



Operating Instructions
Cooling Jacket Advanced

Cooling Jacket Advanced
Cooling Jacket Advanced Extended

Cooling housing for TIM series, video pyrometer and laser pyrometer at high ambient temperatures

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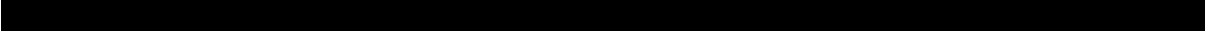
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Table of contents

1	General Notes	7
1.1	Intended Use	7
1.2	Warranty	8
1.3	Scope of Supply.....	9
1.3.1	Versions	9
1.4	Mounting Accessories.....	10
1.4.1	Accessories for TIM NetBox	10
1.4.2	Accessories for USB Server Gigabit.....	11
2	Technical Data	12
2.1	General Specifications	12
2.1.1	Focusing Unit and Front Part.....	13
2.2	Accessories.....	16

2.2.1	High Temperature Cable	16
2.2.2	Protection Window	17
2.2.3	Mounting Flange	19
2.2.4	Laminar Air Purge	19
2.2.5	Additional Accessories.....	22
2.3	Dimensions	23
2.3.1	Cooling Jacket Advanced	23
2.3.2	Cooling Jacket Advanced Extended	27
2.3.3	Mounting Flange (Accessories) TM-CJAMF-TIM	31
2.4	Fittings	32
2.4.1	Cooling Water Fitting	32
2.4.2	Air Purge Collar.....	32
2.4.3	Cable Glands on the Back	34

2.5	Cooling Properties	35
2.5.1	Condensation.....	36
3	Installation	39
3.1	Installation.....	39
3.2	Installation of TIM Camera, Infrared Video Thermometer and Infrared Thermometer	40
3.2.1	Assembling of the Focusing Unit	40
3.2.2	Assembling of the Front Part	44
3.2.3	Mounting of the Protective Window at Focusing Unit	47
3.2.4	Assembly of the Laminar Air Purge	49
3.2.5	Assembling to the Cooling Jacket Advanced Standard Version	53
3.2.6	Assembling to the Cooling Jacket Advanced Extended	64
4	Example of Installation.....	77



1 General Notes

1.1 Intended Use

The cooling housing Cooling Jacket Advanced is intended to use for TIM series, video thermometers CTVideo and CSVideo as well as CTLaser and CSLaser for application at high ambient temperatures.



- Read the manual carefully before the initial start-up. The producer reserves the right to change the herein described specifications in case of technical advance of the product.
- In case of problems or questions which may arise when you use the infrared camera, please contact our service department.



- ▶ All accessories can be ordered according to the referred part numbers in brackets ().

1.2 Warranty

All components of the device have been checked and tested for perfect function in the factory. In the unlikely event that errors should occur despite our thorough quality control, this should be reported immediately to MICRO-EPSILON.

The warranty period lasts 12 months following the day of shipment. Defective parts, except wear parts, will be repaired or replaced free of charge within this period if you return the device free of cost to MICRO-EPSILON. This warranty does not apply to damage resulting from abuse of the equipment and devices, from forceful handling or installation of the devices or from repair or modifications performed by third parties.

No other claims, except as warranted, are accepted. The terms of the purchasing contract apply in full. MICRO-EPSILON will specifically not be responsible for eventual consequential damages. MICRO-EPSILON always strives to supply the customers with the finest and most advanced equipment. Development and refinement is therefore performed continuously and the right to design changes without prior notice is accordingly reserved.

For translations in other languages, the data and statements in the German language operation manual are to be taken as authoritative.

1.3 Scope of Supply

1.3.1 Versions

Cooling Jacket Advanced

- Cooling Jacket Advanced for TIM series (**Part-No.: TM-CJA-TIM**), consisting of housing and chassis
The focusing unit or the front part must be ordered separately.
- Cooling Jacket Advanced for CSLaser, CTLaser as well as CTVideo and CSVideo (**Part-No.: TM-CJA-CTL**)
The front part must be ordered separately.
- Installation instructions

Cooling Jacket Advanced Extended

- Cooling Jacket Advanced for TIM series (**Part-No.: TM-CJAExxx-TIM**), consisting of housing and chassis
- Cooling Jacket Advanced for CSLaser, CTLaser as well as CTVideo and CSVideo (**Part-No.: TM-CJAExxx-CTL**), consisting of housing and chassis
The front part must be ordered separately.
- incl. mounting accessories for
 - TIM NetBox or USB server Gigabit
 - Industrial PIF
 - Installation instructions



Operation without focusing or front attachment is not possible.

1.4 Mounting Accessories

1.4.1 Accessories for TIM NetBox

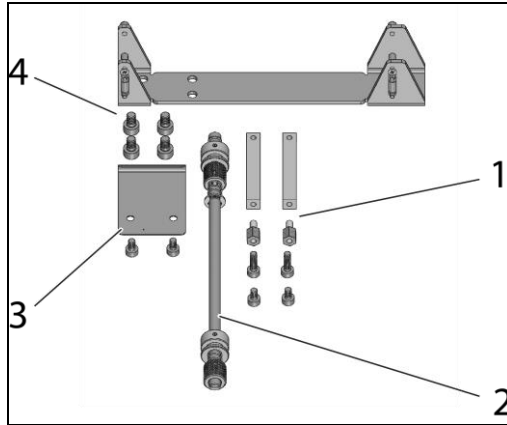


Figure 1: Accessories for TIM NetBox

- 1 Support rods for Industrial PIF (2x distance bolt SW 5,5x6 - M3x6, 2x cylinder head screw M3x10 and 2x cylinder head screw M3x5)
- 2 Shaft for fixing the TIM NetBox
- 3 Holding plate (2x cylinder head screw M3x5)
- 4 Fastening rail (4x cylinder head screw M4x8)

1.4.2 Accessories for USB Server Gigabit

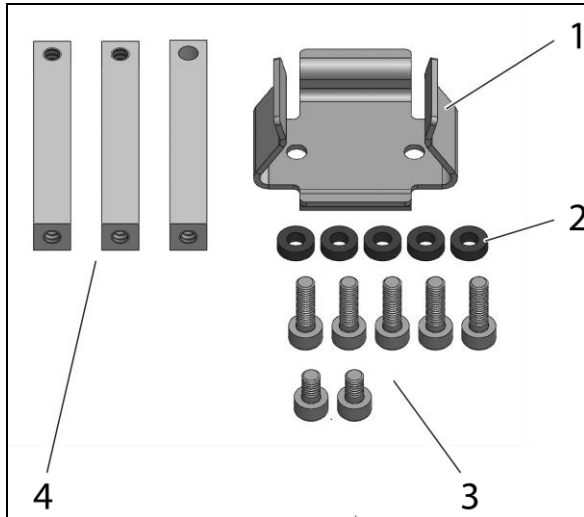


Figure 2: Accessories for USB-Server Gigabit

- 1 DIN rail plate for fixing the USB server Gigabit
- 2 Distance rings
- 3 Screws
- 4 Support rods for Industrial PIF, with thread and without

2 Technical Data

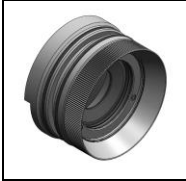
2.1 General Specifications

	Cooling Jacket Advanced	Cooling Jacket Advanced Extended
Environmental rating	IP 65	IP 65
Ambient temperature	up to 315 °C ¹⁾	up to 315 °C ¹⁾
Relative humidity	10 ... 95 %, non-condensing	10 ... 95 %, non-condensing
Material (housing)	V2A	V2A
Dimensions	271 mm x 166 mm x 182 mm	426 mm x 166 mm x 182 mm
Weight	5.7 kg	7.8 kg
Air purge collar	G1/4" Internal thread G3/8" External thread	G1/4" Internal thread G3/8" External thread
Cooling water fittings	G1/4" Internal thread G3/8" External thread	G1/4" Internal thread G3/8" External thread
Cooling water pressure	15 bar (217 psi)	15 bar (217 psi)

¹⁾ Cable available up to 250 °C ambient temperature as well as cable cooling up to 315 °C.

2.1.1 Focusing Unit and Front Part

Is needed for mounting a thermoIMAGER TIM or pyrometer.

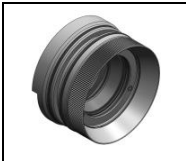


TIM 160

Focusing unit

for 6°, 48° and 72° optics (**Part-No.: TM-CJAFU6-TIM**)

for 23° optics (**Part-No.: TM-CJAFU23-TIM**)



TIM QVGA / QVGA-HD

Focusing unit

for 18° optics (**Part-No.: TM-CJAFU18-TIM**)

for 29° optics (**Part-No.: TM-CJAFU29-TIM**)

for 53° optics (**Part-No.: TM-CJAFU53-TIM**)

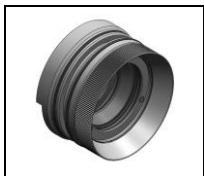
**TIM 640****Focusing unit**

for 15° optics (**Part-No.: TM-CJAFU15-TIM**)

for 33° optics (**Part-No.: TM-CJAFU33-TIM**)

for 60° optics (**Part-No.: TM-CJAFU60-TIM**)

for 90° optics (**Part-No.: TM-CJAFU90-TIM**)

**TIM M-1 / TIM M-05****Focusing unit**

for 16 mm (**Part-No.: TM-CJAFUO16-TIM**)

for 25 mm (**Part-No.: TM-CJAFUO25-TIM**)

for 50 mm (**Part-No.: TM-CJAFUO50-TIM**)

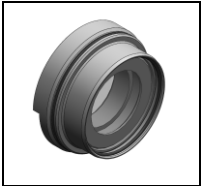
for 75 mm (**Part-No.: TM-CJAFUO75-TIM**)

**TIM 2xx****Front part**

for TIM 2xx (**Part-No.: TM-CJAFP2xx-TIM**)

**Front-part**

for the 80° optics (TIM QVGA) the protection window (**Part-No.: TM-CJAFP80-TIM**) must be ordered separately!

TIM QVGA**Front part**

for CTLaser, CSLaser, CTVideo, CSVideo (**Part-No.: TM-CJAFP-CTL**)

CTLaser, CSLaser, CTVideo, CSVideo

2.2 Accessories

2.2.1 High Temperature Cable

High temperature Ethernet cable cat.6 (180 °C), 10 m, incl. 2x RJ45 connector
(Part-No.: **TM-CJAETC10H-TIM**)

High temperature Ethernet cable cat.6 (180 °C), 20 m, incl. 2x RJ45 connector
(Part-No.: **TM-CJAETC20H-TIM**)

High temperature Ethernet cable cat.6 (250 °C), 10 m, incl. 2x RJ45 connector
(Part-No.: **TM-CJAETC10H2-TIM**)

High temperature Ethernet cable cat.6 (250 °C), 20 m, incl. 2x RJ45 connector
(Part-No.: **TM-CJAETC20H2-TIM**)

High temperature USB cable (180 °C), 5 m
(Part-No.: **TM-USB5PC5HCJA-TIM**)

High temperature USB cable (180 °C), 10 m
(Part-No.: **TM-USB5PC10HCJA-TIM**)

High temperature USB cable (250 °C), 5 m
(Part-No.: **TM-USB5PC5H2CJA -TIM**)

High temperature USB cable (250 °C), 10 m
(Part-No.: **TM-USB5PC10H2CJA -TIM**)

Pyrometer cable (available separately)

Note: A pre-installed cable gland ... CGx is mandatory for the usage of the CoolingJacket.

The cables listed here already contain this cable gland.

2.2.2 Protection Window



Adequate protection windows are available for all versions.

Part-No.	Description	Spectral range	Transmission ¹⁾
TM-CJAPWL-TIM	Protective window (50.8 x 3 mm/ Ge) for TIM QVGA-G7, TIM VGA-G7	7.9 μm	0.96
TM-CJAPWL-TIM	Protective window (50.8 x 3 mm/ Ge) for TIM 160, TIM QVGA, TIM QVGA-HD, TIM 640	7.5 - 13 μm	0.92
TM-CJAPWL2xx-TIM	Protective window (67 x 3 mm/ ZnS) for TIM 2xx (VIS + IR transmittive), TIM 160, TIM QVGA (80° optics), TIM QVGA-HD, TIM QVGA-G7, TIM 640, TIM VGA-G7 if used together with air purge laminar	7.5 - 13 μm	0.91
TM-CJAPWZNS-TIM	Protective window (50.8 x 3 mm/ ZnS) for für TIM QVGA-G7, TIM VGA-G7	7.9 μm	0.93
TM-CJAPWZNS-TIM	Protective window (50.8 x 3 mm/ ZnS) for TIM 160, TIM QVGA (without 80° optics), TIM QVGA-HD, TIM 640	7.5 - 13 μm	0.91
TM-CJAPWS-CTL	Protective window (67 x 3 mm/ Borofloat 33) for 1M/ 2M/ 3M-models of CTlaser-, CSlaser-, CTvideo-, CSvideo series	1.0/ 1.6/ 2.3 μm	0.92

TM-CJAPWM05-TIM	Protective window (67 x 3 mm/ Borofloat 33) for TIM M-05	450 - 650 nm	0.98
TM-CJAPWM1-TIM	Protective window (67 x 3 mm/ Borofloat 33) for TIM M-1	0.85 – 1.1 μm	0.98

¹⁾ The shown values are standard values and may vary between different delivery batches.

