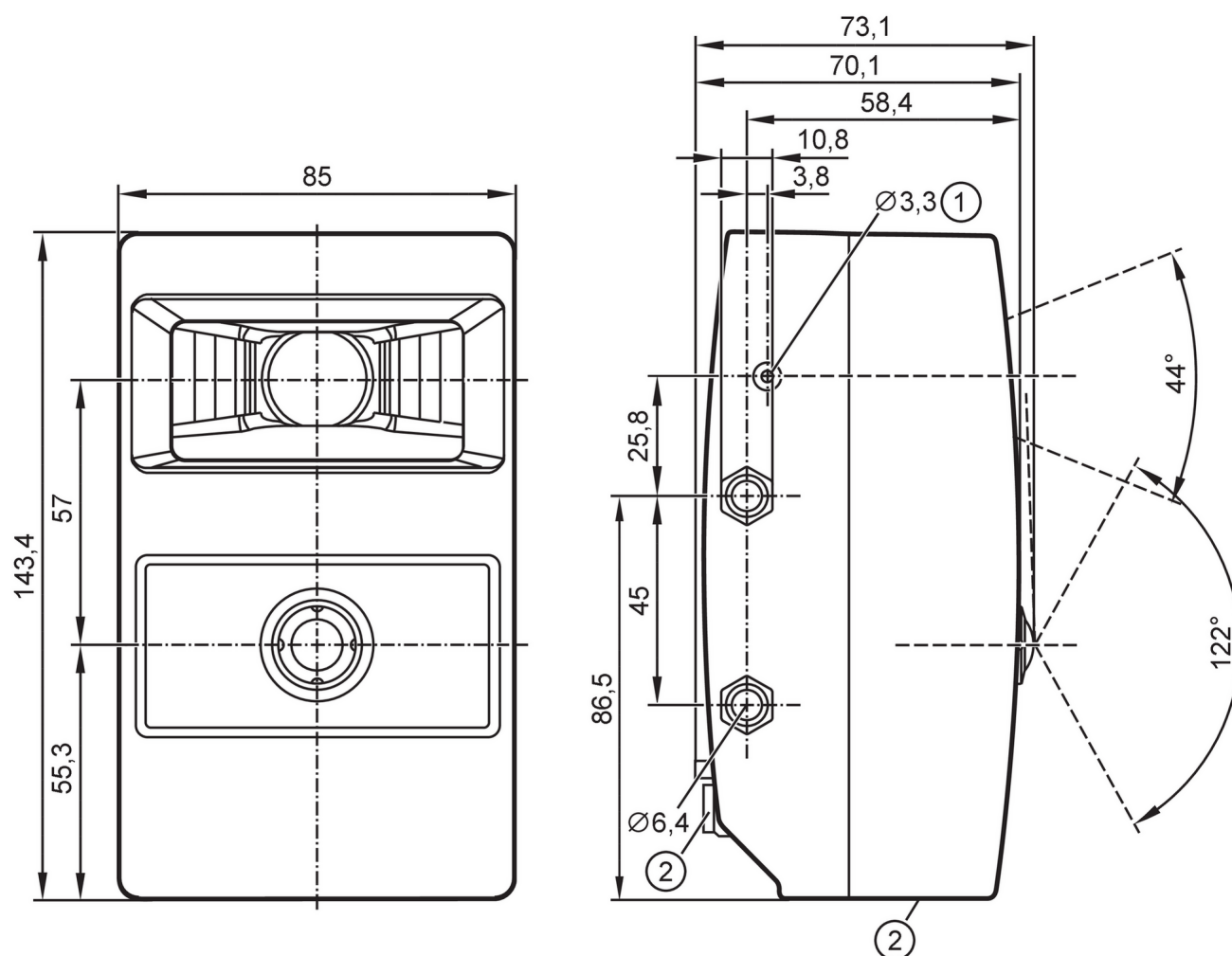


O3M271



3D sensor for mobile applications

O3MXOOKG/CAN/E3/GM/A1/97



- ```
1 Reference socket
2 Connections
```



## Product characteristics

|                               |      |                |
|-------------------------------|------|----------------|
| Type of light                 |      | Infrared light |
| Image resolution              | [px] | 640 x 480      |
| Image resolution 3D           | [px] | 64 x 16        |
| Angle of aperture             | [°]  | 155 x 122      |
| Angle of aperture 3D          | [°]  | 97 x 44        |
| Image repetition frequency    | [Hz] | 25             |
| Image repetition frequency 3D | [Hz] | 25 / 33 / 50   |

## Application

|             |                                                  |
|-------------|--------------------------------------------------|
| Application | output of 3D image data; output of 2D image data |
|-------------|--------------------------------------------------|



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| Electrical data                   |      |                                               |
|-----------------------------------|------|-----------------------------------------------|
| Operating voltage                 | [V]  | 9...32 DC                                     |
| Current consumption               | [mA] | < 600                                         |
| Power consumption                 | [W]  | 4.6                                           |
| Protection class                  |      | III                                           |
| Type of light                     |      | Infrared light                                |
| Image sensor                      |      | PMD 3D ToF-Chip / 2D Chip                     |
| Outputs                           |      |                                               |
| Video output                      |      | PAL (720x576)                                 |
| Monitoring range                  |      |                                               |
| Image resolution                  | [px] | 640 x 480                                     |
| Image resolution 3D               | [px] | 64 x 16                                       |
| Angle of aperture                 | [°]  | 155 x 122                                     |
| Angle of aperture 3D              | [°]  | 97 x 44                                       |
| Image repetition frequency        | [Hz] | 25                                            |
| Image repetition frequency 3D     | [Hz] | 25 / 33 / 50                                  |
| Software / programming            |      |                                               |
| Parameter setting options         |      | via PC with ifm Vision Assistant              |
| Interfaces                        |      |                                               |
