

RoughCam[®] IPM2036

User Manual



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1 Introduction

The RoughCam IPM2036 is a powerful mega-pixel day-/night IP camera (4MP resolution) with advanced analysis (object classification). The camera has a high-definition television resolution (2668x1512) and is equipped with integrated IR-illumination. Besides this it has a Deep Learning Processor Unit for artificial intelligence with deep learning.

The RoughCam series is suitable for indoor as well as outdoor applications. It is extremely robust and therefore perfect for even the roughest industrial conditions. The stainless steel housing allows additional alloys, a powder coating, or coats of varnishes as well as various mechanical accessories in order to extend the resistance towards extreme environmental conditions (salt water, acid, solar radiation, high mechanical strains etc.). Due to the usage of high-quality PTFE sealings, not only the protection level IP68 is reached but also the chemical resistance is maximized. To see other approvals, please visit our website at www.samcon.eu/en

When designing the RoughCam IPM2036, we attached a very high importance to mechanical precision and high quality of stainless steel.

2 Technical data

2.1 Illustration of the model key

Product-name	Model variants					Options
1)	2) Type	3) Housing-combination	4) Temp.-range	5) Cable length [m]	6) Cable termin.	7) Lens
RoughCam IPM2036	T10-	VA2.0.K1.BOR-	LL.H-	005.N-	P-	085/056/041
	T10-	VA2.0.K1.BOR-	LL.H-	005.N-	T-	085/056/041
	T10-	VA2.0.K1.BOR-	LL.H-	005.A-	P-	085/056/041
	T10-	VA2.0.K1.BOR-	LL.H-	005.A-	T-	085/056/041
	T10-	VA2.0.K1.BOR-	LL.HH-	010.N-	T-	085/056/041

Table 2-1 Model key

Explanations:

- 1) RoughCam IPM**2036** = Functional camera description of the RoughCam Series (technical data/ specification of the individual camera module)
- 2) **T10** = SAMCON Production- Type 10 (for safe areas)
- 3) **VA2.0.K1.BOR** = T11 housing (stainless steel 1.4404) with large diameter $\varnothing_{VA2}=113\text{mm}$
 VA2.0.K1.BOR = T11 VA2.0 housing with medium body length ($L_R = 161\text{mm}$)
 VA2.0.K**1**.BOR = K1 cable gland flange
 VA2.0.K1.**BOR** = Borosilicate sight glass DIN7080 (standard, for video cameras within visible spectral range: $\lambda = 350 \dots 2000 \text{ [nm]}$ and photographic infrared range (NIR), not suitable for thermographic applications (MIR/ FIR))

- 4) **LL.H=** High temperature battery installed ($T_{amb} < +60^{\circ}\text{C}$)
LL.H= Heater installed ($T_{amb} > -60^{\circ}\text{C}$)
LL.HH= Active cooling with cool.Jacket for extreme high temperatures
 ($-50^{\circ}\text{C} < T_{amb} < +120^{\circ}\text{C}$)
- 5) **005.N =** Length of the connection line in meter at delivery; 5m is the
 standard cable length, max. cable length is: 005...100 [m]
005.N = Non armoured cable
005.A = Armoured cable
- 6) **P =** Plug- termination (standard)
 CAT6, RJ-45 network plug (heavy duty), AWG 26-22,
 contact assignment acc. To specification EIA/TIA-568**B**
- T =** Terminal Box termination (optional)
 4 x PoE Mode A connection (camera PoE)
 (see chapter electrical connection)

7) **Lens options**

Model	Lens	Iris	Horizontal AoV@16/9
T10-VA2.0.K1.BOR-X.X-XXX.X-X-085 (wide (standard))	Megapixel lens 3.6mm	F1.8 IR	85°
T10-VA2.0.K1.BOR-X.X-XXX.X-X-056 (normal)	Megapixel lens 6.0mm	F1.9 IR	56°
T10-VA2.0.K1.BOR-X.X-XXX.X-X-041 (tele)	Megapixel lens 8.0mm	F1.8 IR	41°

2.2 Electrical parameters of the camera

Power supply of the camera via Ethernet (PoE):

Voltage supply:	PoE, IEEE 802.3af/802.3at type 1 class 3
Reference voltage:	+48 V DC (44...54 V DC)
Maximum power consumption:	12.95 W
Typical power consumption:	5.0 W

2.3 Connection cable

Description:	Data transfer and power supply of the camera module (compliant with DIN EN 60079-14)
Jacket colour:	Green (GN), similar to RAL3001

2.3.1 Connection cable for models without cooling (SKD01-T/ASKD02-T)

Systemcable SKD01-T:

Outside diameter:	9.1 ± 0.2 mm
Bending radius:	10 x D _a when installed, 5 x D _a after relocation
Data line:	4 x 2 x AWG22/1 CAT.6
Properties:	PUR halogen-free, flame-retardant, UV-resistant, chemical resistance, shielded

