S4 PANOMERA®

S4 40/11 & S4 30/22 – Multifocal Sensor System with 4 Sensors

40/30 MEGAPIXELS effective resolution

4K Ultra HD Ready ★

180 m (591 ft) >125 px/m (38 px/ft) Recognition Distance — S4 40/11

90 m (295 ft) >125 px/m (38 px/ft) Recognition Distance — S4 30/22

up to 12.5 fps

Low Bandwidth

Digital Day/Night

UWDR Ultra Wide Dynamic Range

High Light sensitivity

H.264

Multi User

Weather-proof

The patented **Panomera® Multifocal Sensor System** is a totally novel camera technology particularly developed for the extensive video surveillance of large-scale areas. With **Panomera®**, enormously broad ranges as well as areas with great distances are displayed in a completely new resolution quality – in real time and at high frame rates.

With **Panomera®**, a huge area can be surveilled from a single location – and the resolution can be almost scaled without limits depending on the customer's needs (e.g. by combining multiple **Panomera® Multifocal Sensor Systems**).
The innovative lens and sensor concept of the **Panomera®** offers a unique overall view while, at the same time, capturing the finest of details even for long distances.
The result is a significant reduction of infrastructural demands:
In places where, in the past, several HD or megapixel cameras would have had been required, now, one **Panomera® Multifocal Sensor System** alone is sufficient.

Panomera® far exceeds the conventional Full HD 1080p standard and megapixel resolution.
As a **Multifocal Sensor System** especially scaled for each customer requirement, all areas of the entire surveillance scene are simultaneously displayed at maximum detail resolution.
Regardless of which part of the surveilled area an operator concentrates on and no matter when, with **Panomera®** all events are entirely covered at all times.
Therefore, an incident can always be re-constructed to be used as evidence in court, no matter where it took place and even at a later point in time, and individuals involved can be identified.

Panomera® provides for a full overall view with minimum wear and almost no maintenance.
The **Multifocal Sensor System**, thus, offers a long service life and long-term investment protection.

Features

- **Multifocal Sensor System** with **4 sensors**
- **Panomera® Effect** for a resolution across the entire object space always higher than **125 px/m**[1] for up to a distance of **180** or **90 m**[2]
- Specially scaled angles of view and aspect ratios for highly diverse requirements
- Effective resolution **40** or **30 megapixels**[2] (compared to a conventional single-sensor camera)
- **4K Ultra HD Ready**
- Consistent depth of field for overall image sharpness
- Extremely bandwidth-friendly real-time data transmission (streaming) with up to **12.5 fps** at full resolution
- Digital Day/Night switching technology[3]
- **Ultra Wide Dynamic Range (UWDR)** for highest color fidelity and superb detail reproduction even in scenes with a wide range of contrast and strong backlighting
- Permanent capturing/recording of the entire scene
- Pure Digital Signal Processing
- Remote Back Focus Control
- High-efficiency H.264 video compression
- Automatic (brightness) Level Control (ALC)
- Automatic Gain Control (AGC)
- Automatic White Balance (AWB)
- 3D Digital Noise Reduction (3D DNR)
- Privacy Zone Masking (hiding/masking of protected areas)
- Automatic object tracking over long distances
- Multiuser capability
- Multicast capability
- Recording with SMAVIA Recording Server supported
- Weather-proof (IP66)
- Integrated heater
- Easy installation and maintenance
- Copper or fibre-optic networking[2]
- Voltage supply (camera) with 48 V DC, 24 V AC (50/60 Hz) or PoE+ (IEEE 802.3at)
- ONVIF Profile S compliance for easy integration into 3rd party systems
- DIN EN 50130-4 compliant

Areas of Application

- Building facades and perimeter protection, small to medium-sized parking spaces, city surveillance applications, station platforms (train, metro, tram and bus), warehouses and logistics areas, shopping malls, terminals (airport, container, ferry) etc.

1) Depending on the installation height and camera inclination; 125 px/m meet the requirements for the recognition of persons by an operator.
2) Depending on the model
3) The Day/Night switching is performed digitally, without the use of a mechanically removable IR-cut filter; the camera is not sensitive to infrared light during night.

