

# EXTERNAL COMPACT MARINE PTZ CAMERA



KONGSBERG



## RUGGED COMPACT MARINE PAN/TILT/ZOOM CAMERA – “KM” RANGE

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- **1080p @ 30 fps STARVIS HD IP 30x option**
- **36x SD analogue or IP option**
- **Dual sensor – visible + LWIR thermal options**
- **Stainless Steel or painted Aluminium options**

The Kongsberg Maritime “KM” range of cameras offer a rugged, compact, Pan, Tilt & Zoom camera solution for use in the harshest of marine environments and includes a comprehensive range of options to suit each application.

The KM PTZ camera is designed using the latest technology in intelligent imaging and can be specified with a single visible sensor, single visible sensor plus illuminators, or dual sensor combining visible zoom & LWIR uncooled thermal sensors for the ultimate flexibility in detection, recognition and identification of subjects.

The High Definition (HD) IP option uses an advanced 1/2.8” STARVIS CMOS visible sensor with Wide Dynamic Range (WDR) and exceptional low light performance. It offers 30x optical zoom, with 12x digital zoom and ultra-low light sensitivity of 0.01 Lux in colour day mode, as well as auto ICR switching to night mode for extended sensitivity with monochrome imaging. It produces two video streams up to full 1080p HD resolution at 30fps, in a choice of H.264 and MJPEG compression formats. ONVIF compliance ensures seamless integration with other compliant networks and Video Management Software (VMS).

- **Rugged IP67 housing & integrated wiper**
- **ONVIF compliant (IP options only)**
- **IR and white light lighting options**

A Standard Definition (SD) visible sensor option is also available featuring 36x optical zoom, with 12x digital zoom and analogue composite, or ONVIF compliant IP, signal formats.

The rugged IP67 camera features a flat, optically correct, glass window for image clarity and includes an integrated wiper with long life silicone blade. Each camera is supplied complete with a 316L stainless steel mounting bracket, 316L stainless steel junction box for terminating ships cables and a 3m cable tail for interface between the junction box and camera.

### Applications

- **Commercial Vessels**
- **Naval Surface Ships**
- **Port & Harbour Security**
- **Offshore Installations**

## HOUSING & LIGHTING OPTIONS

The rugged KM PTZ camera is offered in satin stainless steel 316L for the ultimate performance in the harshest of marine environments. The camera can also be manufactured from anodised and marine white powder coated aluminium, which is provided with a galvanic isolation kit to combat corrosion caused by electrolysis.

Various lighting options can be integrated into the camera head that will provide usable images up to a range of 150m, in complete darkness. Near Infra-Red (IR) illuminators work with the camera in monochrome mode to provide covert surveillance, whilst the white light option will allow colour images and a visible deterrent. A hybrid lighting option combines near IR and white light.

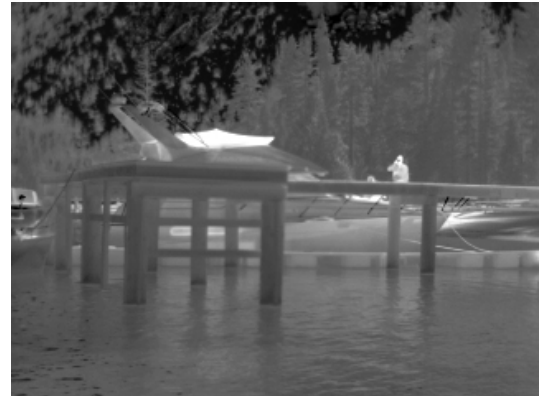


*KM External Compact Marine PTZ Camera: shown here inverted with single sensor / satin stainless steel housing (left) and with white painted aluminium housing / IR illuminator option (right)*

## DUAL SENSOR LWIR THERMAL SENSOR & LENS OPTIONS

The KM PTZ camera is designed using the latest technology in intelligent imaging and can be specified with a single visible sensor, single visible sensor plus illuminators, or dual sensor combining visible zoom & LWIR uncooled thermal sensors for the ultimate flexibility in detection, recognition and identification of subjects.

