

IPC525-NL

2.0MP HD Long Range Laser PTZ Camera



Features

Excellent Image Quality

- 2.0 Megapixel 1/1.9" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps
- H.265 video codec, saves up to 50% bandwidth and storage
- Low illumination, 0.001lux with color picture
- 120dB Ultra WDR
- Laser automatically adjusts
- HLC / 3D noise reduction

Long Operation Lifespan

- Industrial components, withstands operation temperatures of -40°C ~ 60°C
- IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
- More than 30,000 hours operational lifespan of the laser illuminator

Large Scale

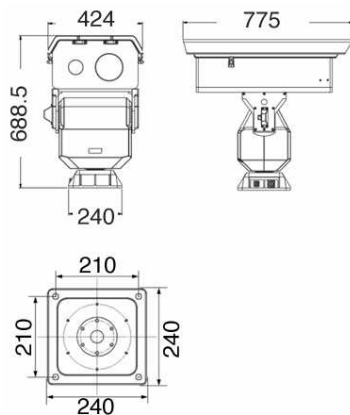
- 60x optical zoom (-F160-NL3, -F260-NL5)
- Barlow lens supported (-F160-NL3, -F260-NL5)
- Long range night vision up to 5Km (-F260-NL5)

Abundant Functions and Features

- Micro SD card slot, supports Automatic Network Replenishment (ANR)
- Strong PT structure has smooth movements even with a 100kg carry-on load
- Optical defog
- Built-in O-sensor
- AR and AF housing glass
- Aviation connector

Dimensions

Units: mm



Specifications

IPC525-NL	
Camera	
Image Sensor	1/1.9" Progressive Scan CMOS
Pixels	2.0 Megapixel
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with Laser
Shutter Speed	1 ~ 1/30,000s
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Ultra WDR, >=120dB
S/N Ratio	> 57dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Backlight Compensation	Off / WDR / BLC / HLC
Lens	
Focal Length	-F132-NL2: 15.6 ~ 500mm, 32x optical -F160-NL3: 12.5 ~ 750mm, 60x optical, 2x Barlow lens supported -F260-NL5: 16.7 ~ 1000mm, 60x optical, 2x Barlow lens supported
Zoom Speed	Approx 3 ~ 10s (Optical)
Angle of View	-F132-NL2: 26.73° ~ 0.75° (Wide~Tele) -F160-NL3: 28.71° ~ 0.49° (Wide~Tele) -F260-NL5: 23.01° ~ 0.41° (Wide~Tele)
Min. Object Distance	5000mm (Wide)
Max. Aperture Ratio	F3.5 (Wide) / F16 (Tele)
Focus Control	Auto / Manual / Semi-Automatic
Auto Back Focus	Auto
Optical Defog	Supported
Laser	
Wave Length	808nm
Power Consumption	-F132-NL2: 15W, -F160-NL3: 20W, -F260-NL5: 25W
Laser Distance	-F132-NL2: 2Km, -F160-NL3: 3Km, -F260-NL5: 5Km
Laser Intensity	Automatically adjust according to zoom ratio
Illuminating Angle	0.3° ~ 30° continuous change
Vision	
Day	-F132-NL2: 3Km, -F160-NL3: 5Km, -F260-NL5: 10Km
Night	-F132-NL2: 2Km, -F160-NL3: 3Km, -F260-NL5: 5Km
Pan and Tilt	
Pan / Tilt Range	360° Endless / - 60° ~ 60° (Auto Flip)
Pan manual speed: 0.01° ~ 15°/s; Pan preset speed: 15°/s	
Tilt manual speed: 0.01° ~ 10°/s; Tilt preset speed: 10°/s	
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples
Preset	256
Patrol	8 Patrols scheme, up to 32 presets per patrol
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path
Power-off Memory	Power-off memory / Power-on recovery
Auto Guard	Path / Preset / Pan scan
PT Limit	Manual / Scan / Pan
3D Positioning	PTZ control with mouse click and drag
Electronic compass	Built-in O-sensor
Location Sensor	GPS
Shield	
Housing Glass	AR & AF glass
Video	
Compression Format	H.265 / H.264 / MJPEG
Image Resolution	Main stream: 1080p Secondary stream: D1
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps
Bitrate	32kbps ~ 16Mbps
Bitrate Control	VBR / CBR
Multi-stream	Supported
Caption	Date and time / Alarm / Direction / Customized
Privacy Masking	Up to 4 zones
Motion Detection	Up to 4 zones
Video Freeze	Supported
ROI	Supported
Digital Noise Reduction	3D noise reduction
Digital Defog	Supported
Image Flip	Mirror
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726
Bitrate	32kbps ~ 64kbps
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute
Network	
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMTP, IPv4, IPv6 (optional)
User Interface	IPC Control (IE, Firefox, Chrome)
Max. User Access	Max. 10 Users (include 2 internal)
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI
Automatic Network Replenishment (ANR)	Supported
Alarm	
Alarm Triggers	Network disconnect / Disk full / Disk error
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm
Interfaces	
Ethernet	10/100M, RJ45 interface
Audio In / Out	1 x Line in / 1 x Line out
Alarm	1 x Output
Memory Slot	Micro SD card slot, supports up to 128GB
Environmental	
Operating Temperature	-40°C ~ 60°C / -40°F ~ 140°F
Operating Humidity	10% ~ 95%
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
Electrical	
Power	24V DC ± 25% (Power adapter included) -F132-NL2: Max. 110W (Laser on) -F160-NL3: Max. 115W (Laser on) -F260-NL5: Max. 120W (Laser on)
Mechanical	
Weight	65kg / 143.3lb (Gross Weight)
Dimensions	775 x 424 x 688.5mm / 30.51" x 16.69" x 27.11"

IPC525-NL

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Large Scale

- 60x optical zoom (-F160-NL3, -F260-NL5)
- Barlow lens supported (-F160-NL3, -F260-NL5)
- Long range night vision up to 5Km (-F260-NL5)