2.2.3 Mounting Flange

Mounting flange (**Part-No.: TM-CJAMF-TIM**) for front mounting of the Cooling Jacket Advanced (Standard and Extended) including mounting screws and washers

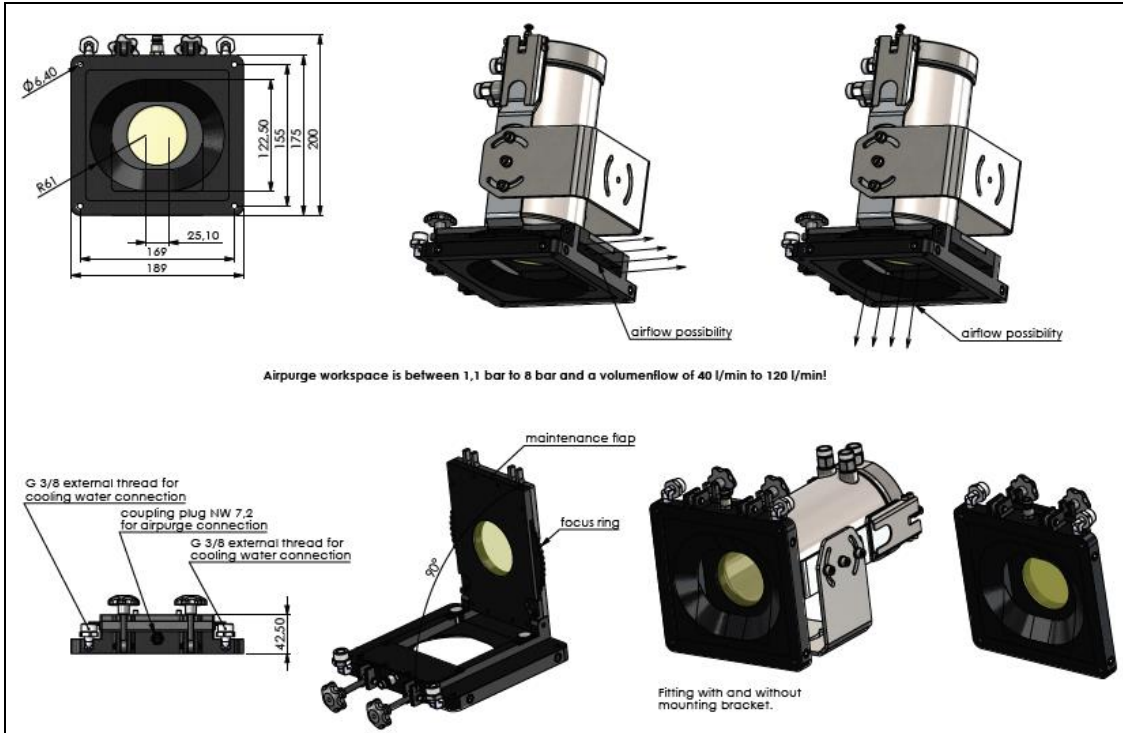
2.2.4 Laminar Air Purge

Laminar air purge for front mounting of the CoolingJacket Advanced (Standard and Extended). Two different versions are available: One for standard IR camera applications [**Part-No.: TM-CJAAPLS**] and the other for line scanning applications [**Part-No.: TM-CJAAPLL**].

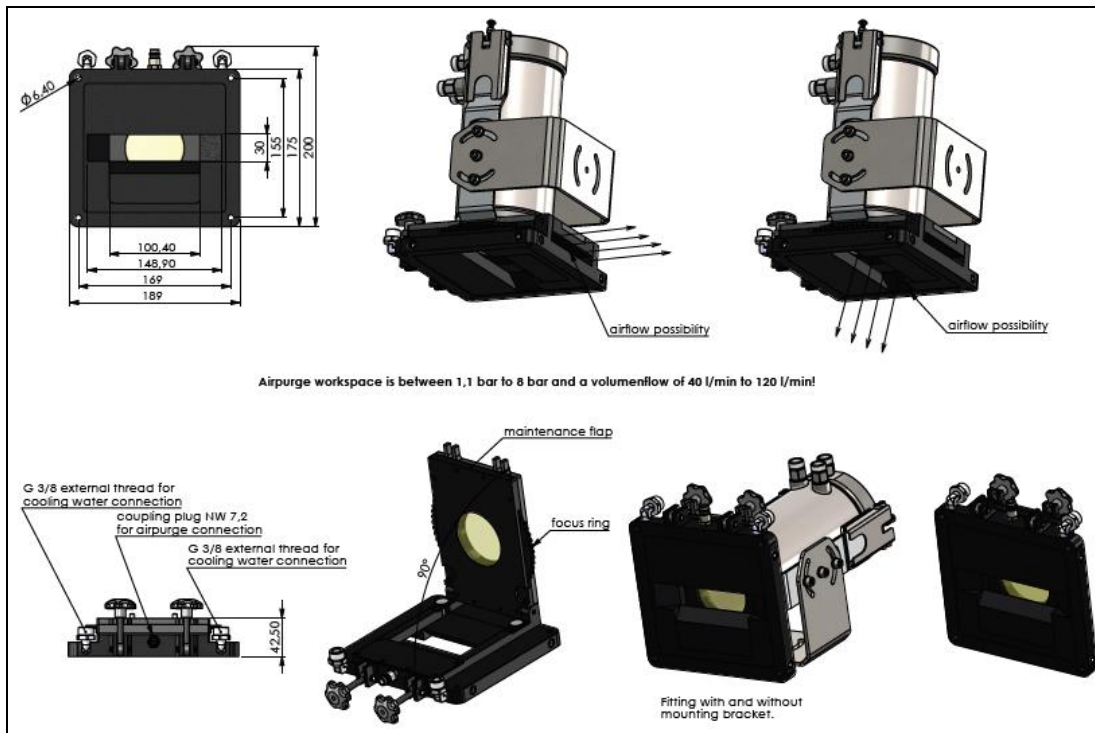
Those two versions are fitting to all focusing units with production date $\geq 01/2018$. A protective window (67 x 3 mm) has to be ordered separately. If you like to mount the air purge on an older CJ, the focusing unit should be exchanged to the current version.

Technical data	
Protective rating	IP65
Ambient temperature	Up to 315 °C (with water cooling)
Material	Aluminum
Dimensions (W x H x D)	200 x 189 x 43 mm
Weight	1,9 kg
Air purge connection	NW 7,2
Cooling water connection	G3/8" external thread
Cooling water pressure	Max. 8 bar
Volume flow	40 - 120 l/min
Air pressure	1,1 - 8 bar
Protective window	Necessary ¹⁾

¹⁾ A protective window (67 x 3 mm) has to be ordered separately.



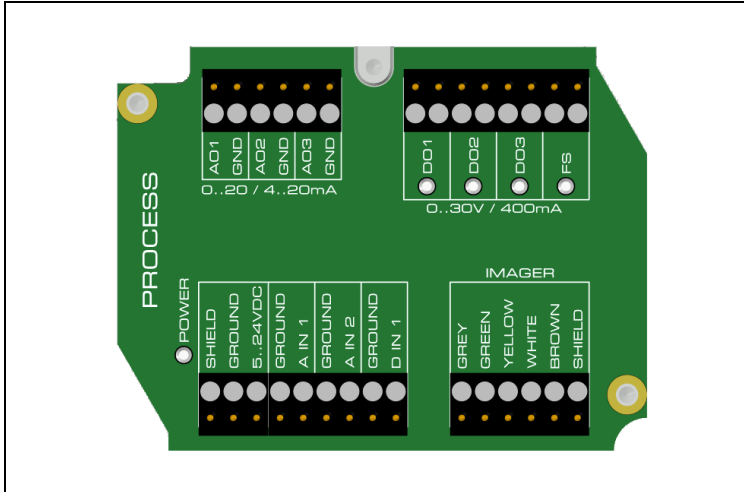
Dimensions of laminar air purge



Dimensions of laminar air purge (line scanner version)

2.2.5 Additional Accessories

Industrial PIF without housing (**Part-No.: TM-CJAPIF500V2-TIM**), 500 VAC_{RMS} isolation voltage between TIM and process, 25 cm connection cable.



