



127 m (417 ft) <small>>125 px/m (38 px/ft)</small> Recognition Distance S7 76/22	94 m (308 ft) <small>>125 px/m (38 px/ft)</small> Recognition Distance S7 46/45	47 m (154 ft) <small>>125 px/m (38 px/ft)</small> Recognition Distance S7 47/90	273 m (896 ft) <small>>125 px/m (38 px/ft)</small> Recognition Distance S8 149/11	up to 12.5 fps	 Low Bandwidth	 Digital Day/Night	UWDR Ultra Wide Dynamic Range	High Light sensitivity	 Multi User	 Weather-proof
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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 (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.

Due to the **Multifocal Sensor System**, 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 7/8 sensors**
- **Panomera® Effect** for a resolution across the entire object space always higher than **125 px/m¹⁾** for up to a distance of **47 m, 94 m, 127 m or 273 m**
- Horizontal field of view (hFOV): **11°, 22°, 45° or 90°**
- Effective resolution **46, 47, 76 or 149 megapixels** (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 technology²⁾
- **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 and optional fibre-optic networking
- Voltage supply with 48V DC or 24V AC
- 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) 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.

Variants/Options

Variants Panomera® S7 76/22	
005058.404	Panomera® S7 76/22 C Panomera® Multifocal Sensor System, 7 sensors, hFOV=22°, vFOV=45°, aspect ratio=1:2, effective resolution 76 MP, recognition distance (≥125px/m) for up to 127 m, 1000BASE-T Ethernet port for copper cabling
005058.405	Panomera® S7 76/22 Multimode Panomera® Multifocal Sensor System, 7 sensors, hFOV=22°, vFOV=45°, aspect ratio=1:2, effective resolution 76 MP, recognition distance (≥125px/m) for up to 127 m, 1000BASE-SX optical SFP port for fibre-optic cabling (MMF, 850 nm, 550 m)
005058.406	Panomera® S7 76/22 Singlemode Panomera® Multifocal Sensor System, 7 sensors, hFOV=22°, vFOV=45°, aspect ratio=1:2, effective resolution 76 MP, recognition distance (≥125px/m) for up to 127 m, 1000BASE-LX/LH optical SFP port for fibre-optic cabling (SMF, 1310 nm, 10 km)

Variants Panomera® S7 46/45	
005058.422	Panomera® S7 46/45 C Panomera® Multifocal Sensor System, 7 sensors, hFOV=45°, vFOV=25°, aspect ratio=9:5, effective resolution 46 MP, recognition distance (≥125px/m) for up to 94 m, 1000BASE-T Ethernet port for copper cabling
005058.423	Panomera® S7 46/45 Multimode Panomera® Multifocal Sensor System, 7 sensors, hFOV=45°, vFOV=25°, aspect ratio=9:5, effective resolution 46 MP, recognition distance (≥125px/m) for up to 94 m, 1000BASE-SX optical SFP port for fibre-optic cabling (MMF, 850 nm, 550 m)
005058.424	Panomera® S7 46/45 Singlemode Panomera® Multifocal Sensor System, 7 sensors, hFOV=45°, vFOV=25°, aspect ratio=9:5, effective resolution 46 MP, recognition distance (≥125px/m) for up to 94 m, 1000BASE-LX/LH optical SFP port for fibre-optic cabling (SMF, 1310 nm, 10 km)

Variants Panomera® S7 47/90	
005058.401	Panomera® S7 47/90 C Panomera® Multifocal Sensor System, 7 sensors, hFOV=90°, vFOV=50°, aspect ratio=9:5, effective resolution 47 MP, recognition distance (≥125px/m) for up to 47 m, 1000BASE-T Ethernet port for copper cabling
005058.402	Panomera® S7 47/90 Multimode Panomera® Multifocal Sensor System, 7 sensors, hFOV=90°, vFOV=50°, aspect ratio=9:5, effective resolution 47 MP, recognition distance (≥125px/m) for up to 47 m, 1000BASE-SX optical SFP port for fibre-optic cabling (MMF, 850 nm, 550 m)
005058.403	Panomera® S7 47/90 Singlemode Panomera® Multifocal Sensor System, 7 sensors, hFOV=90°, vFOV=50°, aspect ratio=9:5, effective resolution 47 MP, recognition distance (≥125px/m) for up to 47 m, 1000BASE-LX/LH optical SFP port for fibre-optic cabling (SMF, 1310 nm, 10 km)

Variants Panomera® S8 149/11	
005055.404	Panomera® S8 149/11 C Panomera® Multifocal Sensor System, 8 sensors, hFOV=11°, vFOV=38°, aspect ratio=3:10, effective resolution 149 MP, recognition distance (≥125px/m) for up to 273 m, 1000BASE-T Ethernet port for copper cabling
005055.405	Panomera® S8 149/11 Multimode Panomera® Multifocal Sensor System, 8 sensors, hFOV=11°, vFOV=38°, aspect ratio=3:10, effective resolution 149 MP, recognition distance (≥125px/m) for up to 273 m, 1000BASE-SX optical SFP port for fibre-optic cabling (MMF, 850 nm, 550 m)
005055.406	Panomera® S8 149/11 Singlemode Panomera® Multifocal Sensor System, 8 sensors, hFOV=11°, vFOV=38°, aspect ratio=3:10, effective resolution 149 MP, recognition distance (≥125px/m) for up to 273 m, 1000BASE-LX/LH optical SFP port for fibre-optic cabling (SMF, 1310 nm, 10 km)

Optional Accessories	
003965	 <p>Power Supply Unit 48V DC, 5A (for EN 50022 DIN-Rails)³⁾ Power supply for Panomera®, 48 V DC, 5A, suitable for DIN rails according to EN 50022</p>