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Variants/Options

Variants Panomera® S4 40/11	
004907.401	**Panomera® S4 40/11 C** Panomera® Multifocal Sensor System, 4 sensors, hFOV = 11°, vFOV = 22°, aspect ratio = 1:2, effective resolution 40 MP, recognition distance (≥125 px/m) for up to 180 m, 1000BASE-T Ethernet port for copper cabling
004907.402	**Panomera® S4 40/11 SX** Panomera® Multifocal Sensor System, 4 sensors, hFOV = 11°, vFOV = 22°, aspect ratio = 1:2, effective resolution 40 MP, recognition distance (≥125 px/m) for up to 180 m, 1000BASE-SX optical SFP port for fibre-optic cabling (MMF, 850 nm, 550 m)
004907.403	**Panomera® S4 40/11 LX** Panomera® Multifocal Sensor System, 4 sensors, hFOV = 11°, vFOV = 22°, aspect ratio = 1:2, effective resolution 40 MP, recognition distance (≥125 px/m) for up to 180 m, 1000BASE-LX/LH optical SFP port for fibre-optic cabling (SMF, 1310 nm, 10 km)

Variants Panomera® S4 30/22	
004907.404	**Panomera® S4 30/22 C** Panomera® Multifocal Sensor System, 4 sensors, hFOV = 22°, vFOV = 30°, aspect ratio = 5:7, effective resolution 30 MP, recognition distance (≥125 px/m) for up to 90 m, 1000BASE-T Ethernet port for copper cabling
004907.405	**Panomera® S4 30/22 SX** Panomera® Multifocal Sensor System, 4 sensors, hFOV = 22°, vFOV = 30°, aspect ratio = 5:7, effective resolution 30 MP, recognition distance (≥125 px/m) for up to 90 m, 1000BASE-SX optical SFP port for fibre-optic cabling (MMF, 850 nm, 550 m)
004907.406	**Panomera® S4 30/22 LX** Panomera® Multifocal Sensor System, 4 sensors, hFOV = 22°, vFOV = 30°, aspect ratio = 5:7, effective resolution 30 MP, recognition distance (≥125 px/m) for up to 90 m, 1000BASE-LX/LH optical SFP port for fibre-optic cabling (SMF, 1310 nm, 10 km)

Panomera® Accessories	
004389	**WBMA – Wall Mount Bracket** Wall mount bracket WBMA with integrated joint, compatible with Panomera® S4

Optional Licenses SMAVIA Recording Server (Panomera® Sub-Channels)	
004898	**DLC - 3 Additional Panomera® Sub-Channels** License for the use of three additional HD channels for the exclusive recording of Panomera® sub-channels

