ACCESSORIES

Alvium IP Housing Kits
User Guide

V1.0.1

Note: Cameras, lenses, and cables not part of this product.

Quick links

-
-
-

Read before use

EN - English

Safety

Before using the product, read these safety instructions. Observe the warnings at all times. Use the product only as stated in the

CAUTION

Injury by a falling product

The falling product can cause injury.

Intended use

Intended use of Allied Vision product is the integration into vision systems by professionals. All Allied Vision product is sold in a B2B setting.

DA - Dansk

Sikkerhed

Læs sikkerhedsanvisningerne, før produkt bruges. Overhold alle advarsler. Brug kun produkt som anført i Intended use på side 18.

FORSIGTIG

Kvæstelser, hvis produkt falder ned

Falder produkt ned, kan dette forårsage kvæstelser.

Tilsigtet brug

Allied Vision produktets tilsigtede brug er en indbygning i et visionssystem, udført af fagfolk. Alle Allied Vision produkter sælges i B2B.

DE - Deutsch

Sicherheit

Bevor Sie das Produkt benutzen, lesen Sie diese Sicherheitshinweise. Beachten Sie diese Hinweise immer. Verwenden Sie das Produkt nur wie beschrieben in Intended use auf Seite 18.

VORSICHT

Verletzung durch das fallende Produkt

Das fallende Produkt kann Verletzungen verursachen.

Bestimmungsgemäßer Gebrauch

Allied Vision Produkte sind bestimmt für die Integration in Bildverarbeitungs-systeme durch Fachpersonal. Alle Allied Vision Produkte werden in einer B2B-Umgebung verkauft.

ES - Español

Seguridad

Antes de utilizar el producto lea estas instrucciones de seguridad. Observe las advertencias en todo momento. Utilice el producto solo tal y como se estipula en el Intended use en la página 18.

ATENCIÓN

Lesiones en caso de que el producto se cae

Si el producto se cae puede provocar lesiones.

Uso previsto

El uso previsto del producto Allied Vision es la integración en el sistema de visión por parte de profesionales. Todos los productos Allied Vision se venden dentro de una relación B2B.

FI - Suomi

Turvallisuus

Lue nämä turvallisuusohjeet ennen tuotteen käyttöä. Noudata tuotetta joka hetki. Käytä tuotteen ainoastaan kohdassa Intended use sivulla 18 kuvatulla tavalla.

HUOMIO

Putoavan tuotteen aiheuttamat vammat

Putoava tuote voi aiheuttaa vammoja.

Käyttötarkoitus

Allied Vision-tuotteen käyttötarkoitus on integrointi kuvajärjestelmiin ammattilaisten toimesta. Kaikki Allied Vision-tuotteet myydään B2B-ympäristössä.

FR - Français

Sécurité

Veuillez lire ces consignes de sécurité avant d'utiliser le produit. Respectez continuellement les avertissements. Utilisez le produit uniquement comme indiqué sous Intended use, page 18.

ATTENTION

Blessures en cas de chute du produit

La chute de la produit peut entraîner des blessures.

Utilisation prévue

L'utilisation prévue du produit Allied Vision est son intégration dans des systèmes de vision par le soin de professionnels. Tout produit Allied Vision est vendu dans un cadre B2B.

עברית - HE

בטיחות

לפני השימוש במוצר, עליך לקרוא את הוראות הביטחון האלו. עליך לממש הוראות ביטחון אלו תמיד. השימוש במצלמה הוא רק לפי מה שכתוב ב"כוונת השימוש" (Intended use בעמוד 18).

זהירות

פציעה מנפילת המוצר

נפילת המוצר עלולה לגרום לפציעה.

שימוש מיועד

מוצרי AlliedVision מיועדים לשילוב במערכות ממוחשבת לעיבוד צילומים ע"י אנשי מקצוע. כל מוצרי AlliedVision נמכרים לשימוש בסביבת B2B.

IT - Italiano

Sicurezza

Leggere queste istruzioni per la sicurezza prima di utilizzare il prodotto. Osservare sempre tutte le avvertenze. Utilizzare il prodotto come descritto alla sezione Intended use a pagina 18.

ATTENZIONE

Lesioni dovute alla caduta del prodotto

Il prodotto può causare delle lesioni.

Uso previsto

Il prodotto Allied Vision è concepito per essere integrato in sistemi di monitoraggio in campo professionale. Tutti i prodotti Allied Vision sono venduti in uno scenario B2B.

JA – 日本語

安全性

本製品を使用する前に、この安全ガイドをお読みください。警告を必ず守ってください。必ず21ページのIntended use 18 ページに従って使用してください。

注意

製品の落下によるケガ

本製品が落下すると、けがをするおそれがあります。

用途

Allied Vision製品は、専門家が視覚装置に統合することを意図したものです。すべてのAllied Vision製品は、企業間取り引き用に販売されています。

NL - Nederlands

Veiligheid

Lees deze veiligheidsinstructies voordat u het product gebruikt. Neem deze waarschuwingen altijd in acht. Gebruik het product uitsluitend, zoals aangegeven in het Intended use op pagina 18.

VOORZICHTIG

Letsel door het vallende product

Het vallende product kan verwondingen veroorzaken.

Beoogd gebruik

Het beoogde gebruik van het Allied Vision-product is de integratie in optische systemen door professionals. Alle Allied Vision-producten worden verkocht in de B2B-markt.

NO - Norsk

Sikkerhet

Les disse sikkerhetsinstruksene før du bruker produkt. Følg advarslene til en hver tid. Bruk kun produkt i samsvar med Intended use på side 18.

FORSIKTIG

Skade ved det fallende produktet

Det fallende produktet kan forårsake skade.

Tiltenkt bruk

Den tiltenkte bruken av Allied Vision-produktet er integrering i visjonssystemer av profesjonelle. Alle Allied Vision-produkter selges i en forretning til forretning-situasjon.

SV - Svenska

Säkerhet

Läs igenom säkerhetsinstruktionerna innan du använder produkten. Var hela tiden särskilt uppmärksam på varningarna. Använd enbart produkten på det sätt som anges i Intended use på sida 18.

VARNING

Risk för skador från fallande produkter

Fallande produkter kan förorsaka skador.

Avsedd användning

Den avsedda användningen av Allied Vision-produkter är integrering i visionssystem av fackmän. Samtliga Allied Vision-produkter säljs i en B2B-miljö.

ZH – 简体中文版

安全需知

在使用产品之前，请阅读这些安全说明。请务必遵守相关警告 和 Intended use 于第 18 页.

注意事项

由坠落的产品造成的伤害

产品可能会坠落并造成伤害。

预期用途

Allied Vision 产品的预期用途是由专业人士整合到视觉系统中。所有 Allied Vision 的产品均通过 B2B 渠道销售。

Allied Vision

This document at a glance

Read this document carefully

Learn to use Alvium IP Housing Kits in the most safe and efficient way and avoid damage to cameras and lenses.