Abundant Functions and Features

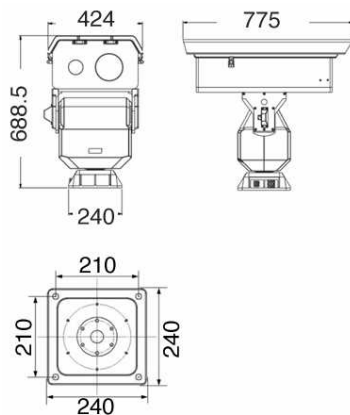
- Micro SD card slot, supports Automatic Network Replenishment (ANR)
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- Optical defog
- Built-in O-sensor
- AR and AF housing glass
- Aviation connector

Specifications

IPC525-NL	
Camera	IPC525-NL
Image Sensor	1/1.9" Progressive Scan CMOS
Pixels	2.0 Megapixel
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with Laser
Shutter Speed	1 ~ 1/30,000s
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Ultra WDR, >=120dB
S/N Ratio	> 57dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Backlight Compensation	Off / WDR / BLC / HLC
Lens	
Focal Length	-F132-NL2: 15.6 ~ 500mm, 32x optical -F160-NL3: 12.5 ~ 750mm, 60x optical, 2x Barlow lens supported -F260-NL5: 16.7 ~ 1000mm, 60x optical, 2x Barlow lens supported
Zoom Speed	Approx 3 ~ 10s (Optical)
Angle of View	-F132-NL2: 26.73° ~ 0.75° (Wide~Tele) -F160-NL3: 28.71° ~ 0.49° (Wide~Tele) -F260-NL5: 23.01° ~ 0.41° (Wide~Tele)
Min. Object Distance	5000mm (Wide)
Max. Aperture Ratio	F3.5 (Wide) / F16 (Tele)
Focus Control	Auto / Manual / Semi-Automatic
Auto Back Focus	Auto
Optical Defog	Supported
Laser	
Wave Length	808nm
Power Consumption	-F132-NL2: 15W, -F160-NL3: 20W, -F260-NL5: 25W
Laser Distance	-F132-NL2: 2Km, -F160-NL3: 3Km, -F260-NL5: 5Km
Laser Intensity	Automatically adjust according to zoom ratio
Illuminating Angle	0.3° ~ 30° continuous change
Vision	
Day	-F132-NL2: 3Km, -F160-NL3: 5Km, -F260-NL5: 10Km
Night	-F132-NL2: 2Km, -F160-NL3: 3Km, -F260-NL5: 5Km
Pan and Tilt	
Pan / Tilt Range	360° Endless / - 60° ~ 60° (Auto Flip)
Pan manual speed: 0.01° ~ 15°/s; Pan preset speed: 15°/s	
Tilt manual speed: 0.01° ~ 10°/s; Tilt preset speed: 10°/s	
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples
Preset	256
Patrol	8 Patrols scheme, up to 32 presets per patrol
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path
Power-off Memory	Power-off memory / Power-on recovery
Auto Guard	Path / Preset / Pan scan
PT Limit	Manual / Scan / Pan
3D Positioning	PTZ control with mouse click and drag
Electronic compass	Built-in O-sensor
Location Sensor	GPS
Shield	
Housing Glass	AR & AF glass
Video	
Compression Format	H.265 / H.264 / MJPEG
Image Resolution	Main stream: 1080p Secondary stream: D1
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Bitrate	32kbps ~ 16Mbps
Bitrate Control	VBR / CBR
Multi-stream	Supported
Caption	Date and time / Alarm / Direction / Customized
Privacy Masking	Up to 4 zones
Motion Detection	Up to 4 zones
Video Freeze	Supported
ROI	Supported
Digital Noise Reduction	3D noise reduction
Digital Defog	Supported
Image Flip	Mirror
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726
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User Interface	IPC Control (IE, Firefox, Chrome)
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Automatic Network Replenishment (ANR)	Supported
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Alarm Triggers	Network disconnect / Disk full / Disk error
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Interfaces	
Ethernet	10/100M, RJ45 interface
Audio In / Out	1 x Line in / 1 x Line out
Alarm	1 x Output
Memory Slot	Micro SD card slot, supports up to 128GB
Environmental	
Operating Temperature	-40°C ~ 60°C / -40°F ~ 140°F
Operating Humidity	10% ~ 95%
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
Electrical	
Power	24V DC ± 25% (Power adapter included) -F132-NL2: Max. 110W (Laser on) -F160-NL3: Max. 115W (Laser on) -F260-NL5: Max. 120W (Laser on)
Mechanical	
Weight	65kg / 143.3lb (Gross Weight)
Dimensions	775 x 424 x 688.5mm / 30.51" x 16.69" x 27.11"

Dimensions

Units: mm



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- More than 30,000 hours operational lifespan of the laser illuminator

Large Scale

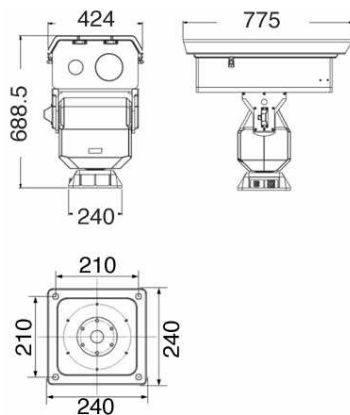
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- Long range night vision up to 5Km (-F260-NL5)

Abundant Functions and Features

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- Strong PT structure has smooth movements even with a 100kg carry-on load
- Optical defog
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- AR and AF housing glass
- Aviation connector