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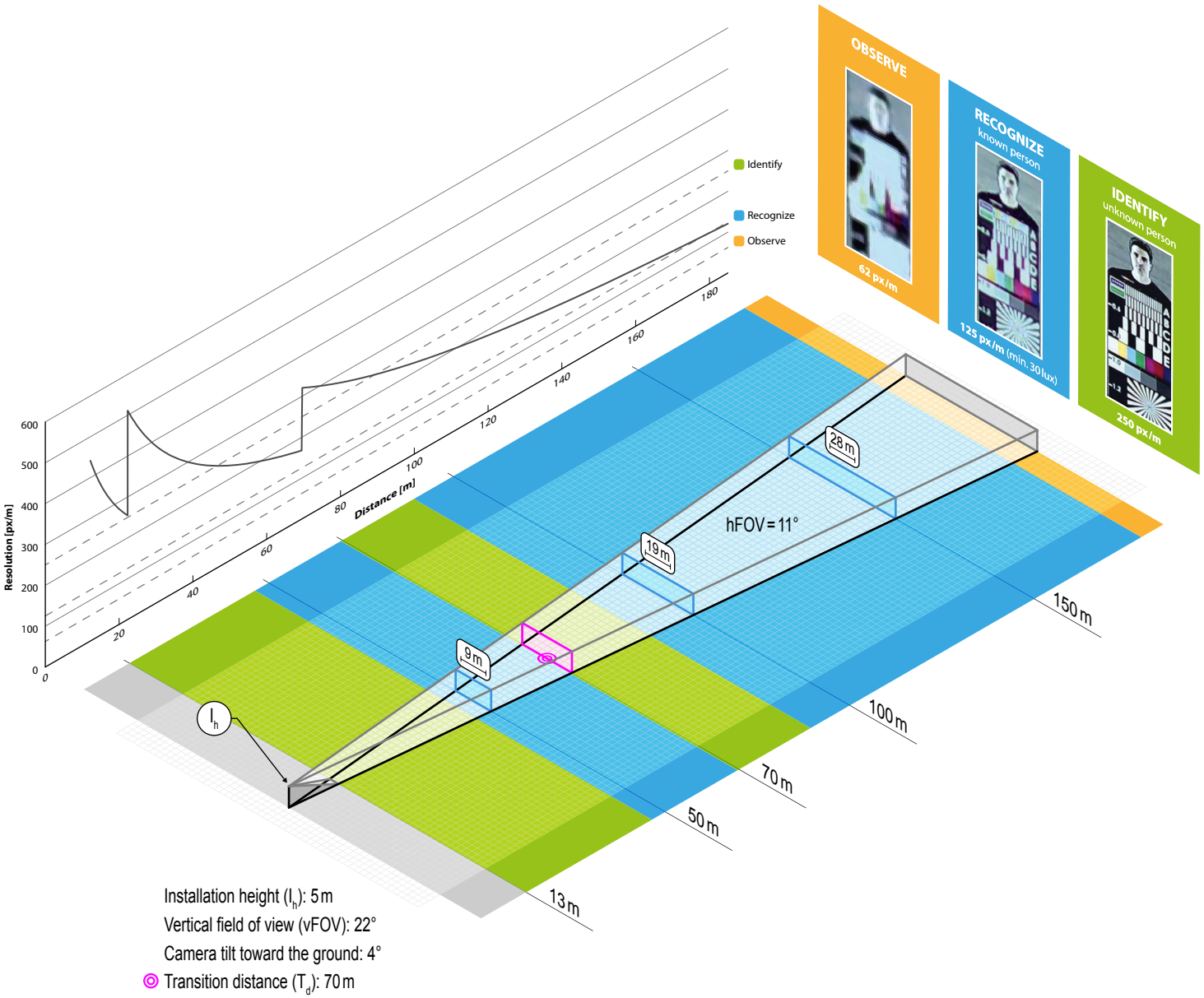
Field of View Panomera® S4 40/11



Installation height (l_h): 5 m
Vertical field of view (vFOV): 22°
Camera tilt toward the ground: 4°
◎ Transition distance (T_d): 70 m

Basic Recommendations	
Installation height (l_h)	4.5 – 5.5 m
Camera tilt toward the ground for an ideal resolution distribution @l_h	approx. +4° @5 m (on the assumption that the camera body was initially mounted parallel to the ground)
Transition distance (T_d)	70 m (use as an adjusting aid for an ideal camera tilt)

