

'Cobra' sectional pole video inspection system



oe16-100a-rec

- Screw Poles (1-10m), 27-82mm Diam Cameras
- Integral LEDs and Motor Driven Tilt
- Many industrial applications including nuclear

The standard OE16-100a 'Cobra' Sectional Pole Video Inspection System comes with a small colour CCD camera with integral lighting that allows inspection through less than 30mm diameter holes. Uniquely, the camera has a motorised external 90° tilt and can be manually rotated to obtain 360° vision.

The camera is mounted on the end of a lightweight screw together sectional pole, extendable from 1.2 to 5 metres as standard with additional sections available as an option if required (up to 10m max). The system can be broken in to lengths of 1.2 metres for ease of transport and storage.

Alternatively telescopic or static pole mounts can be provided and a number of different interchangeable compact colour, fixed, zoom or rotate and tilt camera options are available.

The user friendly hand held control unit with a 7" screen allows the operator to vary the tilt speed and LED brightness. Video recording is available via a built-in compact Flash Disk Recorder, which can also be removed and plugged into a PC USB port for viewing using Windows® media player.

A battery power pack option is available to allow free ranging.

The controller is also compatible with the OE18-100 Telescopic Pole Video Inspection System, allowing a cost effective dual purpose viewing system to be purchased.

The OE16-100a is suitable for a wide range of industrial harsh environment, hazardous and inaccessible inspection applications in air and in water (IP68 version), including nuclear where it has a proven track record of working in low to high radiation environments. Many of the camera heads also come with polished stainless steel housing and anti-browning glass options for further protection.

Standard Features

16-100a-6004 Colour Fixed Focus Camera Head with LEDs, 90° tilt

Electrical

Horizontal Resolution	380 TV Lines
Minimum Illumination	0.25 Lux @ f/2.0
Sensor	582 x 500 pixels
Video Output	1.0V p-p
Signal to Noise Ratio	48dB
Light Source	4 x 3mm white LEDs
Light Range	3 metres
Power	12V dc/150mA
Power Supply	Mains adaptor supplied
Electro-Magnetic Compatibility	EN50081-1 Emission EN50082-1 Immunity

Environmental

Temperature Range	Operating -20°C to +40°C Storage -20°C to +60°C
Vibration	10g, 20-150Hz, 3-axes (non operating)
Shock	30g peak, 25mS half-sine pulse
Camera Rating	IP65 (IP68, Submersible to 5m for 2 hrs with Lemo connector option)

Optical

Standard Lens	4.3mm – f/2.0
Angle of View	78° diagonal
Shutter	1/50 to 1/100,000 sec.
Focus	Fixed
Port	Optical glass

Mechanical

Diameter	26.4mm
Length	90mm
Weight	Approx. 0.2Kg
Tilt	90°, Electrically driven variable speed
Standard Housing	Aluminium Alloy HE30T6
External Finish	Alchromate
Sectional Poles	5 metres in 1.2 metre lengths – IP65 dust & light jet wash proof (IP68, Submersible to 10m for 2 hrs pole/connector upgrade option)

Camera Options

Polished Stainless Steel Housing
Anti-Browning Glass
Alternative Camera Heads (see over)

Hand Held Monitor/Control Unit

Dimensions	175mm (H) x 275mm (L) x 75mm (D) (excl. handles and connector)
Display	7" TFT Colour
Recorder	MPEG4 Flash Recorder + Expandable Compact Flash Cards (2GB supplied)
Power Input	95-270V ac/10-30V dc
Camera Output	6-12V dc (variable LEDs)
Tilt Output	±6-12V dc (Variable Speed)
Case	Die Cast Aluminium, Black Powder Coated
Weight	2 Kg

Rugged Carry Case

For controller, camera & poles

System Options

Additional lighting
Anodised 1.2m extension poles (or alternative sizes, up to 10m max)
Alternative telescopic or static pole mounts
Waist belt battery power pack



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Alternative Camera Heads

As an alternative to the standard 27mm diameter 16-100a-6004 camera head, we also offer three additional compact and robust CCD camera heads for the Cobra system (from 63mm diameter): the 16-100a-6030, the 16-100a-6930 and the 18-100-6001.

