



Industrial imaging

# Augmented reality: mobile 3D smart camera with overlay function



Camera systems for  
mobile machines

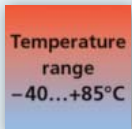


**3D sensor system with integrated 2D camera and overlay function**

**Indication of warnings and obstacles in the live view**

**Signal processing in the sensor, no external process unit required**

**Easy adjustment via ifm Vision Assistant**



## Augmented reality

The 3D smart camera is the first 3D sensor system with integrated 2D camera. The video image is displayed with real-time graphics, symbols or texts. They are either triggered by the integrated driver assistance system or by the machine controller via CAN. Thus, the user can always see all relevant warnings or other relevant details in the camera image.

## Integrated assistance system

In addition to the 3D and 2D image sensor a complete evaluation system is integrated in the sensor system. This system provides an independent assistance system for collision avoidance for the user. Set-up only requires just a few steps using the ifm Vision Assistant PC software. In addition to the analogue video output the smart camera also features a CAN and Ethernet UDP interface. The system can use this interface to supply warnings in critical situations autonomously.



Resolution [pixels]	Angle of aperture horizontal x vertical [°]	Angle of aperture 2D [°]	Illumination	Max. sampling rate [Hz]	Order no.
<b>PMD 3D sensor · Type O3M · M12 connector</b>					
64 x 16	70 x 23	90	Ext. illumination required (O3M950)	25/33/50	<b>O3M251</b>
64 x 16	95 x 23	120	Ext. illumination required (O3M960)	25/33/50	<b>O3M261</b>

## Connection technology

Type	Description	Order no.
	MCI cable, connection sensor / system illumination unit, 0,25 m	<b>E3M120</b>
	MCI cable, connection sensor / system illumination unit, 1 m	<b>E3M121</b>
	MCI cable, connection sensor / system illumination unit, 2 m	<b>E3M122</b>
	MCI cable, connection sensor / system illumination unit, 3 m	<b>E3M123</b>
	M12 video connection cable, connection sensor / display PDM360, 5 m	<b>E3M151</b>
	M12 video connection cable, connection sensor / display PDM360, 11 m	<b>E3M152</b>
	M12 video connection cable, connection sensor / display PDM360, 16 m	<b>E3M153</b>
	M12 video connection cable, connection sensor / display PDM360, 21 m	<b>E3M154</b>
	M12 video extension cable, 5 m	<b>E3M159</b>
	M12 video adapter cable / Cinch plug, for connection of a video grabber, 1 m	<b>E3M160</b>
	M12 socket, voltage supply system illumination unit, 2 m, PUR cable, 4 poles	<b>E3M131</b>
	M12 socket, voltage supply system illumination unit, 5 m, PUR cable, 4 poles	<b>E3M132</b>
	M12 socket, voltage supply system illumination unit, 10 m, PUR cable, 4 poles	<b>E3M133</b>
	Ethernet, cross-over patch cable, 2 m, PVC cable, M12 / RJ45	<b>E11898</b>
	Ethernet, cross-over patch cable, 10 m, PVC cable, M12 / RJ45	<b>E12204</b>
	Ethernet, cross-over patch cable, 20 m, PVC cable, M12 / RJ45	<b>E12205</b>
	CAN jumper, screened, 2 m, PUR cable, M12 plug / M12 socket	<b>E11593</b>
	CAN jumper, screened, 5 m, PUR cable, M12 plug / M12 socket	<b>E11594</b>
	CAN jumper, screened, 10 m, PUR cable, M12 plug / M12 socket	<b>E11595</b>

## Further technical data O3M251

Type of sensor	1/4" 4:3 VGA CMOS image sensor Color
PAL resolution [pixels]	640 x 480
Housing material	diecast aluminium
Connection	M12 connector
Protection rating, protection class	IP 67 / IP 69K, III
Operating voltage [V DC]	9...32
Current consumption sensor [mA]	< 500
Current consumption system illumination unit [A]	< 5
Ambient temperature [°C]	-40...85
Storage temperature [°C]	-40...105
Interfaces	1x CAN, 1 x fast Ethernet, 1x PAL
Supported CAN protocols	CANopen, SAE J 1939
Standards and tests (extract)	CE, E1 (UN-ECE R10)

## Accessories

Type	Description	Order no.
	IR system illumination unit (850 nm) for mobile 3D sensors, angle of aperture 70 x 23	<b>O3M950</b>
	IR system illumination unit (850 nm) for mobile 3D sensors, angle of aperture 95 x 32	<b>O3M960</b>
	CAN/RS232 USB interface CANfox	<b>EC2112</b>
	Adapter cable set for CANfox	<b>EC2114</b>
	Operating software for vision sensors	<b>E3D300</b>
	U-shaped bracket, suitable for sensor or illumination unit	<b>E3M102</b>
	Weather protective cover (the article E3M100 or E3M102 is required for installation)	<b>E3M101</b>