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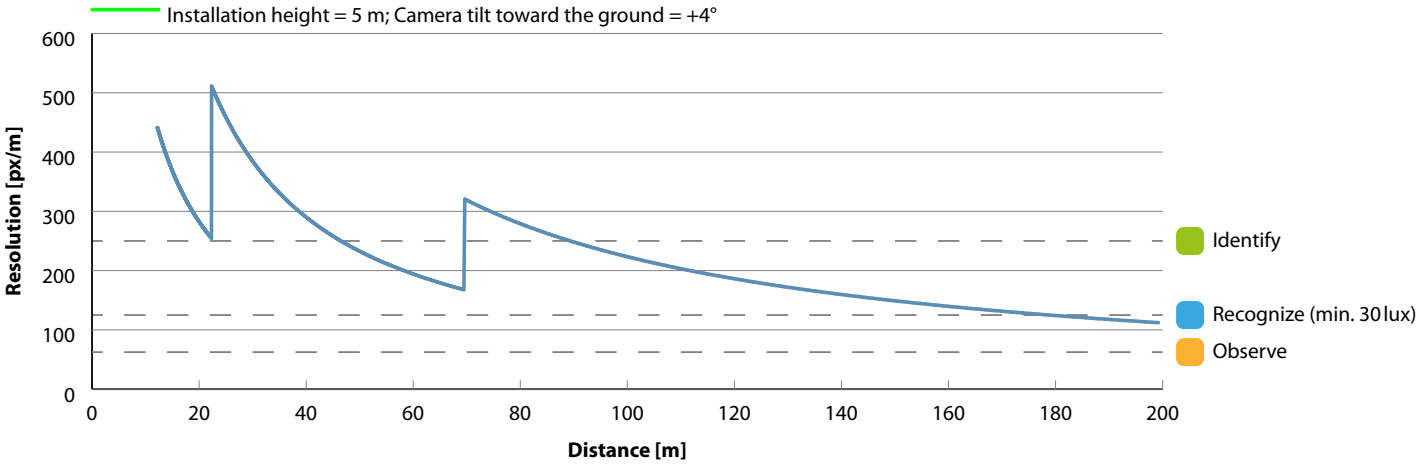
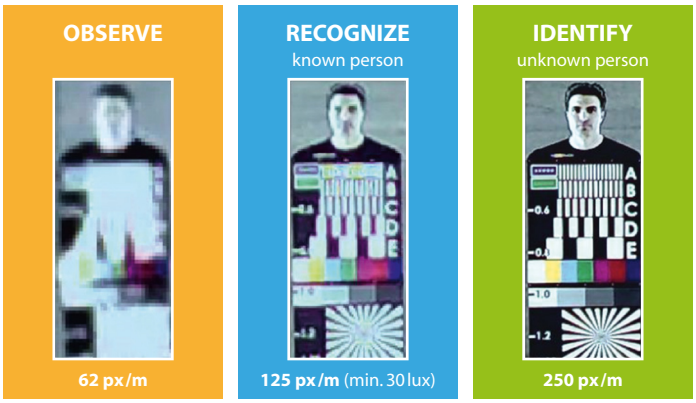
Resolution Panomera® S4 40/11



Recognition distance (≥125 px/m) for up to 180 m[4)]

Distance [m]	Image Width [m]	Image Height [m]	Resolution [px/m]
50	9.6	5.3	233
70	13.5	5.5	319
100	19.3	5.7	223
150	28.9	6.0	149
200	38.5	6.3	112