About Alvium IP Housing Kits

Alvium IP Housing Kits enable applications that require IP66 and IP67 protection. By absorbing moisture from the air, the included Desiccants Bag avoids condensation on cameras and lenses inside Alvium IP Housing Kits when temperature changes.

Shipping contents

Each kit consists of 6 bags including the main components
- Camera Tube and Lens Tube
- Camera Mounting Ring
- Back Plate
- Cable Entry
- Seal Rings
- Screws (with threadlocker applied)
- Desiccant

For details, see Alvium IP Housing parts list on page 29.

What else do you need?

Screws to mount IP housing

Mount IP housings to bases for heat dissipation. Purchase screws to suit the dimensions of your mounting base.

Technical information and ordering

For information about Allied Vision cameras, see www.alliedvision.com/en/support.

For IP housings in this user guide, please contact Allied Vision Sales at www.alliedvision.com/en/about-us/contact-us/contact-sales.

Contact us

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Distribution partners
www.alliedvision.com/en/avt-locations/avt-distributors

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Contents

Allied Vision

Document history and conventions

This chapter includes:

Document history

Version	Date	Remarks
V1.0.1	2023-Aug-25	• Added Hebrew contents to Read before use on page 2. • Corrected the letter for Camera Mounting Ring (f) in Figure 5 on page 32. • Applied editorial changes.
V1.0.0	2023-Jan-23	Release version

Table 1: Document history

Conventions used in this user guide

To give this document an easily understood layout and to emphasize important information, the following typographical styles and symbols are used:

Typographical styles

Style	Function
Emphasis	Highlighting important things
Features	Names for GenICam features
Web links and references	Links to webpages and internal cross references

Table 2: Typographical styles

Symbols and notes

CAUTION

Injury by falling products

Precautions are described

NOTICE

Material damage

Precautions are described.

Practical tip

Additional information helps to understand or eases handling the product.

Additional information

Web link or reference to an external source with more information is shown.

Allied Vision

Intended use and safety

§

This chapter includes:

Intended use

Allied Vision's objective is the development, design, production, maintenance, servicing and distribution of digital cameras and components for image processing. We are offering standard products as well as customized solutions.

Intended use of Allied Vision product is the integration into Vision systems by professionals. All Allied Vision product is sold in a B2B setting.

Allied Vision isn't a legal manufacturer of medical product. Instead, Allied Vision cameras and accessories may be used as components for medical product after design-in by the medical device manufacturer and based on a quality assurance agreement (QAA) between Allied Vision (supplier) and medical device manufacturer (customer). Allied Vision's duties in that respect are defined by ISO 13485, clause 7.2 (customer-related processes, equivalent to ISO 9001, clause 8.2).

Your safety

Mounting IP housings

IP housings must be mounted using the 4 mounting threads. Falling IP housings can hurt you. To avoid personal injury:

- Ensure proper mounting of IP housings to mounting bases.
- Apply threadlocker for screw connections.
- Especially for dynamic applications, observe the supported values confirmed by tests for Shock and vibration on page 21.
- Follow the instructions in Mounting the Camera Tube and the lens on page 37.

Product safety

To prevent material damage, read the following to understand risks in using Alvium IP Housing Kits.

Lenses and Lens Tube windows

For dynamic applications, the supported maximum lens mass is 70 g. See Shock and vibration on page 21.

Ensure the Lens Tube is large enough for your lens. Observe that some lenses increase length for various focus settings. With unsuitable lenses, the front element of lenses or the window of the Lens Tube can be damaged.

Protect the window of the Lens Tube from scratches. They may be out of lens focus or out of the angle of view, but direct light can cause unwanted flares.

Joining tubes

If the tubes are screwed together at an angle, the threads can be damaged. We recommend you to rotate the Lens Tube and the Camera Tube against each other counterclockwise until you feel the threads engage before you rotate them clockwise to join them.

Using seals

If seals are missing or have not been mounted properly, IP housings are not tight as specified. Ensure to use all seals as described in the instructions.

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Allied Vision

Specifications

This chapter includes technical data for two IP housings:

Applied standards

IP class

Alvium IP Housing Kits comply with IP66 and IP67 classes according to IEC 60529.

Shock and vibration

Alvium IP Housing Kits were tested according to the following standards:

- IEC 60068-2-6, sinusoidal vibration testing
- IEC 60068-2-27, shock testing.

Cameras were inspected before and after the tests. All tests were passed successfully:

Condition	Passed
Mechanics	• The camera housings showed no deformations. • The connections between camera components had not come loose. • The sensor position was within the specified tolerances of a new camera.
Camera behavior	Camera functionalities were not affected, no deviations occurred.
Image streaming	Images were streamed without errors.

Table 3: Conditions for passed tests

The conditions for cameras and lenses were the same for all tests. Solid steel tubes were used to represent real lenses:

Parameter	Value
Lens dummy length	22 mm
Lens dummy mass	70 g
Center of gravity (CoG)[1]	14 mm
[1]For camera and lens dummy assemblies, measured from the lens mount front flange	

Table 4: Conditions for lenses

IEC 60068-2-6: Sinusoidal vibration

Frequency	Acceleration	Displacement
10 Hz to 58.1 Hz	Not applicable	1.5 mm
58.1 Hz to 500 Hz	20 g	Not applicable

Table 5: Frequency, acceleration, and displacement for IEC 60068-2-6 tests

Parameter	Value
Axis	x, y, z
Sweep rate	1 oct/min
Sweep duration per axis [hh:mm:ss]	09:00:00
Number of sweeps	20

Table 6: Other parameters for IEC 60068-2-6 tests

IEC 60068-2-27: Shock

Parameter	Value
Axis	x, y, z
Acceleration	40 g
Number of shocks per axis	5000
Duration per axis	6 ms
Waveform	Half sine

Table 7: Parameters for IEC 60068-2-27 tests

Alvium IP Housing D55 Kit

Alvium IP Housing D55 Kits are typically used with S-Mount lenses.

General specifications

Feature	Value
Product code	18534
IP class	IP66 and IP67
Supported camera series	Alvium G1, Alvium G5
Housing materials	
Camera and Lens Tubes	Aluminum
Window	BK7 glass
Window coating	AR (Anti-reflective coating)
Dimensions and mass (Kit)	
Dimensions (diameter × length, including Cable Entry)	55.0 mm × ≤137.4 mm
Mass (all components of the Alvium IP Housing D55 Kit))	450 g
Dimensions (Lens Tube inside)	
Diameter	Ø47 mm
Length[1] available for C-Mount lenses	7.5 mm
Length[1] available for CS-Mount lenses	12.5 mm
Length[1] available for S-Mount lenses	12.5 mm
Connections	
Mounting threads (2 on top side, 2 on bottom side)	M6 – 7.0 ↓
For Ø5 mm and Ø6 mm cables	Cable Entry Split M25 × 1.5
For Ø3.5 mm or for Ø5 mm and Ø6 mm cables	Cable Entry Integrated M25 × 1.5
[1] Excluding the length of the mounting thread.	