Industrial PIF without housing

2.3 Dimensions

2.3.1 Cooling Jacket Advanced

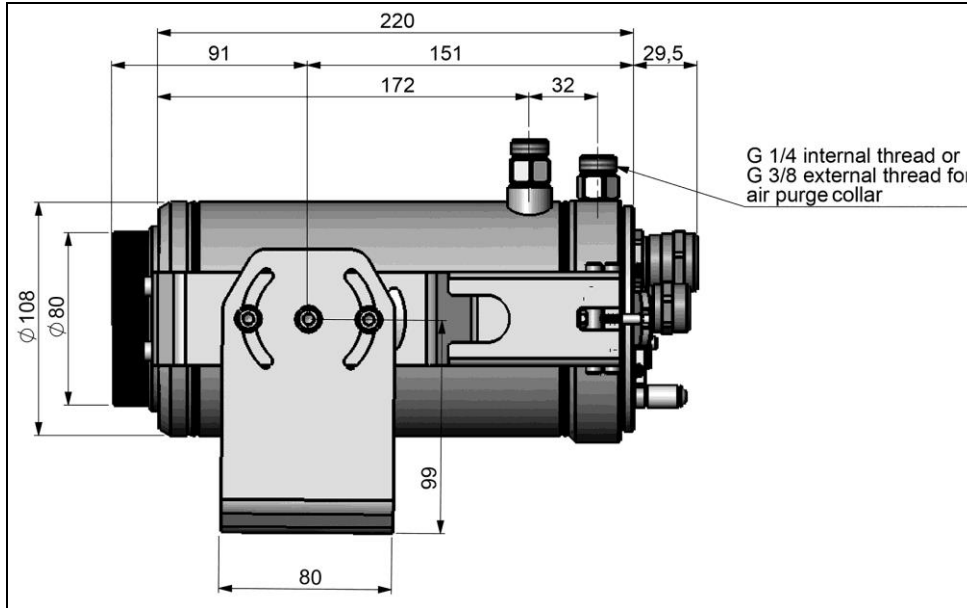


Figure 3: Cooling Jacket Advanced - side view

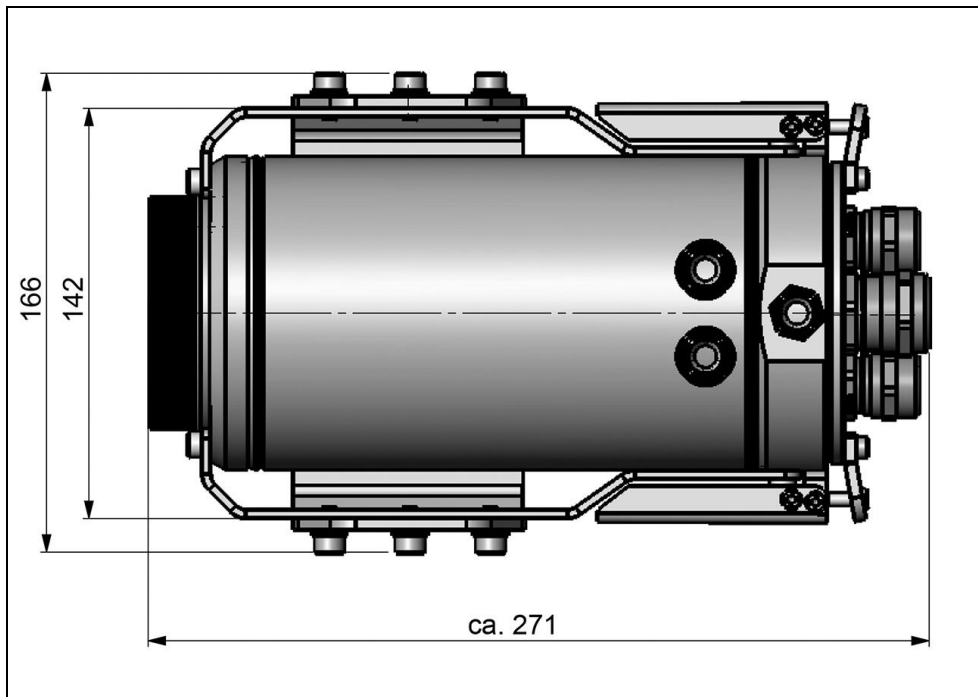


Figure 4: Cooling Jacket Advanced - top view

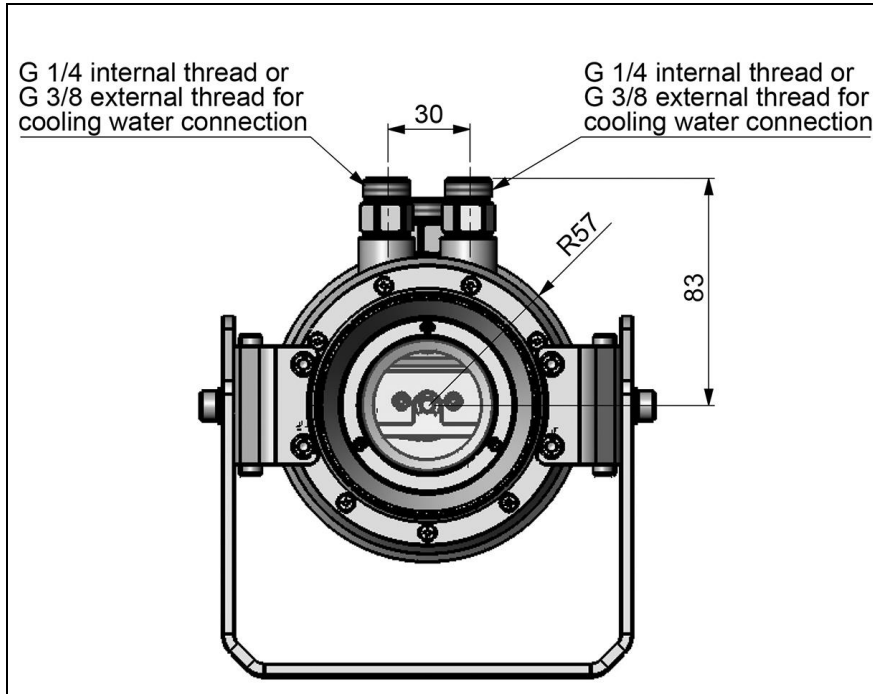


Figure 5: Cooling Jacket Advanced - front view

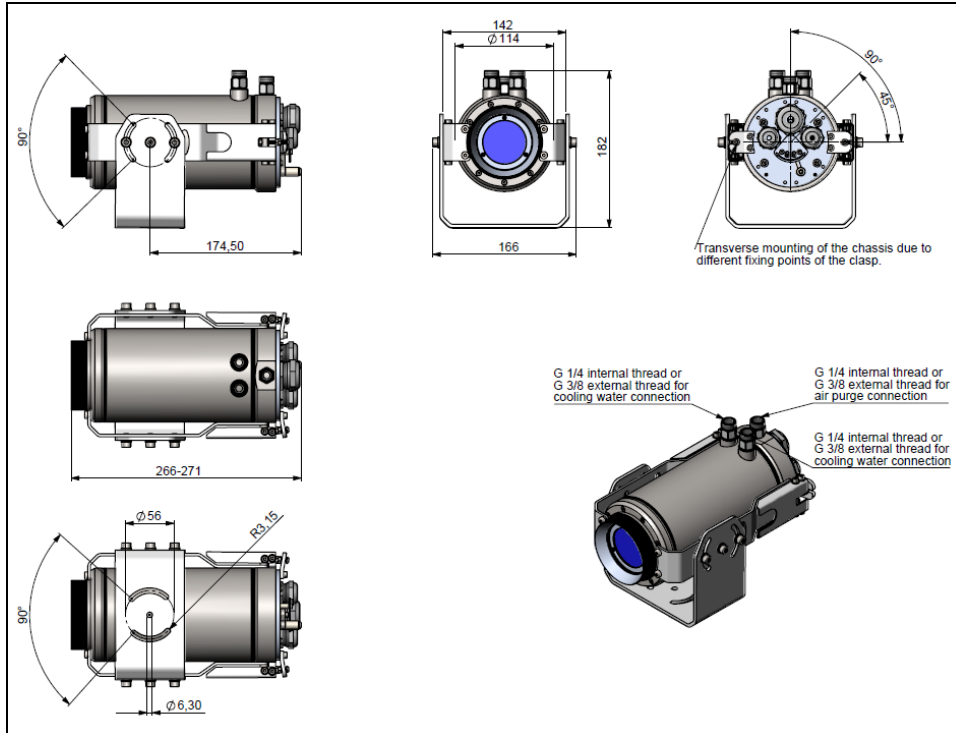


Figure 6: Cooling Jacket Advanced, standard version – complete view

2.3.2 Cooling Jacket Advanced Extended

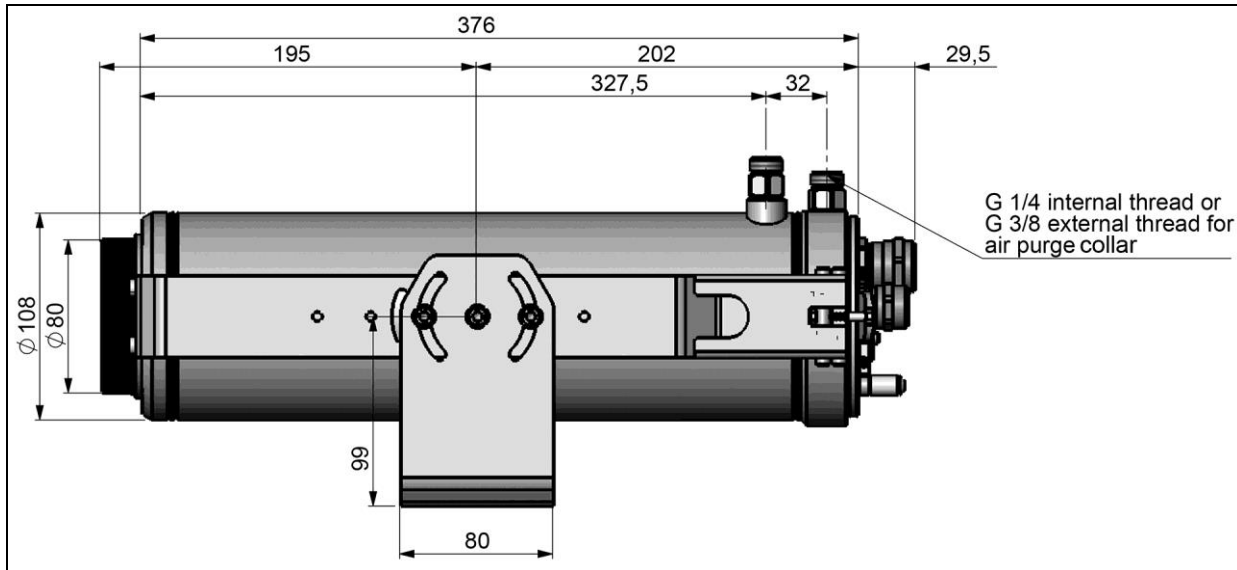


Figure 7: Cooling Jacket Advanced Extended - side view

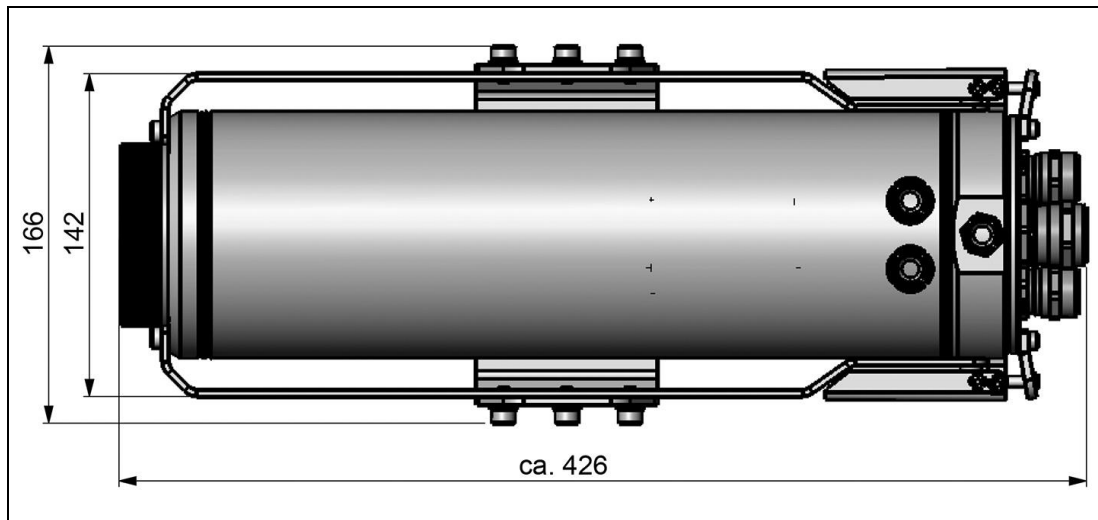


Figure 8: Cooling Jacket Advanced, extended version - top view

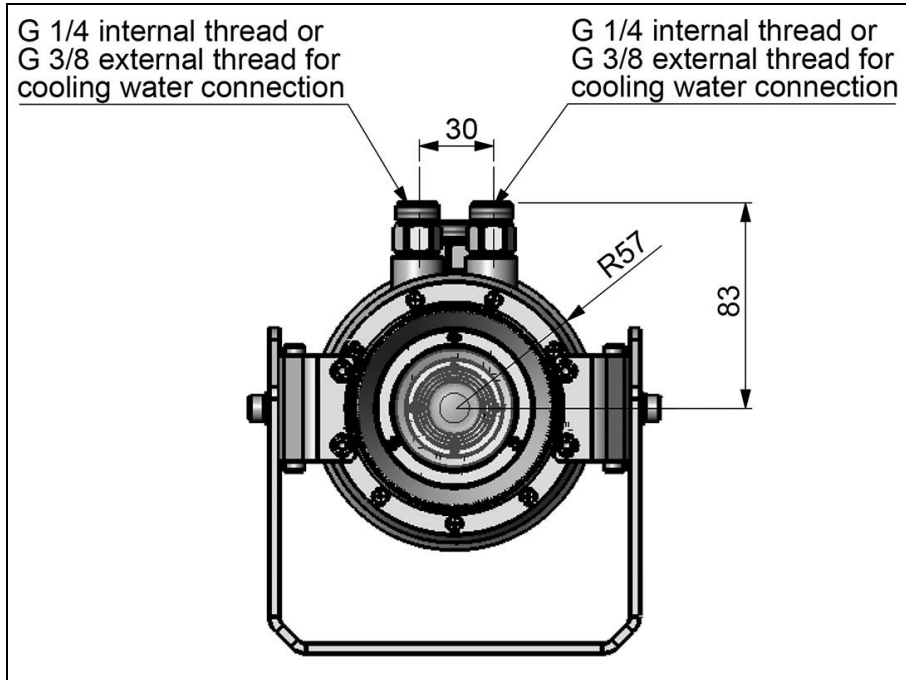


Figure 9: Cooling Jacket Advanced, extended version - front view

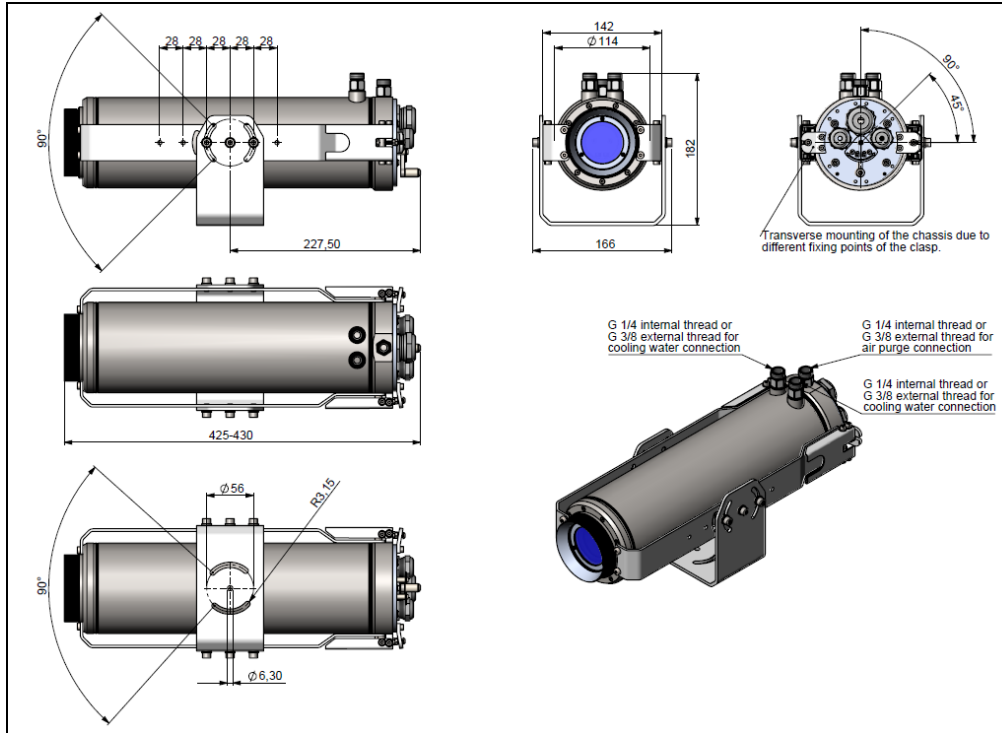


Figure 10: Cooling Jacket Advanced, extended version – complete view

2.3.3 Mounting Flange (Accessories) TM-CJAMF-TIM

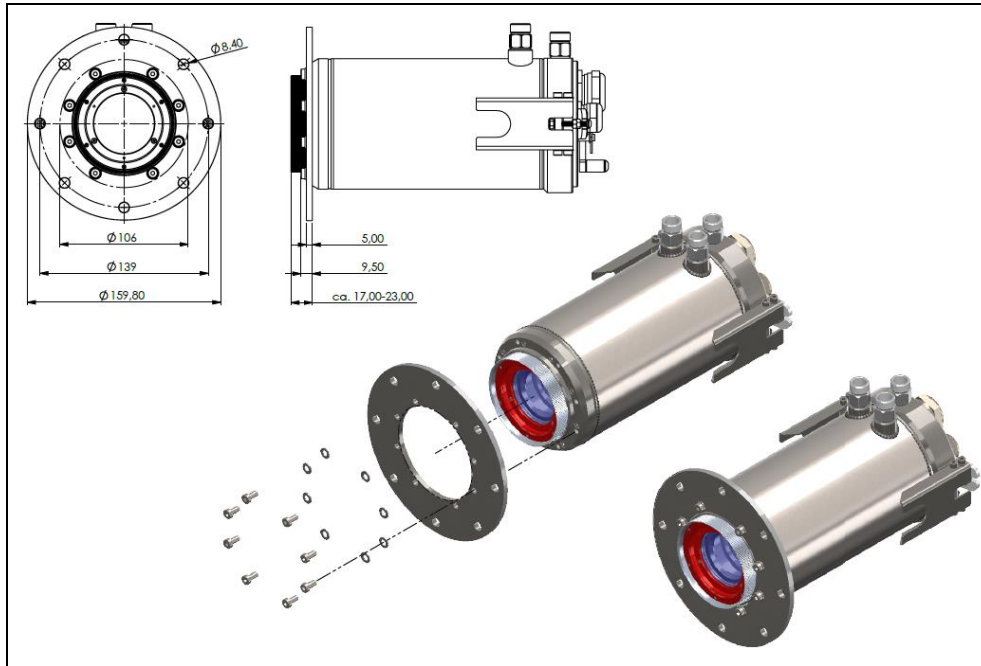


Figure 11: Mounting flange for Cooling Jacket Advanced (Standard and Extended)

2.4 Fittings

2.4.1 Cooling Water Fitting



- The cooling water input and output has a G1/4"-internal thread and a G3/8"-external thread.
- The maximum cooling water pressure is 15 bar (271 psi).
- While connecting the hoses keep inclined the Cooling Jacket at an angle of approx. 45° to avoid air bubbles.

2.4.2 Air Purge Collar



- Use oil-free, technically clean air only.
- The needed amount of air (approx. 120 l/min., 5 – 8 bar) depends on the application and the installation conditions on-site.
- The air purge collar has a G1/4"-internal thread and a G3/8"-external thread.