4) Illuminance of at least 30 lux recommended over the entire scene

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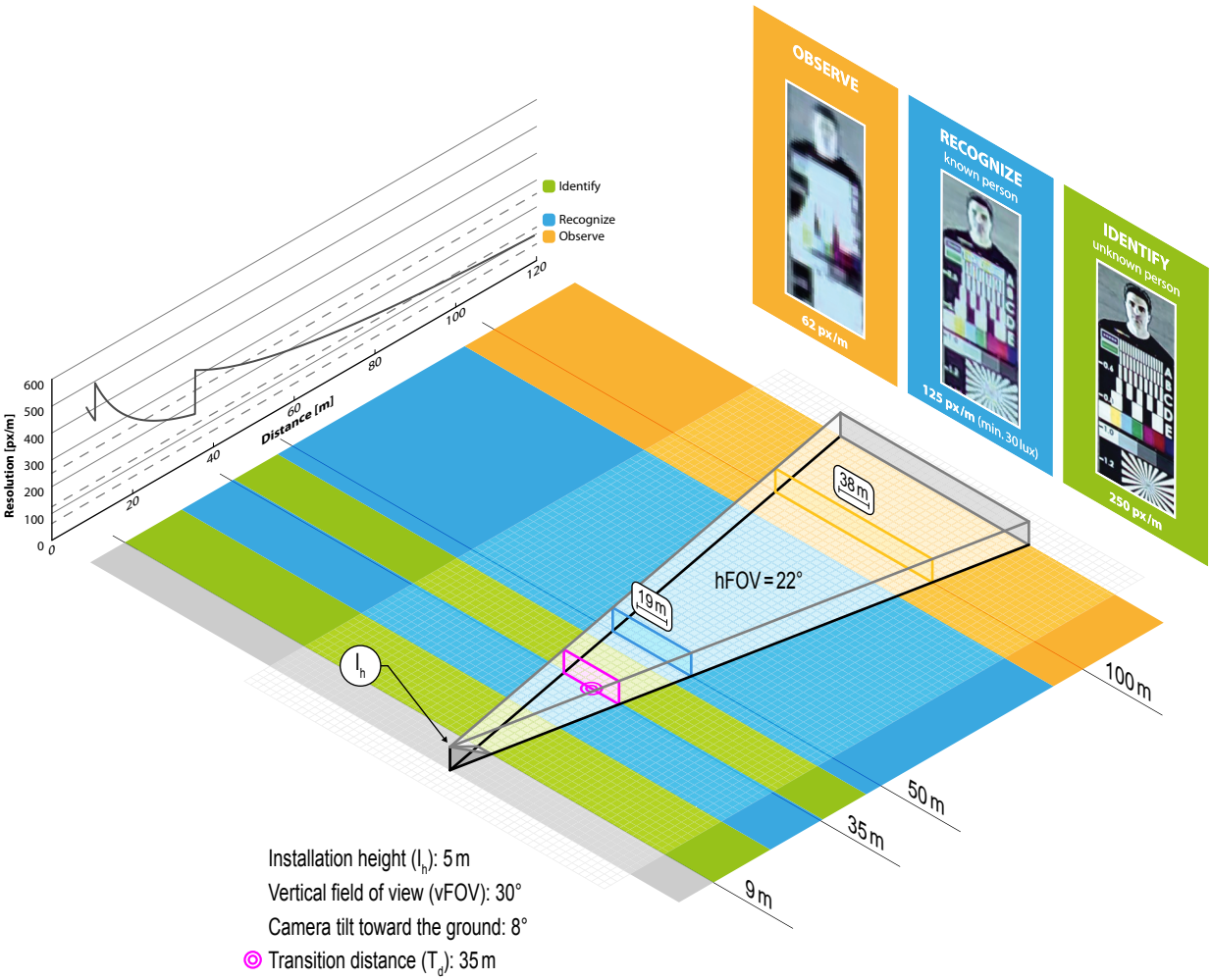
Field of View Panomera® S4 30/22



Installation height (l_h): 5 m
Vertical field of view (vFOV): 30°
Camera tilt toward the ground: 8°
◎ Transition distance (T_d): 35 m

Basic Recommendations	
Installation height (l_h)	4.5 – 5.5 m
Camera tilt toward the ground for an ideal resolution distribution @l_h	approx. +8° @5 m (on the assumption that the camera body was initially mounted parallel to the ground)
Transition distance (T_d)	35 m (use as an adjusting aid for an ideal camera tilt)