Dimensions

Units: mm



Specifications

IPC525-NL	
Camera	
Image Sensor	1/1.9" Progressive Scan CMOS
Pixels	2.0 Megapixel
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with Laser
Shutter Speed	1 ~ 1/30,000s
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Ultra WDR, >=120dB
S/N Ratio	>57dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Backlight Compensation	Off / WDR / BLC / HLC
Lens	
Focal Length	-F132-NL2: 15.6 ~ 500mm, 32x optical -F160-NL3: 12.5 ~ 750mm, 60x optical, 2x Barlow lens supported -F260-NL5: 16.7 ~ 1000mm, 60x optical, 2x Barlow lens supported
Zoom Speed	Approx 3 ~ 10s (Optical)
Angle of View	-F132-NL2: 26.73° ~ 0.75° (Wide~Tele) -F160-NL3: 28.71° ~ 0.49° (Wide~Tele) -F260-NL5: 23.01° ~ 0.41° (Wide~Tele)
Min. Object Distance	5000mm (Wide)
Max. Aperture Ratio	F3.5 (Wide) / F16 (Tele)
Focus Control	Auto / Manual / Semi-Automatic
Auto Back Focus	Auto
Optical Defog	Supported
Laser	
Wave Length	808nm
Power Consumption	-F132-NL2: 15W, -F160-NL3: 20W, -F260-NL5: 25W
Laser Distance	-F132-NL2: 2Km, -F160-NL3: 3Km, -F260-NL5: 5Km
Laser Intensity	Automatically adjust according to zoom ratio
Illuminating Angle	0.3° ~ 30° continuous change
Vision	
Day	-F132-NL2: 3Km, -F160-NL3: 5Km, -F260-NL5: 10Km
Night	-F132-NL2: 2Km, -F160-NL3: 3Km, -F260-NL5: 5Km
Pan and Tilt	
Pan / Tilt Range	360° Endless / - 60° ~ 60° (Auto Flip)
Pan manual speed	0.01° ~ 15°/s; Pan preset speed: 15°/s
Tilt manual speed	0.01° ~ 10°/s; Tilt preset speed: 10°/s
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples
Preset	256
Patrol	8 Patrols scheme, up to 32 presets per patrol
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path
Power-off Memory	Power-off memory / Power-on recovery
Auto Guard	Path / Preset / Pan scan
PT Limit	Manual / Scan / Pan
3D Positioning	PTZ control with mouse click and drag
Electronic compass	Built-in O-sensor
Location Sensor	GPS
Shield	
Housing Glass	AR & AF glass
Video	
Compression Format	H.265 / H.264 / MJPEG
Main stream	1080p
Image Resolution	Secondary stream: D1
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps
Bitrate	32kbps ~ 16Mbps
Bitrate Control	VBR / CBR
Multi-stream	Supported
Caption	Date and time / Alarm / Direction / Customized
Privacy Masking	Up to 4 zones
Motion Detection	Up to 4 zones
Video Freeze	Supported
ROI	Supported
Digital Noise Reduction	3D noise reduction
Digital Defog	Supported
Image Flip	Mirror
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726
Bitrate	32kbps ~ 64kbps
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute
Network	
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMTP, IPv4, IPv6 (optional)
User Interface	IPC Control (IE, Firefox, Chrome)
Max. User Access	Max. 10 Users (include 2 internal)
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI
Automatic Network Replenishment (ANR)	Supported
Alarm	
Alarm Triggers	Network disconnect / Disk full / Disk error
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm
Interfaces	
Ethernet	10/100M, RJ45 interface
Audio In / Out	1 x Line in / 1 x Line out
Alarm	1 x Output
Memory Slot	Micro SD card slot, supports up to 128GB
Environmental	
Operating Temperature	-40°C ~ 60°C / -40°F ~ 140°F
Operating Humidity	10% ~ 95%
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
Electrical	
Power	24V DC ± 25% (Power adapter included) -F132-NL2: Max. 110W (Laser on) -F160-NL3: Max. 115W (Laser on) -F260-NL5: Max. 120W (Laser on)
Mechanical	
Weight	65kg / 143.3lb (Gross Weight)
Dimensions	775 x 424 x 688.5mm / 30.51" x 16.69" x 27.11"

IPC528-F360-NL5-R150Z

2.0MP HD Varifocal Thermal + Optical Bi-spectrum Laser PTZ Camera



Features

Excellent Image Quality

- 2.0 Megapixel 1/1.8" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps (Optical), 800 x 600@30fps (Thermal)
- H.265 video codec, saves up to 50% bandwidth and storage
- Low illumination, 0.005Lux with color picture
- 120dB Ultra WDR
- Laser automatically adjusts
- HLC / 3D noise reduction

Thermal Module

- High sensitivity thermal module, 800 x 600@30fps
- Up to 9 palettes of adjustable color

Long Operation Lifespan

- Industrial components, withstands operation temperatures of -40°C ~ 60°C
- IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
- More than 30,000 hours operational lifespan of the laser illuminator

Large Scale

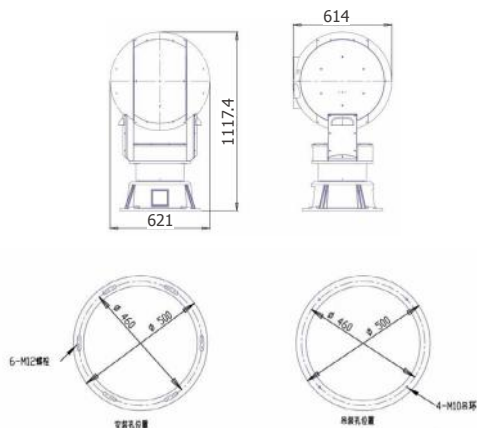
- 60x optical zoom
- Long range night vision up to 5Km

Abundant Functions and Features

- Micro SD card slot, supports Automatic Network Replenishment (ANR)
- Strong PT structure has smooth movements even with a 100kg carry-on load
- Optical defog
- Built-in O-sensor
- AR and AF housing glass
- Aviation connector

