Control

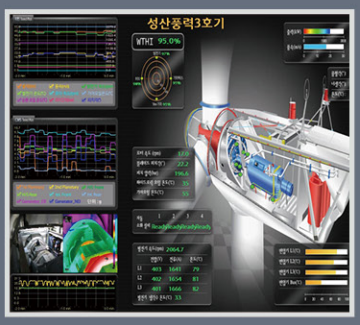


Connect with alarm equipment

Hunting



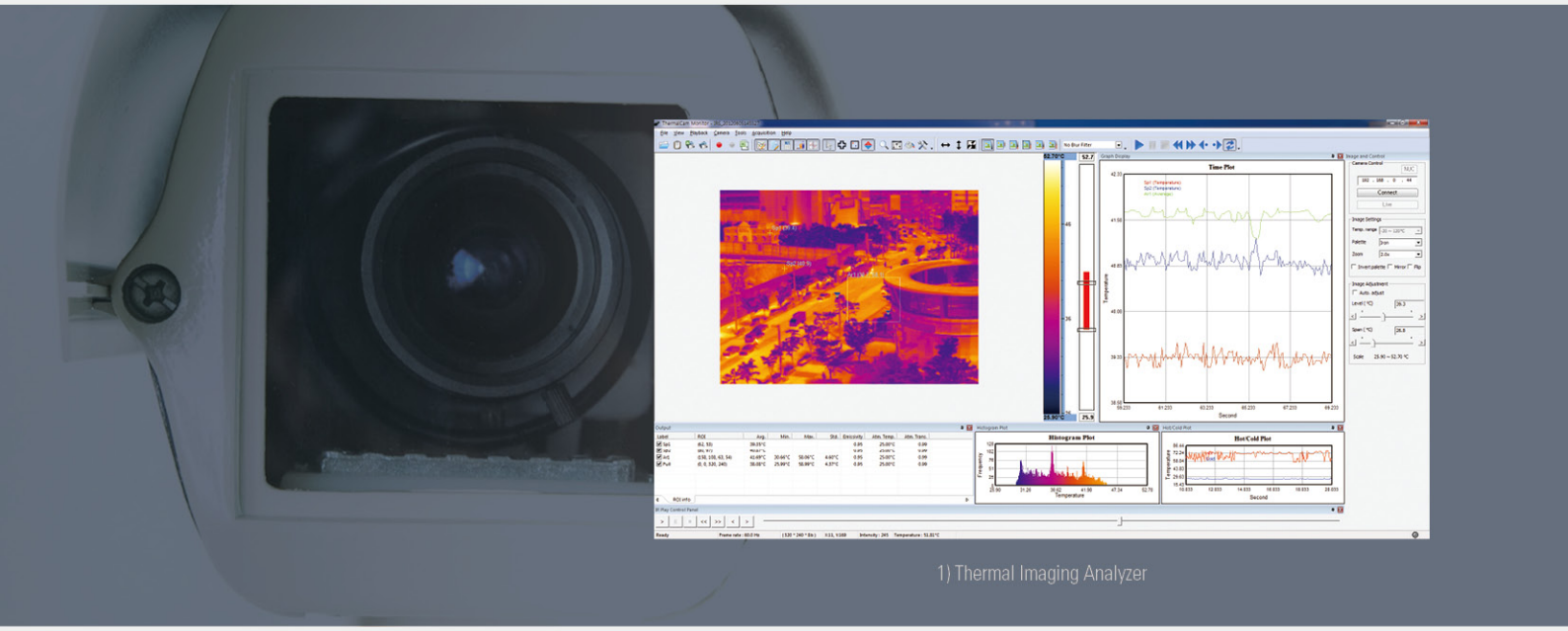
Medical Checkup



Wind Power Plant

Multiple Programming Options for

CX320, CX640



1) Thermal Imaging Analyzer

PC Software

1) Thermal Imaging Analyzer

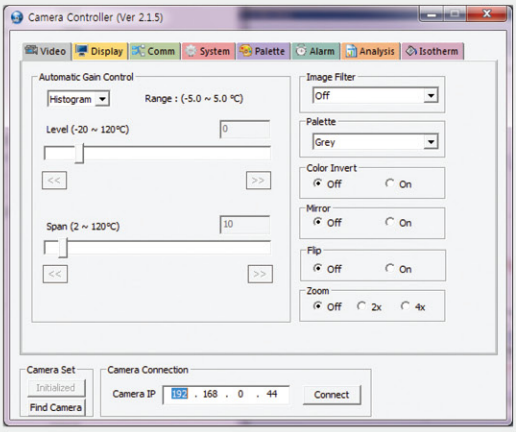
Radiometric R&D program for digital connection and streamed image viewing.