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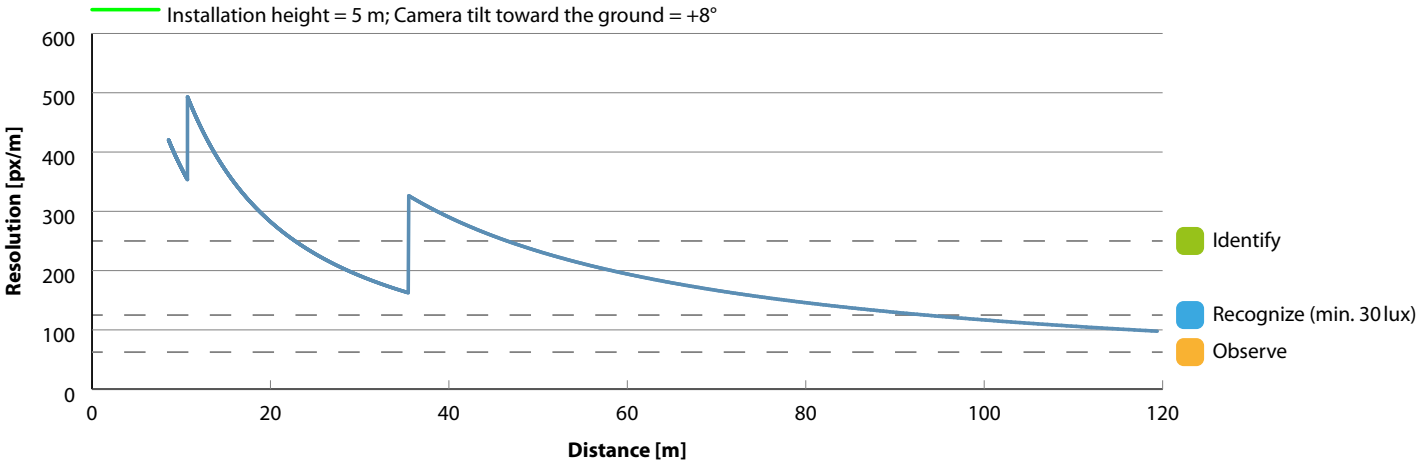
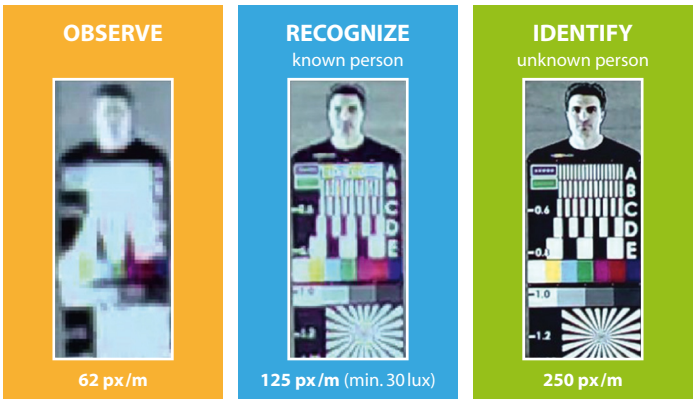
Resolution Panomera® S4 30/22



Recognition distance (≥125 px/m) for up to 90 m[5)]

Distance [m]	Image Width [m]	Image Height [m]	Resolution [px/m]
35	13.6	5.3	326
50	19.4	5.4	233
100	38.9	5.8	117



5) Illuminance of at least 30 lux recommended over the entire scene

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Specifications

Sensor System	
Type	Multifocal Sensor System
Number of sensors	4
Number of sensor pixels	16 MP
Signal processing	Pure Digital Signal Processing
Image capture	Progressive Scan
Sensor sensitivity	0.5 lux
Dynamic range (UWDR)	120 dB (effective)

Resolution	Panomera® S4 40/11	Panomera® S4 30/22
Effective resolution	40 MP (compared to a conventional single-sensor camera)	30 MP (compared to a conventional single-sensor camera)
Recognition distance (≥125 px/m)	Up to 180 m	Up to 90 m
4K Ultra HD Ready	Yes	

Field of View & Aspect Ratio	Panomera® S4 40/11	Panomera® S4 30/22
Horizontal field of view (hFOV)	11° (11.0°)	22° (22.0°)
Vertical field of view (vFOV)	22° (22.2°)	30° (30.4°)
Aspect ratio (H:V)	1:2	5:7

Day/Night Operation	
Day/Night switching technology	Digital (no mechanically removable IR-cut filter)[6)]

Functions	
Black-and-white mode	Automatic (at low light or in night mode)[7)]
Digital Noise Reduction	3D DNR
Brightness control	Automatic Level Control (ALC)
Gain control	Automatic Gain Control (AGC)
White balance	Automatic White Balance (AWB)
Privacy Zone Masking	Yes (max. 20% of the entire image)
Remote Back Focus Control	Yes (for easy remote focusing over the network during installation and maintenance)
Configuration/Operation	Via web browser, SMAVIA Recording Server Software, SMAVIA Viewing Client and Panomera® Viewing Client
Languages	German, English, French, Spanish, Italian; other languages on request

Format and Encoding	
Video compression	H.264
Frame rate	Up to 12.5 fps at full resolution
Transfer format	Progressive (full image)
Live streaming transmission methods	Multicast or unicast (for Viewing Client) Unicast (for recording)

Network and Recording	
Required network bandwidth	48 Mbps (nominal) 6 Mbps with Panomera® Streaming Server
Recording data rate	Up to 24 Mbps

6) The Day/Night switching is performed digitally, without the use of a mechanically removable IR-cut filter; the camera is not sensitive to infrared light during night.
7) Without color information, or rather in black-and-white mode, the image quality in low light conditions will be much clearer (e.g. less color noise).