Dimensions

Units: mm



Specifications

IPC528-F360-NL5-R150Z	
Thermal Module	
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays
Resolution	800 x 600
Lens	15 ~ 150mm, 10x thermal
Pixel Interval	17um
NETD	< 40mk (@25°C, F#=1.0)
Response Waveband	8um ~ 14um
Color mode	up to 9 modes
Optical Camera	
Image Sensor	1/1.8" Progressive Scan CMOS
Pixels	2.0 Megapixel
Min. Illumination	Color: 0.005Lux @ (F3.0, AGC ON) B/W: 0.0005Lux @ (F3.0, AGC ON); 0Lux with Laser
Shutter Speed	1 ~ 1/30,000S
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Ultra WDR, >=120dB
S/N Ratio	> 57dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Backlight Compensation	Off / WDR / BLC / HLC
Lens	
Focal Length	16.7 ~ 1000mm, 60x optical
Zoom Speed	Approx 3 ~ 10s (Optical)
Angle of View	28.43° ~ 0.29° (Wide~Tele)
Min. Object Distance	5000mm (Wide)
Max. Aperture Ratio	F3.5 (Wide) / F16 (Tele)
Focus Control	Auto / Manual / Semi-Automatic
Auto Back Focus	Auto
Optical Defog	Supported
Laser	
Wave Length	808nm
Power Consumption	25W
Laser Distance	5Km
Laser Intensity	Automatically adjust according to zoom ratio
Illuminating Angle	0.3° ~ 30° continuous change
Vision	
Day	10Km
Night	5Km
Pan and Tilt	
Pan / Tilt Range	360° Endless / - 60° ~ 60° (Auto Flip)
Pan / Tilt Speed	Pan manual speed: 0.01° ~ 180°/s; Pan preset speed: 180°/s Tilt manual speed: 0.01° ~ 90°/s; Tilt preset speed: 90°/s
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples
Preset	256
Patrol	8 Patrols scheme, up to 32 presets per patrol
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path
Power-off Memory	Power-off memory / Power-on recovery
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Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm
Interfaces	
Ethernet	10/100M, RJ45 interface
Audio In / Out	1 x Line in / 1 x Line out
Alarm	4 x Input / 2 x Output
Memory Slot	Micro SD card slot, supports up to 256GB
Environmental	
Operating Temperature	-40°C ~ 60°C / -40°F ~ 140°F
Operating Humidity	10% ~ 95%
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
Electrical	
Power	48V DC ± 25% (Power adapter included)
Power Consumption	Max. 180W (Laser on)
Mechanical	
Weight	150kg / 330.69lb (Gross Weight)
Dimensions	614 x 621 x 1170mm / 24.17" x 24.45" x 46.06"

IPC525-NL-R

2.0MP HD Thermal & Optical Bi-spectrum Laser PTZ Camera



Features

Excellent Image Quality

- 2.0 Megapixel 1/1.9" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps (Optical), 800 x 600@30fps (Thermal)
- H.265 video codec, saves up to 50% bandwidth and storage
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- High sensitivity thermal module, 800 x 600@30fps
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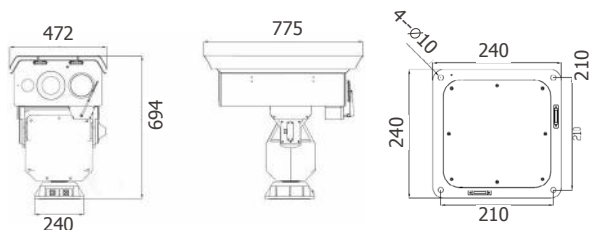
- 62x optical zoom (-F160-NL5)
- Long range night vision up to 5Km (-F160-NL5)

Abundant Functions and Features

- Micro SD card slot, supports Automatic Network Replenishment (ANR)
- Strong PT structure has smooth movements even with a 100kg carry-on load
- Optical defog
- Built-in O-sensor
- AR and AF housing glass
- Aviation connector

Dimensions

Units: mm



Specifications

IPC525-NL-R	
Thermal Module	
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays
Resolution	800 x 600
Lens	-F132-NL3-R75: 75mm -F160-NL5-R100: 100mm
Detector Pitch	17µm
NETD	< 40mk@25°C,F#=1.0
Response Waveband	8µm ~ 14µm
Color mode	up to 9 modes
Optical Camera	
Image Sensor	1/1.9" Progressive Scan CMOS
Pixels	2.0 Megapixel
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with Laser
Shutter Speed	1 ~ 1/30,000S
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Ultra WDR, >=120dB
S/N Ratio	>57dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Backlight Compensation	Off / WDR / BLC / HLC
Lens	
Focal Length	-F132-NL3-R75: 15.6 ~ 500mm, 32x optical -F160-NL5-R100: 12.5 ~ 775mm, 62x optical
Zoom Speed	Approx 3 ~ 10s (Optical)
Angle of View	-F132-NL3-R75: 26.73°~ 0.75° (Wide~Tele) -F160-NL5-R100: 28.71°~ 0.49° (Wide~Tele)
Min. Object Distance	5000mm (Wide)
Max. Aperture Ratio	F3.5 (Wide) / F1.6 (Tele)
Focus Control	Auto / Manual / Semi-Automatic
Auto Back Focus	Auto
Optical Defog	Supported
Laser	
Wave Length	808nm
Power Consumption	-F132-NL3-R75: 20W -F160-NL5-R100: 25W
Laser Distance	-F132-NL3-R75: 3Km -F160-NL5-R100: 5Km
Laser Intensity	Automatically adjust according to zoom ratio
Illuminating Angle	0.3° ~ 30° continuous change
Vision	
Day	-F132-NL3-R75: 5Km -F160-NL5-R100: 10Km
Night	-F132-NL3-R75: 3Km -F160-NL5-R100: 5Km
Pan and Tilt	
Pan / Tilt Range	360° Endless / - 60° ~ 60° (Auto Flip)
Pan / Tilt Speed	Pan manual speed: 0.01° ~ 15°/s; Pan preset speed: 15°/s Tilt manual speed: 0.01° ~ 10°/s; Tilt preset speed: 10°/s
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples
Preset	256
Patrol	8 Patrols scheme, up to 32 presets per patrol
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path
Power-off Memory	Power-off memory / Power-on recovery
Auto Guard	Path / Preset / Pan scan
PT Limit	Manual / Scan / Pan
3D Positioning	PTZ control with mouse click and drag
Electronic compass	Built-in O-sensor
Location Sensor	GPS
Shield	
Housing Glass	AR & AF glass
Video	
Compression Format	H.265 / H.264 / MJPEG
Main stream:	1080p
Image Resolution	Secondary stream: D1
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps
Bitrate	32kbps ~ 16Mbps
Bitrate Control	VBR / CBR
Multi-stream	Supported
Caption	Date and time / Alarm / Direction / Customized
Privacy Masking	Up to 4 zones
Motion Detection	Up to 4 zones
Video Freeze	Supported
ROI	Supported
Digital Noise Reduction	3D noise reduction
Digital Defog	Supported
Image Flip	Mirror
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726
Bitrate	32kbps ~ 64kbps
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute
Network	
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMTP, IPv4, IPv6 (optional)
User Interface	IPC Control (IE, Firefox, Chrome)
Max. User Access	Max. 10 Users (include 2 internal)
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI
Automatic Network Replenishment (ANR)	Supported
Alarm	
Alarm Triggers	Network disconnect / Disk full / Disk error
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm
Interfaces	
Ethernet	10/100M, RJ45 interface
Audio In / Out	1 x Line in / 1 x Line out
Alarm	1 x Output
Memory Slot	Micro SD card slot, supports up to 256GB
Environmental	
Operating Temperature	-40°C ~ 60°C / -40°F ~ 140°F
Operating Humidity	10% ~ 95%
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
Electrical	
Power	48V DC ± 25% (Power adapter included)
Power Consumption	Max. 160W (Laser on)
Mechanical	
Weight	70kg / 154.3lb (Gross Weight)
Dimensions	775 x 424 x 688.5mm / 30.51" x 16.69" x 27.11"

