

Orlaco is a Manufacturing company that specializes in making cameras and monitor systems for commercial vehicles, fork-lift trucks, cranes, off shore and maritime. Our objective is to design and produce camera systems for the professional market that improve the drivers' view and increase operating efficiency.

At our facility in Barneveld we locate our design, manufacturing, warehousing and service department. Vision is our mission. Orlaco therefore deploys the development, manufacture, supply and service of camera and display systems that will improve safety and efficiency of all vehicles, machinery and vessels. Our systems give the end user a view on each blind spot and will create comfort and improved working conditions. Our active approach will support market demands and innovations and will lead to enthusiastic ambassadors in the market; our customers.



For more information: www.orlaco.com

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Camera CCC, CMOS, AMOS, MILMOS

Installation manual
No. IM0973060 R2-6

4/2013
English



Compact Camera**Type: CCC, CMOS, AMOS, AMOS IR LED, MILMOS****Safety**

In order to guarantee safe operation, these safety instructions must be read before you start using this equipment.

- Do not open the enclosure. This can cause damage, short-circuiting or electrical shocks.
- Do not expose the equipment to extreme temperatures. This can cause deformation of the enclosure or damage to internal components.
- Repairs may only be undertaken by the manufacturer.
- The equipment must be assembled as shown in this manual.

Before you start using this equipment, please read this manual carefully and follow all instructions. We recommend that you keep this manual in a safe place for reference purposes.

If you have any questions or issues concerning the operation of this equipment, consult the relevant section in the manual or contact the Orlaco Products BV Service department.

The camera/display systems from Orlaco comply with the latest CE, ADR, EMC and mirror-directive regulations. All products are manufactured in accordance with the ISO 9001 quality management, ISO/TS16949 quality automotive and ISO 14001 environmental management.

**6. Revision details****R1-0**, First issue, June 2009.**R1-1**, Page 3, text added, April 2010.**R1-2**, Page 4, text added, Sept. 2010.**R2-0**, Article numbers added, dimensions layout changed, April 2011.**R2-1**, Camera type AMOS, MILMOS added, Nov. 2012.**R2-2**, Picture cover changed, Jan. 2013.**R2-3**, Article numbers deleted, AMOS IRLED mounting instructions added, April 2013.**R2-4**, Chapter 2, page 10; pin connection changed, June. 2013.**R2-5**, Chapter 1.2., page 4; torque changed, June. 2014.**R2-6**, Barcode added, Sept. 2014.

5. General terms and conditions

Orlaco Products BV is not liable for damage resulting from inadequate servicing, incorrect usage or alterations made to the equipment without informing the manufacturer in writing.

This installation manual has been made available by Orlaco Products BV. All rights reserved. No part of this manual may be reproduced and/or made public in printed form, in photocopy form or on microfilm, or in any other way, without the prior written permission of Orlaco. This also applies to the associated drawings and figures.

Orlaco reserves the right to make changes to components at any time without informing customers beforehand or directly. All dimensions given are for commercial purposes.

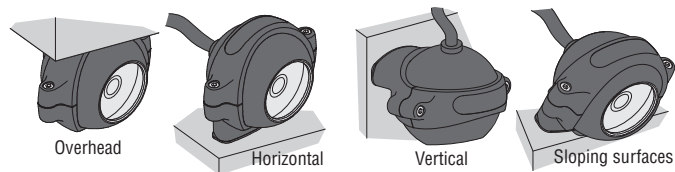
For information regarding repairs that is not covered in this manual, please contact the Orlaco Products BV service department.

This manual has been prepared with all due care and attention. However, Orlaco Products BV cannot be held responsible for any errors in this manual or any consequences thereof.

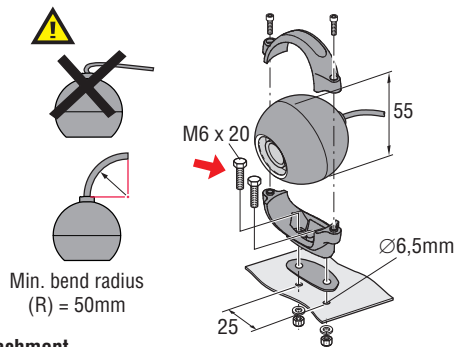
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1. Mounting and connecting Camera



1.1. Universal camera bracket.



1.2. Camera attachment.

Recommendation:

The bracket should be tightened with a torque of 6 Nm nominal.
Tighten by hand or with very low speed.

3. Maintenance and cleaning

Fixing a blurry image:

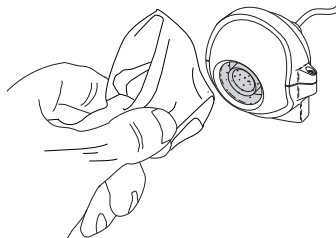
If the camera image is blurry, it is advisable to clean the camera.

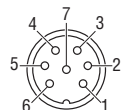
Cleaning the lens glass:

Use a soft cloth to clean the lens glass of the camera. Use clean water or a high quality and safe foam cleaner. Rub the camera lens glass clean with the cloth. Do absolutely not use aggressive chemicals or abrasive cleaning agents.

4. Disposal

Disassembly, removal and disposal. Local regulations for dealing with waste must be followed when disposing of disassembled components or entire units.



