

Advanced Thermal Imaging Network Camera



IMT-811/813

(320x240) (640x480)



Key Features and Applications

Key Features

- **640(H)x480(V), 320(H)x240(V)**, Uncooled FPA(Focal Plane Array) thermal sensor
- TCP/IP protocol for analyze, alarm and camera control
- **10 boxes ROI(Region of Interest)** with Max./Min./Average Temperature value
- **Alarm trigger temperature and color mode adjustment for every individual ROI boxes.**
- Event schedule response through **E-Mail, FTP, Syslog, Digital Output, TCP channel**
- Correction for temp. compensation: Emissivity, Transmission, Atmosphere, Zero offset, Distance
- 100 Mbps Ethernet
- **Max. 30fps** at full resolution (H.264)
- H.264 / MJPEG / MPEG4 Multi-stream encoding
- Max 10 users access simultaneously
- General purpose Digital I/O (1 Input, 2 Output)
- Composite Video output
- **PoE (Power over Ethernet)**
- DC Motorized lens support (Option)
- Support viewer software(ImSpiderCMSLite) and IP manager program
- Easy remote firmware upgrade
- ONVIF Profile S conformant

Applications

- Border control
- Commercial Surveillance
- Perimeter security
- Firefighting
- Law enforcement
- Night vision
- Maritime, Airborne
- Research & Development
- Building Diagnostics
- Furnace & Boiler Inspection



Product Line-up

Model	IR Resolution	Frame	NTED	Accuracy	Temp. Range	Thermography
IMT-813N	640(H) x 480(V)	30fps	<50mK @f1.0 30Hz 300K	±2°C or ±2%	-20°C to + 120°C 0°C to + 600°C	Support
IMT-813S	640(H) x 480(V)	30fps	<50mK @f1.0 30Hz 300K	-	-	None
IMT-811N	320(H) x 240(V)	30fps	<40mK @f1.0 30Hz 300K	±2°C or ±2%	-20°C to + 120°C 0°C to + 600°C	Support
IMT-811S	320(H) x 240(V)	30fps	<40mK @f1.0 30Hz 300K	-	-	None



Technical Specifications

Detector/Imaging

Detector type	Uncooled FPA(Focal Plane Array) microbolometer
Spectral range	8~14μm
Detector pitch	17μm
Detector time constant	Typical <15 ms
Total pixels	640(H) X 480(V), 320(H) X 240(V)
Thermal sensitivity(NETD)	50mK for IMT-813 / 40mK for IMT-811

Operational

Camera title	Off/On (English: 20 Characters, 5 Lines)
Frame frequency	25/30Hz
Brightness	Manual adjustment (0~100)
Contrast	Manual adjustment (0~100)
Gain control	Auto / Manual adjustment (-30.0~130.0)
NUC(Non-Uniformity Correction)	OFF/Manual/Auto/Time/Auto+Time+Sensitivity(Off/Low/Mid/High)
D-zoom	Controlbar
Color palette	Grey/Iron/Rainbow/GreyRed/Glowbow/Yellow/Midgrey/BlueRed (Total : 8 color support)
Temperature mode	Normal/High
Edge enhancement	Off/Low/Mid/High
Noise reduction filter	Off/Low/Mid/High
Digital noise reduction	Off/Low/Mid/High
Dead pixel compensation	On/Off
Rotate Image	Flip : On/Off , Mirror : On/Off
Motion detection	Off/On/8 Zones(Grid)/Sensitivity/Threshold
Privacy mask	Off/On/6 Zones
Alarm triggers	Motion Detection, Digital Input, Thermal Alarm(for 811/813N)
Schedule response	E-Mail, FTP, Syslog, Digital Output, TCP channel
Video out	CVBS 1.0 Vp-p / 75 Ω
Lens	Fixed, Manual or Zoom/Focus DC Motorized(DC 5V or DC12V)

Measurement (for IMT-811/813N)

Object temperature range	-20°C ~ +120°C(-4°F to +248°F) / 0°C~+650°C(+32°F to +1,202°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading
ROI(Region of Interest)	10 boxes with max./min./average/position (Event scheduling)
Isotherm	1 with above/below/interval
Emissivity correction	Variable from 0.01 to 1.0
Transmission correction	Variable from 0.01 to 1.0
Atmosphere correction	Variable from -50.0 to 100.0
Zero offset correction	Variable from -20.0 to 20.0
Distance correction	Variable from 0.0 to 100.0

Network

Ethernet	RJ-45 (10/100BASE-T)
Video compression format	H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High Motion JPEG
Resolution	640x480(for IMT-813), 320x240(for IMT-811)
Max. framerate	(H.264) Max 30fps at all resolutions, (MJPEG) Max 15fps@640x480
Video quality adjustment	H.264 : Compression quality, Target bitrate, Frame Interval control MJPEG : Compression quality, Frame Interval control MPEG4 : Compression quality, Target bitrate, Frame Interval control
Bitrate control method	CBR, VBR(192K ~ 45Mbps) MJPEG: VBR(Bitrate Range: 128K~1M)
Streaming capability	Multiple Streaming (Up to 3 Profiles) / ROI for each profiles
IP Network	IPv4
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, ICMP, IGMP, ARP, DNS, DDNS, SMTP, TELNET, SNTP
Security	IP Address Filtering, User access Log, HTTPS(SSL) Authentication, Basic Authentication
Streaming method	Unicast / Multicast
Max. user access	Max. 10 users access(TBD)
Application programming interface	OnVif Profile S, Genetec, PSIA v1.1, HTTP API(proprietary)
Webpage language	English, Korean
Web viewer	Supported OS : Windows XP / VISTA / 7 / 8 / 8.1 /10 Supported Browser : Microsoft Internet Explorer (Ver. 8 ~ 11)