IPC523-F255-NR

2.0MP HD 55x Optical & Thermal Bi-spectrum PTZ Camera



Features

Excellent Image Quality

- Vanadium oxide uncooled focal plane arrays Thermal Sensor
- 2.0 Megapixel 1/2.8" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps (Optical)
- H.265 video codec, saves up to 50% bandwidth and storage
- Ultra low illumination, 0.001lux with color picture
- 120dB Ultra WDR
- Laser automatically adjusts
- HLC / 3D noise reduction

Thermal Module

- High sensitivity thermal module, 800 x 600@30fps (IPC523-F255-NR150)
- Up to 9 palettes of adjustable color

Intelligent Functions

- Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge

Long Operation Lifespan

- Industrial components, withstands operation temperatures of -40°C ~ 70°C
- IP66, TVS 6000V lightning protection, surge protection and voltage transient protection

Large Scale

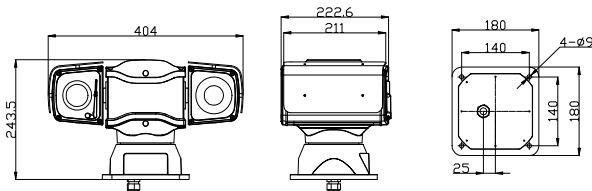
- 55x optical zoom

Abundant Functions and Features

- SD card optional, supports Automatic Network Replenishment (ANR)
- Up to 3 video streams
- Bi-directional audio / alarm in and out / video out
- Wiper supported

Dimensions

Units: mm



Specifications

	IPC523-F255-NR025	IPC523-F255-NR050	IPC523-F255-NR150
Thermal Module			
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays		
Resolution	400 x 300		800x600
Lens	25mm	50mm	
Detector Pitch	17µm		
NETD	< 40mk (@25°C, F#=1.0)		
Response Waveband	8µm ~ 14µm		
Color mode	up to 9 modes		
Optical Camera			
Image Sensor	1/2.8" Progressive Scan CMOS		
Pixels	2.0 Megapixel		
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with IR		
Shutter Speed	1 ~ 1/30,000S		
Day / Night	Auto (ICR) / Color / B/W		
Wide Dynamic Range	Ultra WDR, >=120dB		
S/N Ratio	>55dB		
White Balance	Auto / Manual		
Gain Control	Auto / Manual		
Backlight Compensation	Off / WDR / BLC / HLC		
Lens			
Focal Length	6.6 ~ 363mm, 55x optical		
Zoom Speed	Approx 4s (Optical)		
Angle of View	43.8°~ 1° (Wide~Tele)		
Min. Object Distance	300 ~ 1500mm (Wide~Tele)		
Max. Aperture Ratio	F1.6 (Wide) / F6.0(Tele)		
Focus Control	Auto / Manual / Semi-Automatic		
Pan and Tilt			
Pan / Tilt Range	360° Endless / - 85° ~ 85° (Auto Flip)		
Pan / Tilt Speed	Pan manual speed: 0.1° ~ 120°/s; Pan preset speed: 120°/s Tilt manual speed: 0.1° ~ 30°/s; Tilt preset speed: 100°/s		
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples		
Patrol	256		
Pattern Scan	8 Patrols scheme, up to 32 presets per patrol		
Power-off Memory	4 Scan paths, each path can record 10 minutes of operation path		
Auto Guard	Power-off memory / Power-on recovery		
PT Limit	Path / Preset / Pan scan		
3D Positioning	Manual / Scan / Pan		
Wiper	PTZ control with mouse click and drag		
Video	Supported		
Compression Format	H.265 / H.264 / MJPEG		
Image Resolution	Main stream: 1080p Secondary stream: D1		
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps		
Bitrate	32kbps ~ 16Mbps		
Bitrate Control	VBR / CBR		
Multi stream	Supported		
Caption	Date and time / Alarm / Direction / Customized		
Privacy Masking	Up to 4 zones		
Motion Detection	Up to 4 zones		
Video Freeze	Supported		
ROI	Supported		
Digital Noise Reduction	3D noise reduction		
Digital Defog	Supported		
Image Flip	Flip / Mirror		
Audio			
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726		
Bitrate	32kbps ~ 64kbps		
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute		
Network			
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMTP, IPv4, IPv6 (optional)		
User Interface	IPC Control (IE, Firefox, Chrome)		
Max. User Access	Max. 10 Users (Include 2 Internal)		
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI		
Automatic Network Replenishment (ANR)	Supported		
Alarm			
Alarm Triggers	Alarm input / Network disconnect / Disk full / Disk error		
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge		
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm		
Interfaces			
Ethernet	10/100M, RJ45 interface		
Audio In / Out	1 x Line in / 1 x Line out		
Alarm In / Out	1 x Input / 1 x Output		
Video Out	1 x BNC, 1.0V [p-p] / 75Ω		
Memory Slot	Built-in Micro SD card (optional), up to 128GB		
Environmental			
Operating Temperature	-40°C ~ 70°C / -40°F ~ 158°F		
Operating Humidity	10% ~ 95%		
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection		
Electrical			
Power	24V AC / 3A (Power adapter included)		
Power Consumption	Max. 70W (Laser on)		
Mechanical			
Weight	10kg / 22lb (Gross Weight)		
Dimensions	404 x 222.6 x 243.5mm / 15.9" x 8.76" x 9.59"		