The compact 16-100a-6030 colour zoom camera has a 63mm diameter and integral lighting. The 16-100a-6930 colour zoom camera also has a motorised 180° tilt that can look back on itself and can be manually rotated to obtain 360° vision. The camera housings are anodized aluminium as standard. A polished stainless steel housing with anti-browning glass option is also available for the 16-100a-6030 and 16-100a-6930 camera heads.

**16-100a-6030**

63mm Colour Zoom
Camera with LEDs

16-100a-6930

75mm Colour Zoom
Camera with LEDs,
180° tilt

18-100-6001

Fixed Colour Camera
with Integral lighting
and an Integral 250° tilt

Features**16-100a-6030 and 16-100a-6930 Camera Heads****Electrical**

Horizontal Resolution	440 TV Lines/PH (minimum)
Minimum Illumination	0.2 Lux (nominal) for 100mV of video at 100% Scene Reflectance
Sensor	1/4" format Interline Transfer CCD
Video Output	1.0V, p-p
Signal to Noise Ratio	Minimum 53dB (weighted)
Light Source	8 x 2mm white LEDs
Light Range	3 metres
Power	16 to 24V dc, 0.65A
Power Supply	Mains adaptor supplied
Electro-Magnetic Compatibility	EN50081-1 Emission EN50082-1 Immunity

Environmental

Temperature	Operating -5°C to +40°C Storage -20°C to +60°C
Vibration	5g, 20-150Hz, 3-axes (non-operating)
Shock	30g peak, 25mS half-sine pulse
Camera Rating	IP65, dust & light jet wash proof (IP68, Submersible to 10m for 2 hrs with Lemo connector option)

Optical

Zoom Lens	4.2mm to 42mm, F1.8 – F2.9
Angle of View (in Water)	42° diagonal
Focus Range	10mm to infinity (at wide angle) 1400mm to infinity (at narrow angle)
Port	Perspex

Mechanical

Diameter	63mm (16-100a-6030) 75mm (16-100a-6930)
Length	95mm (16-100a-6030) 125mm (16-100a-6930)
Weight	Approx. 0.7Kg (16-100a-6030) Approx. 0.9Kg (16-100a-6930)
Tilt (oe16-100a-6930)	180°, Electrically driven variable speed
Tilt (oe16-100a-6030)	Connects to standard 16-100a-6004 Tilt
Standard Housing	Aluminium Alloy HE30T6
External Finish	Hard Anodised Black

Features**18-100-6001 Camera Head****Electrical**

Image Resolution	480 TV Lines
Minimum Illumination	0.5 Lux
Video Output	1.0V, p-p
Sensing Device	1/4" CCD Interline Transfer
Signal to Noise Ratio	52dB
Light Source	6 x 5mm white LEDs
Light Range	3 metres
Power	6 to 12V dc/300mA
Shutter	Auto 1/15, 1/100,000
Electro-Magnetic Compatibility	EN50081-1 Emission EN50082-1 Immunity

Environmental

Temperature	Operating -20°C to +40°C Storage -20°C to +60°C
Vibration	10g, 20-150Hz, 3-axes (non-operating)
Shock	30g peak, 25mS half-sine pulse
Camera Rating	IP65, dust & light jet wash proof (IP68, Submersible to 10m for 2 hrs with Lemo connector option)

Optical

Standard Lens	2mm @ f/1.2
Angle of View	70° diagonal
Focus	Fixed Focus
Port	Acrylic

Mechanical

Dimensions (excl. Connector)	(W) 64mm x (L) 94mm x (D) 60mm
Weight	0.4Kg
Tilt	250°, Electrically driven variable speed
Standard Housing	Aluminium Alloy HE30T6
External Finish	Hard Anodised Dyed Black

Camera Options

Polished Stainless Steel Housing with
Anti-Browning Glass (except 18-100-6001)

Compatible Cameras**OE16-376/377**

Light Ring Colour Camera

**OE16-100a-6940**

RC Crawler Video Camera

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Kongsberg Maritime reserves the right to amend specifications without notice.