The lens must be kept clean at all times from dust, smoke, fumes and other contaminants in order to avoid reading errors. These effects can be reduced by using an air purge collar.

The following classes according to ISO 8573-1 are recommended for the quality of compressed air:

	Classes
Oil content:	class 2 or better
Water content:	class 4 or better
Solid content:	class 2 or better

2.4.3 Cable Glands on the Back

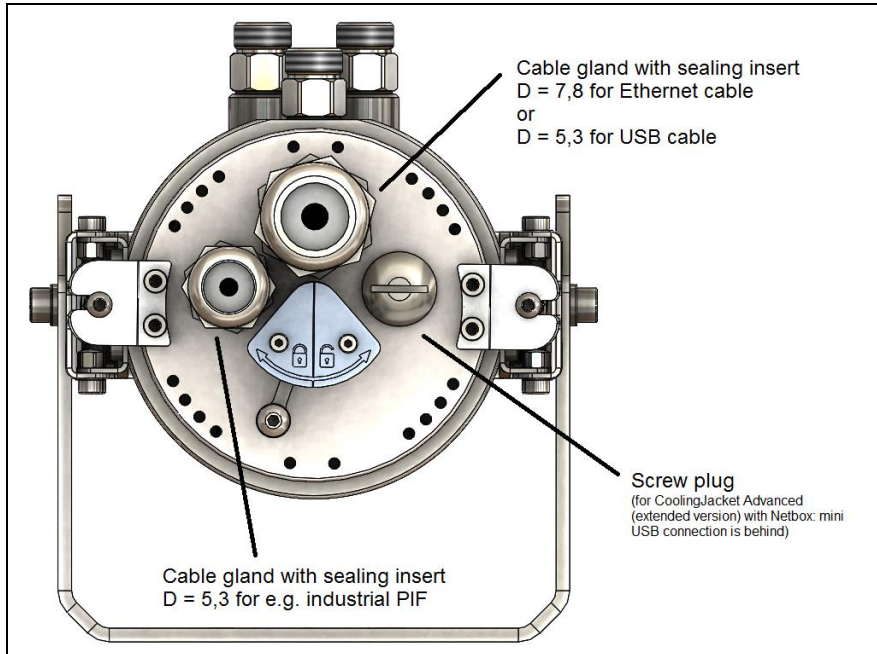


Figure 12: Cable glands with seal insert

2.5 Cooling Properties

Flow		Temperature at 1 l/min	Temperature at 2,5 l/min	Temperature at 5 l/min
Ambient temperature [255 °C]	Cooling water input [°C]	19	19	19
	Camera/ Thermometer [°C]	36	34	32

Table 1: Cooling properties with a steady cooling water input temperature and various flow

Flow		Temperature at 2.5 l/min of flow			
Ambient temperature [255 °C]	Cooling water input [°C]	25	30	35	40
	Camera/ Thermometer [°C]	39	42	45	51

Table 2: Cooling properties with a steady flow and various cooling water input temperature

2.5.1 Condensation



- For applications at ambient temperatures until 100 °C and a high humidity there is danger of condensation (see **Table 3**).
- To avoid condensation, the temperature of the cooling media and the flow rate must ensure a minimum device temperature.
- Consider the operation temperature of the applied devices.

Example (see **Table 3**):

Ambient temperature	80 °C
Relative humidity	25 %
Minimum device temperature	45 °C

At an ambient temperature of 80 °C and a relative humidity of 25 % the device temperature must not be below 45 °C. Otherwise condensation occurs on the lens or the electronic.

		Relative humidity [%]																		
		10	15	20	<u>25</u>	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Ambient temperature [°C]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5	10
	15	0	0	0	0	0	0	0	0	0	5	5	5	5	10	10	10	10	10	15
	20	0	0	0	0	0	0	5	5	5	10	10	10	10	15	15	15	15	15	20
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	40	0	5	10	10	15	20	20	20	25	25	25	30	30	30	35	35	35	35	40
	45	0	10	15	15	20	25	25	25	30	30	35	35	35	35	40	40	40	40	45
	50	5	10	15	20	25	25	30	30	35	35	35	40	40	40	45	45	45	45	50
	60	15	20	25	30	30	35	40	40	40	45	45	50	50	50	50	50	50	50	60
	70	20	25	35	35	40	45	45	50	50	50	50	50	60	60	60	60	60	60	70
	<u>80</u>	25	35	40	<u>45</u>	50	50	50	60	60	60	60	60	70	70	70	70	70	70	80
	90	35	40	50	50	50	60	60	60	70	70	70	70	80	80	80	80	80	80	
	100	40	50	50	60	60	70	70	70	80	80	80	80	80						

Table 3: Minimum device temperature in relation to ambient temperature and relative humidity in [°C]



Please respect the maximum ambient temperature of your measuring system!

3 Installation

3.1 Installation

The Cooling Jacket Advanced both versions can be installed in the desired position via the mounting bracket.

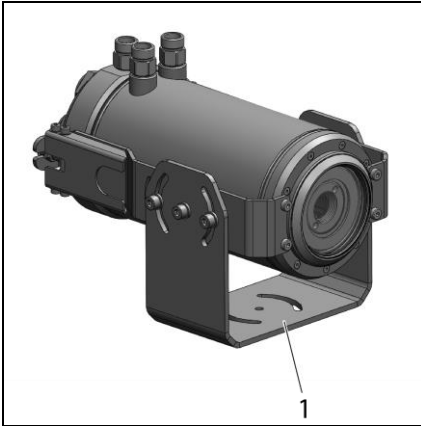


Figure 13: Cooling Jacket Advanced with mounting bracket (TM-JAB-TIM)

- 1 Mounting bracket, adjustable in two axes

3.2 Installation of TIM Camera, Infrared Video Thermometer and Infrared Thermometer

3.2.1 Assembling of the Focusing Unit



The focusing unit consists of two parts, external **(1)** and internal **(2)** part. The external part focuses the camera. The internal part fixes the camera.

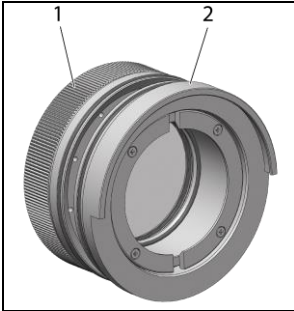


Figure 14: Focusing unit (external and internal part)

- 1 External part of the focusing unit
- 2 Internal part of the focusing unit

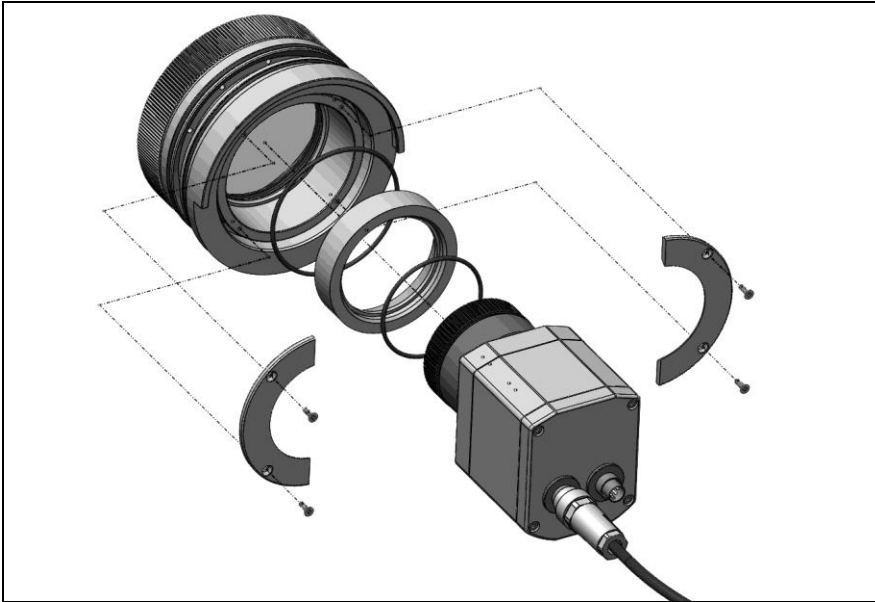


Figure 15: Assembling of the 6°, 9°, 23°, 26°, 29°, 33°, 39°, 41°, 53°, 72° optics

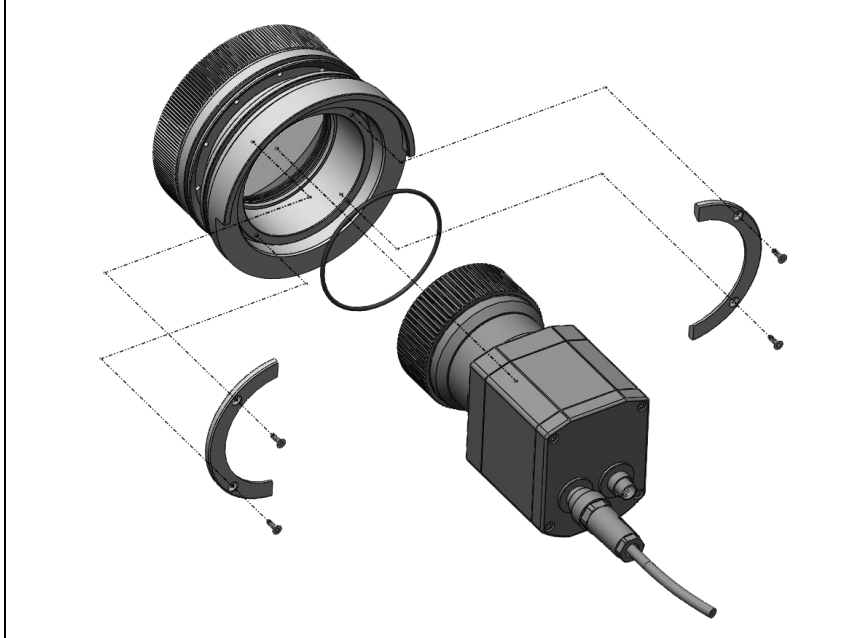
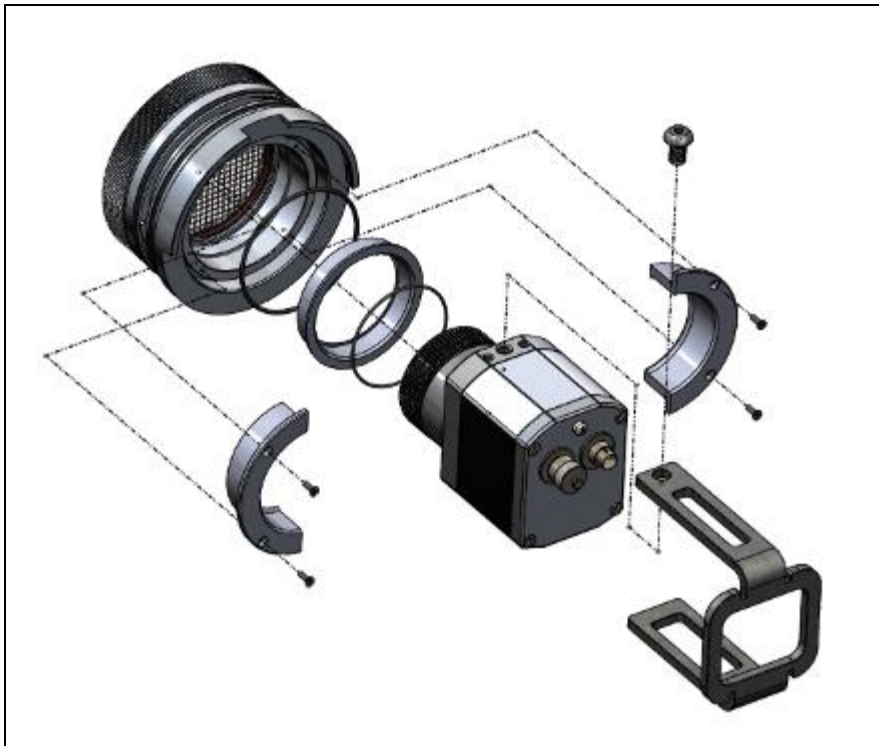


Figure 16: Assembling of the 13° and 15° optics



Note: For the installation of the 60 ° and 90 ° optics, the camera must be fixed upside down on a supplied bracket.

Figure 17: Assembling of the 60° and 90° optics

3.2.2 Assembling of the Front Part

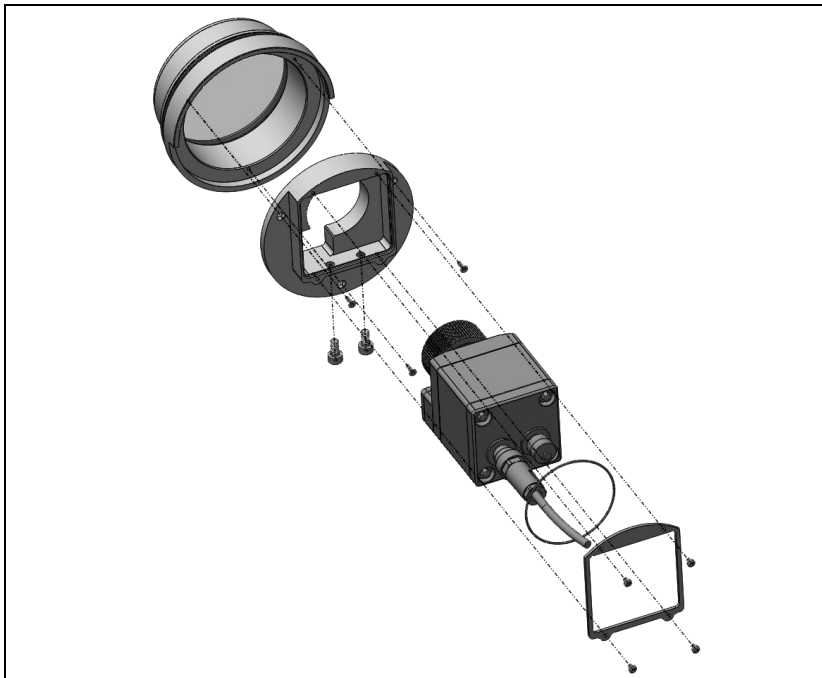


Figure 18: Assembling of the TIM 2xx



Note: The subsequent focusing on the focusing unit in the built-in cooling housing should be done wisely. If you use too much force, the optics can be over-twisted and damaged.