Thermal technology provides clear, high resolution images through smoke, haze, dust, light fog or the darkest night, so for many applications is the perfect choice for 24-hour surveillance.



	KM External Compact Marine PTZ Camera - Standard Thermal Range (Dual Sensor Option)						
<b>Thermal Lens Option (FOV)</b>	40° - 7.5mm F1.2	16°-19mm F1.1	9° - 35mm F1.2	44° - 14mm F1.2	25° - 25mm F1.2	18° - 35mm F1.2	12° - 50mm F1.2
<b>Resolution/Array Format</b>	320x240 Standard	320x240 Standard	320x240 Standard	640x480 Hi-Res	640x480 Hi-Res	640x480 Hi-Res	640x480 Hi-Res
<b>Sensor type</b>	Uncooled VOx Microbolometer						
<b>Pixel size</b>	17µ						
<b>Spectral band</b>	8-14µm						
<b>Thermal sensitivity</b>	<50mK						
<b>Frame rates</b>	25 / 30Hz						
<b>Image control</b>	White hot, Black hot, Invert						
<b>Focus</b>	Fixed, preset, Athermalised						
<b>Zoom</b>	E-zoom 1-4, Region of interest						
<b>Video output</b>	Composite or IP						

# TECHNICAL SPECIFICATIONS

Visible Sensor	SD	HD
Optical Zoom	36x	30x
Digital Zoom	12x (432x combined)	12x (360x combined)
Resolution	550TVL	Approx. 3.27 million pixels; >800TVL
Image Format	PAL / NTSC	HD 1080p
Image Sensor	1/4" Exview CCD	1/2.8" type Exmor CMOS
Lens	f = 3.4mm to 122.4mm F1.6 to F4.5	f = 4.3mm to 129mm F1.6 to F4.7
Angle of View (H)	57.8° (W) to 1.7° (T)	63.7° (W) to 2.3° (T)
Minimum Illumination	Day mode (colour): 0.1 lux typical Night mode (mono): 0.01 lux typical	0.01 lux colour, 0.0008 lux in high sensitivity mode
Video Output	Composite or IP	HD-IP
Video Compression	H.264, MJPEG (IP only)	H.264, MJPEG
Video Streaming	Multiple simultaneous streams	Up to 2 simultaneous streams

## Electrical

Tilt	+90° to -30° upright / +30° to -90° inverted
Tilt speed	Aluminium: 180° per second / stainless steel: 100° per second
Pan	360° continuous
Pan speed	Aluminium: 180° per second / stainless steel: 100° per second
Presets/tours	127 + wash preset / 16 tours
Protocols	Pelco P, Pelco D
Ethernet	10/100BASE-T
Network protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP, FTP, RTSP, DHCP, SNTP, SNMP
ONVIF compliance	Yes, ONVIF profile S
Power requirements	24V ac/dc 100w max. at camera / 100-240Vac 50/60Hz at junction box
Configuration	Via on-screen menu or web browser
Electro-Magnetic Compatibility	CE marking, BSEN 55022 as part of EN 61000-6-3 2007 Emission and EN 61000-6-1 2007 Immunity

## Environmental

Housing	Camera: IP67 / Junction Box: IP66
Temperature	(Designed to) MIL-STD-810F Operating: -40°C to +60°C aluminium housing / -40°C to +52°C stainless steel housing Storage: -30°C to +70°C
Vibration	(Designed to) MIL-STD-167-1A, Type 1, Shipboard, 4 to 33Hz
Shock	(Designed to) NES 1004, 30g Peak, 18mS

## Mechanical

Mount orientation	Upright, Inverted and Offset
Dimensions	Camera only: 220mm (W) x 370mm (H) / camera with bracket 220mm (W) x 559mm (H) Junction box: 268mm (W) x 366mm (D) x 88mm (H)
Weight	Aluminium: 7Kg / stainless steel: 16Kg (camera only) Bracket: 3Kg / Junction Box: 6Kg
Interface	Camera bracket: 4 x M10 ST/ST A4 fixings on Ø130mm PCD Junction box: 4 x M6 ST/ST A4 fixings, 235mm x 260mm centres
Housing options (camera)	Anodised aluminium, finished with marine anti-corrosion powder coating, RAL9003 white 316L stainless steel, satin finish
Window material	Optically flat glass
Wiper	Yes, with long life silicone blade
Connector	Camera: Amphenol Neptune IP67 / junction box: glands
Junction Box	316L stainless steel
Cable Tail	Low Smoke Zero Halogen (LSZH) insulation composite CCTV cable, 3m long standard