Digital I/O

Sensor input	1 opto-isolated
Alarm output	2 opto-isolated

Electrical

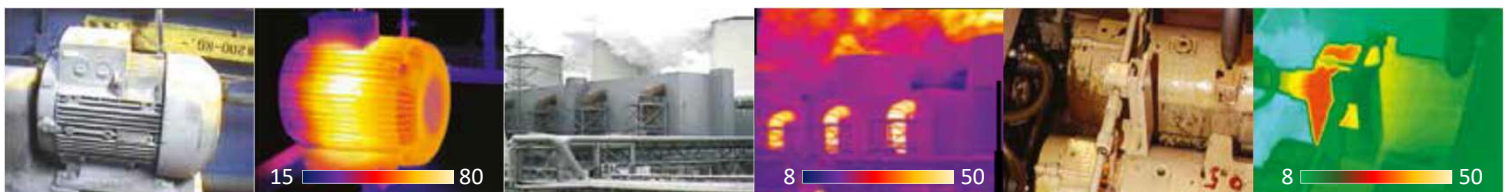
Input voltage / Current	12~24V±10% DC, PoE(IEEE802.3af class3)
Power consumption	Max. 8W

Environmental

Operating temperature / humidity	-20°C ~ +50°C / Less than 80% RH
Storage temperature / humidity	-45°C ~ +70°C(-49°F ~ +158°F) / Less than 80% RH
EMC	CE/FCC/KC

Mechanical / Physical data

Dimension	105(L) x 60(W) x 52(H) (excl. lens)
Tripod mounting	UNC ¼"-20
Housing material	Aluminum
Weight	Approx. 700g (Without Lens)



Technical Specifications

Optical Specifications (for IMT-813/640x480)

Focal Length	4.8mm	8mm	12mm	20mm	35mm
Spatial resolution(IFOV)	3.54 mrad	2.12 mrad	1.41 mrad	0.84 mrad	0.48 mrad
Minimum Focus Distance	∞~0.50 m (1.64 ft.)	∞~0.50 m (1.64 ft.)	∞~0.25 m (0.82 ft.)	∞~0.30 m (0.98 ft.)	∞~0.50 m (1.64 ft.)
F-number	F1.0	F0.8	F1.0	F1.0	F1.0
Filed of View(FOV) (HxVxD)	97.1°x80.7°x109.6°	68.4°x54.0°x80.7°	48.8°x37.6°x59.1°	30.4.0°x23.1°x38.18°	17.7°x13.3°x22.0°
Focus	Fixed	Fixed	Fixed	Fixed	Fixed

Focal Length	50mm	75mm	100mm	110m	120mm
Spatial resolution(IFOV)	0.34 mrad	0.22 mrad	0.17 mrad	0.15 mrad	0.14 mrad
Minimum Focus Distance	∞~1.50 m (4.92 ft.)	∞~5.0 m (16.40 ft.)	∞~5.0 m (16.40 ft.)	∞~10.0 m (30.81 ft.)	∞~10.0 m (30.81 ft.)
F-number	F1.0	F1.0	F1.0	F1.0	F1.0
Filed of View(FOV) (HxVxD)	12.4°x9.3°x15.5°	8.3°x6.2°x10.4°	6.2°x4.7°x7.8°	5.7°x4.2°x7.1°	5.2°x3.9°x6.5°
Focus	Fixed	Fixed	Fixed	Fixed	Fixed

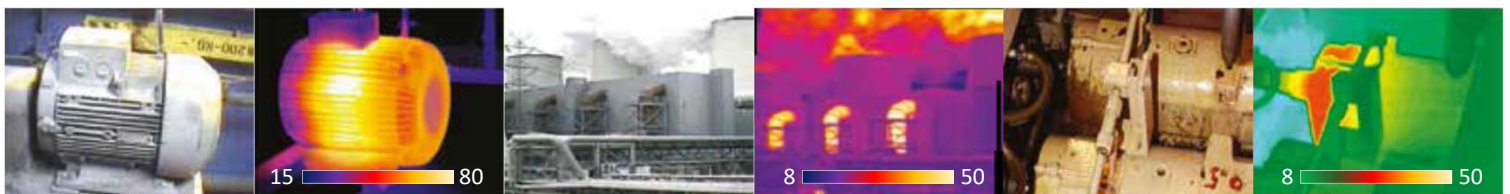
Focal Length	130mm	150mm	200mm	210m	250mm
Spatial resolution(IFOV)	0.13 mrad	0.11 mrad	0.085 mrad	0.08 mrad	0.068 mrad
Minimum Focus Distance	∞~10.0 m (30.8 ft.)	∞~15.0 m (49.21 ft.)	∞~20.0 m (65.62 ft.)	∞~30.0 m (98.42 ft.)	∞~30.0 m (98.42 ft.)
F-number	F1.2	F1.2	F1.4	F1.4	F1.5
Filed of View(FOV) (HxVxD)	4.8°x3.6°x6.0°	4.2°x3.1°x5.2°	3.1°x2.3°x3.9°	2.9°x2.2°x3.7°	2.5°x1.9°x3.1°
Focus	Fixed	Fixed	Fixed	Fixed	Fixed