Figure 19: Assembling of the TIM M-1 / TIM M-05

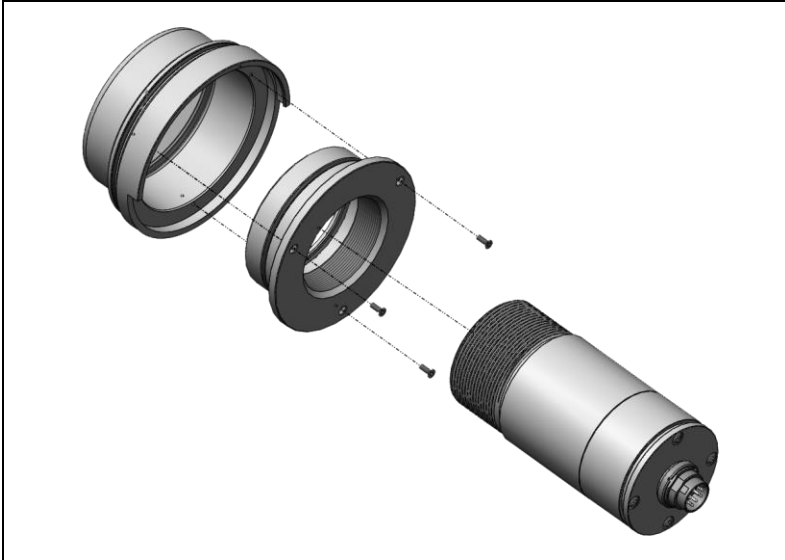


Figure 20: Assembling of the CTLaser, CSLaser, CTVideo, CSVideo

3.2.3 Mounting of the Protective Window at Focusing Unit

Step 1: Loosen the three countersunk head screws M2 x 5 (inside) and remove them!

Step 2: Turn six countersunk head screws M1.6 x 4 (outside) by two turns to the left! (**Do not unscrew or remove!**)

Step 3: Now carefully pull the nozzle ring out of the focusing unit!

Step 4: Place the protective window in the provided platform of the focusing unit and the O-ring 50 x 1.5 in the provided nut of the nozzle ring!

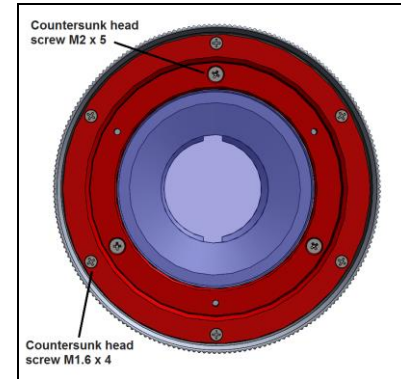


Figure 21: Focusing unit

Step 5: Plug the nozzle ring back into the focusing unit and secure it with the three countersunk head screws M2 x 5 (inside)!

Step 6: Now tighten the six countersunk head screws M1.6 x 4 (outside) by twisting them two turns to the right!

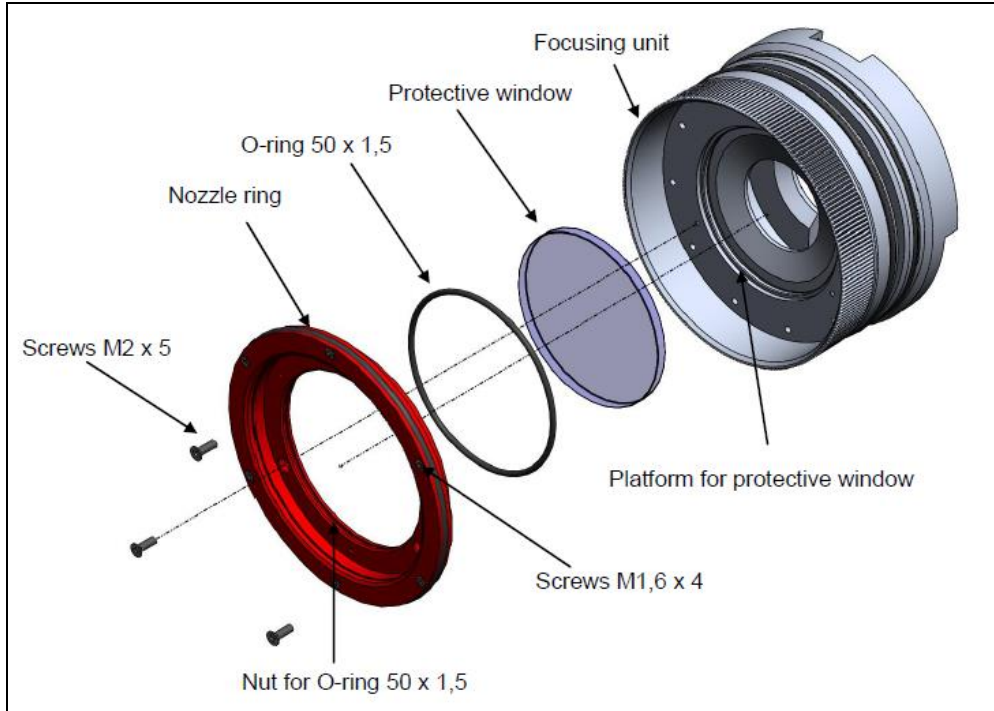


Figure 22: Individual components of the focusing unit

3.2.4 Assembly of the Laminar Air Purge

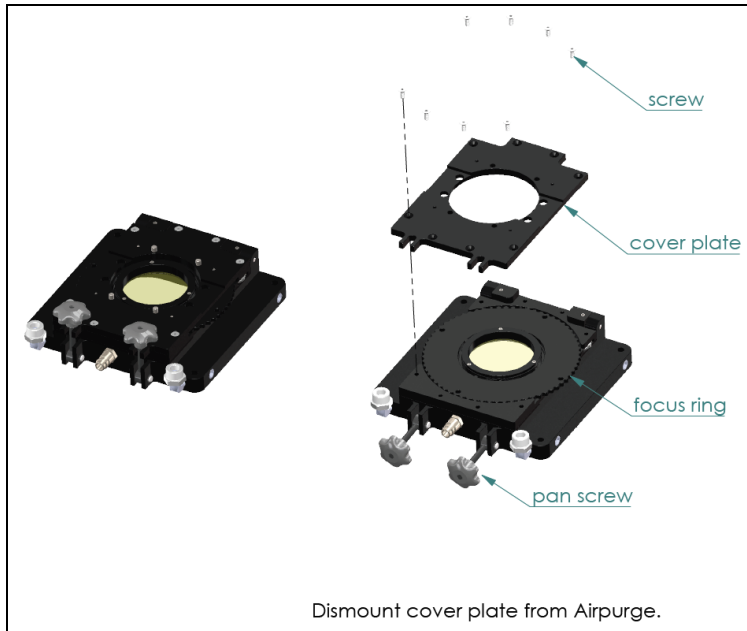


Figure 23: Assembly of the laminar air purge

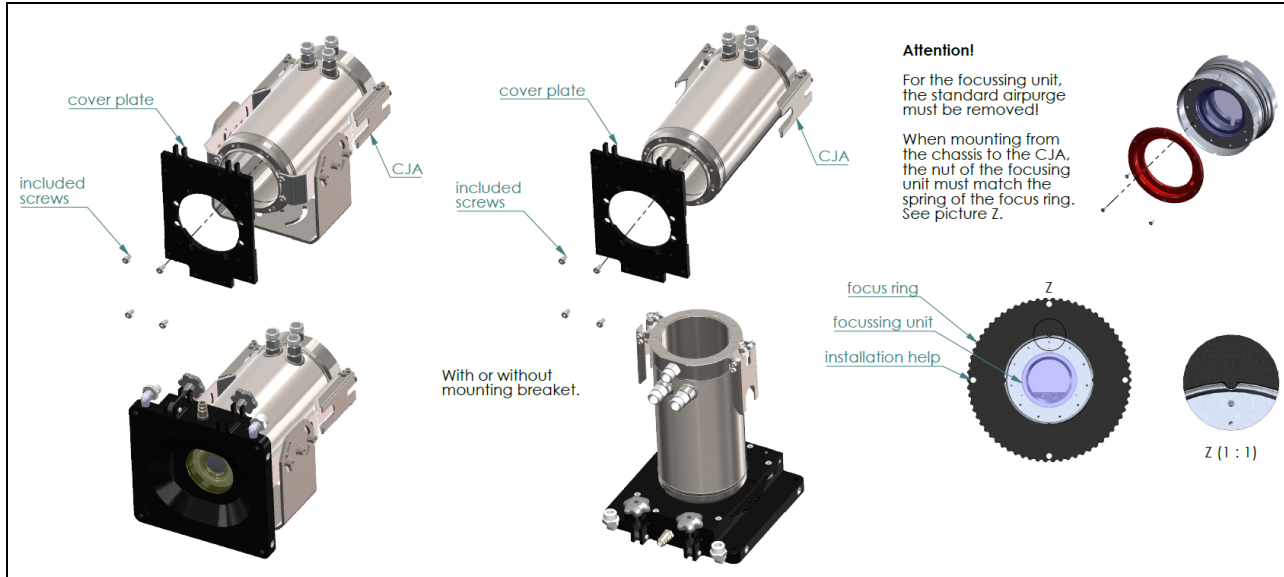


Figure 24: Assembly of the laminar air purge



For the focussing unit, the standard air purge must be removed!
When mounting from the chassis to the CJA, the nut of the focussing unit must match the spring of the focus ring (see picture Z).

Adjustment of air flow

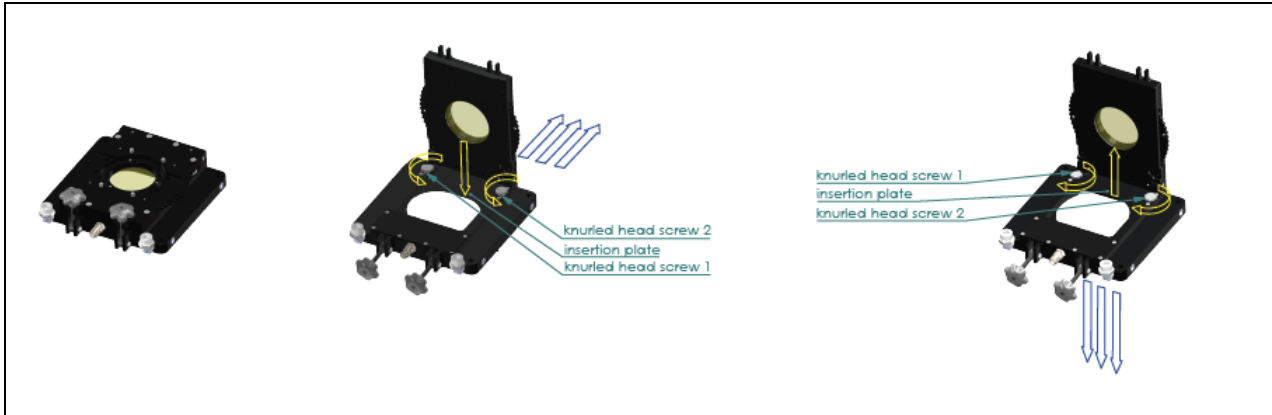


Figure 25: Adjustment of air outflow



To change the air outflow direction on the air purge, turn the knurled head screws 1 and 2 simultaneously to the left or right to move the drawer up or down.

Exchanging the protective window



Figure 26: Change of the protective window



Loosen the screws from the clamping ring and remove it! Now take out the O-ring and the protective window!

3.2.5 Assembling to the Cooling Jacket Advanced Standard Version

Depending on the chassis either a camera of the TIM series, a laser infrared thermometer or an infrared video thermometer can be installed.

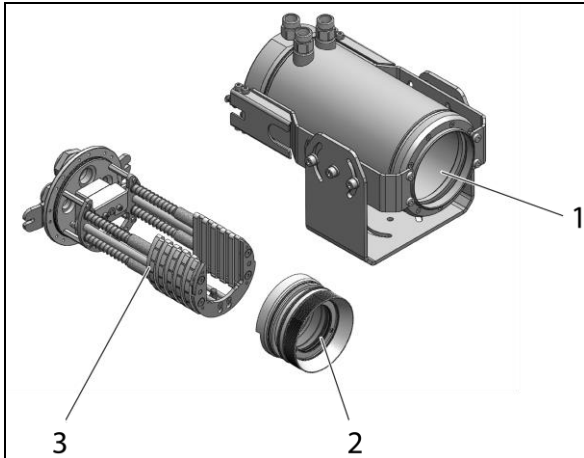


Figure 27: Cooling Jacket Advanced

- 1 Housing
- 2 Front part (or focusing unit)
- 3 Chassis

Installation of TIM camera

1. Mount the camera to the focusing unit or the front part as described in **Chapter 3.2.1** respectively **Chapter 3.2.2**. (exception for the camera TIM M-1/ M-05).
2. Seat the focusing unit or front part in the chassis (**Figure 28**). Position it as shown in **Figure 31**, by pushing it to the bottom. The TIM M-1/ TIM M-05 camera is first placed into the chassis without the front part. After that the front part is attached to the optic. Make sure that the front part is placed at a height of approx. 5 mm above the optic in order to be able to slide it over the chassis front plate (**Figure 31**).