Table 8: Alvium IP Housing D55 specifications
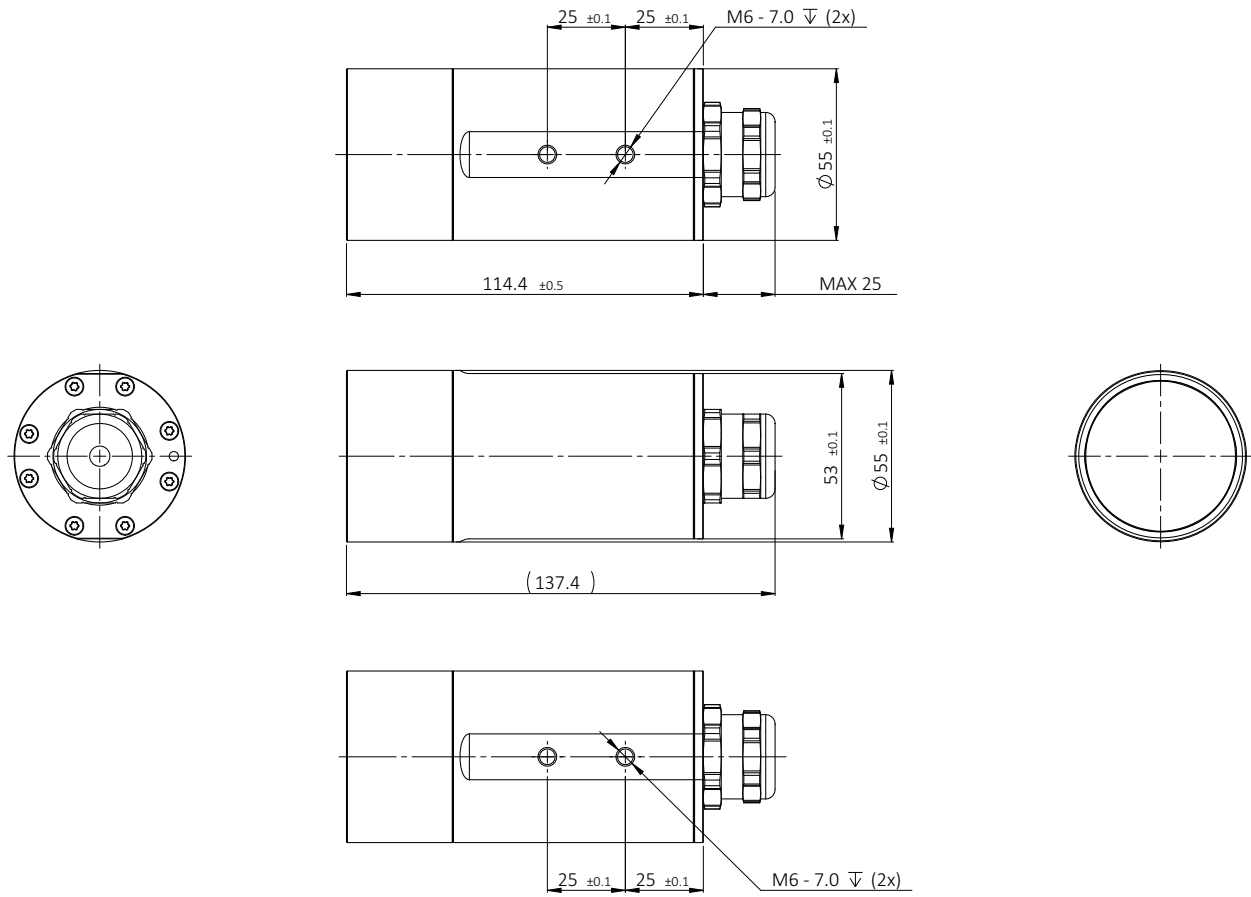
Technical drawing

Figure 1: Alvium IP Housing D55 technical drawing

Alvium IP Housing D80 Kit

Alvium IP Housing D55 Kits are typically used with C-Mount and CS-Mount lenses.

General specifications

Feature	Value
Product code	18535
IP class	IP66 and IP67
Supported camera series	Alvium G1, Alvium G5
Housing materials	
Camera and Lens Tubes	Aluminum
Window	BK7 glass
Window coating	AR (Anti-reflective coating)
Dimensions and mass (Kit)	
Dimensions (diameter × length, including Cable Entry)	80.0 mm × ≤183.7 mm
Mass (all components of the Alvium IP Housing D80 Kit))	600 g
Dimensions (Lens Tube inside)	
Diameter	Ø72 mm
Length[1] available for C-Mount lenses	52 mm
Length[1] available for CS-Mount lenses	57 mm
Length[1] available for S-Mount lenses	57 mm
Connections	
Mounting threads (2 on top side, 2 on bottom side)	M6 – 7.0 ↓
For Ø5 mm and Ø6 mm cables	Cable Entry Split M25 × 1.5
For Ø3.5 mm or for Ø5 mm and Ø6 mm cables	Cable Entry Integrated M25 × 1.5
[1] Excluding the length of the mounting thread.	

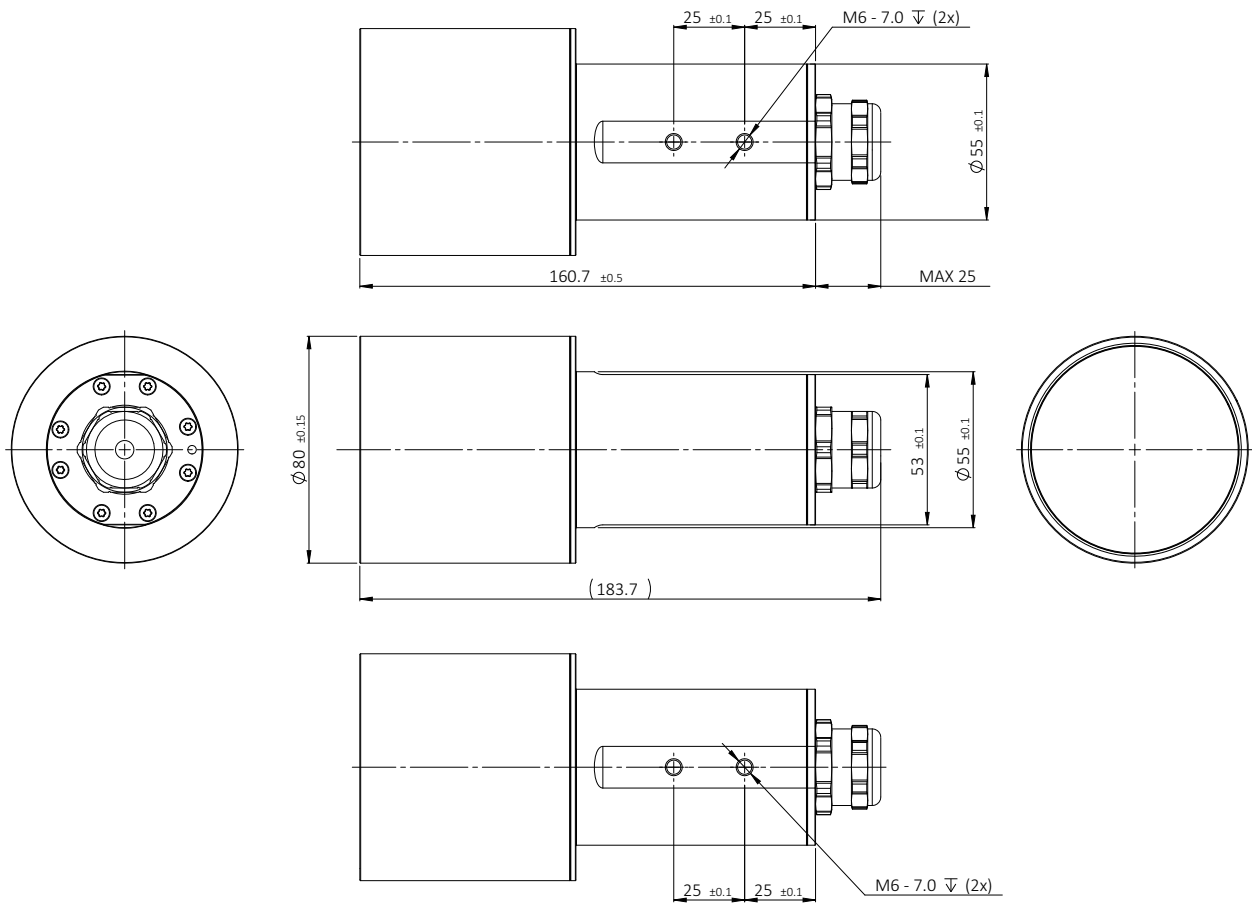*Table 9: Alvium IP Housing D80 specifications*