IPC523-F255-NR

2.0MP HD 55x Optical & Thermal Bi-spectrum PTZ Camera



Features

Excellent Image Quality

- Vanadium oxide uncooled focal plane arrays Thermal Sensor
- 2.0 Megapixel 1/2.8" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps (Optical)
- H.265 video codec, saves up to 50% bandwidth and storage
- Ultra low illumination, 0.001lux with color picture
- 120dB Ultra WDR
- Laser automatically adjusts
- HLC / 3D noise reduction

Thermal Module

- High sensitivity thermal module, 800 x 600@30fps (IPC523-F255-NR150)
- Up to 9 palettes of adjustable color

Intelligent Functions

- Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge

Long Operation Lifespan

- Industrial components, withstands operation temperatures of -40°C ~ 70°C
- IP66, TVS 6000V lightning protection, surge protection and voltage transient protection

Large Scale

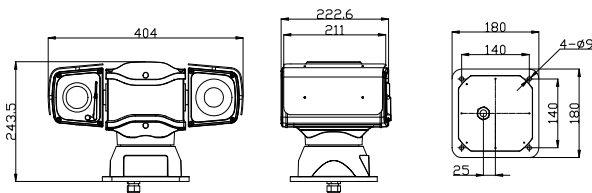
- 55x optical zoom

Abundant Functions and Features

- SD card optional, supports Automatic Network Replenishment (ANR)
- Up to 3 video streams
- Bi-directional audio / alarm in and out / video out
- Wiper supported

Dimensions

Units: mm



Specifications

	IPC523-F255-NR025	IPC523-F255-NR050	IPC523-F255-NR150
Thermal Module			
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays		
Resolution	400 x 300		800x600
Lens	25mm	50mm	
Detector Pitch	17µm		
NETD	< 40mk (@25°C, F#=1.0)		
Response Waveband	8µm ~ 14µm		
Color mode	up to 9 modes		
Optical Camera			
Image Sensor	1/2.8" Progressive Scan CMOS		
Pixels	2.0 Megapixel		
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with IR		
Shutter Speed	1 ~ 1/30,000S		
Day / Night	Auto (ICR) / Color / B/W		
Wide Dynamic Range	Ultra WDR, >=120dB		
S/N Ratio	>55dB		
White Balance	Auto / Manual		
Gain Control	Auto / Manual		
Backlight Compensation	Off / WDR / BLC / HLC		
Lens			
Focal Length	6.6 ~ 363mm, 55x optical		
Zoom Speed	Approx 4s (Optical)		
Angle of View	43.8°~ 1° (Wide~Tele)		
Min. Object Distance	300 ~ 1500mm (Wide~Tele)		
Max. Aperture Ratio	F1.6 (Wide) / F6.0(Tele)		
Focus Control	Auto / Manual / Semi-Automatic		
Pan and Tilt			
Pan / Tilt Range	360° Endless / - 85° ~ 85° (Auto Flip)		
Pan / Tilt Speed	Pan manual speed: 0.1° ~ 120°/s; Pan preset speed: 120°/s Tilt manual speed: 0.1° ~ 30°/s; Tilt preset speed: 100°/s		
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples		
Preset	256		
Patrol	8 Patrols scheme, up to 32 presets per patrol		
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path		
Power-off Memory	Power-off memory / Power-on recovery		
Auto Guard	Path / Preset / Pan scan		
PT Limit	Manual / Scan / Pan		
3D Positioning	PTZ control with mouse click and drag		
Wiper	Supported		
Video			
Compression Format	H.265 / H.264 / MJPEG		
Image Resolution	Main stream: 1080p Secondary stream: D1		
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps		
Bitrate	32kbps ~ 16Mbps		
Bitrate Control	VBR / CBR		
Multi stream	Supported		
Caption	Date and time / Alarm / Direction / Customized		
Privacy Masking	Up to 4 zones		
Motion Detection	Up to 4 zones		
Video Freeze	Supported		
ROI	Supported		
Digital Noise Reduction	3D noise reduction		
Digital Defog	Supported		
Image Flip	Flip / Mirror		
Audio			
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726		
Bitrate	32kbps ~ 64kbps		
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute		
Network			
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMTP, IPv4, IPv6 (optional)		
User Interface	IPC Control (IE, Firefox, Chrome)		
Max. User Access	Max. 10 Users (Include 2 Internal)		
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI		
Automatic Network Replenishment (ANR)	Supported		
Alarm			
Alarm Triggers	Alarm input / Network disconnect / Disk full / Disk error		
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge		
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm		
Interfaces			
Ethernet	10/100M, RJ45 interface		
Audio In / Out	1 x Line in / 1 x Line out		
Alarm In / Out	1 x Input / 1 x Output		
Video Out	1 x BNC, 1.0V [p-p] / 75Ω		
Memory Slot	Built-in Micro SD card (optional), up to 128GB		
Environmental			
Operating Temperature	-40°C ~ 70°C / -40°F ~ 158°F		
Operating Humidity	10% ~ 95%		
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection		
Electrical			
Power	24V AC / 3A (Power adapter included)		
Power Consumption	Max. 70W (Laser on)		
Mechanical			
Weight	10kg / 22lb (Gross Weight)		
Dimensions	404 x 222.6 x 243.5mm / 15.9" x 8.76" x 9.59"		