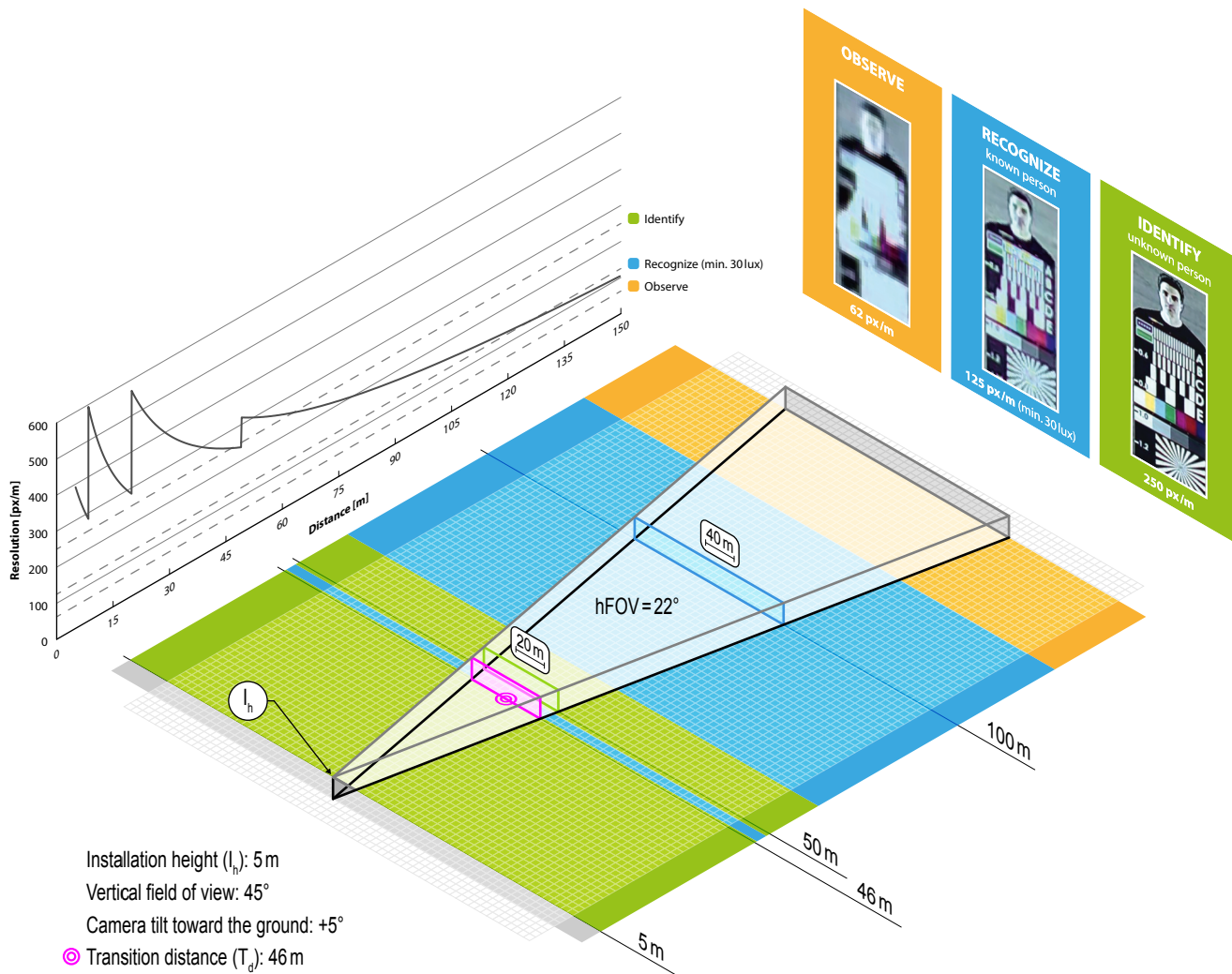
Optional Licenses SMAVIA Recording Server (Panomera® Sub-Channels)	
005059	DLC - 6 Additional Panomera® Sub-Channels License for the use of six additional HD channels for the exclusive recording of Panomera® sub-channels
004900	DLC - 7 Additional Panomera® Sub-Channels License for the use of seven additional HD channels for the exclusive recording of Panomera® sub-channels

3) The Power Supply Unit 48V DC (003965) is suitable for parallel power supply of camera and heater. A 4-wire cable routing is recommended for the power supply.

Mounting Accessories

Panomera® S5–S8 Wall Mount Set	
005084	 <p>WBOVA2 – Wall Mount Bracket Wall mount bracket WBOVA2 with integrated joint, compatible with Panomera® S5–S8</p>
	 <p>WCPA – Support Plate Adapter Reinforcing support plate WCPA for adapting the wall brackets WBMA and WBOVA2</p>
Panomera® S5–S8 Corner Mount Set	
005085	 <p>WBOVA2 – Wall Mount Bracket Wall mount bracket WBOVA2 with integrated joint, compatible with Panomera® S5–S8</p>
	 <p>WCWA – Corner Mount Adapter Corner mount adapter WCWA for corner mounting</p>
Panomera® S5–S8 Ceiling Mount Set	
005086	 <p>WFWCA – Ceiling Mount Bracket Ceiling mount bracket WFWCA with integrated joint, compatible with Panomera® S5–S8</p>
Panomera® S5–S8 Pole Mount Set (65–110 mm)	
005087	 <p>WBOVA2 – Wall Mount Bracket Wall mount bracket WBOVA2 with integrated joint, compatible with Panomera® S5–S8</p>
	 <p>WSFPA – Pole Mount Adapter Pole mount adapter WSPFA for pole diameters 65–110 mm (2.6–4.3")</p>
Panomera® S5–S8 Pole Mount Set (210–225 mm)	
005088	 <p>WBOVA2 – Wall Mount Bracket Wall mount bracket WBOVA2 with integrated joint, compatible with Panomera® S5–S8</p>
	 <p>WCPA – Support Plate Adapter Reinforcing support plate WCPA for adapting the wall brackets WBMA and WBOVA2</p>
	 <p>DBHWGC – Pole Mount Adapter Pole mount adapter DBHWGC for pole diameters 210–225 mm (8.3–8.6")</p>