Optical Specifications (for IMT-811/320x240)

Focal Length	4.8mm	8mm	12mm	20mm	35mm
Spatial resolution(IFOV)	3.54 mrad	2.12 mrad	1.41 mrad	0.84 mrad	0.48 mrad
Minimum Focus Distance	∞~0.50 m (1.64 ft.)	∞~0.50 m (1.64 ft.)	∞~0.25 m (0.82 ft.)	∞~0.30 m (0.98 ft.)	∞~0.50 m (1.64 ft.)
F-number	F1.0	F1.0	F1.0	F1.0	F1.0
Filed of View(FOV) (HxVxD)	59.1°x46.1°x70.6°	37.6°x28.6°x46.1°	25.5°x19.3°x31.6°	15.5°x11.6°x19.3°	8.89°x6.67°x11.1°
Focus	Fixed	Fixed	Fixed	Fixed	Fixed

Focal Length	50mm	75mm	100mm	110m	120mm
Spatial resolution(IFOV)	0.34 mrad	0.22 mrad	0.17 mrad	0.15 mrad	0.14 mrad
Minimum Focus Distance	∞~1.50 m (4.92 ft.)	∞~5.0 m (16.40 ft.)	∞~5.0 m (16.40 ft.)	∞~10.0 m (30.81 ft.)	∞~10.0 m (30.81 ft.)
F-number	F1.0	F1.0	F1.0	F1.0	F1.0
Filed of View(FOV) (HxVxD)	6.23°x4.67°x7.78°	4.15°x3.12°x5.19°	3.12°x2.34°x3.89°	2.83°x2.12°x3.54°	2.60°x1.95°x3.25°
Focus	Fixed	Fixed	Fixed	Fixed	Fixed

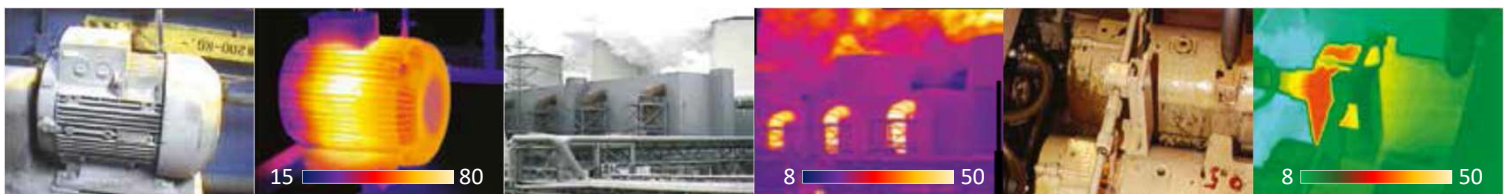
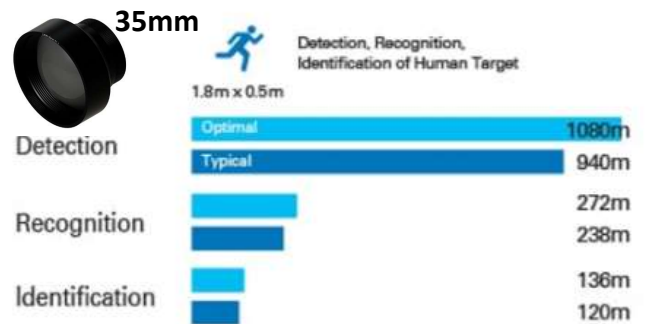
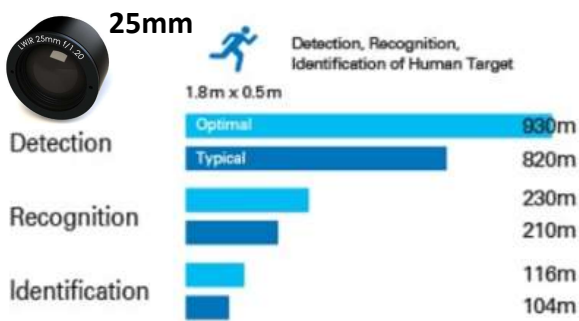
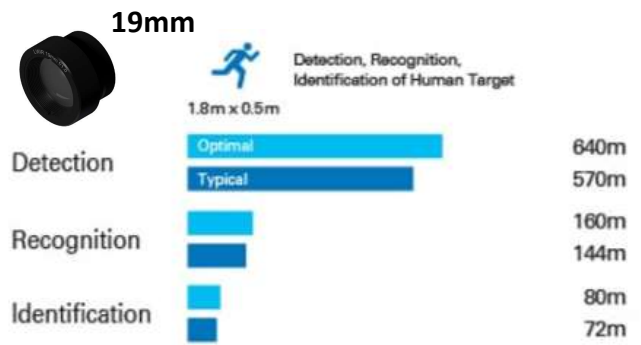
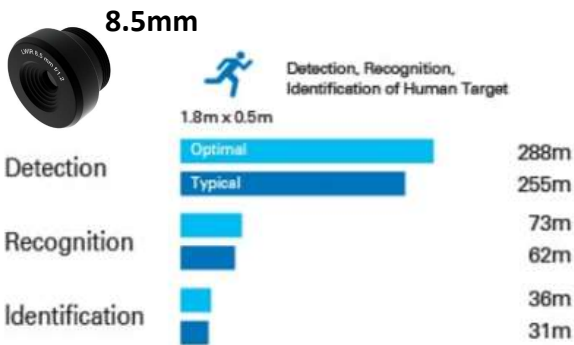
Focal Length	130mm	150mm	200mm	210m	250mm
Spatial resolution(IFOV)	0.13 mrad	0.11 mrad	0.085 mrad	0.081 mrad	0.068 mrad
Minimum Focus Distance	∞~10.0 m (30.8 ft.)	∞~15.0 m (49.21 ft.)	∞~20.0 m (65.62 ft.)	∞~30.0 m (98.42 ft.)	∞~30.0 m (98.42 ft.)
F-number	F1.2	F1.2	F1.4	F1.4	F1.5
Filed of View(FOV) (HxVxD)	2.40°x1.80°x3.00°	2.08°x1.56°x2.60°	1.56°x1.17°x1.95°	1.48°x1.11°x1.86°	1.25°x0.94°x1.56°
Focus	Fixed	Fixed	Fixed	Fixed	Fixed