IPC525-NL-R

2.0MP HD Thermal & Optical Bi-spectrum Laser PTZ Camera



Features

Excellent Image Quality

- 2.0 Megapixel 1/1.9" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps (Optical), 800 x 600@30fps (Thermal)
- H.265 video codec, saves up to 50% bandwidth and storage
- Low illumination, 0.001lux with color picture
- 120dB Ultra WDR
- Laser automatically adjusts
- HLC / 3D noise reduction

Thermal Module

- High sensitivity thermal module, 800 x 600@30fps
- Up to 9 palettes of adjustable color

Long Operation Lifespan

- Industrial components, withstands operation temperatures of -40°C ~ 60°C
- IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
- More than 30,000 hours operational lifespan of the laser illuminator

Large Scale

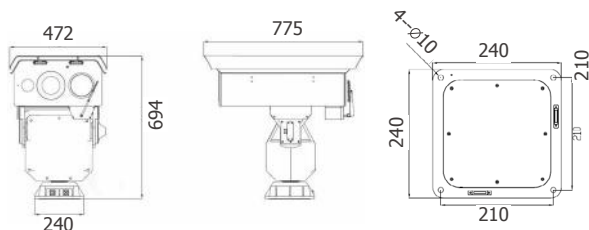
- 62x optical zoom (-F160-NL5)
- Long range night vision up to 5Km (-F160-NL5)

Abundant Functions and Features

- Micro SD card slot, supports Automatic Network Replenishment (ANR)
- Strong PT structure has smooth movements even with a 100kg carry-on load
- Optical defog
- Built-in O-sensor
- AR and AF housing glass
- Aviation connector

Dimensions

Units: mm



Specifications

IPC525-NL-R	
Thermal Module	
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays
Resolution	800 x 600
Lens	-F132-NL3-R75: 75mm -F160-NL5-R100: 100mm
Detector Pitch	17µm
NETD	< 40mk@25°C,F#=1.0
Response Waveband	8µm ~ 14µm
Color mode	up to 9 modes
Optical Camera	
Image Sensor	1/1.9" Progressive Scan CMOS
Pixels	2.0 Megapixel
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with Laser
Shutter Speed	1 ~ 1/30,000S
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Ultra WDR, >=120dB
S/N Ratio	>57dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Backlight Compensation	Off / WDR / BLC / HLC
Lens	
Focal Length	-F132-NL3-R75: 15.6 ~ 500mm, 32x optical -F160-NL5-R100: 12.5 ~ 775mm, 62x optical
Zoom Speed	Approx 3 ~ 10s (Optical)
Angle of View	-F132-NL3-R75: 26.73°~ 0.75° (Wide~Tele) -F160-NL5-R100: 28.71°~ 0.49° (Wide~Tele)
Min. Object Distance	5000mm (Wide)
Max. Aperture Ratio	F3.5 (Wide) / F1.6 (Tele)
Focus Control	Auto / Manual / Semi-Automatic
Auto Back Focus	Auto
Optical Defog	Supported
Laser	
Wave Length	808nm
Power Consumption	-F132-NL3-R75: 20W -F160-NL5-R100: 25W
Laser Distance	-F132-NL3-R75: 3Km -F160-NL5-R100: 5Km
Laser Intensity	Automatically adjust according to zoom ratio
Illuminating Angle	0.3° ~ 30° continuous change
Vision	
Day	-F132-NL3-R75: 5Km -F160-NL5-R100: 10Km
Night	-F132-NL3-R75: 3Km -F160-NL5-R100: 5Km
Pan and Tilt	
Pan / Tilt Range	360° Endless / - 60° ~ 60° (Auto Flip)
Pan / Tilt Speed	Pan manual speed: 0.01° ~ 15°/s; Pan preset speed: 15°/s Tilt manual speed: 0.01° ~ 10°/s; Tilt preset speed: 10°/s
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples
Preset	256
Patrol	8 Patrols scheme, up to 32 presets per patrol
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path
Power-off Memory	Power-off memory / Power-on recovery
Auto Guard	Path / Preset / Pan scan
PT Limit	Manual / Scan / Pan
3D Positioning	PTZ control with mouse click and drag
Electronic compass	Built-in O-sensor
Location Sensor	GPS
Shield	
Housing Glass	AR & AF glass
Video	
Compression Format	H.265 / H.264 / MJPEG
Main stream:	1080p
Image Resolution	Secondary stream: D1
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps
Bitrate	32kbps ~ 16Mbps
Bitrate Control	VBR / CBR
Multi-stream	Supported
Caption	Date and time / Alarm / Direction / Customized
Privacy Masking	Up to 4 zones
Motion Detection	Up to 4 zones
Video Freeze	Supported
ROI	Supported
Digital Noise Reduction	3D noise reduction
Digital Defog	Supported
Image Flip	Mirror
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726
Bitrate	32kbps ~ 64kbps
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute
Network	
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMTP, IPv4, IPv6 (optional)
User Interface	IPC Control (IE, Firefox, Chrome)
Max. User Access	Max. 10 Users (include 2 internal)
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI
Automatic Network Replenishment (ANR)	Supported
Alarm	
Alarm Triggers	Network disconnect / Disk full / Disk error
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm
Interfaces	
Ethernet	10/100M, RJ45 interface
Audio In / Out	1 x Line In / 1 x Line out
Alarm	1 x Output
Memory Slot	Micro SD card slot, supports up to 256GB
Environmental	
Operating Temperature	-40°C ~ 60°C / -40°F ~ 140°F
Operating Humidity	10% ~ 95%
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection
Electrical	
Power	48V DC ± 25% (Power adapter included)
Power Consumption	Max. 160W (Laser on)
Mechanical	
Weight	70kg / 154.3lb (Gross Weight)
Dimensions	775 x 424 x 688.5mm / 30.51" x 16.69" x 27.11"