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Specifications (Continuation)

Network Connections (*depending on the model*)	
Copper cabling	1× M16 BULGIN circular plug-in connector Buccaneer PX0412/10S incl. adapter cable (length 5 m, UV resistant) with circular plug-in connector PX0410/10P on RJ45 plug, 100BASE-TX PoE+ (100 Mbps), 1000BASE-T PoE+ (1000 Mbps)
Fibre-optic cabling	SFP module (mini-GBIC) for 1000BASE-SX (MMF, 850 nm, 550 m) *or* 1000BASE-LX/LH (SMF, 1310 nm, 10 km)

Ethernet	
Protocols	IPv4, TCP, UDP, ARP, ICMP, DHCP, NTP, HTTP, RTSP, IGMP V2, FTP, SMTP, RTP, RTCP

Miscellaneous	
ONVIF compliance	Profile S

Electrical Data	
Connection	1× M16 BULGIN circular plug-in connector Buccaneer PX0412/06P incl. adapter cable (length 5 m, UV resistant) with circular plug-in connector PX0410/06S on 4 single strands
Voltage supply (camera)	48 V DC / 24 V AC (50/60 Hz) *or PoE+ (IEEE 802.3at)* Color coding (strand color): Red: +48 V DC / 24 V AC Black: −48 V DC / 24 V AC
Voltage supply (heater)	12 V DC / 24 V AC Color coding (strand color): Orange: +12 V DC / 24 V AC Brown: −12 V DC / 24 V AC
Power consumption (camera)	Max. 25.5 W
Power consumption (heater)	Max. 20 W

Mechanical Data	
Construction material	Aluminium
Dimensions	*See technical drawings*
Finish	Powder coating, white
Weight	approx. 5.3 kg (w/o sun shield) approx. 5.8 kg (w/ sun shield)

Environmental Conditions	
Suitable installation sites	Indoor/Outdoor
Operating temperature	−40 °C to +50 °C (minimum start-up temperature: −30 °C) Heater On: +15 °C ±3 °C Heater Off: +22 °C ±3 °C
Relative humidity	0% – 90% RH, non-condensing
IP rating	IP66

Approvals/Certifications	
Type	CE, FCC, ACA, DIN EN 50130-4 compliant

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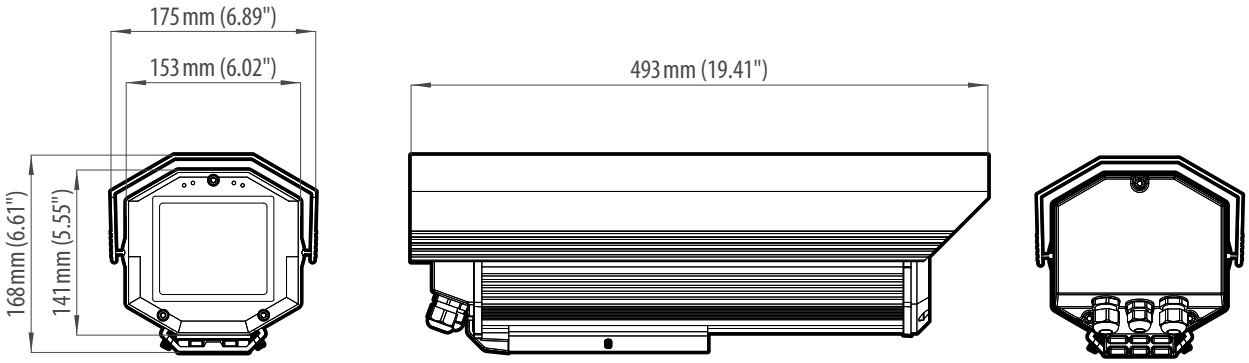
Dimensions



Dimensions w/ sun shield