Technical Specifications

Range Performance

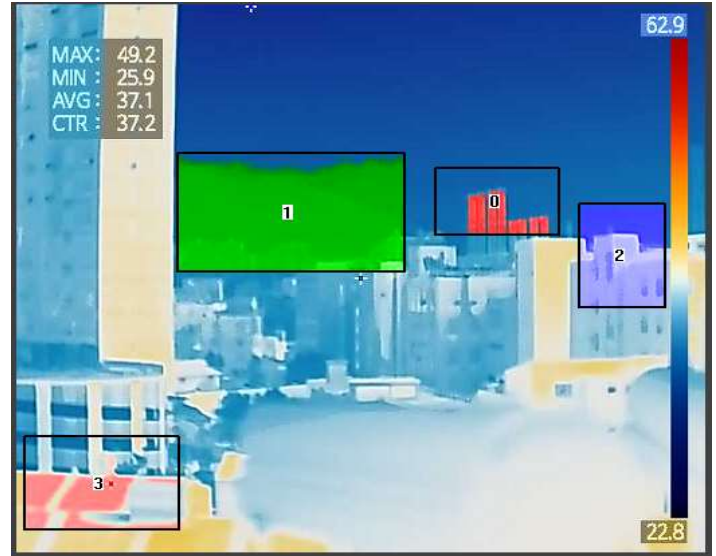
4.8mm			8mm			12mm		
	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)
Detection	170m (557ft)	430m (1,410ft)	290m (951ft)	720m (2,360ft)	440m (1,440ft)	1,080m (3,540ft)		
Recognition	40m (131ft)	100m (328ft)	70m (229ft)	180m (590ft)	110m (360ft)	270m (880ft)		
20mm			35mm			50mm		
	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)
Detection	740m (2,420ft)	1,800m (5,900ft)	1,300m (4,260ft)	3,140m (10.3Kft)	1,860m (6,100ft)	4,500m (14.7Kft)		
Recognition	180m (590ft)	450m (1,470ft)	320m (1,040ft)	780m (2,550ft)	460m (1,500ft)	1,120m (3,670ft)		
75mm			100mm			110mm		
	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)
Detection	2,790m (9,150ft)	6,760m (22.1Kft)	3,720m (12.2Kft)	9,010m (29.5Kft)	4,090m (13.4Kft)	9,920m (32.5Kft)		
Recognition	690m (2,260ft)	1,690m (5,540ft)	930m (3,050ft)	2,250m (7,380ft)	1,042m (3,340ft)	2,480m (8,130ft)		
120mm			130mm			150mm		
	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)
Detection	4,460m (14.6Kft)	10,820m (35.4Kft)	4,830m (15.8Kft)	11,720m (38.4Kft)	5,580m (18.3Kft)	13,520m (44.3Kft)		
Recognition	1,110m (3,640ft)	2,700m (8,850ft)	1,200m (3,930ft)	2,930m (9,610ft)	1,390m (4,560ft)	3,380m (11.0Kft)		
200mm			210mm			250mm		
	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)	Human(1.8/0.5)	Object(2.3/2.3)
Detection	7,440m (24.4Kft)	18,030m (59.1Kft)	7,810m (25.6Kft)	18,940m (62.1Kft)	9,300m (30.5Kft)	22,540m (73.9Kft)		
Recognition	1,860m (6,10ft)	4,500m (14.7Kft)	1,950m (6,390ft)	4,730m (15.5Kft)	2,320m (7,610ft)	5,630m (18.4Kft)		



Technical Specifications

10ea ROI(Region of Interest) setting

IMT-811/813N supports max. 10ea ROI(Region of Interest) setting. User can set Max./Min./Average temperature in each ROI as the reference temperature for the alarm and the other notifications. When the detected temperature is higher or lower than set alarm temperature, the camera triggers the alarm and the other notifications immediately. Also, user can set the color of alarm temperature isotherm, so the situation can be detected by the color in each ROI during monitoring. Due to checking the location of the set color on the monitor, user can easily figure out exactly where the event occurs.