| Communication interface           |      | CAN; Ethernet                                 |
| Number of CAN interfaces          |      | 1                                             |
| Number of Ethernet interfaces     |      | 1                                             |
| Number of video interfaces (CVBS) |      | 1                                             |
| Note on interfaces                |      | Output of preprocessed data via CAN interface |
| CAN                               |      |                                               |
| Transmission rate                 |      | 250 (125...1000) kBaud                        |
| Protocol                          |      | CANopen; UDS                                  |
| Factory settings                  |      | J1939 interface: default                      |
|                                   |      | device address (ECU): 239                     |
|                                   |      | UDS interface: 500 (125...1000) kBaud         |
| Usage type                        |      | Parameter setting; Data transmission          |
| Ethernet                          |      |                                               |
| Protocol                          |      | UDP/IP                                        |
| Factory settings                  |      | IP address: 192.168.1.1                       |
|                                   |      | subnet mask: 255.255.255.0                    |
|                                   |      | target IP address: 255.255.255.255            |
|                                   |      | target port: 42000                            |
| Usage type                        |      | Data transmission                             |
| Operating conditions              |      |                                               |
| Ambient temperature               | [°C] | -40...85                                      |
| Note on ambient temperature       |      | with high image repetition frequency of 25Hz  |
| Storage temperature               | [°C] | -40...105                                     |

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|                                   |       |                                                             |
|-----------------------------------|-------|-------------------------------------------------------------|
| Max. relative air humidity        | [%]   | 90; (non condensing)                                        |
| Max. height above sea level       | [m]   | 4000                                                        |
| Protection                        |       | IP 67; IP 69K; (with mounted connectors or protective caps) |
| Max. immunity to extraneous light | [klx] | 120                                                         |