Technical drawing

Figure 2: Alvium IP Housing D80 technical drawing

Mounting cameras in IP housings

This chapter includes:

Observe before assembly

Maximum torque values

	NOTICE
ⓘ	**Damage to cameras and IP housings**

Damage to cameras and IP housings

Values for maximum torque apply to screw threads and mounting threads in dry state, without thread locking agents.

• Adjust values to your setup.

Heat dissipation

If during operation, cameras heat up more quickly than the IP housing can conduct heat to the environment, the camera's mainboard temperature can exceed the specified maximum. In this case, the camera is powered off after two seconds automatically. The current value for mainboard temperature is output by `DeviceTemperature`. You can use this value to control cooling by software, for example, to control a fan.

To ensure smooth camera operation:

• Mount IP housings to bases with a high thermal conductivity.
• Provide active cooling of IP housings, such as by ventilation.
• Reduce high ambient temperature. For example, in outdoor applications with direct sunlight, provide shading.
• Do extensive testing before using Alvium IP housings in the field.

If the ambient temperature exceeds 25 °C, additional heat dissipation can be required. This applies especially when cameras are operated with high resolutions and high frame rates. Should you still run into problems with camera operating temperature, please contact our Sales and Support team!

Keeping the sensor clean

Always protect the sensor from dust. Keep the **circular protection foil** on the lens mount until you start the assembly. After removing the circular protection foil, attach a lens or a lens mount cap.
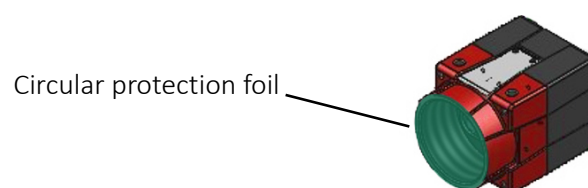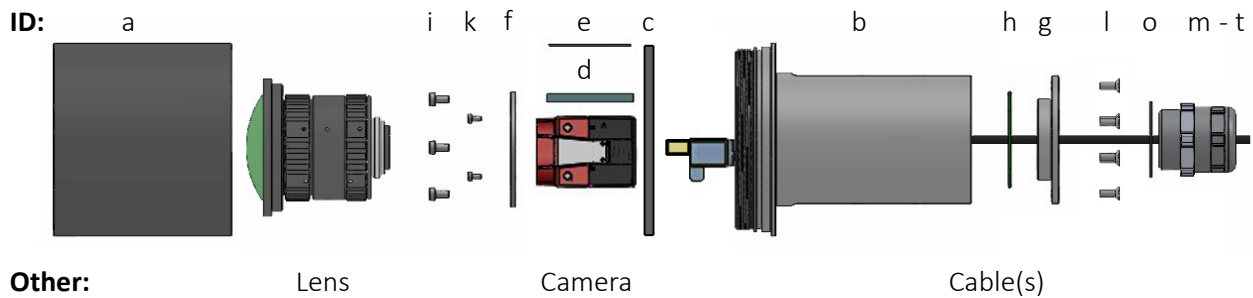
Circular protection foil

Figure 3: Alvium G1 camera with circular protection foil

Components and tools for assembly

Alvium IP Housing parts list

IDs are used in the instructions for reference.

ID: a i k f e c b h g l o m - t

d

Other: Lens Camera Cable(s)

Bag No.	ID	Category	Quantity	Part name	Notes
1	a	Camera and Lens Tube	1 piece	Lens Tube D55[1] or D80[2]	Preassembled, the Seal Ring has been lubricated for tightness.
	b		1 piece	Camera Tube D55[1] or D80[2]	
	c		1 piece	Seal Ring for D55[1] or D80[2] Tubes	
2	d	Desiccants	1 piece	Desiccants Bag	
	e		1 piece	Adhesive Pad for Desiccants Bag	
3	f	Camera Mounting	1 piece	Camera Mounting Ring	
4	g	Back Plate	1 piece	Back Plate	
	h		1 piece	Seal Ring for Back Plate	
5	i	Screws	4 pieces	Screw M3 × 6 mm ISO 14580	With threadlocker applied
	k		4 pieces	Screw M2 × 4 mm ISO 14580	
	l		8 pieces	Screw M3 × 8 mm ISO 14581	
6	m	Cable Entry[3] (GigE)	1 piece	Cable Entry **Split** M25 × 1.5 mm	For split mounting
	n		1 piece	Seal Insert **Split**[4] 1 × 5 mm; 1 × 6 mm	
	o	Cable Entry[3] (Other)	1 piece	Cable Entry M25 × 1.5 mm	For integrated mounting
	p		1 piece	Seal Insert[5] 1 × 3.5 mm	
	q		1 piece	Seal Insert[4] 1 × 5 mm; 1 × 6 mm	
	r		1 piece	Seal Ring for Cable Entry	
	s	Seal Bolts[6]	1 piece	Seal Bolt 5.0 mm × 25 mm	To close through holes in Cable Inserts
	t		1 piece	Seal Bolt 6.0 mm × 25 mm	

[1] Alvium IP Housing D55 | [2] Alvium IP Housing D80 | [3] For **Pflitsch** cable entries and tools, see www.pflitsch.de.
[4] For 1 cable ø 5.0 mm and 1 cable ø 6.0 mm | [5] For 1 cable ø 3.5 mm | [6] For Cable Entry Split

Table 10: Alvium IP Housing parts list

Required items

You need the following items to mount cameras with lenses into
Alvium IP Housings:

- Alvium G1 or Alvium G5 camera

NOTICE

Damage to the lens and Lens Tube window

Ensure the Lens Tube is large enough to house your lens.
See Specifications on page 20.