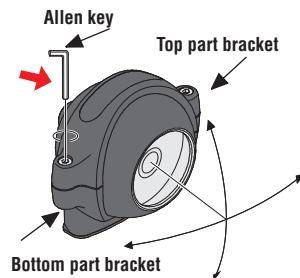
Soldering side of 7 pins male connector (1330500) (Camera with 7p connector):

- 1 = Coax core (Video signal)
- 2 = Coax screen (Video GND)
- 3 = Red (12V/DC)
- 4 = White (0V)
- 5 = N.C.
- 6 = N.C.
- 7 = N.C.

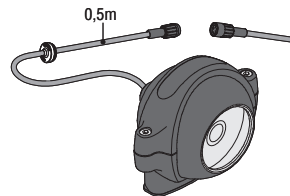
NOTE: The camera can operate in mirror-mode.

Mirror-mode: Connect the orange wire to pin 3 red (+ 12V/DC).

Normal-mode: Connect the orange wire to pin 4 white (0V).

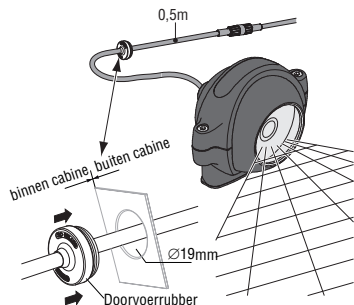
**1.3. Aiming the camera.**

Attach the top part and bottom part of the bracket with the included M3 head cap screws and tighten with a torque of 0,8 Nm - 1Nm. Allen key included.

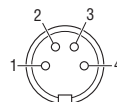
**1.4. Camera with molded connectors**

Mounting the standard cable with molded connectors.

1.5. Finish.



Soldering side of 4 pins male connector (1312001) (Camera with 4p connector):



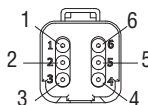
- | | |
|-----------------|----------------|
| 1 = Coax core | (Video signal) |
| 2 = Coax screen | (Video GND) |
| 3 = Red | (12V/DC) |
| 4 = White | (0V) |
| Shielding | N.C. |

NOTE: The camera can operate in mirror-mode.

Mirror-mode: Connect the orange wire to pin 3 red (+ 12V/DC).

Normal-mode: Connect the orange wire to pin 4 white (0V).

Crimp side of 6 pins male connector (1391180) (Camera with 6p connector):

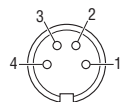


- | | |
|-----------------|---------------------|
| 1 = Coax core | (Video signal) |
| 2 = Coax screen | (Video GND) |
| 3 = Red | (12V/DC) |
| 4 = Black | (0V) |
| 5 = Green | (Overall shielding) |
| 6 = Orange | (Mirror) |

2. Pin connection

CCC

Front side of 4 pins male molded connector:

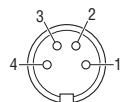


- 1 = Coax core (Video signal)
- 2 = Coax screen (Video GND)
- 3 = Red (12V/DC)
- 4 = White (0V)
- Shielding

connected to connector*

AMOS, AMOS IR LED, CMOS and MILMOS

Front side of 4 pins male molded connector:



- 1 = Coax core (Video signal)
- 2 = Coax screen (Video GND)
- 3 = Red (12/24V/DC)
- 4 = White (0V)
- Shielding

connected to connector*

***Shielding connected to Connector housing and Camera housing:**

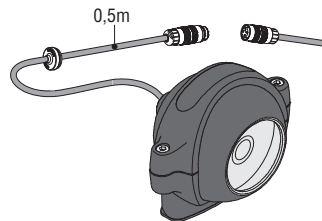
AMOS, AMOS IR LED, MILMOS.

***Shielding connected only to connector housing:**

CCC, CMOS.

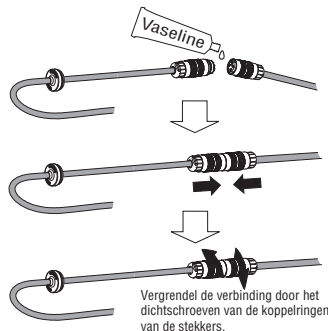
1.6. Camera with soldered connectors

Follow these steps only if a standard cable with metal (screw) connector is used.

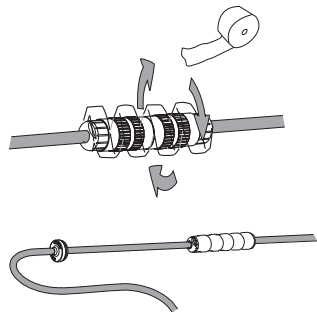


1.7. Screw connection

Fill the female coupling ring with vaseline and lock the connection. The Vaseline can be used to protect the screw connection. The Vaseline ensures that the connectors can easily be un-screwed even after long time in the field.



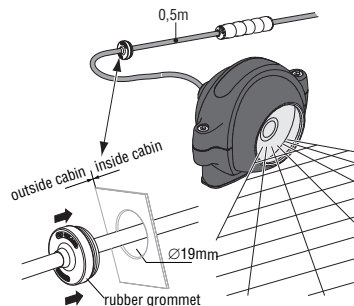
Vergrendel de verbinding door het dichtschoeven van de koppelringen van de stekkers.



1.8. Tape

Protect the connection with tape. The tape can be used to insulate (electrical) and isolate (mechanical) the metal connector from metal parts of your vehicle.

1.9. Finish.



1.10. Camera AMOS IR LED mounting instructions

The IR LED camera is equipped with powerful LED illumination which reflects and disturbs the image if nearby structural parts of the vehicle are in the field of vision or just around the field of vision. Make sure the IR LED camera has a free area in the immediate surroundings of the camera to prevent these reflections. Warning: Infrared (IR) is emitted from this product. Do not stare directly into the camera in operation.