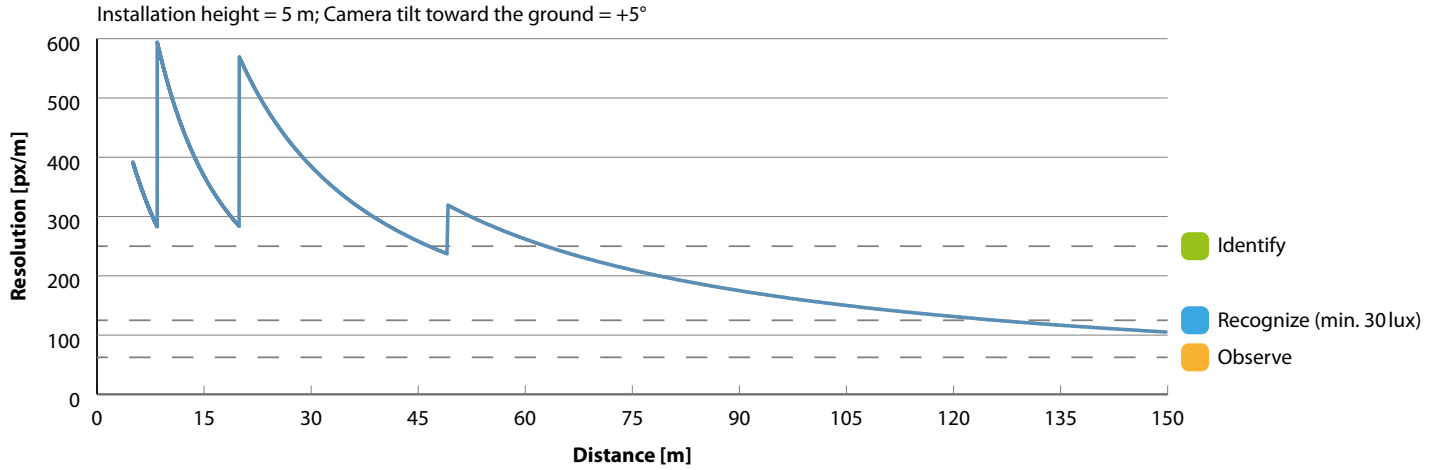
Field of View Panomera® S7 76/22



Installation height (I_h): 5 m
 Vertical field of view: 45°
 Camera tilt toward the ground: +5°
 Ⓞ Transition distance (T_d): 46 m

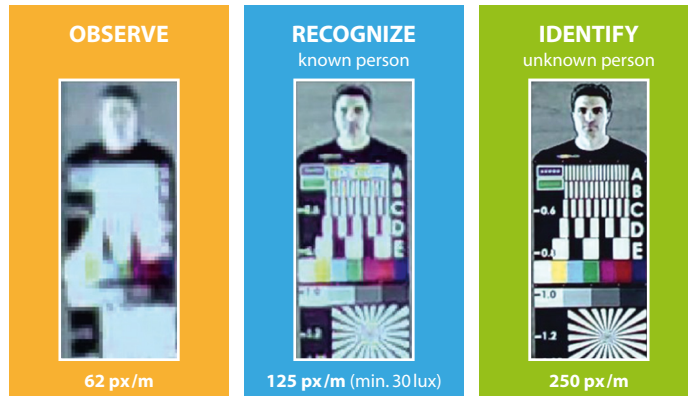
Basic Recommendations	
Installation height (I_h)	4.5 – 5.5 m
Camera tilt toward the ground for an ideal resolution distribution @ I_h	approx. +5° @5m (on the assumption that the camera body was initially mounted parallel to the ground)
Transition distance (T_d)	46 m (use as an adjusting aid for an ideal camera tilt)

Resolution Panomera® S7 76/22



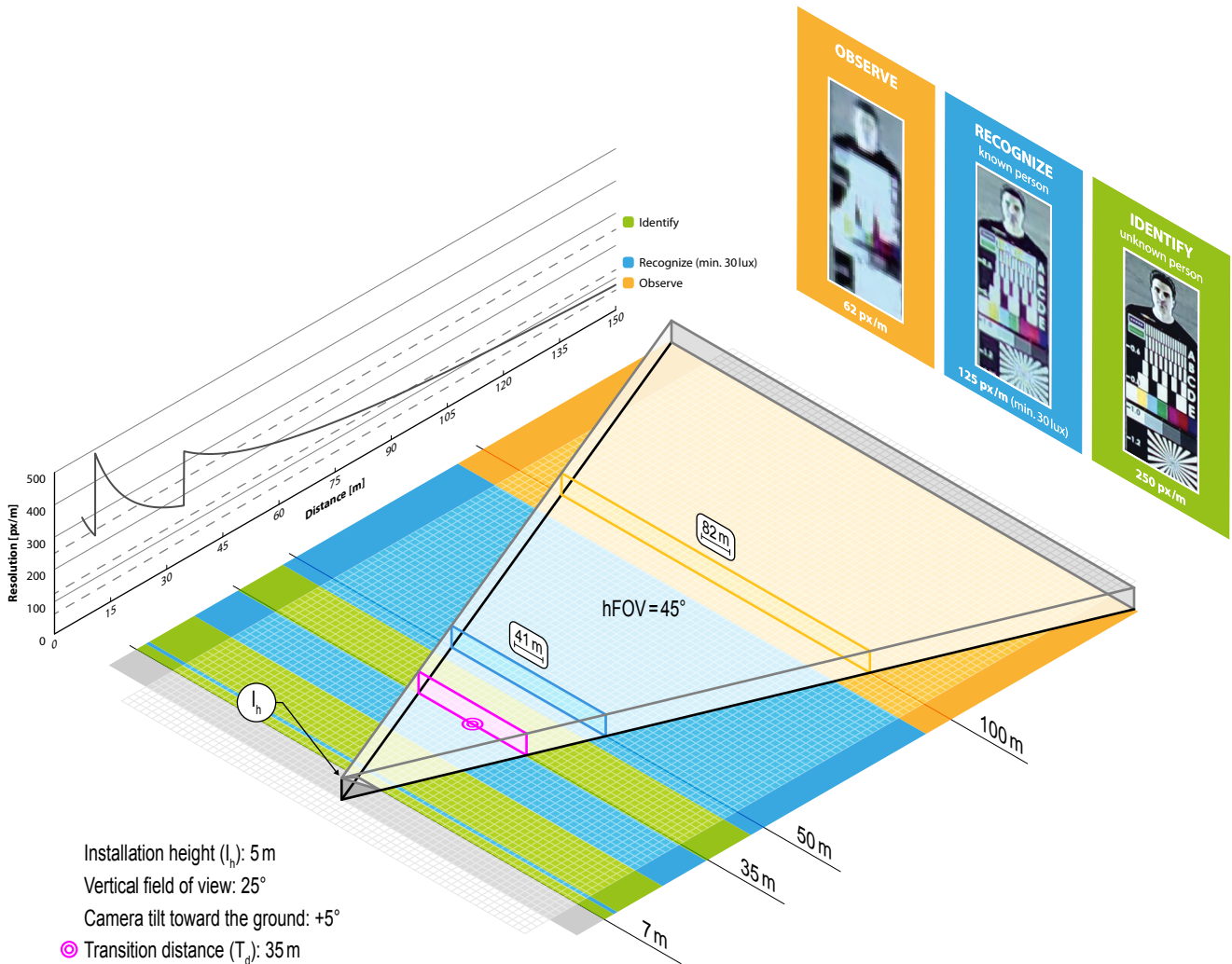
Recognition distance (≥ 125 px/m) for up to 127 m⁴⁾