ROI Setting window

Set Region/Alarm

Region				
ID	StartX	StartY	EndX	EndY
Entire	0	0	640	480
0	400	141	507	249
1	311	62	450	166
2	294	298	482	410
3	152	19	265	237
4	130	90	155	115
5	160	110	185	135
6	190	130	215	155
7	220	150	245	175
8	250	170	275	195
9	280	190	305	215

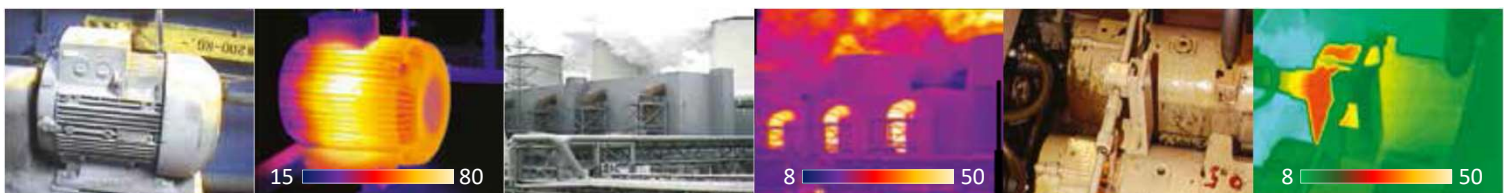
Alarm						
ID	Mode	Condition	Temperature (-20~650°C)	Start Delay (0~1800sec)	Stop Delay (0~1800sec)	Iso Therm Color Transparency
Entire	Maximum	Above	20.0	10	10	None On
0	Maximum	Above	50.0	10	0	None On
1	Maximum	Above	34.0	10	0	None On
2	Maximum	Above	33.0	10	0	None On
3	Maximum	Above	32.0	10	0	None On
4	Maximum	Above	20.0	10	10	None On
5	Maximum	Above	20.0	10	10	None On
6	Maximum	Above	20.0	10	10	None On
7	Maximum	Above	20.0	10	10	None On
8	Maximum	Above	20.0	10	10	None On
9	Maximum	Above	20.0	10	10	None On

Refresh Apply

Application Sample

ROI no.0		ROI no.1		ROI no.2		ROI no.3	
Application	Fire detection	Application	Medical measure	Application	Machine vision	Application	Surveillance
Alarm Temp.	45	Alarm Temp.	37	Alarm Temp.	25	Alarm Temp.	32
Condition	Above	Condition	Above	Condition	Average	Condition	Above + Motion
Color	Red	Color	Green	Color	Blue	Color	Grey
Start Delay	5ms	Start Delay	0ms	Start Delay	0ms	Start Delay	0ms
Stop Delay	0ms	Stop Delay	0ms	Stop Delay	0ms	Stop Delay	60ms
Notify	TCP, I/O, E-mail, FTP	Notify	TCP, I/O, E-mail	Notify	TCP, FTP, SysLog	Notify	TCP, I/O, E-mail, FTP
VMS	Popup Window	VMS	Popup message	VMS	Popup message	VMS	Popup Window