## Lighting Options

IR	Up to 150m, with 30° beam angle
White light	Up to 150m, with 30° beam angle
Hybrid IR / white light	Up to 120m, with 30° beam angle

# KM RANGE ORDERING CODE CONFIGURATOR

		STANDARD CODES			OPTIONAL CODES			
EXAMPLE		KM	- HDIP	- 30	- SSS	( - DS	- 640	- 25 )
<b>PRODUCT RANGE</b>								
<b>KM</b>	EXTERNAL COMPACT MARINE PTZ CAMERA							
<b>SIGNAL INTERFACE</b>								
<b>PAAN</b>	PAL ANALOGUE STANDARD DEFINITION (SD)							
<b>PAIP</b>	PAL IP STANDARD DEFINITION (SD)							
<b>NTAN</b>	NTSC ANALOGUE STANDARD DEFINITION (SD)							
<b>NTIP</b>	NTSC IP STANDARD DEFINITION (SD)							
<b>HDIP</b>	HIGH DEFINITION IP (HD)							
<b>OPTICAL ZOOM RANGE, VISIBLE SENSOR</b>								
<b>36</b>	36 x OPTICAL ZOOM (SD ONLY)							
<b>30</b>	30 x OPTICAL ZOOM (HD ONLY)							
<b>HOUSING MATERIAL</b>								
<b>WAL</b>	WHITE PAINTED ANODISED ALUMINIUM							
<b>SSS</b>	SATIN STAINLESS STEEL 316L							
<b>DUAL SENSOR THERMAL / LIGHTING OPTIONS</b>								
<b>DS</b>	DUAL SENSOR C/W LWIR THERMAL SENSOR							
<b>IR</b>	NEAR IR ILLUMINATORS							
<b>WL</b>	WHITE LIGHT ILLUMINATORS							
<b>HY</b>	HYBRID IR / WHITE LIGHT ILLUMINATORS							
<b>THERMAL CORE RESOLUTION</b>								
<b>320</b>	320 x 240 UNCOOLED LWIR, 25/30HZ (EXPORT LICENCE WILL BE REQUIRED)							
<b>640</b>	640 x 480 UNCOOLED LWIR, 25/30HZ (EXPORT LICENCE WILL BE REQUIRED)							
<b>THERMAL LENS OPTIONS, FIXED</b>								
<b>40</b>	40° FOV, 7.5mm, FOR 320 x 240							
<b>16</b>	16° FOV, 19mm, FOR 320 x 240							
<b>09</b>	9° FOV, 35mm, FOR 320 x 240							
<b>44</b>	44° FOV, 14mm, FOR 640 x 480							
<b>25</b>	25° FOV, 25mm, FOR 640 x 480							
<b>18</b>	18° FOV, 35mm, FOR 640 x 480							
<b>12</b>	12° FOV, 50mm, FOR 640 x 480							

EXAMPLE 1: (SHOWN ABOVE) WHICH SPECIFIES HIGH DEFINITION IP, 30x OPTICAL ZOOM, SATIN STAINLESS STEEL, DUAL SENSOR C/W LWIR THERMAL SENSOR, 640 x 480 UNCOOLED LWIR, 25/30HZ, 25° FOV, 25mm

EXAMPLE 2: **KM-NTAN-36-WAL**; WHICH SPECIFIES NTSC ANALOGUE STANDARD DEFINITION, 36x OPTICAL ZOOM, WHITE PAINTED ANODISED ALUMINIUM

EXAMPLE 3: **KM-HDIP-30-SSS-IR**; WHICH SPECIFIES HIGH DEFINITION IP, 30x OPTICAL ZOOM, SATIN STAINLESS STEEL, NEAR IR ILLUMINATORS

Specifications subject to change without any further notice

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