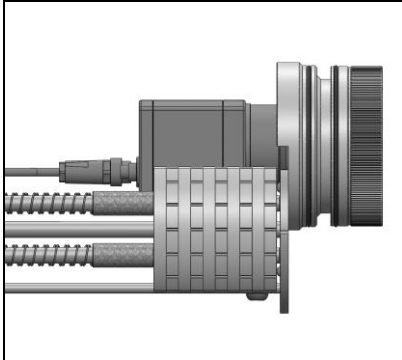


Figure 28: Inserting of the focusing unit

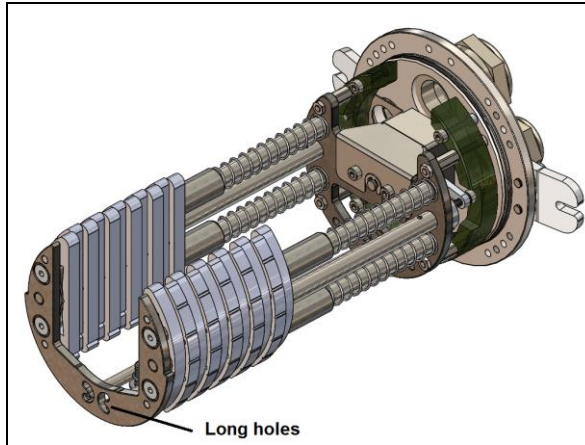


Figure 29: Long holes on the bottom of the chassis

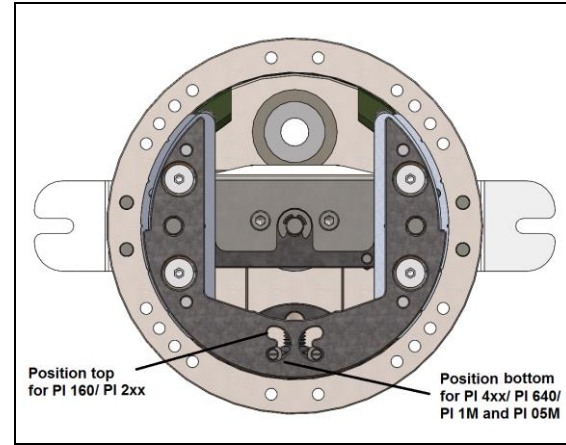


Figure 30: Positioning the two bars in the slot for different cameras

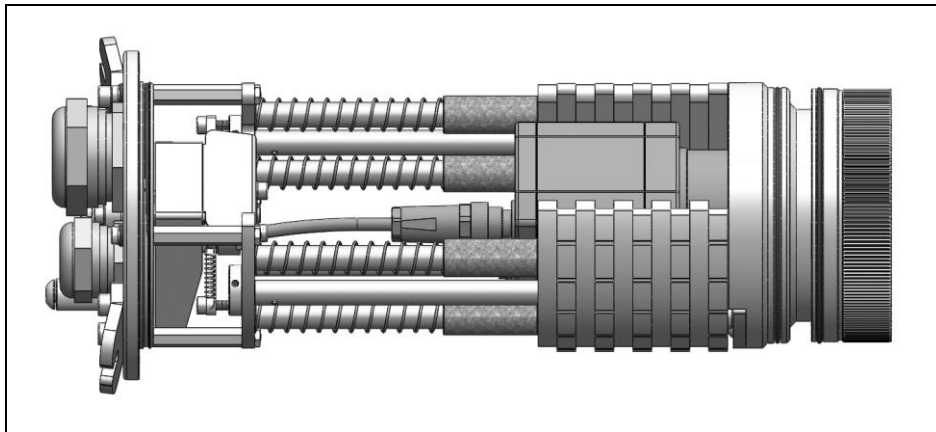


Figure 31: Focusing unit with camera

3. Fix the camera with the provided screw on the bottom of the chassis.

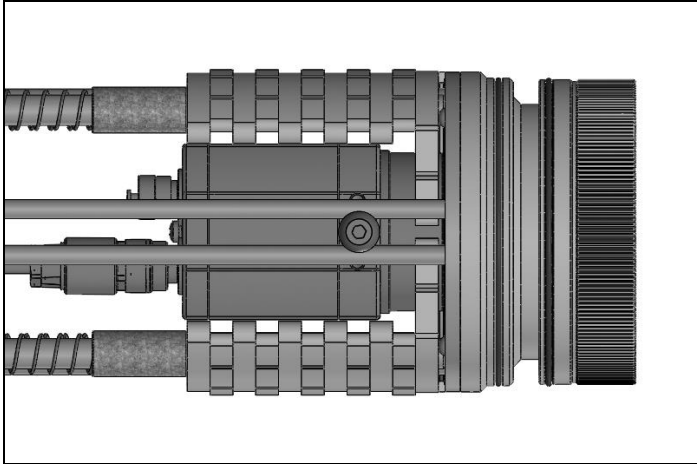


Figure 32: Mounting of the camera to the chassis

4. Then connect the TIM camera with the provided USB cable and lead it out of the cable gland.
5. Slide the chassis with the camera in the housing. Put the pins of the hinges to the slits of the chassis and lock the hinge by pushing it forward (**Figure 33**).

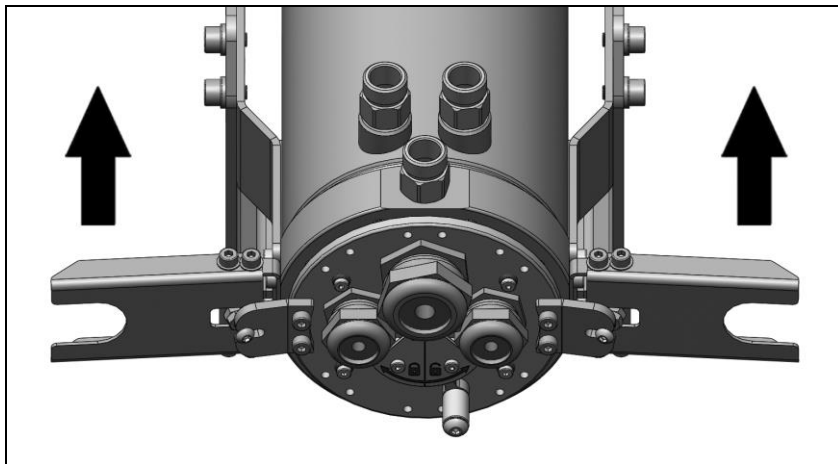

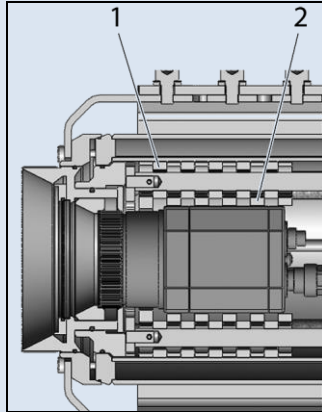


Figure 33: Locking of the hinge

6. Move the locking lever to the left (symbol: ) , so that the chassis is fitted close to the inner surface of the housing (**Figure 34**).



The alternate contact of the cooling jaws with the camera/ infrared thermometer and inner housing generates an optimal cooling effect.



- 1 Contact of the cooling jaws and inner housing
- 2 Contact of the cooling jaws and camera/ infrared thermometer

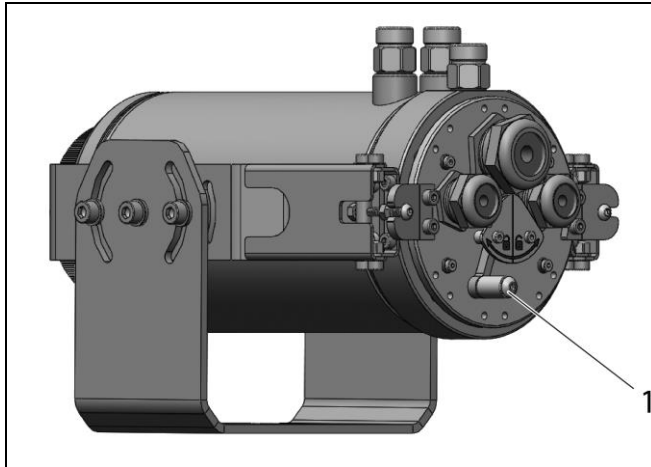


Figure 34: Back side of the Cooling Jacket with locking lever

1 Locking lever

7. Dismount in reverse order.

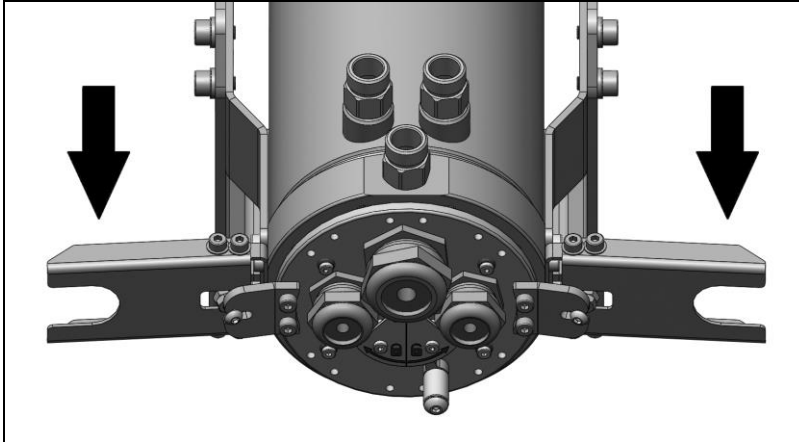


Figure 35: Unlocking of the hinge

Installation of video thermometer or infrared thermometer

1. Screw the infrared thermometer in the thread (M48x1.5) of the front part (see **Figure 20**) and seat the front part in the chassis (**Figure 36**).

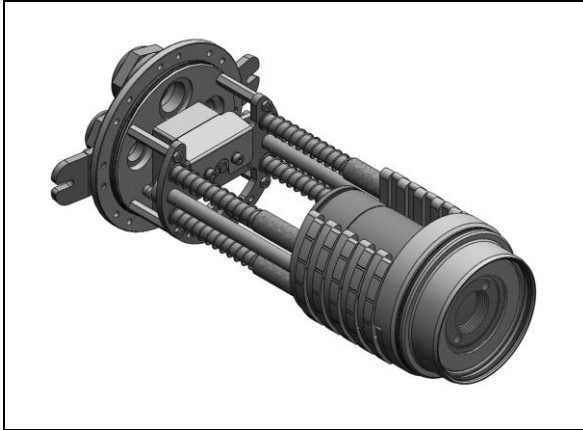


Figure 36: Front part with infrared thermometer

2. Lead the sensor cable out of the cable gland.

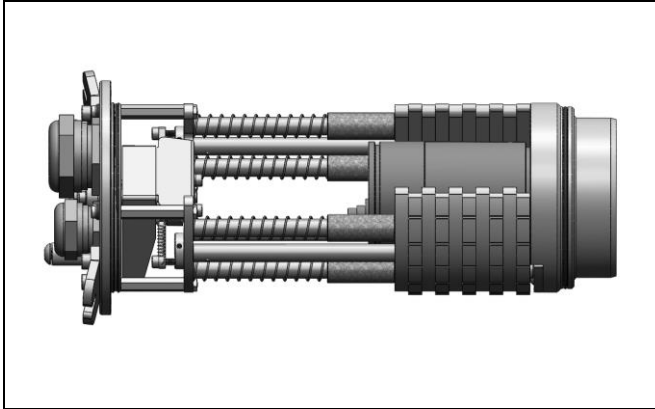



Figure 37: Infrared thermometer mounted

3. Slide the chassis with the camera in the housing. Put the pins of the hinges to the slits of the chassis and lock the hinge by pushing in forward (**Figure 33**).
4. Move the locking lever to the left (symbol: ) , so that the chassis is fitted close to the inner surface of the housing (**Figure 34**)
5. Dismount in reverse order (**Figure 35**).

3.2.6 Assembling to the Cooling Jacket Advanced Extended

The extended version of the Cooling Jacket Advanced provides an installation of the TIM series together with the TIM NetBox and an Industrial PIF or with the USB server Gigabit and an Industrial PIF.

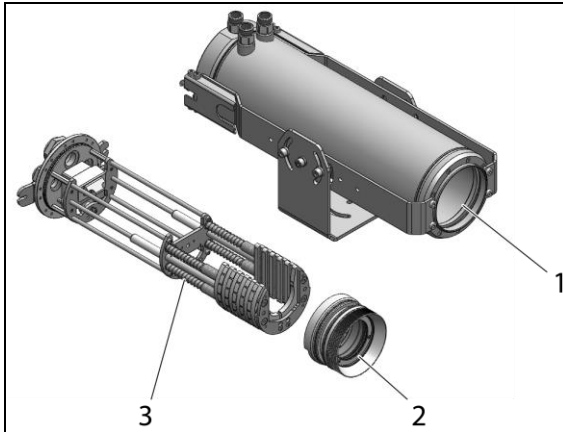


Figure 38: Cooling Jacket Advanced, extended version

- 1 Housing
- 2 Focusing unit
- 3 Chassis

Installation of TIM camera

Steps 1-3, see page 54.

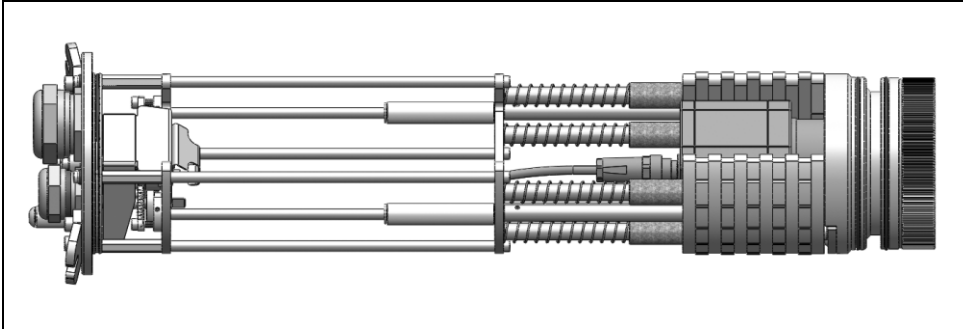


Figure 39: Camera implemented (extended version)

Assembling of TIM NetBox and Industrial PIF

4. Mount the holding plate (screws M3x5). Then attach the two support rods complete with the distance bolts (SW 5,5x6 - M3x6) with the provided screws (M3x10) to the bottom of the chassis. At last mount the shaft to fix the TIM NetBox (**Figure 40**).