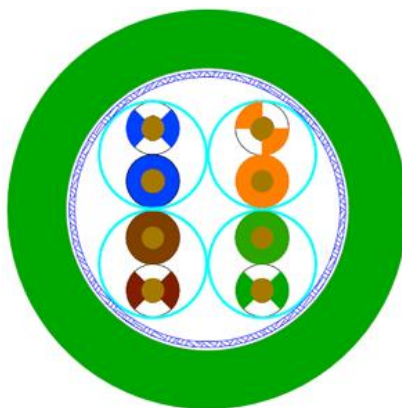


Figure 2-1 Sectional view of SKD01-T

System cable ASKD02-T:

Outside diameter:	12.0 ± 0.4 mm
Bending radius:	20 x D _a when installed and 10 x D _a after relocation
Data line:	4 x 2 x AWG23/1 CAT.6
Properties:	PUR halogen-free, flame-retardant, UV-resistant, chemical resistance, shielded (see www.samcon.eu)

Quicklink:

https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/ASKD02-T_Datasheet.pdf

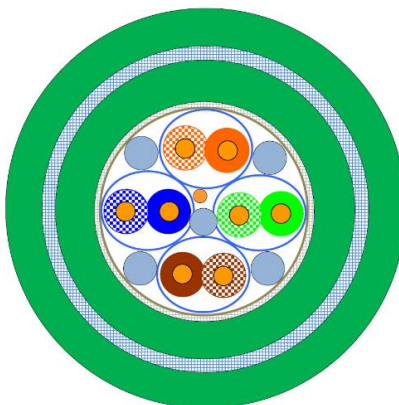


Figure 2-2 Sectional view of ASKD02-T

2.3.2 Connection cable for model with cool.Jacket (SKD05-HT)

Description:	Data transfer and power supply of the camera module (compliant with DIN EN 60079-14)
Jacket colour:	Grey (GY)

Systemcable SKD05-HT:

Outside diameter:	6.60 ± 0.2 mm
Bending radius:	8 x D _a when installed and 4 x D _a after relocation
Data line:	4 x 2 x AWG26/7 CAT.6
Properties:	FEP, flame-retardant, UV-resistant, chemical resistance, for extreme hot temperatures

Quick link:

https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/SKD05-HT_Datasheet.pdf

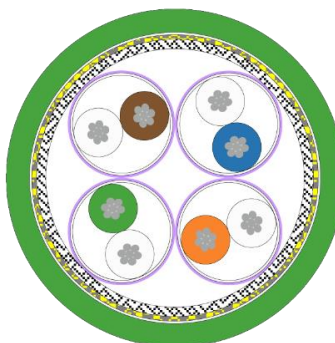


Figure 2-3 Sectional view of SKD05-HT

2.4 Video-technical characteristics

We use the AXIS M2036-LE Network Camera in a pressure-resistant enclosure. For details, please refer to the Product Documentation, video-technical data of AXIS®:

<https://www.axis.com/products/axis-m2036-le>



2.5 Other technical data

Protection class:	IP 66/68 (IEC /EN 60529)
Transport/storage temperature:	-40°C...+65°C (non-condensing)
Ambient temperature:	-60°C...+60°C (Type...LL.H...) -50°C...+120°C (Type...LL.HH) ¹

	Camera	Terminal box (Ex-e)
Permissible ambient temperature	-60°C ... +60°C (PoE power supply model LL.H)	-60°C ... +55°C
Protection class as per EN 60529/IEC 529	IP66/68 (Test conditions: 24h/3m water column 5°C)	IP66
Housing material	stainless steel, mat. no. 1.4404	polyester resin
Weight	about 5 kg	about 1 kg
Dimensions	D113mm x 161mm	145mm x 145mm x 71mm

Table 2-2 Other technical data

2.6 IR-LED illumination

When switching to night mode, the camera uses both visible and near-infrared light to deliver bright and detailed black and white images instead of color images.

2x high efficiency LEDs²

IR-LEDs with optimized infrared spectral component ($\lambda_{\text{centroid}} = 850 \text{ [nm]}$), enable high-contrast black and white camera images in the dark and under difficult lighting conditions (max. distance in complete darkness 2m, otherwise typical range depends on lighting conditions (residual light) and Scene). See test protocol for illumination.



Attention!

Infrared radiation may emanate from this product. Do not look directly at the operating lamp.

¹ This model requires the SAMCON cool.Jacket.

² In the case of IR LED illumination, the viewing angle may be minimally restricted or a shadow/reflection may be visible, depending on the lens, the adjustment of the illumination angle and the residual light. Image disturbances possible due to multiple LED light reflections on the borosilicate sight glass of the stainless steel housing.



Figure 2-4 IR LEDs

2.6.1 Settings for automatic switching to night mode

1. Set the **IR-cut filter** to **Auto**: go to **Video > Image > Day-night mode**
2. Determination of the light level from which the camera should switch to night mode: move the **Threshold** slider towards **Bright** or **Dark**.
3. To use the built-in IR light of the camera, when the camera is in night mode: Activate **Allow IR illumination** and **Synchronize IR illumination**.
4. Tip:
Set the switch to night mode when it is brighter → Image remains sharper, as there is less low-light noise.
Set the switch to night mode when it is darker → colors are maintained for longer, but there is more image blur due to low-light noise.