... up to ROI no. 9



Technical Specifications

Main Page

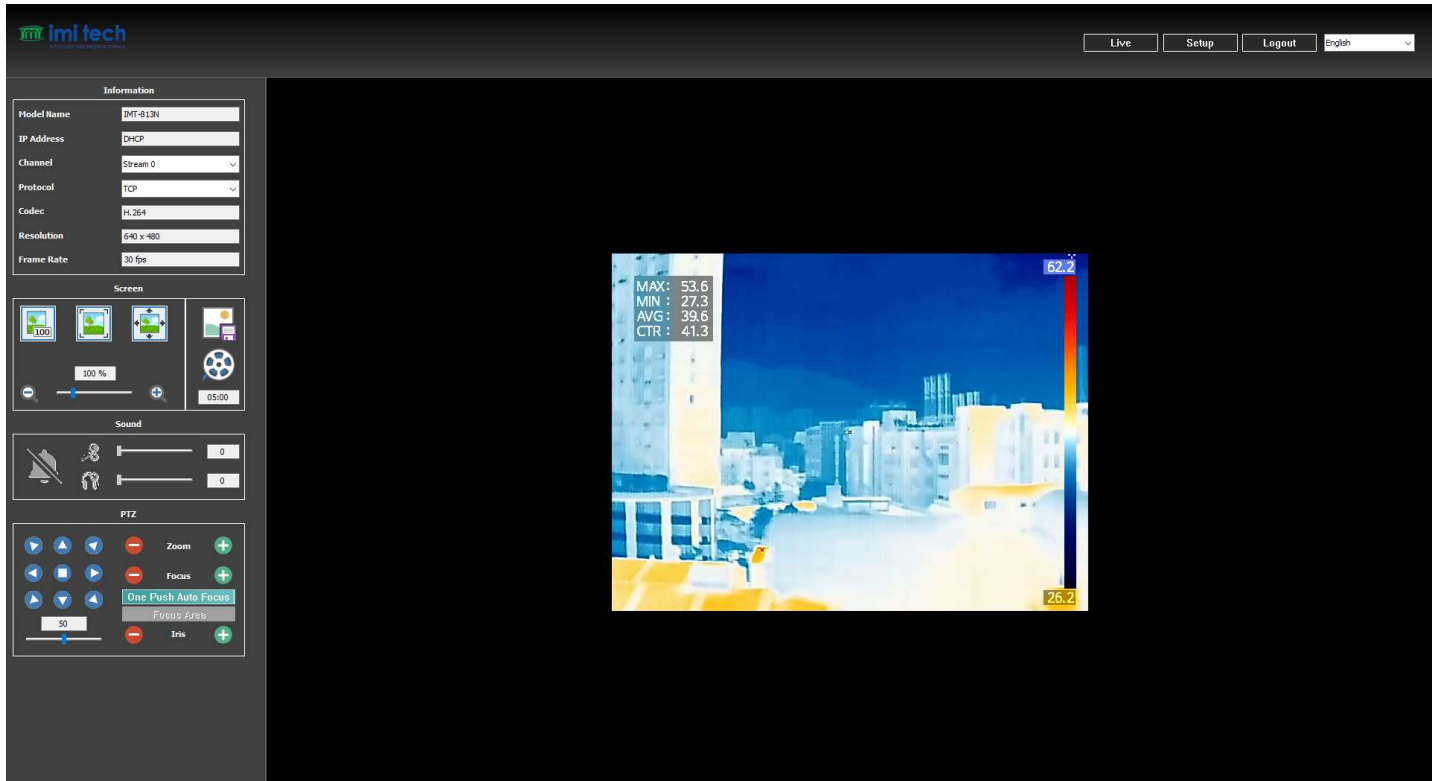
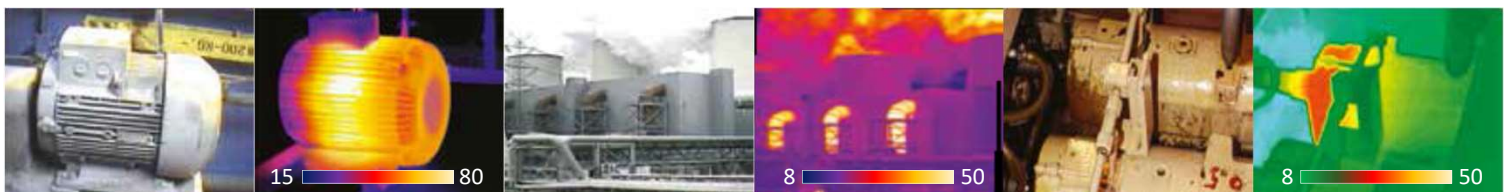
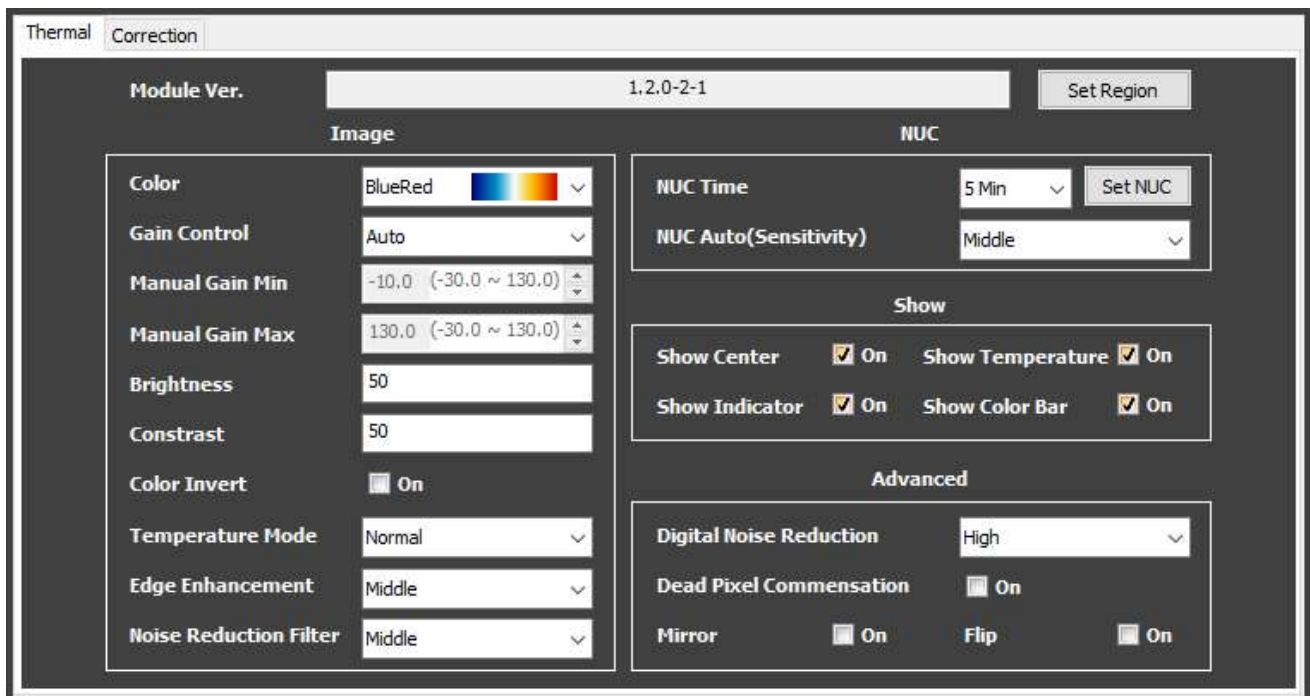


Image Control



Technical Specifications

Digital I/O

Trigger
Sensor

Trigger

Enable On

Source Software S/W Input

Polarity

Parameter Capture Format JPEG

Delay (0 ~ 4000) us Capture Saving As Network

Noise Filter (0 ~ 1023) us Capture Image Quality 50 (0 ~ 100)

Setting Parameter On

Increment On

Shutter us

Gain (0 ~ 100)

Add Modify Delete

No.	Increment	Shutter	Gain

Strobe

Night Only On

Strobe1

Enable On

Mode

Polarity

Delay

Duration

Strobe2

On

Event

Type	Description
Thermal	ThermalAlarm
Digital I/O(Port:0)	ThermalAlarm
Trigger	ThermalAlarm