Distance [m]	Image Width [m]	Image Height [m]	Resolution [px/m]
50	20	5	314
100	40	5	157
150	60	5	105



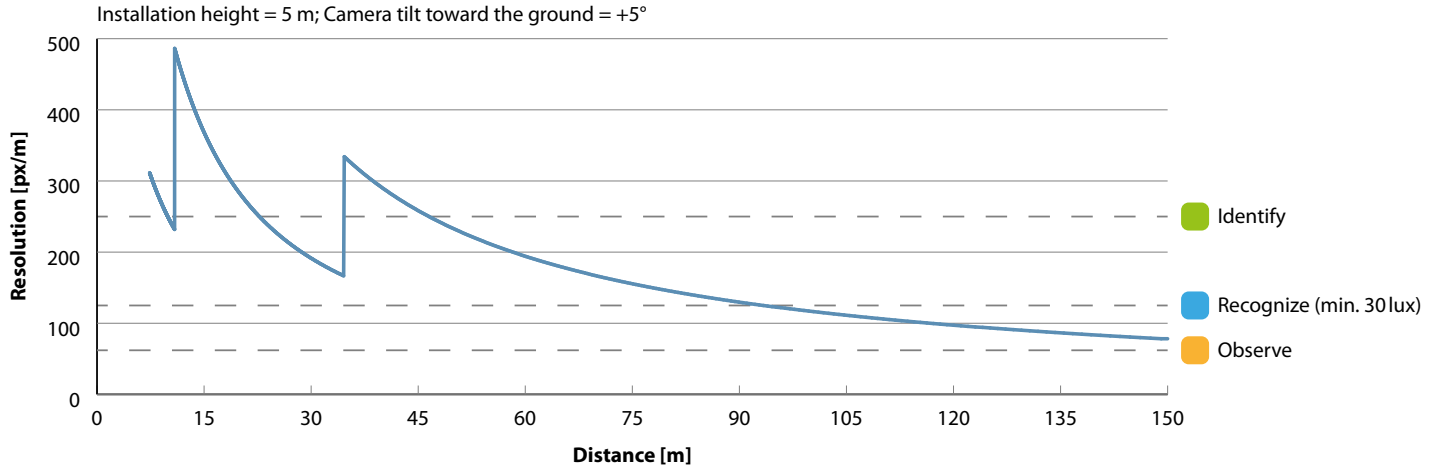
4) Illuminance of at least 30 lux recommended over the entire scene

Field of View Panomera® S7 46/45



Basic Recommendations	
Installation height (I_h)	4.5 – 6.0 m
Camera tilt toward the ground for an ideal resolution distribution @ I_h	approx. +5° @5m (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)

Resolution Panomera® S7 46/45



Recognition distance (≥ 125 px/m) for up to 94 m⁵⁾

Distance [m]	Image Width [m]	Image Height [m]	Resolution [px/m]
50	41	5	233
100	82	5	117
150	124	5	78