### Tests / approvals

|                      |                    |                                                           |
|----------------------|--------------------|-----------------------------------------------------------|
| EMC                  | DIN EN 61000-6-4   | industrial environments                                   |
|                      | DIN EN 61000-6-2   | industrial environments                                   |
| Shock resistance     | DIN EN 60068-2-27  | 30 g / 6 ms bump                                          |
| Vibration resistance | DIN EN 60068-2-6   | 10 g / 10...500 Hz swept sine                             |
|                      | DIN EN 60068-2-64  | 10...1000 Hz noise                                        |
| Electrical safety    | DIN EN 61010-2-201 | electric shock / electrical supply only via PELV circuits |
| MTTF                 | [years]            | 58                                                        |

### Mechanical data

|            |      |                                                 |
|------------|------|-------------------------------------------------|
| Weight     | [g]  | 1154.8                                          |
| Dimensions | [mm] | 143.4 x 85 x 73.1                               |
| Material   |      | housing: diecast aluminium; disc: gorilla glass |

### Accessories

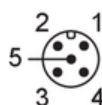
|                |                   |
|----------------|-------------------|
| Items supplied | Protective covers |
|----------------|-------------------|

### Remarks

|               |                                                                                        |
|---------------|----------------------------------------------------------------------------------------|
| Remarks       | The illumination unit is required for the operation of the sensor.                     |
|               | Only use original ifm cables to connect sensor and illumination unit.                  |
|               | The function-specific performance values can be found in the applicable documentation. |
| Pack quantity | 1 pcs.                                                                                 |

### Electrical connection - CAN

Connector: 1 x M12; coding: A; Contacts: 5



|   |          |
|---|----------|
| 1 | screen   |
| 2 | 9...32 V |
| 3 | GND      |
| 4 | CAN-H    |
| 5 | CAN-L    |

### Electrical connection - Ethernet

Connector: 1 x M12; coding: D; Contacts: 4



|   |      |
|---|------|
| 1 | TD + |
| 2 | RD + |
| 3 | TD - |
| 4 | RD - |

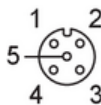


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### Electrical connection - Video

Connector: 1 x M12; coding: A; Contacts: 3



|   |          |
|---|----------|
| 2 | not used |
| 3 | GND      |
| 4 | FBAS     |
| 5 | not used |

### Other data

#### Field of view size with lens distortion correction

| Measuring range / distance [m] | Length [m] | Width [m] |
|--------------------------------|------------|-----------|
| 5                              | 11.3       | 4.0       |
| 10                             | 22.6       | 8.1       |
| 15                             | 33.9       | 12.1      |
| 30                             | 67.8       | 24.2      |

#### measuring range for object recognition

| object type / object size | application condition | Measuring range [m] |
|---------------------------|-----------------------|---------------------|
| vehicle                   | sunny (~120 klx)      | 0.25...17           |
|                           | cloudy (~20 klx)      | 0.25...25           |
|                           | darkness              | 0.25...29           |
| person                    | sunny (~120 klx)      | 0.25...7            |
|                           | cloudy (~20 klx)      | 0.25...10           |
|                           | darkness              | 0.25...12           |
| retroreflector            | sunny (~120 klx)      | 1...24              |
|                           | cloudy (~20 klx)      | 1...35              |
|                           | darkness              | 1...46              |

software variant: OD object recognition

#### measuring range for ROI

| application condition | Measuring range [m] |
|-----------------------|---------------------|
|                       | typical value       |
| sunny (~120 klx)      | 0.25...7            |
| cloudy (~20 klx)      | 0.25...9            |
| darkness              | 0.25...17           |

software variant : DI / BF distance image basic functions

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### measuring accuracy

| application condition | measuring accuracy [cm]                |
|-----------------------|----------------------------------------|
|                       | typical value                          |
| sunny (~120 klx)      | ± 15                                   |
| cloudy (~20 klx)      | ± 10                                   |
| darkness              | ± 5                                    |
| software variant :    | DI / BF distance image basic functions |