Event Type Thermal Add

Input I/O Port Modify

Description ThermalAlarm Delete

Notify

Type	Interval
TCP	1 ms
SysLog	1 ms
I/O(Port:0)	1 ms

Notify Type Add

Output I/O Modify

Interval 1 ms Delete

Schedule

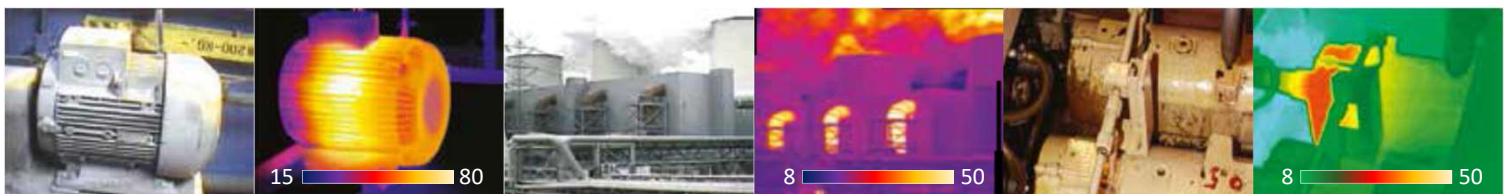
Draw Remove

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
MON.																									
TUE.																									
WED.																									
THU.																									
FRI.																									
SAT.																									
SUN.																									

Pre / Post Recording(Stream #2)