- Lens

- GigE interface cable (max. ø 6 mm)
- I/O cable (optional) (max. ø 5 mm)
- M6 screws to mount the IP housing to your mounting plate
- Alvium IP Housing Kit, see Alvium IP Housing parts list on page 29.

Required tools

Provide the following conditions and tools:

- Clean desktop or work bench
- For M2 screws: Torque screwdriver T6 or T7
- For M3 screws: Torque screwdriver T9 or T10
- For Cable Entries
    - Spreading pliers
    - Vice
- For integrated Cable Entries:
  Torque wrench 28 mm × 31.2 mm or 24 mm × 26.7 mm
- For split Cable Entries:
    - Torque wrench 35 mm × 38.5 mm for mounting
    - Thin flat head screwdriver to disassemble
- To connect the housing tubes: Strap wrench

Cable Entries

For details on Cable Entries and for assembly tools, see www.pflitsch.de.

Checking the camera and lens

With the following actions, you ensure to mount a working camera and lens into the IP housing.

1. Mount the lens to your Alvium G1 or G5 camera.
2. Connect the camera to the host with a GigE interface cable.
3. Start the camera and acquire an image
4. Adjust the lens.
5. Disconnect the camera.
6. Remove the lens.
7. Protect the lens mount with a lens mount cap.

Disconnecting the housing tubes

8. Holding the Camera Tube (b) with one hand, rotate the Lens Tube (a) counterclockwise until the tubes disengage. See Figure 4.
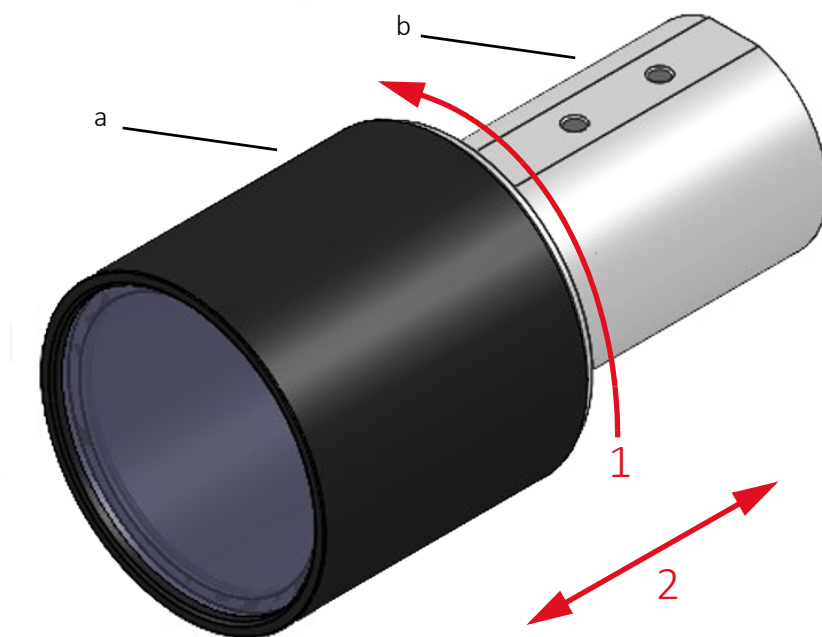9. Store both tubes in a clean and dry place until you continue the assembly.


Figure 4: Separating the housing tubes from each other

Camera orientation

As a reference for the following instructions, Figure 5 shows **top and bottom mounting** of the Camera Tube (b) to acquire an upright camera image. For lateral mounting of the Camera Tube (b), rotate all components accordingly.

The Camera Mounting Ring (f) has an asymmetric design. Figure 5 shows that three M3 mounting holes (D, E) are completed by one oval groove (A) for M3 screws. Moreover, the M3 mounting holes (D) are center aligned to the M2 mounting holes (F), while the M3 mounting hole (E) is located off the center to match M3 mounting thread (B) of the Camera Tube (b).

This way, you can set up a defined assembly process for the camera position. Please observe, you cannot rotate the camera quickly after it has been joined with the Camera Mounting Ring (f).

In Figure 5, the camera outputs an upright image if it is mounted with the Allied Vision engraving on the right side (C).
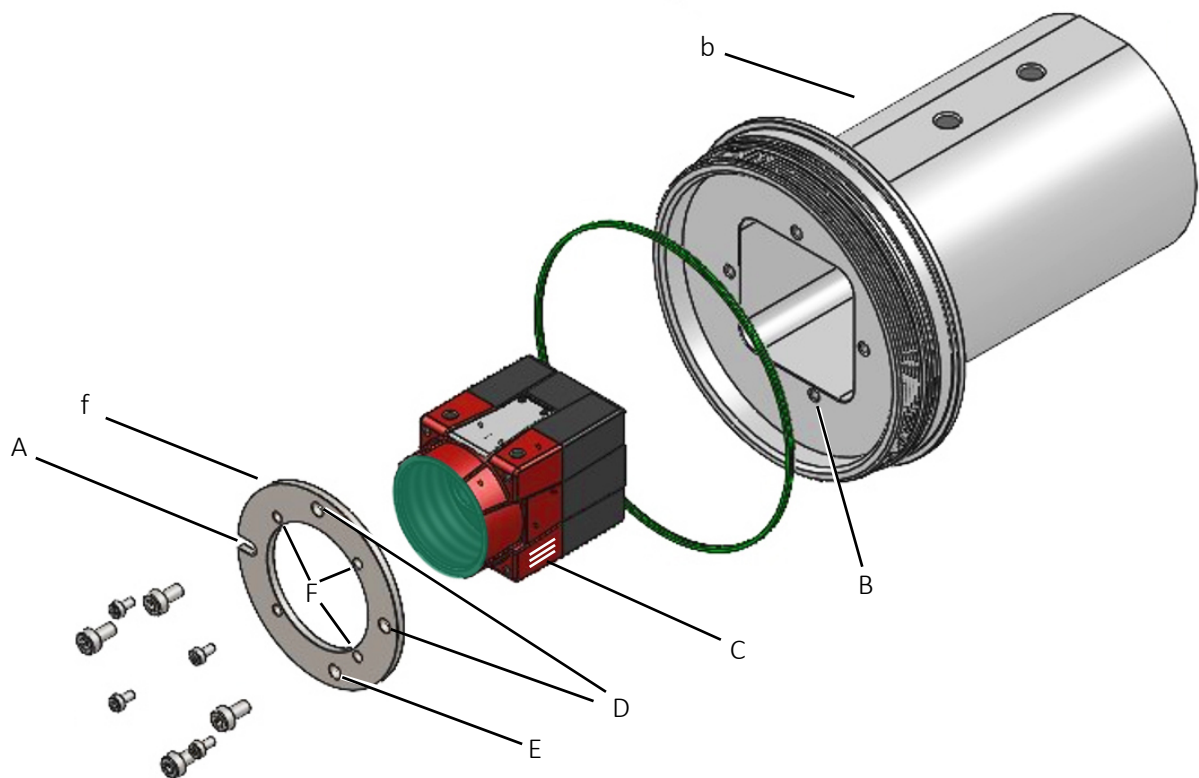
Figure 5: Camera Mounting Ring (f) oriented for an upright camera image

To start the assembly

To start the assembly, follow the instructions in Connecting and mounting the camera on page 33.