OBSERVE

62 px/m

RECOGNIZE
known person

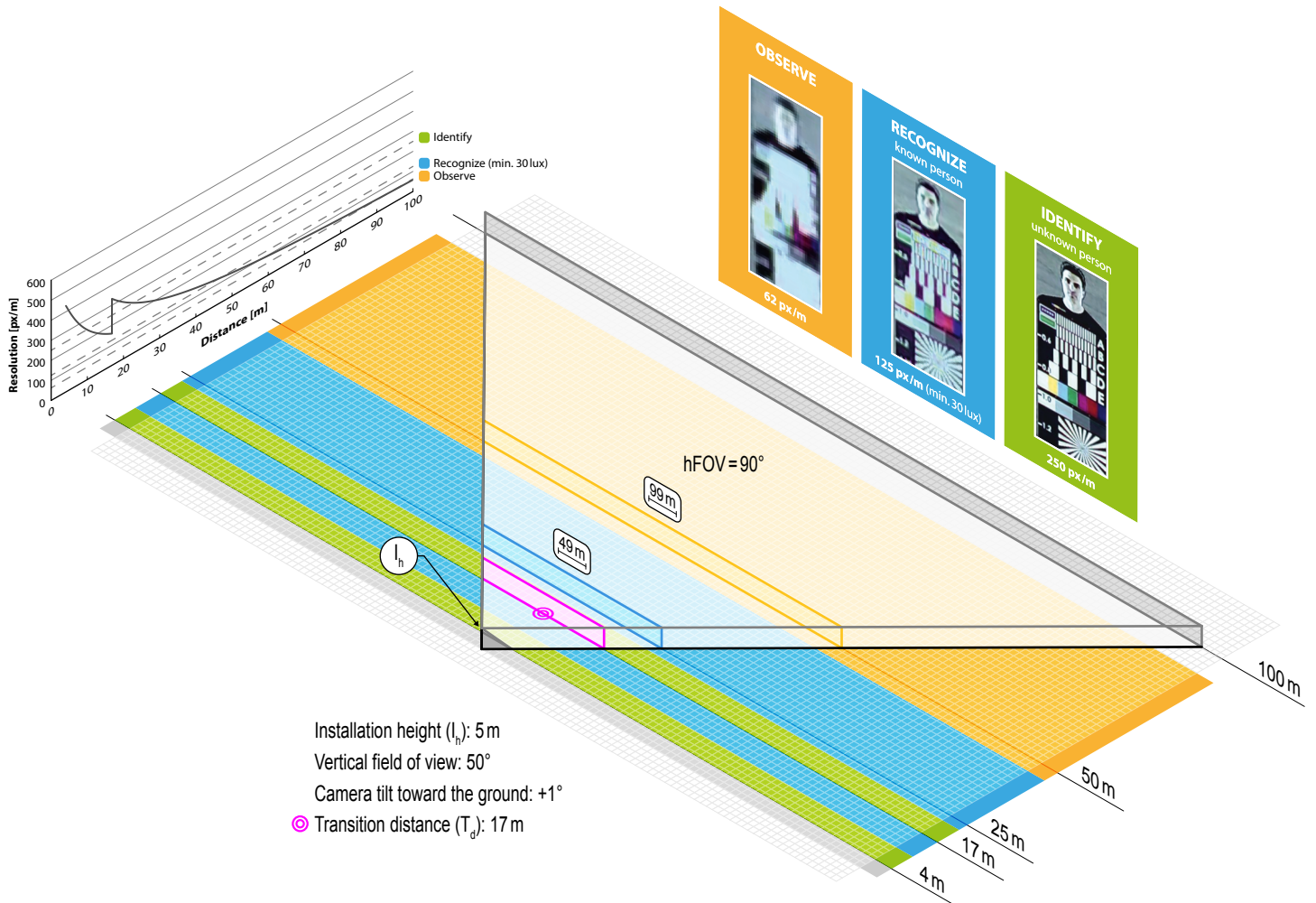
125 px/m (min. 30 lux)

IDENTIFY
unknown person

250 px/m

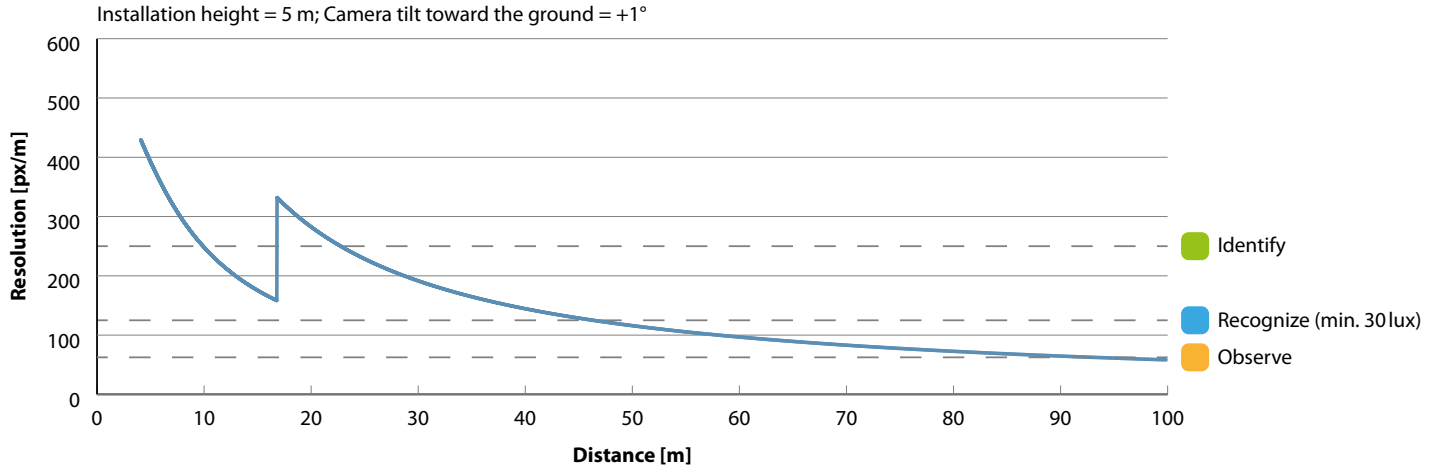
5) Illuminance of at least 30 lux recommended over the entire scene

Field of View Panomera® S7 47/90



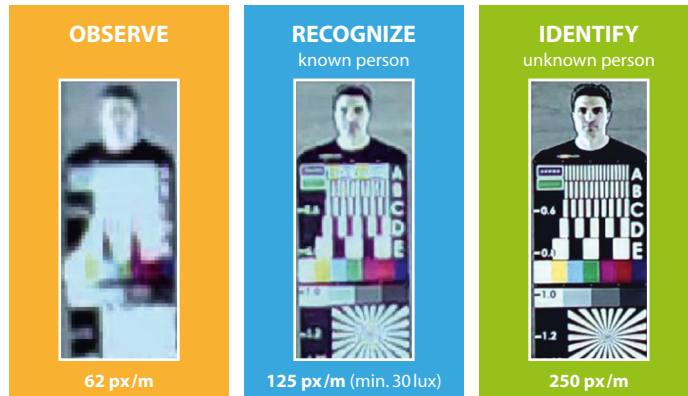
Basic Recommendations	
Installation height (I_h)	4.0 – 6.0 m
Camera tilt toward the ground for an ideal resolution distribution @ I_h	approx. +1° @ 5m (on the assumption that the camera body was initially mounted parallel to the ground)
Transition distance (T_d)	17 m (use as an adjusting aid for an ideal camera tilt)