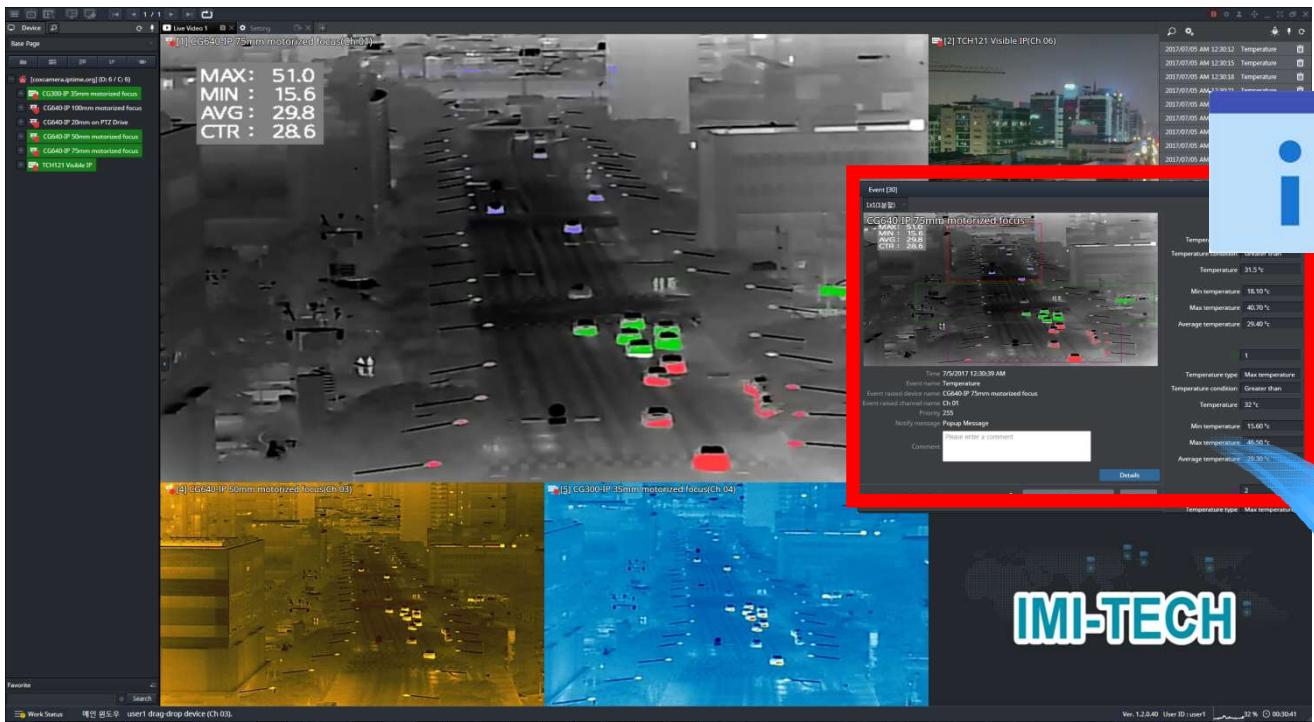
Enable On Recording Type Image

Event Setting

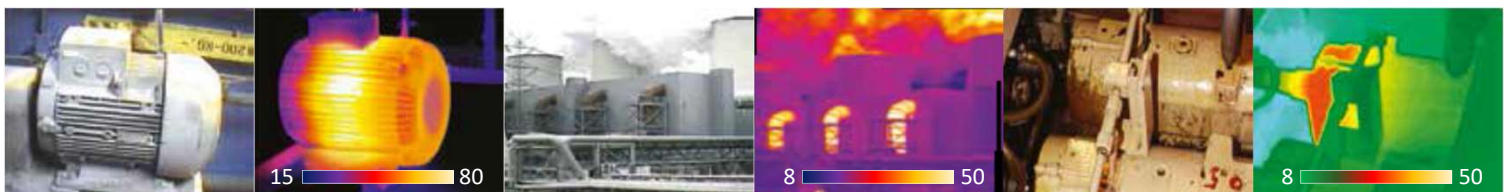
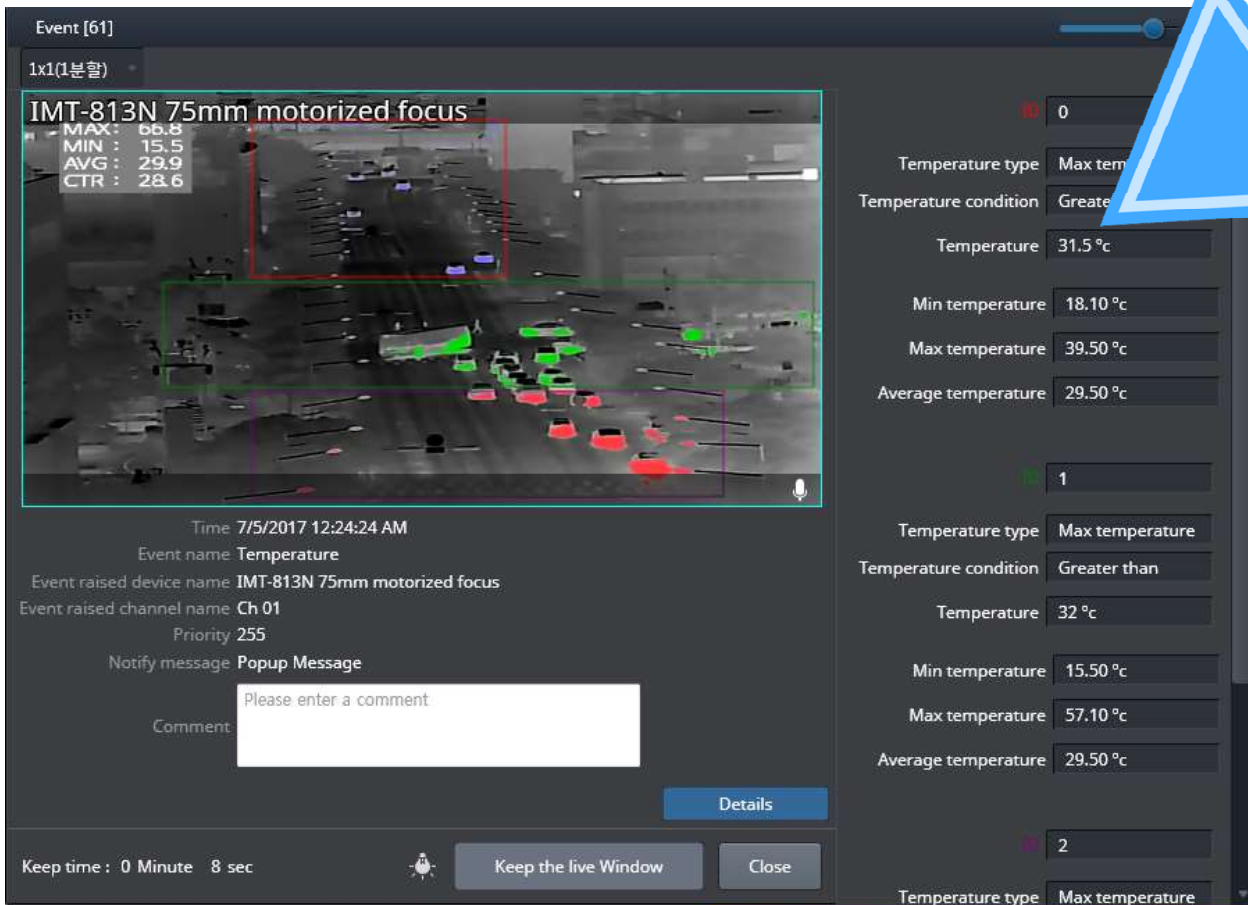


Technical Specifications

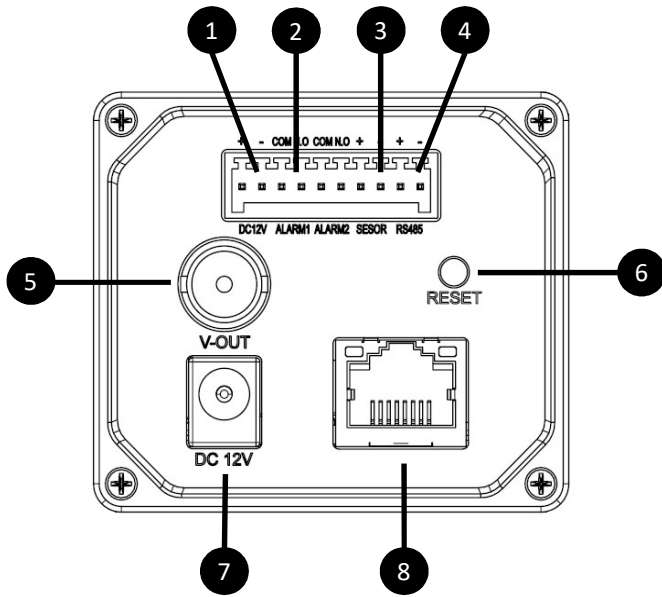
VMS Interface



Popup Window



Technical Specifications



Interface

1	Power Input 12V±10% DC
2	Alarm Output (2 opto-isolated)
3	Sensor Input (1 opto-isolated)
4	RS485(Pelco-D)
5	CVBS 1.0 Vp-p / 75 Ω
6	Reset(Factory default)
7	Power Input 12V±10% DC
8	RJ-45 (10/100BASE-T), PoE(IEEE802.3af class3)
9	Zoom/Focus DC Motorized Lens

Dimension