Connecting and mounting the camera

NOTICE

Damage to the camera and lens by condensation

To protect your camera and lens from humidity, mount the Desiccants Bag (d) directly before you close the IP housing.

10. With the Adhesive Pad (e), fix the Desiccants Bag (d) to the inner surface of the Camera Tube (b).
11. Feed a GigE interface cable (J) through the Camera Tube (b).
12. Optional: Feed an I/O cable through the Camera Tube (b).
13. Connect the GigE interface cable to the camera.
14. Optional: Connect the I/O cable to the camera.
15. Put the camera and Camera Mounting Ring (f) into position as shown in Figure 6. For lateral mounting of the Camera Tube, rotate the parts accordingly.

Orientation of the Camera Mounting Ring (f)

Ensure that the M3 mounting hole (E) is located off the center to match M3 mounting thread (B) as shown in Figure 6.

16. Feed the camera's lens mount (G) through the Camera Mounting Ring (f).
17. Rotate the Camera Mounting Ring (f) to the camera to align the mounting holes of the Camera Mounting Ring (f) and the camera's mounting threads (H).
18. Feed the 4 M2 × 4 mounting screws (k) through the mounting holes (F) into the camera's mounting threads (H) and tighten at 0.18 Nm maximum torque.
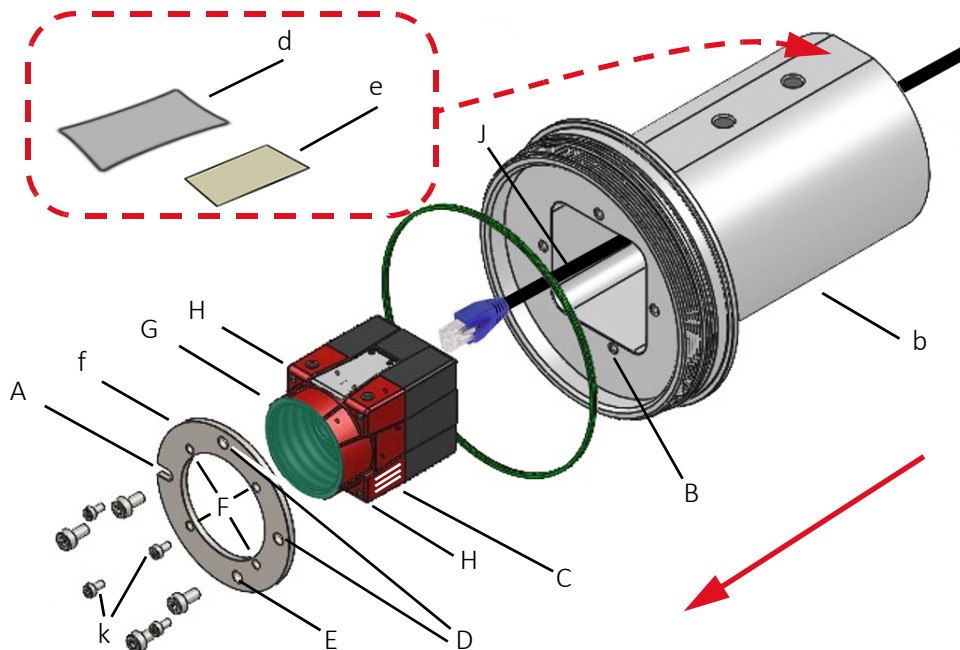

Figure 6: Connecting and mounting the camera

19. Feed the 4 M3 × 6 mounting screws (i) through the mounting holes into the mounting threads (B in Figure 6) and tighten at 0.6 Nm maximum torque.
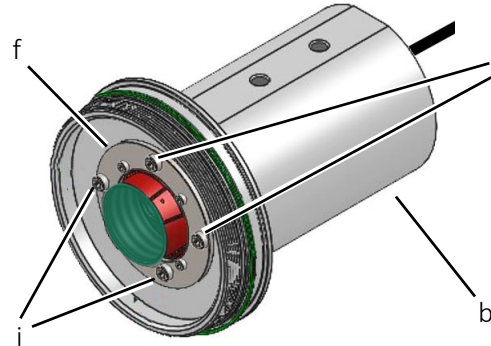

Figure 7: Joining the Camera Mounting Ring (f) with the Camera Tube (b)

Mounting the Back Plate

20. Slide the Seal Ring (h) for the Back Plate (g) over the cable (J) and place it on the bottom of the rear hole of the Camera Tube (b). See Figure 8.

Orientation of the back Plate (g)

Ensure the Back Plate (g) aligns with the Camera Tube (b) as shown in Figure 8.

21. Slide the Back Plate (g) over the cable (J) and insert it in the rear hole of the Camera Tube (b).
22. Rotate the Back Plate (g) against the Camera Tube (b) until the mounting holes of the Back Plate (g) and the mounting threads of the Camera Tube (b) match.
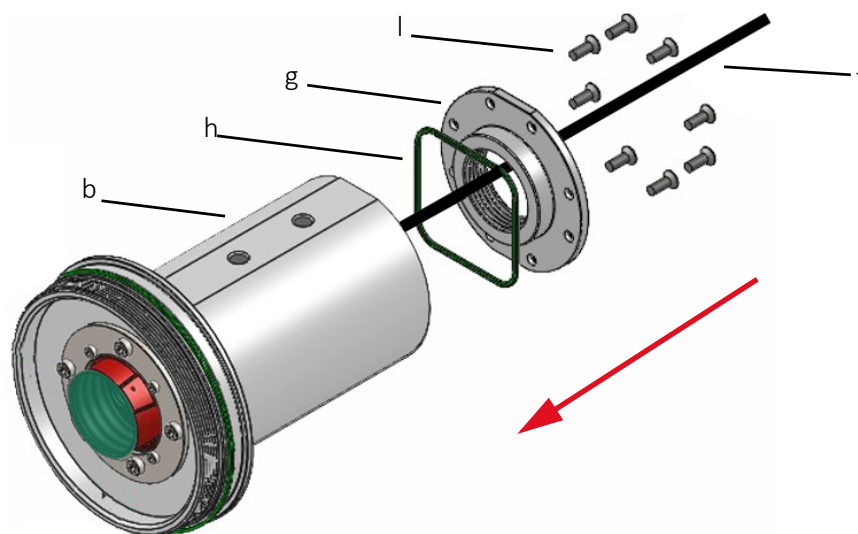23. Insert the 8 M3 × 8 screws (l) into the mounting threads and tighten at 0.8 Nm maximum torque.

