Accelerate pallet detection using 3D cameras

3D sensors

For all standard pallets with two pallet pockets

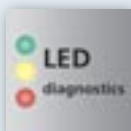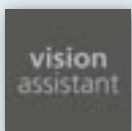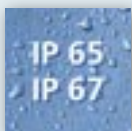**Position accuracy of ± 1cm**

Ranges up to 4 m

Detection time < 1 s

Communication via Ethernet or CAN

Support on GitHub

Powerful

The PDS pallet detection system is a tried-and-tested software solution for faster, fully automatic and position-independent detection of standard pallet types with two pockets. In combination with the O3D hardware, pallet position detection is extremely fast and accurate. This constitutes a significant reduction of the overall cycle time of pallet detection in autonomous and semi-autonomous pallet handling vehicles.

Efficient

Even in adverse environmental conditions, the sophisticated software solution will lead the lift fork reliably to its destination by means of the 3D point cloud of the ToF camera. The Pallet Detection System directly impacts the performance of the autonomous and semi-autonomous vehicles by increasing the speed of detecting the pallet position without sacrificing the quality of the detection.

Interface	Type of sensor	Material Front pane / LED window	Protection rating / Protection class	Angle of aperture [°]	Max. field of view size [m]	Order no.
PMD 3D sensors · O3D type · M12 connector · housing material: Aluminium						
Ethernet	PMD 3D ToF chip	Gorilla glass / polyamide	IP 65, IP 67 / III	40 x 30	2.61 x 3.47	**O3DP01**
CAN	PMD 3D ToF chip	Gorilla glass / polyamide	IP 65, IP 67 / III	40 x 30	2.61 x 3.47	**O3DP21**
Ethernet	PMD 3D ToF chip	Gorilla glass / polyamide	IP 65, IP 67 / III	60 x 45	3.75 x 5.00	**O3DP03**
CAN	PMD 3D ToF chip	Gorilla glass / polyamide	IP 65, IP 67 / III	60 x 45	3.75 x 5.00	**O3DP23**

Technical data Pallet detection		
Operating distance	[m]	0.3...2 (4)
Position accuracy	[cm]	±1
Detection time	[s]	< 1
Angle of approach	[°]	+12 / -12

Further technical data		
Operating voltage	[V DC]	20.4...28.8
Current consumption	[mA]	< 2400 peak current pulsed; typ. mean value 420
Current rating (per switching output)	[mA]	100
Short-circuit protection, pulsed		•
Overload protection		•
Ambient temperature	[°C]	-10...50
Real chip resolution		25,000 / 100,000
Resulting resolution		176 x 132 pixels
Function display	LED	2 x yellow, 2 x green
Illumination		850 nm, infrared
Immunity to extraneous light	[klx]	8 (up to 100 klx possible with reduced measuring accuracy and repeatability)
Trigger		external; 24 V PNP / NPN according to IEC 61131-2 type 3
Switching inputs		2 (configurable), 24 V PNP / NPN according to IEC 61131-2 type 3
Switching outputs digital		3 (configurable), 24 V PNP / NPN, according to IEC 61131-2
Switching outputs analogue		1 (can be configured as current output 4...20 mA or voltage output 0...10 V)
Parameter setting interface Ethernet		10 Base-T /100 Base-TX
Possible parameter settings		via PC / notebook
Dimensions (H, W, D)	[mm]	72 x 67.1 x 95

Accessories

Housing	Description	Order no.
Mounting accessories		
	Mounting set for O3D	**E3D301**
	Dissipators	**E3D302**
	Double cooling element	**E3D304**
	Heat conductor	**E3D303**
Connection technology		
	Ethernet, cross-over patch cable, 2 m, PVC cable, M12 / RJ45	**E11898**
	Ethernet, jumper cable, 2 m, PVC cable, M12 / M12	**E21138**
	Socket, M12, 2 m black, PUR cable, 8-pole	**E11950**
	Socket, M12, 4-pole 2 m black, PUR cable	**EVC001**
	CAN connection cable, M12 socket, 2 m purple, PUR cable	**E11596**
	CAN connection cable, M12 socket, 5 m purple, PUR cable	**E11597**

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For further technical details, please visit: ifm.com