Resolution Panomera® S7 47/90



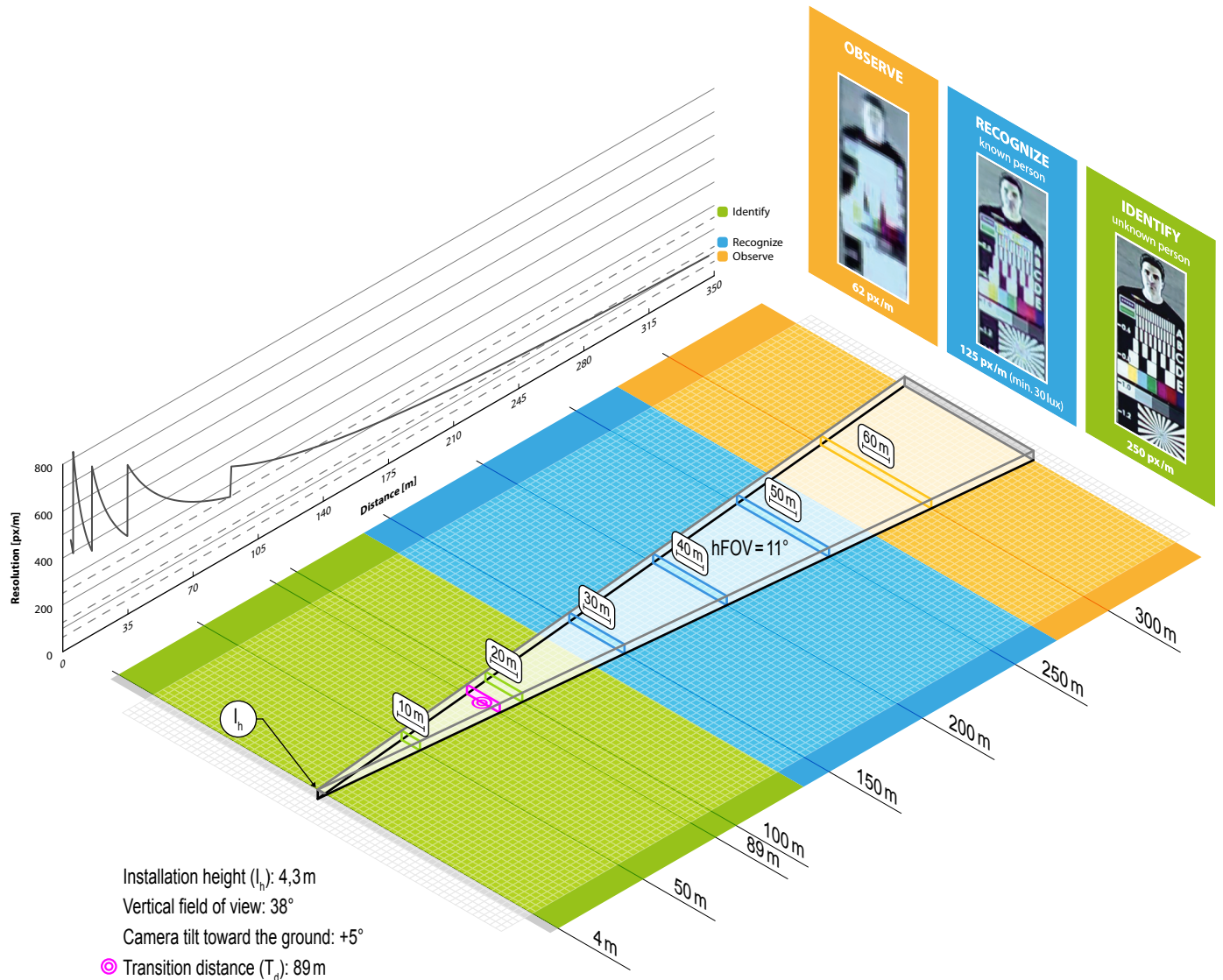
Recognition distance (≥ 125 px/m) for up to 47 m⁶⁾

Distance [m]	Image Width [m]	Image Height [m]	Resolution [px/m]
25	49	5	228
50	99	5	115
100	198	5	58



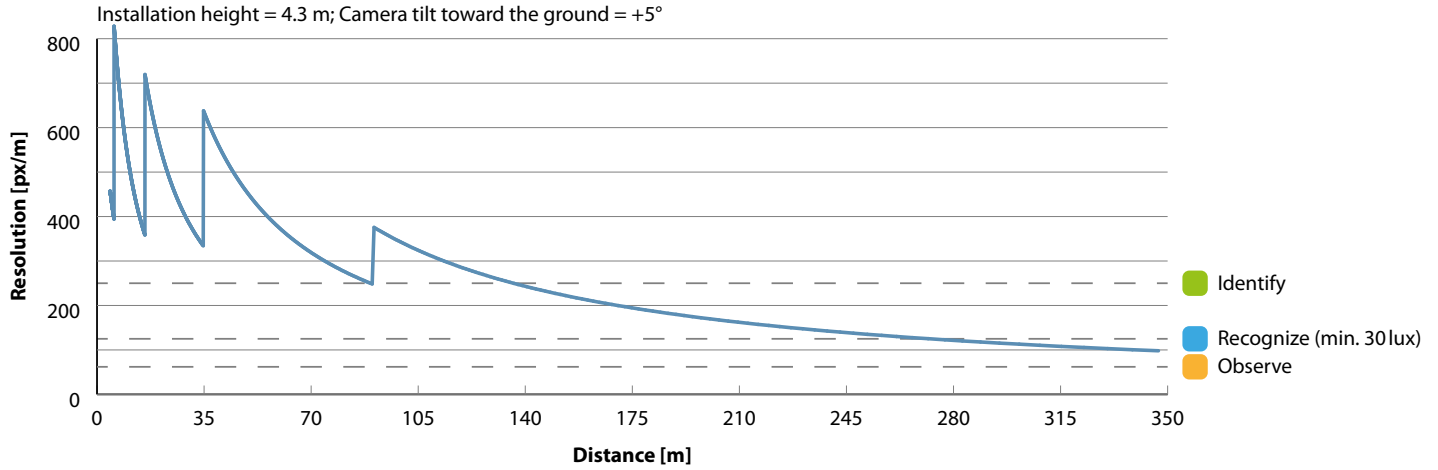
6) ■ Illuminance of at least 30 lux recommended over the entire scene