IPC523-F255-NR

2.0MP HD 55x Optical & Thermal Bi-spectrum PTZ Camera



Features

Excellent Image Quality

- Vanadium oxide uncooled focal plane arrays Thermal Sensor
- 2.0 Megapixel 1/2.8" Progressive Scan CMOS Sensor
- High definition and smooth picture, 1080p@60fps (Optical)
- H.265 video codec, saves up to 50% bandwidth and storage
- Ultra low illumination, 0.001lux with color picture
- 120dB Ultra WDR
- Laser automatically adjusts
- HLC / 3D noise reduction

Thermal Module

- High sensitivity thermal module, 800 x 600@30fps (IPC523-F255-NR150)
- Up to 9 palettes of adjustable color

Intelligent Functions

- Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge

Long Operation Lifespan

- Industrial components, withstands operation temperatures of -40°C ~ 70°C
- IP66, TVS 6000V lightning protection, surge protection and voltage transient protection

Large Scale

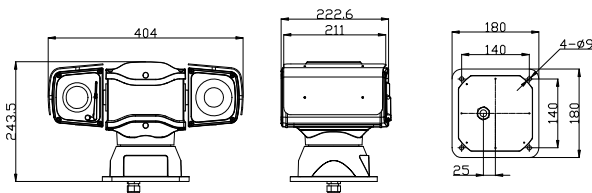
- 55x optical zoom

Abundant Functions and Features

- SD card optional, supports Automatic Network Replenishment (ANR)
- Up to 3 video streams
- Bi-directional audio / alarm in and out / video out
- Wiper supported

Dimensions

Units: mm



Specifications

	IPC523-F255-NR025	IPC523-F255-NR050	IPC523-F255-NR150
Thermal Module			
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays		
Resolution	400 x 300		800x600
Lens	25mm	50mm	
Detector Pitch	17µm		
NETD	< 40mk (@25°C, F#=1.0)		
Response Waveband	8µm ~ 14µm		
Color mode	up to 9 modes		
Optical Camera			
Image Sensor	1/2.8" Progressive Scan CMOS		
Pixels	2.0 Megapixel		
Min. Illumination	Color: 0.001Lux @ (F1.2, AGC ON) B/W: 0.0001Lux @ (F1.2, AGC ON); 0Lux with IR		
Shutter Speed	1 ~ 1/30,000S		
Day / Night	Auto (ICR) / Color / B/W		
Wide Dynamic Range	Ultra WDR, >=120dB		
S/N Ratio	>55dB		
White Balance	Auto / Manual		
Gain Control	Auto / Manual		
Backlight Compensation	Off / WDR / BLC / HLC		
Lens			
Focal Length	6.6 ~ 363mm, 55x optical		
Zoom Speed	Approx 4s (Optical)		
Angle of View	43.8°~ 1° (Wide~Tele)		
Min. Object Distance	300 ~ 1500mm (Wide~Tele)		
Max. Aperture Ratio	F1.6 (Wide) / F6.0(Tele)		
Focus Control	Auto / Manual / Semi-Automatic		
Pan and Tilt			
Pan / Tilt Range	360° Endless / - 85° ~ 85° (Auto Flip)		
Pan / Tilt Speed	Pan manual speed: 0.1° ~ 120°/s; Pan preset speed: 120°/s Tilt manual speed: 0.1° ~ 30°/s; Tilt preset speed: 100°/s		
Proportional Zoom	Pan / Tilt speed can be adjusted automatically according to zoom multiples		
Preset	256		
Patrol	8 Patrols scheme, up to 32 presets per patrol		
Pattern Scan	4 Scan paths, each path can record 10 minutes of operation path		
Power-off Memory	Power-off memory / Power-on recovery		
Auto Guard	Path / Preset / Pan scan		
PT Limit	Manual / Scan / Pan		
3D Positioning	PTZ control with mouse click and drag		
Wiper	Supported		
Video			
Compression Format	H.265 / H.264 / MJPEG		
Image Resolution	Main stream: 1080p Secondary stream: D1		
Frame Rate	Main stream: 1080p@60fps Secondary stream: D1@30fps		
Bitrate	32kbps ~ 16Mbps		
Bitrate Control	VBR / CBR		
Multi stream	Supported		
Caption	Date and time / Alarm / Direction / Customized		
Privacy Masking	Up to 4 zones		
Motion Detection	Up to 4 zones		
Video Freeze	Supported		
ROI	Supported		
Digital Noise Reduction	3D noise reduction		
Digital Defog	Supported		
Image Flip	Flip / Mirror		
Audio			
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC / G.722.1c / G.726		
Bitrate	32kbps ~ 64kbps		
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute		
Network			
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP, VSIP, UPnP, 802.1x, NAT, QoS, SMT, IPv4, IPv6 (optional)		
User Interface	IPC Control (IE, Firefox, Chrome)		
Max. User Access	Max. 10 Users (Include 2 Internal)		
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, API, CGI		
Automatic Network Replenishment (ANR)	Supported		
Alarm			
Alarm Triggers	Alarm input / Network disconnect / Disk full / Disk error		
Intelligent	Motion detection / Tampering / Guard line / Enter guard area / Exit guard area / Object left / Object removal / Gathering / Audio surge		
Alarm Events	Alarm report / Recording / Text overlay / Snapshot / External output / Email notice / Acoustic alarm		
Interfaces			
Ethernet	10/100M, RJ45 interface		
Audio In / Out	1 x Line in / 1 x Line out		
Alarm In / Out	1 x Input / 1 x Output		
Video Out	1 x BNC, 1.0V [p-p] / 75Ω		
Memory Slot	Built-in Micro SD card (optional), up to 128GB		
Environmental			
Operating Temperature	-40°C ~ 70°C / -40°F ~ 158°F		
Operating Humidity	10% ~ 95%		
Protection Level	IP66, TVS 6000V lightning protection, surge protection and voltage transient protection		
Electrical			
Power	24V AC / 3A (Power adapter included)		
Power Consumption	Max. 70W (Laser on)		
Mechanical			
Weight	10kg / 22lb (Gross Weight)		
Dimensions	404 x 222.6 x 243.5mm / 15.9" x 8.76" x 9.59"		