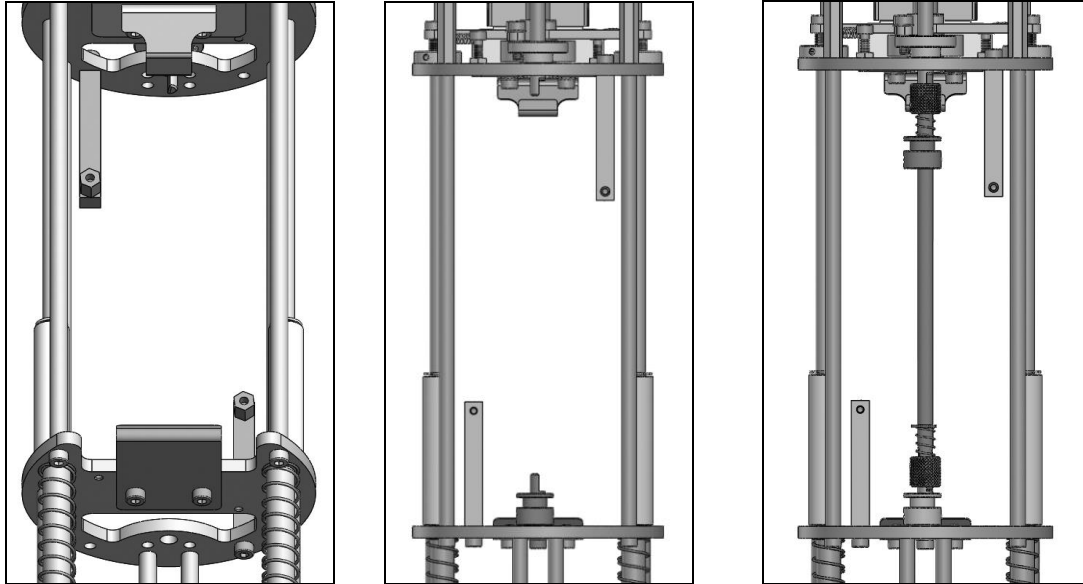


Figure 40 (a-c): Mounting of the accessories for TIM NetBox: **a)** Holding plate for TIM NetBox (top view), **b)** Support rods for Industrial PIF (view from the bottom), **c)** Shaft to fix the TIM NetBox (view from the bottom)

5. Fix the Industrial PIF with the screws (M3x5) as shown in **Figure 41**.

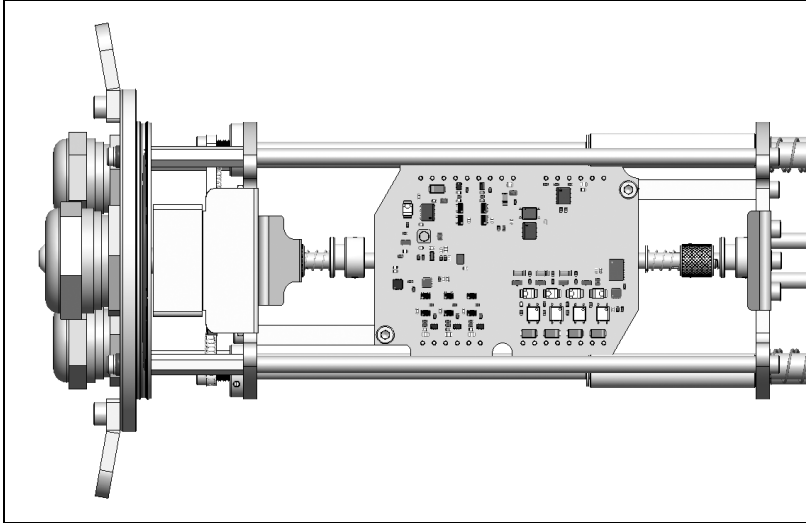


Figure 41: Mounting of the Industrial PIF (top view)

6. To mount the TIM NetBox to the chassis screw it to the fastening rail (screws M4x8).

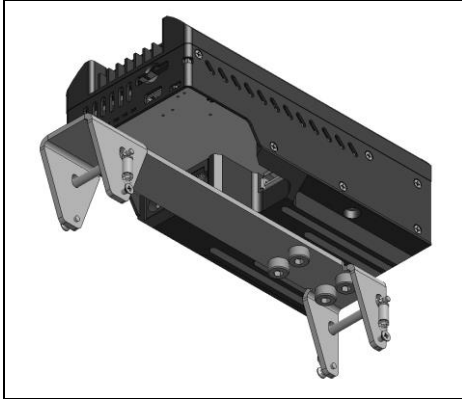


Figure 42: TIM NetBox with fastening rail

At first push the fastening rail with the TIM NetBox into the left notch (1) of the shaft. Afterwards into the right notch (1) (**Figure 43**) until it is engaged (**Figure 44**).



By locking the chassis the shaft pushes the TIM NetBox to the inner surface of the housing. This guarantees an optimal cooling of the TIM NetBox.

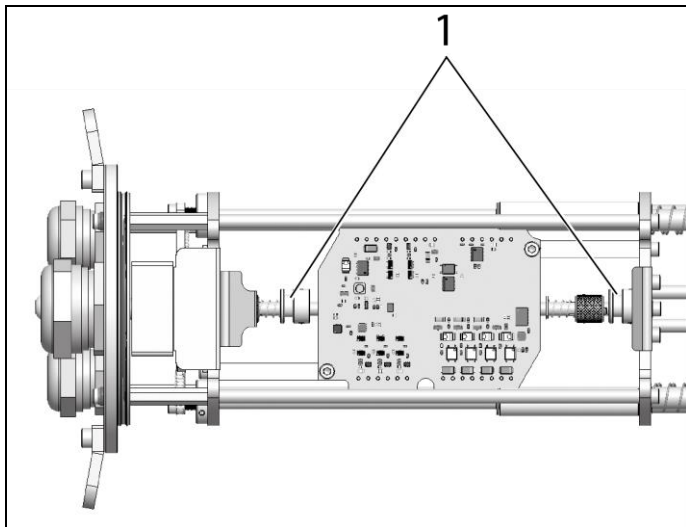


Figure 43: Notch to fix the TIM NetBox (top view)

1 Notch

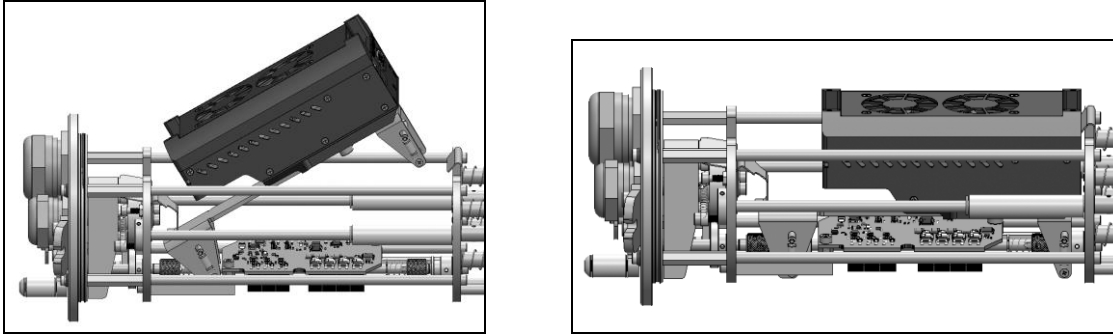


Figure 44: Fitting the TIM NetBox into the chassis (right hand view)

7. Then connect the TIM camera and the TIM NetBox with the provided USB cable and the Industrial PIF with the camera. Combine the network connector and the TIM NetBox (**Figure 45**).



The USB angle plug is a reversible plug. This means that the plug can be plugged freely around in the USB socket and works in both orientations.

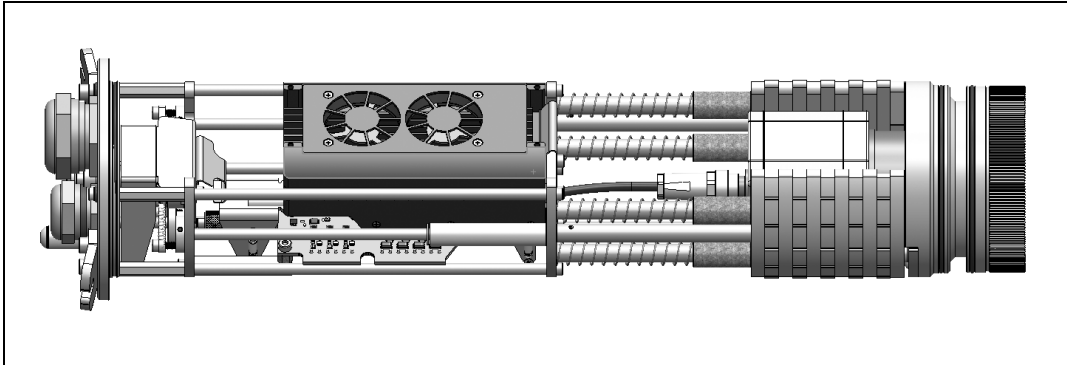


Figure 45: Chassis with TIM camera, Industrial PIF and TIM NetBox

Follow as step 5, **page 57**.

Assembling of USB server Gigabit and Industrial PIF

4. Mount the DIN rail plate with the screws (M3x5) to fix the USB server Gigabit. Then attach the support rods with the provided screws (M3x10) to one side of the chassis; use the distance ring on the left (**Figure 46**).

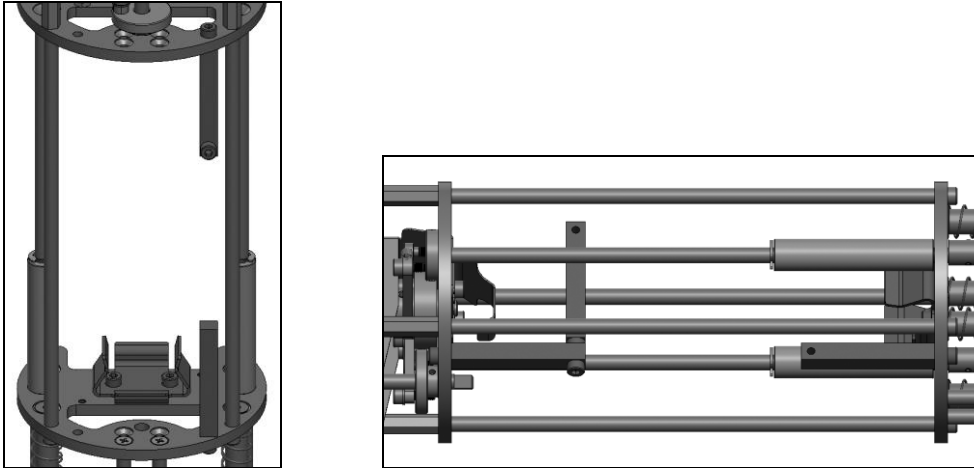


Figure 46 (a + b): Mounting of the accessories for USB server Gigabit: **a)** DIN rail plate for USB server Gigabit (view from the bottom), **b)** Support rods for Industrial PIF (right hand view)

5. Fix the Industrial PIF with the screws (M3x5) as shown in **Figure 47**.

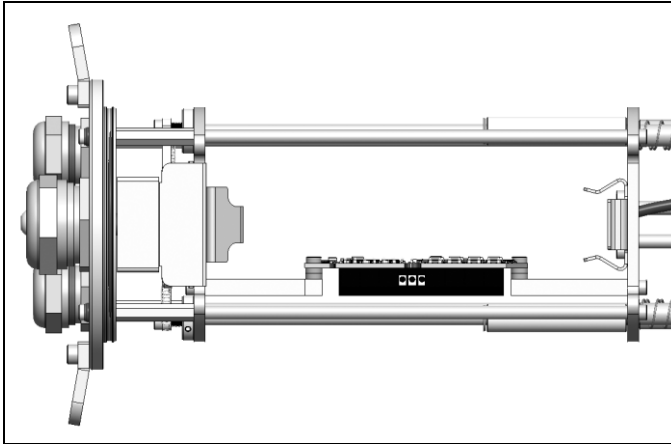


Figure 47: Mounting of the Industrial PIF (top view)

6. Engage the USB server Gigabit to the DIN rail plate (**Figure 48**).

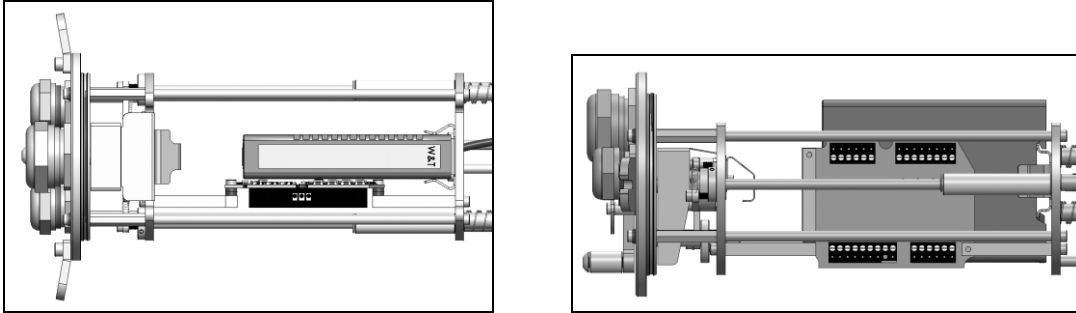


Figure 48 (a + b): Fitting the USB server Gigabit into the chassis (top view and right hand view)

7. Then connect the TIM camera and the USB server Gigabit with the provided USB cable and the Industrial PIF with the camera. Combine the network connector and the USB server Gigabit (**Figure 49**).



The USB angle plug is a reversible plug. This means that the plug can be plugged freely around in the USB socket and works in both orientations.