Field of View Panomera® S8 149/11



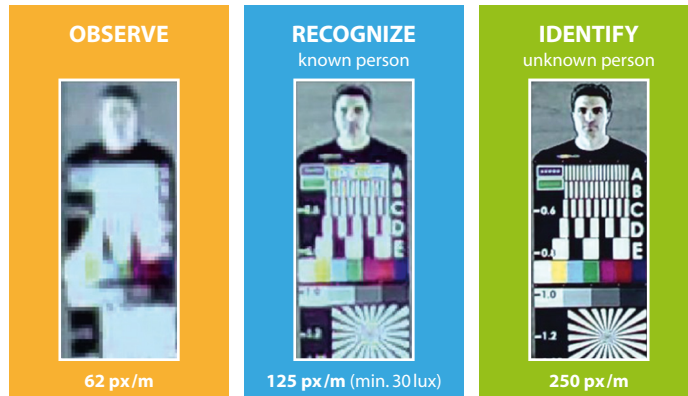
Basic Recommendations	
Installation height (I_h)	4.0 – 6.0 m
Camera tilt toward the ground for an ideal resolution distribution @ I_h	approx. +5° @ 4.3 m (on the assumption that the camera body was initially mounted parallel to the ground)
Transition distance (T_d)	89 m (use as an adjusting aid for an ideal camera tilt)

Resolution Panomera® S8 149/11



Recognition distance (≥ 125 px/m) for up to 273 m⁷⁾

Distance [m]	Image Width [m]	Image Height [m]	Resolution [px/m]
50	10	4.3	445
100	20	4.3	340
150	30	4.3	226
200	40	4.3	170
250	50	4.3	136
300	60	4.3	113



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

Specifications

Sensor System	Panomera® S7 76/22	Panomera® S7 46/45	Panomera® S7 47/90	Panomera® S8 149/11
Type	Multifocal Sensor System			
Number of sensors	7	7	7	8
Number of sensor pixels	28 MP	28 MP	28 MP	32 MP
Signal processing	Pure Digital Signal Processing			
Image capture	Progressive Scan			
Sensor sensitivity	0.5lux			
Dynamic range (UWDR)	120dB (effective)			

Resolution	Panomera® S7 76/22	Panomera® S7 46/45	Panomera® S7 47/90	Panomera® S8 149/11
Effective resolution (compared to a conventional single-sensor camera)	76 MP	46 MP	47 MP	149 MP
Recognition distance (≥ 125 px/m)	Up to 127 m	Up to 94 m	Up to 47 m	Up to 273 m
Identification distance (≥ 250 px/m)	--	--	--	Up to 136 m
4K Ultra HD Ready	Yes			

Field of View & Aspect Ratio	Panomera® S7 76/22	Panomera® S7 46/45	Panomera® S7 47/90	Panomera® S8 149/11
Horizontal field of view (hFOV)	22°	45°	90°	11°
Vertical field of view (vFOV)	45°	25°	50°	38°
Aspect ratio (H:V)	1:2	9:5	9:5	3:10

Day/Night Operation	
Day/Night switching technology	Digital (no mechanically removable IR-cut filter) ⁸⁾

Functions	
Black-and-white mode	Automatic (at low light or in night mode) ⁹⁾
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	Panomera® S7 76/22	Panomera® S7 46/45	Panomera® S7 47/90	Panomera® S8 149/11
Required network bandwidth (nominal, for recording)	42 Mbps ¹⁰⁾	42 Mbps ¹⁰⁾	42 Mbps ¹⁰⁾	48 Mbps ¹⁰⁾
	6 Mbps (with Panomera® Streaming Server)			
Recommended network bandwidth	1000 Mbps (Gigabit Network)			

8) 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.

9) 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).

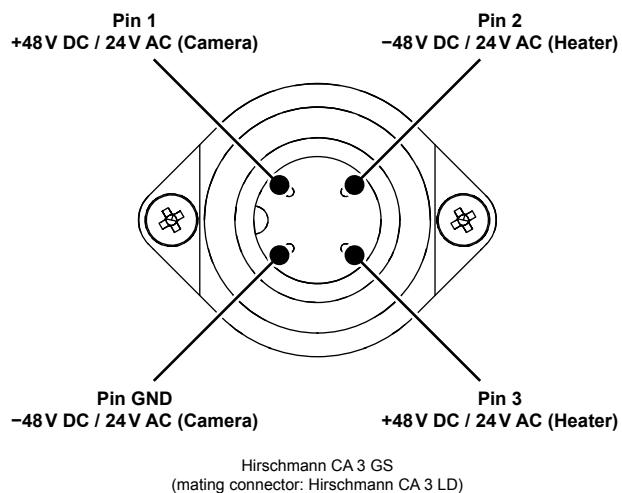
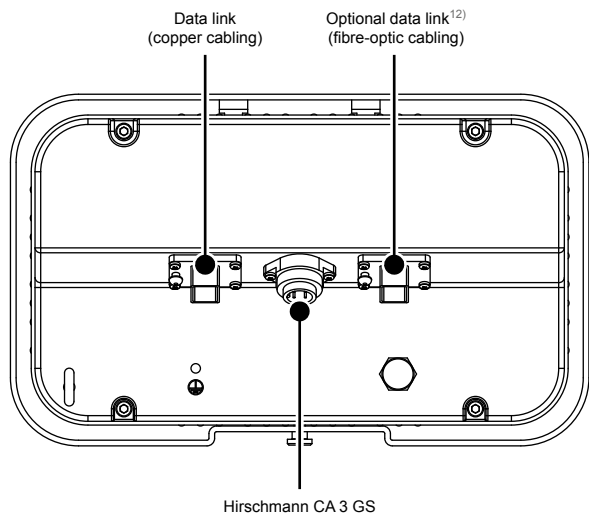
10) This value is based on the encoding of each sensor with 6Mbps and the use of the recording system as a proxy for the live view.