Figure 8: Mounting the Back Plate (g) to the Camera Tube (b)

Assembling the Cable Entry

Cable Entry components

Figure 9 shows the components of the Cable Entry used in the following installations. **The instructions apply to Seal Inserts for 1 or 2 cables**.
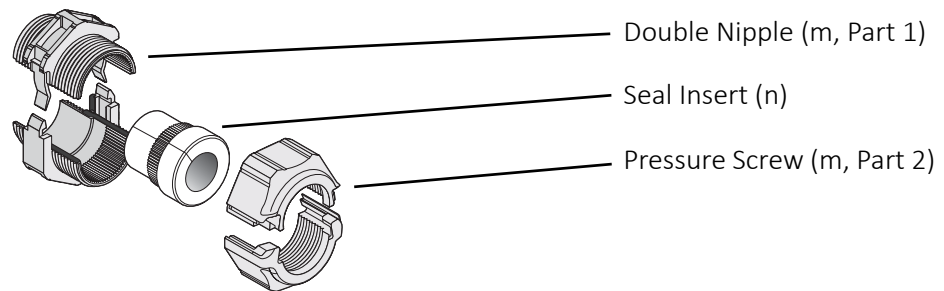

Double Nipple (m, Part 1)

Seal Insert (n)

Pressure Screw (m, Part 2)

Figure 9: Cable Entry components, schematic view

Instructions

24. Clamp the Camera Tube (b) in a vice.
25. With the sealing (K) facing the Back Plate (g), close the sides of the split Double Nipple (L) around the cable(s) until the sides join with a click. See Figure 10.
26. Close the sides of the split Pressure Screw (M) around the cable(s) until the sides join with a click.
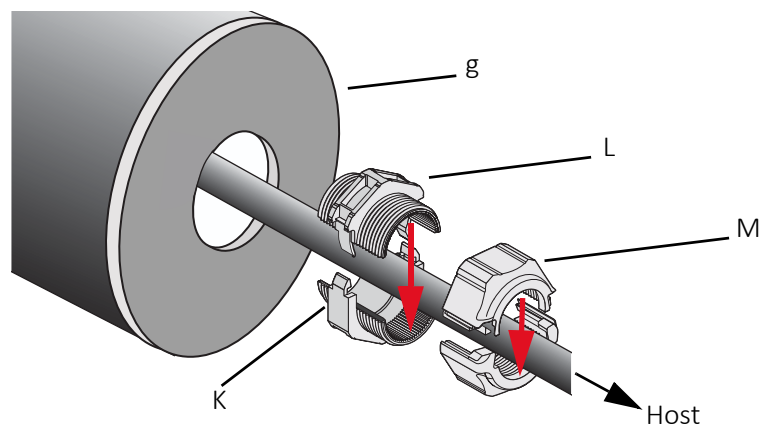

g

L

M

K

Host

Figure 10: Mounting the Double Nipple (L) and the Pressure Screw (M)

27. Slide the Double Nipple (L) to the thread of the Back Plate (g) and rotate the Double Nipple (L) clockwise.
28. Tighten the Double Nipple (L) with an SW35 mm wrench at 6 Nm maximum torque.

29. Between the Pressure Screw (M) and the Double Nipple (L), grab the cable with the Spreading Pliers (N), see Figure 11.
30. Slide the Gap (P) of the Seal Insert (O) over the Spreading Pliers (N) and press the Gap (P) open.
31. Slide the cable into the Seal Insert (O) and close the Spreading Pliers (N).
32. Slide the Spreading Pliers (N) along the cable, out of the Seal Insert (O).
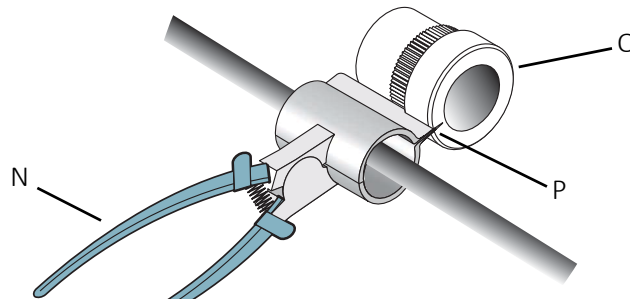

Figure 11: Sliding the cable into the Seal Insert (O)

33. If you are using an I/O cable, repeat from 29. to 32.
34. If cable through holes of the Seal Insert (O) are not needed, close them with the corresponding Seal Bolts: (s) for 5.0 mm, and (t) for 6.0 mm.
35. Push the Seal Insert (O) into the Double Nipple (L). See Figure 12.
36. Push the Pressure Screw (M) to the thread of the Double Nipple (L) and rotate clockwise.
37. Tighten the Pressure Screw (M) with an SW35 mm wrench at 4 Nm maximum torque.
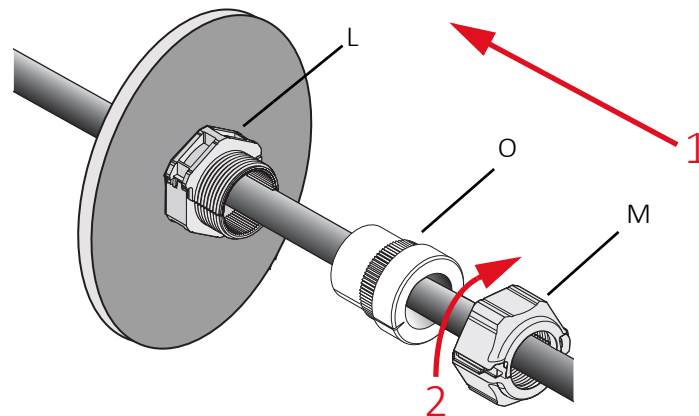

Figure 12: Positioning the Seal Insert (O) and tightening the Pressure Screw (M)

Removing the Cable Entry

To remove the Cable Entry, follow the steps from 37. to 24. in reverse order.
Use a thin flat screwdriver to disengage the sides of Pressure Screws (M) and Double Nipples (L).

Mounting the Camera Tube and the lens

CAUTION

Injury by falling IP housings

- Use suitable screws and fasten screws with maximum torque, using the entire thread engagement. For less thread engagement, see Thread holes and maximum torque values on page 38.
- Use threadlocker to prevent screws from loosening.

NOTICE

Damage to the camera

If the lens is too heavy, the camera mounting holes can be damaged.

- For dynamic applications, use a lens with maximum 70 g mass, with a center of gravity (COG) of 14 mm, measured from the lens mount front flange.
- For static applications, **with absolutely no vibration**, a maximum 250 g mass is allowed with a COG of 50 mm.