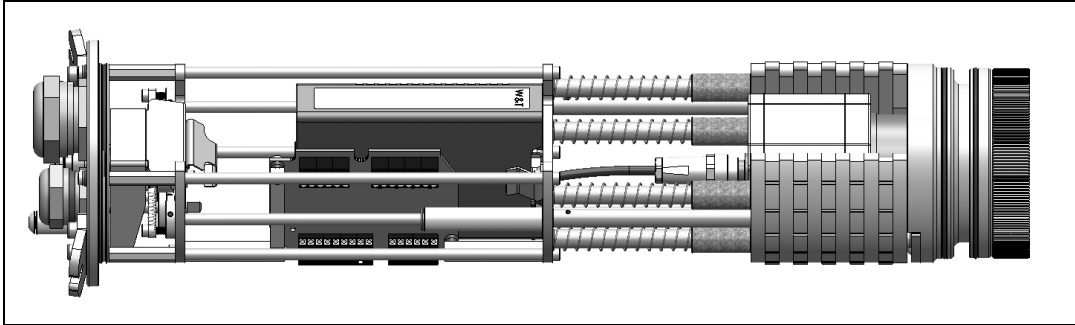


Figure 49: Chassis with TIM camera, Industrial PIF and USB server Gigabit

Follow as step 5, **page 57**.



The USB Server can only be powered via PoE (Power of Ethernet) in the built-in CoolingJacket.

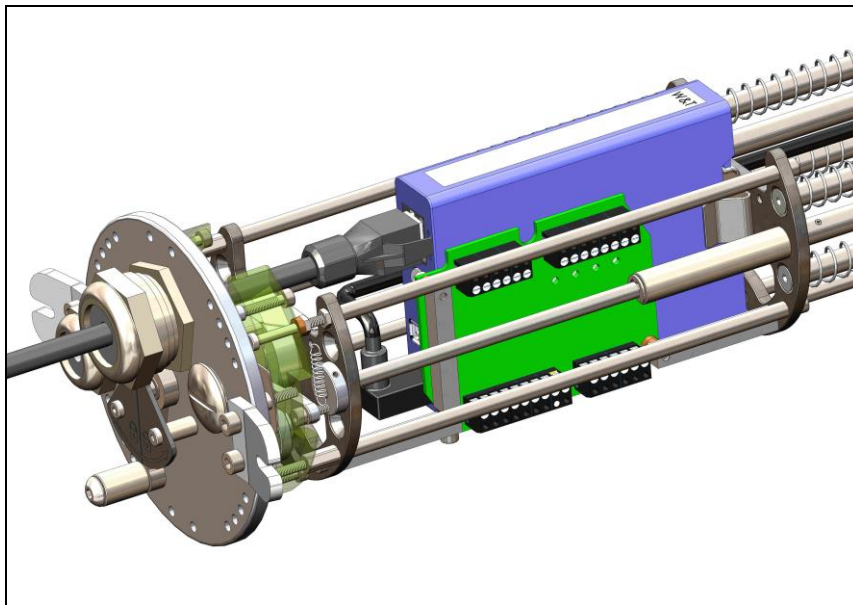
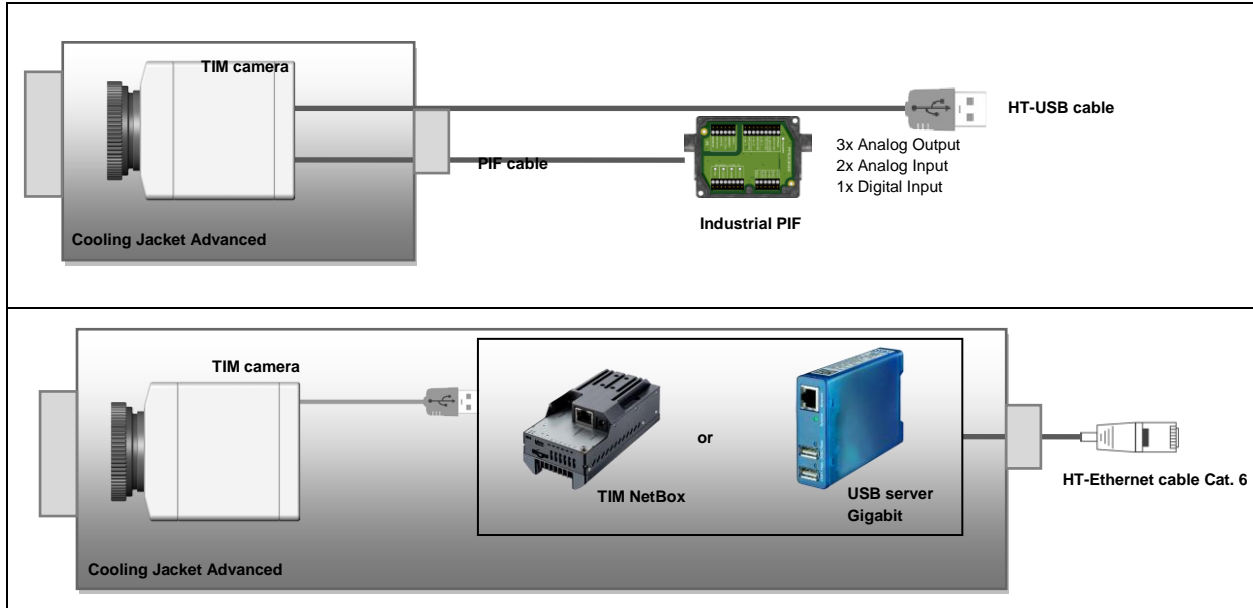
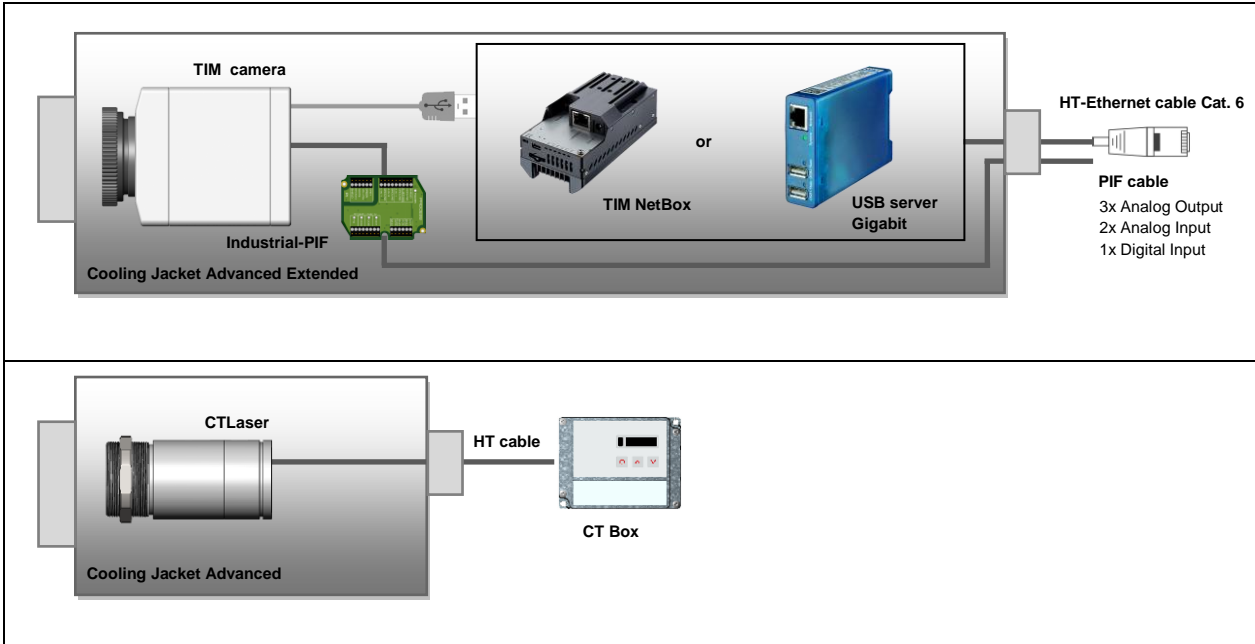


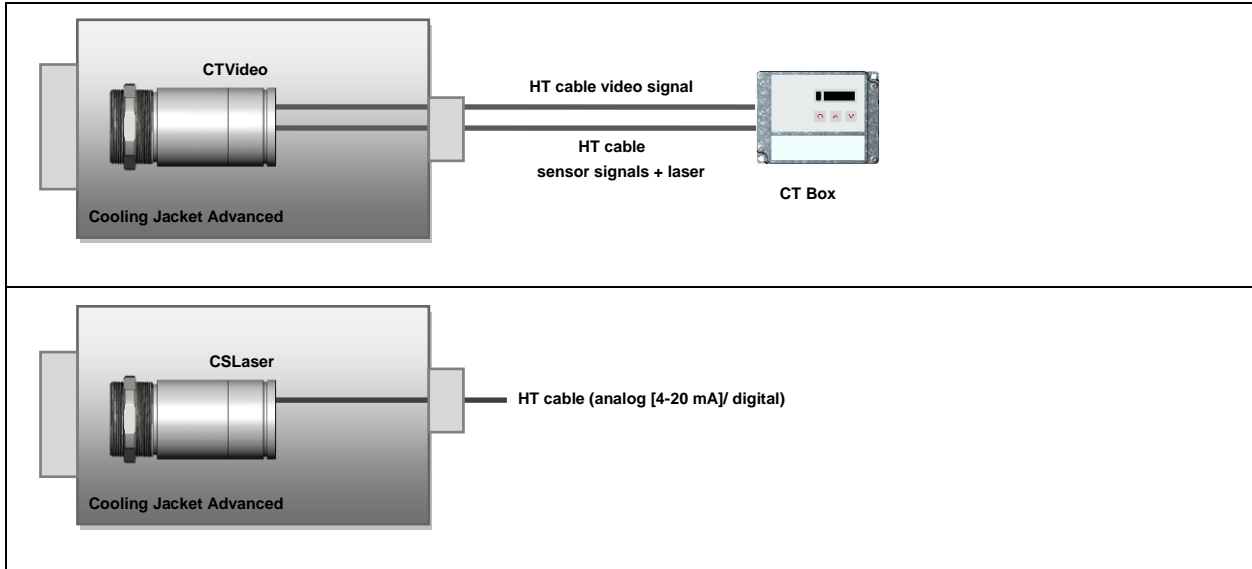
Figure 50: Mounting USB and network connector to USB server

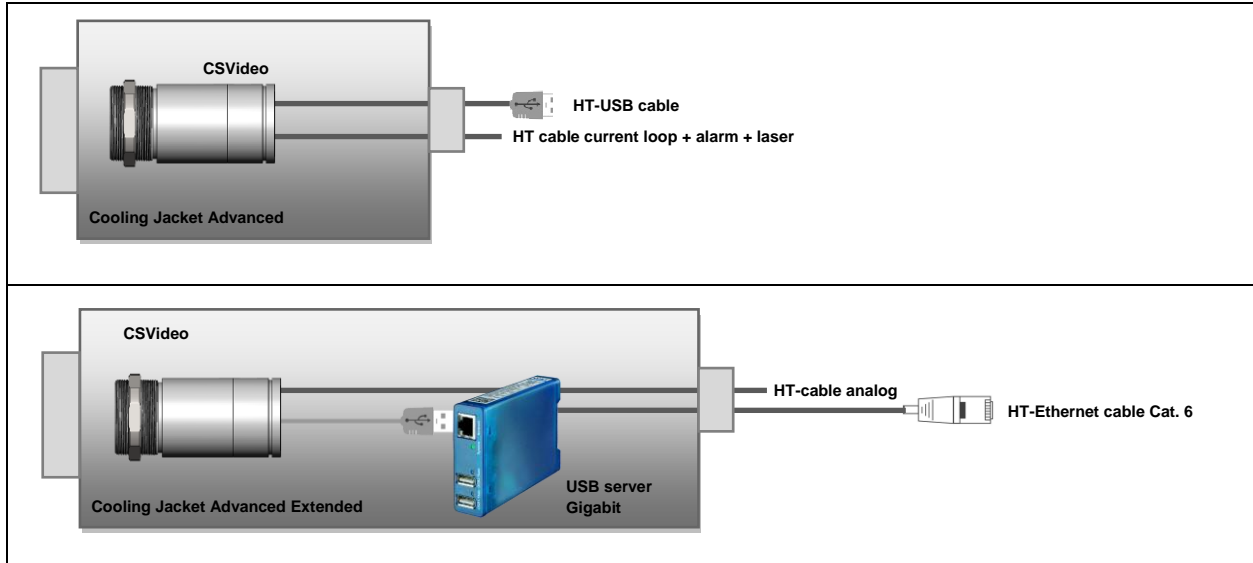
Follow as step 5, [page 57](#).

4 Example of Installation









*All high temperature cables are available for temperatures up to 180 °C/ 250 °C:

- IR video thermometer and IR thermometer: 3 m, 8 m, 15 m
- HT-Ethernet cable Cat.6: 10 m und 20 m
- HT-USB cable: 5 m, 10 m



Figure 51: CoolingJacket (Standard) with CSvideo

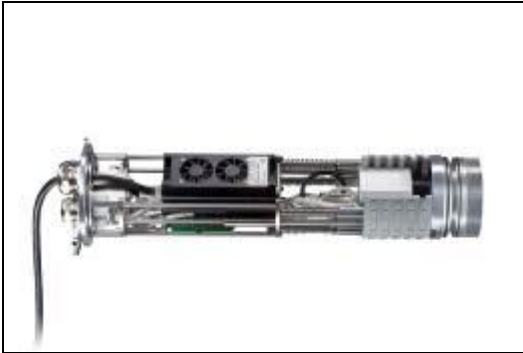


Figure 52: Cooling Jacket Advanced (Extended) with TIM Netbox and industrial PIF



Figure 53: Cooling Jacket Advanced (Extended-Version) with USB Server and industrial PIF



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