Specifications (Continuation)

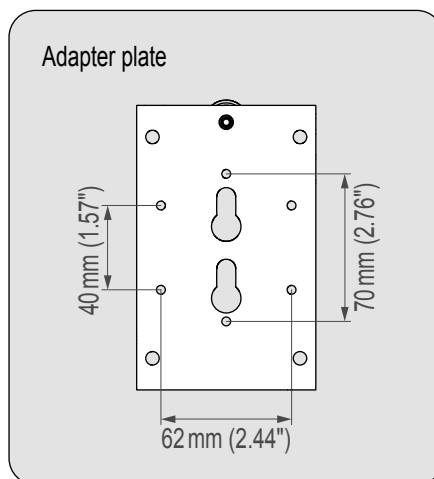
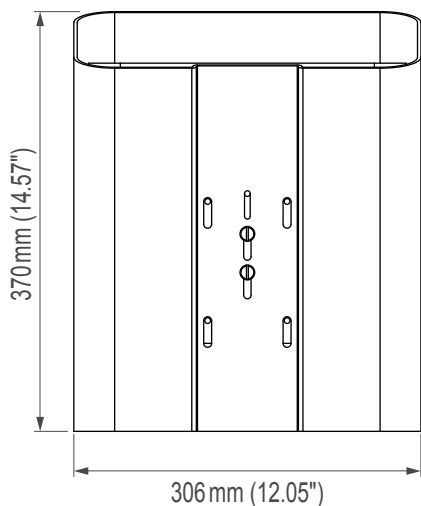
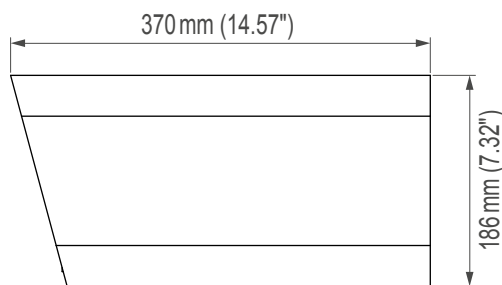
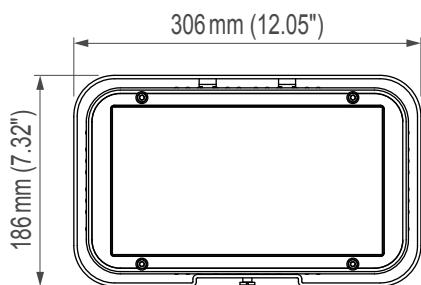
Network Connections (depending on the model)					
Copper cabling	1× Telegärtner STX V4 bulkhead H86000A0002 with STX RJ45 coupler Cat.6 J80029A0010 for 1000BASE-T (1000Mbps) Included: • STX V4 plug housing H86011A0011 with STX RJ45 field plug insert Cat.6 J80026A0004, for field-assembly • Ready-made copper cable (length 3 m, UV-resistant, Telegärtner STX on RJ45 plug)				
Fibre-optic cabling MMF	1× Telegärtner STX V4 bulkhead H86000A0002 with STX LC-Duplex adaptor Multimode F80074A0000 for 1000BASE-SX (MMF, 850nm, 550m) Included: • STX V4 plug housing H86011A0011 with STX LC-Duplex plug insert Multimode F80073A0000, for field-assembly • Ready-made fibre-optic cable (length 10 m, UV-resistant, Telegärtner STX on LC-Duplex connector Multimode)				
Fibre-optic cabling SMF	1× Telegärtner STX V4 bulkhead H86000A0002 with STX LC-Duplex adaptor Singlemode F80074A0001 for 1000BASE-LX/LH (SMF, 1310nm, 10km) Included: • STX V4 plug housing H86011A0011 with STX LC-Duplex plug insert Singlemode F80073A0001, for field-assembly • Ready-made fibre-optic cable (length 10 m, UV-resistant, Telegärtner STX on LC-Duplex connector Singlemode)				
Ethernet					
Protocols	IPv4, TCP, UDP, ARP, ICMP, DHCP, NTP, HTTP, RTSP, IGMP V2, FTP, SMTP, RTP, RTCP				
Miscellaneous					
ONVIF compliance	Profile S				
Electrical Data		Panomera® S7 76/22	Panomera® S7 46/45	Panomera® S7 47/90	Panomera® S8 149/11
Voltage supply ¹¹⁾		Camera: 48V DC / 24V AC Heater: 48V DC / 24V AC			
Power consumption		Camera: Max. 44W Heater: Max. 60W		Camera: Max. 51W Heater: Max. 60W	
Connection	Hirschmann CA 3 GS (mating connector: Hirschmann CA 3 LD)				
Mechanical Data		Panomera® S7 76/22	Panomera® S7 46/45	Panomera® S7 47/90	Panomera® S8 149/11
Construction material	Aluminium				
Dimensions	See "Dimensions" on page 14.				
Finish	Powder coating, grey white (RAL 9002)				
Weight (with sun shield)	approx. 8.5 kg			approx. 8.7 kg	
Environmental Conditions					
Suitable installation sites	Indoor/Outdoor				
Operating temperature	-40°C to +50°C (minimum start-up temperature: -30°C) Heater On: < +10°C Heater Off: > +10°C				
Relative humidity	0% – 90% RH, non-condensing				
IP rating	IP66				
Approvals/Certifications					
Type	CE, FCC, ACA, DIN EN 50130-4 compliant				

11) The Power Supply Unit 48V DC (003965) is suitable for parallel power supply of camera and heater. A 4-wire cable routing is recommended for the power supply.

Connections



Dimensions



12) Depending on the model