38. Select suitable 4 M6 screws, see Thread holes and maximum torque values on page 38.
39. Apply threadlocker to the 4 M6 screws.
40. Use the 4 M6 screws to connect the Camera Tube (b) to your mounting base and tighten them at 6.6 Nm maximum torque for a thread engagement of 6.5 mm. See Figure 13.
41. Connect the GigE interface cable (J) to the host.
42. Optional: Connect the I/O cable to power or peripherals.
43. Start the camera for image acquisition.

Maintaining values for focus and iris

Ensure that the positions for the focus and iris adjustment rings are maintained during operation.

44. At smallest f-stop, focus the lens (P) to object distance.
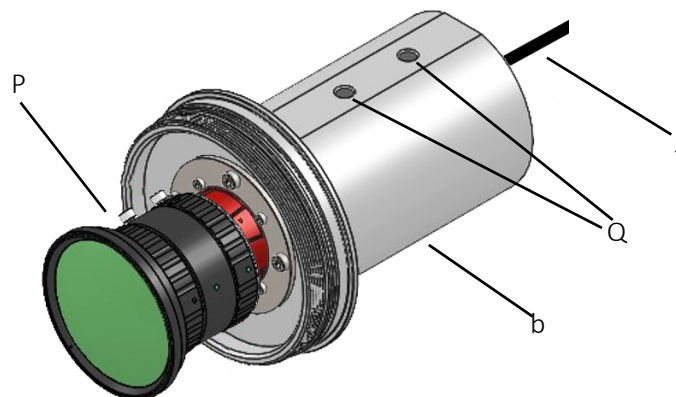45. Select the f-stop value required for your application..

Figure 13: Adjusting the lens after the camera tube assembly has been completed

Thread holes and maximum torque values

NOTICE

Damage to cameras and Alvium IP Housing Kits

Values for maximum torque apply to screw threads and mounting threads in dry state, without thread locking agents.

• Adjust values to your setup.

Figure 14 shows the dimensions of mounting holes in Camera Tubes (b):
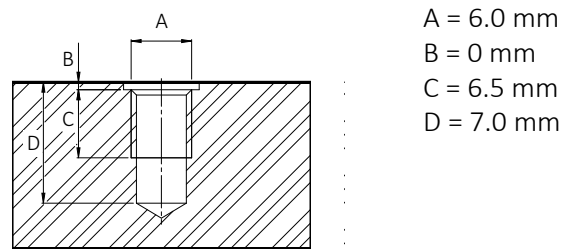

A = 6.0 mm
B = 0 mm
C = 6.5 mm
D = 7.0 mm

Figure 14: Thread holes in Camera Tubes (b)

The total bolt length composes of the mounting holes length and the height of your mounting base.

For using less than the stated length of thread engagement, calculate maximum torque as follows:

$$\frac{\textbf{Current length of thread engagement}}{\text{Length of thread engagement in table}} \times \text{Torque in table} = \textbf{Current torque}$$

Example for a length of thread engagement of **5.0 mm** instead of 6.5 mm:
5.0 mm / 6.5 mm × 6.6 Nm = **5.1 Nm**

Length of thread engagement	Maximum torque
6.5 mm	6.6 Nm
5.0 mm	**5.1 Nm**

Table 11: Adjusting maximum torque values

Mounting the Lens Tube

Lubricant on the Seal Ring (c)

At Allied Vision manufacturing, the Seal Ring (c) is equipped with **Uniflor 8512** lubricant. This keeps the housing tight for a long time.

46. Engage the thread of the Lens Tube (a) to the thread of the Camera Tube (b).
47. Rotate the Lens Tube (a) counterclockwise against the Camera Tube (b) until you feel the threads engage.
48. Rotate the Lens Tube (a) clockwise until it touches the Seal Ring (c).
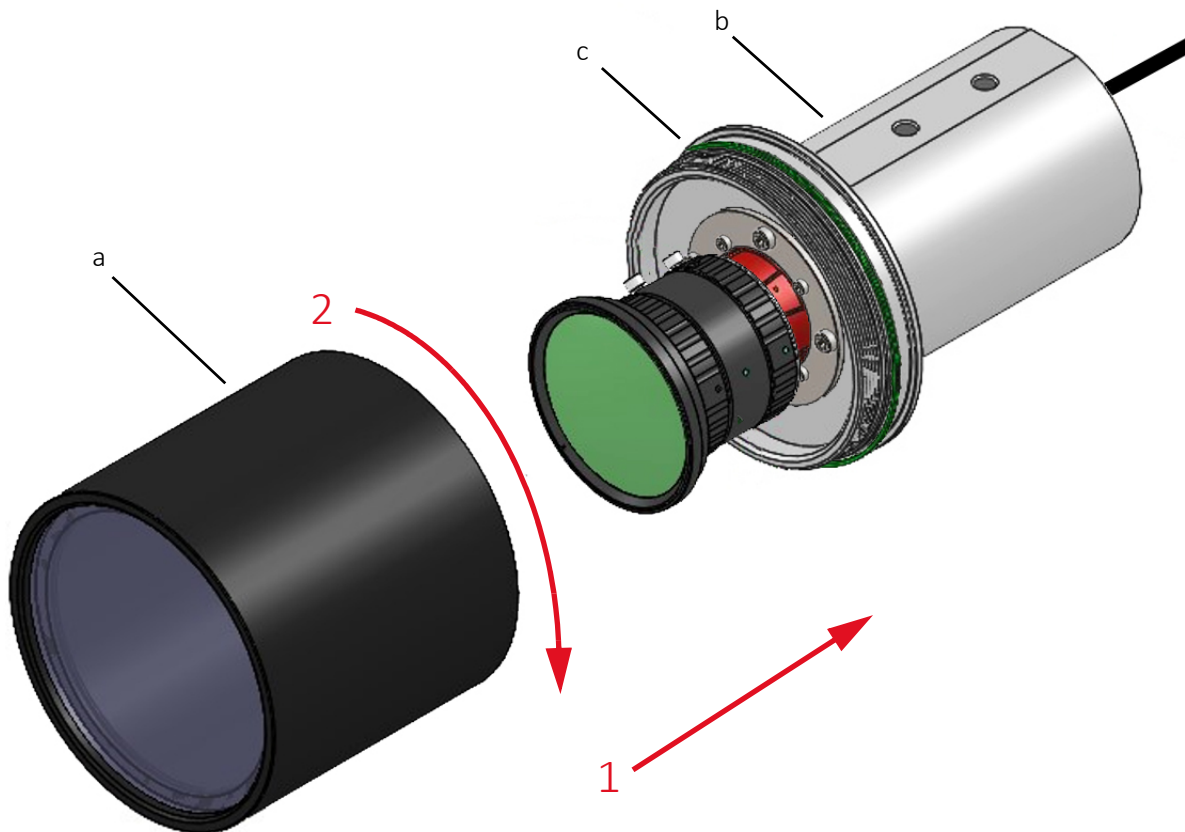49. Using a strap wrench, continue rotation 60° beyond this position.

Figure 15: Mounting the Lens Tube (a) to the Camera Tube (b)

Your Alvium camera with lens is properly mounted in an IP housing and ready for operation.