2) Camera Controller

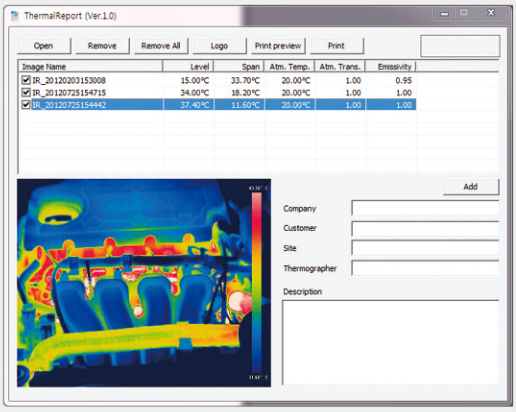
Analog interface setting program for camera connection and control /setup of internal features/ functions.

3) Thermal Report

Storage images print-out program to customize it.



2) Camera Controller



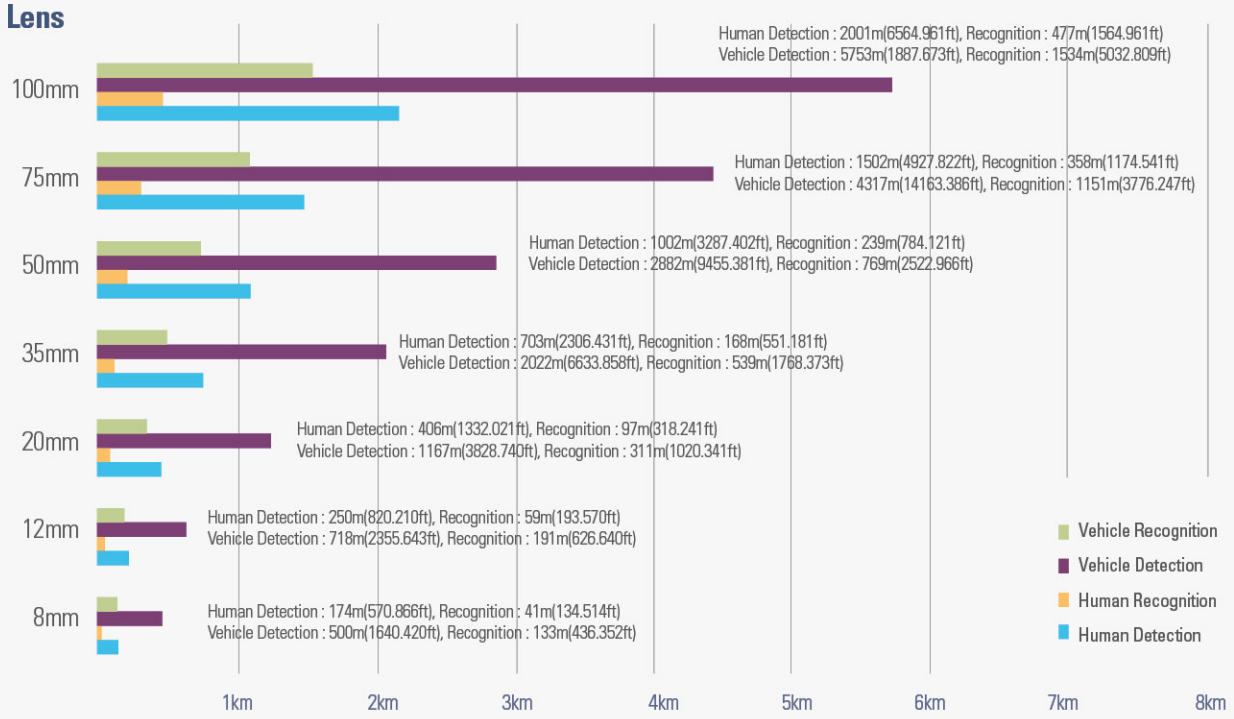
3) Thermal Report

The CX320 can be easily operated with beginner.
And Software Development Kit(SDK) allows programmers to control various measurement functions that can be used to turn the CX320 into powerful equipment tool with diverse applications.
The programs come with the CD in the delivery box or can be asked COX website for **free of charge.**

Distance Range by Lenses for
CX300 and CX320

Resolution : 384 x 288

* According to the Johnson Criteria, actual range may vary depending on camera setup, environment conditions etc.



Distance Range by Lenses for
CX600 and CX640

Resolution : 640 x 480

* According to the Johnson Criteria, actual range may vary depending on camera setup, environment conditions etc.