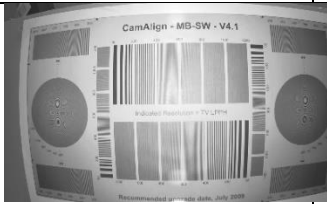
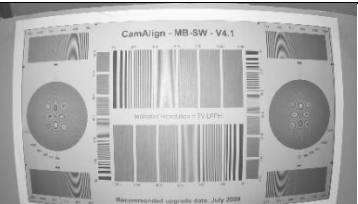
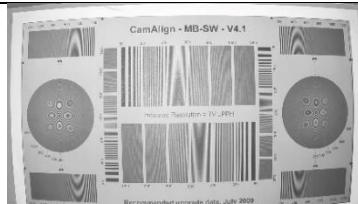
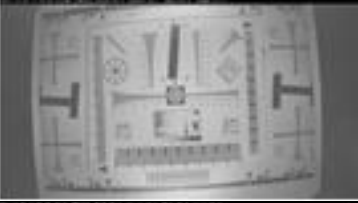
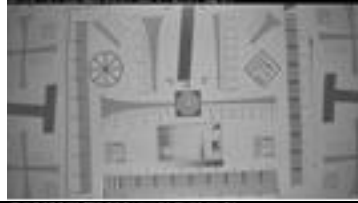
2.6.2 Optimize IR illumination

Depending on the positioning and conditions around the camera, such as external light sources in the scene, IR illumination can sometimes be improved by manually adjusting the intensity of the LEDs.

1. Go to **Video > Image > Day-night mode**.
2. Activate **Allow illumination**.
3. Go to **IR** and select **Manual**.
4. Adjust the intensity.

2.6.3 Illumination tests

Tests with IR illumination ON

	85°	56°	41°
With low light Object distance 0.5m			
Darkness Object distance 0.5m			
Darkness Object distance 1m			
Darkness Object distance 2m			
Darkness Object distance 5m			

In absolute darkness, the internal infrared illumination can only be used up to a maximum object distance of 2.0 m. In addition, the quality of the image is strongly influenced by the resulting reflections and the object to be observed is no longer visible.

The image quality increases as soon as an external infrared light source is used.

When illuminated by external infrared light, the distance to be observed is more than 30.0m and the image has no noticeable loss of quality due to the illumination.

In absolute darkness, it is advisable to use an external infrared light source.

3 Safety Instructions

Please observe the national safety regulations and regulations for prevention of accidents, as well as to the safety instructions given below in this User Manual!



Attention!

Repairs may only be carried out by using original parts from the manufacturer. Repairs may only be carried out in accordance with the nationally applied regulations and exclusively by the manufacturer.



Attention!

Prior to installation, take external sources of heat or cold into account! The temperature ranges prescribed for storage, transport and operating must be adhered to!

4 Installation

For commissioning and operating the camera, the relevant national regulations, as well as the generally accepted rules of technology shall prevail. Before mounting the camera, thoroughly check it for any transport damage, especially on the housing and cable. Installation, electrical connection and the first start must only be carried out by qualified specialists.

Work preparation:



Attention!

Prepare your work carefully and in accordance with the relevant regulations.

To ensure the best image quality delivered by the network camera, plan the installation site carefully (consider light conditions, object distance or size, angle and minimum object distance to the focus).

- Use appropriate tools and aids.
- When working, ensure a safe stand.
- Make sure that any static charge is avoided.



Attention!

Please observe the national security, installation and accident prevention regulations and the safety instructions in this User Manual!

The RoughCam® IPM2036 consists of a camera housing and, optionally (models with a terminal box ...-T), a terminal box. Both units are connected via a 5 m cable. Mount the

camera according to the desired field of view. Install the terminal box so that a good accessibility is provided, in order to facilitate electrical connection.



Attention!

Please pay attention to the national and local regulations for mounting heavy loads. In case of doubt, take appropriate security measures.

Drawings for drill hole patterns and further information can be viewed on our product page:

Quick link:

<https://www.samcon.eu/en/products/roughcam/roughcam-ipm2036/>



Optional mounting accessories

Wall bracket WMB-...		WALL MOUNT WMB-VA2.0-2.2 Wall bracket for cameras of the T10-VA2.0-Series Suitable for hanging the cameras on walls. Material: Stainless steel 1.4404 Load bearing: 25 kg Dimensions: 80 x 100 x 275 mm
Weather protec- tion roof WPR-...		WEATHER PROTECTION ROOF WPR-VA2.0 Weathershield for cameras of the T10-VA2.0-Series
Pole adapter PMB-...		WALL MOUNT BRACKET PMB-VA2.0 Pole adapter for VA wall mount Material: stainless steel 1.4404 Suitable for pole diameters between 50 and 100 mm Load-bearing capacity: 50 kg Dimensions: 120 x 180 (x 130 bei Mast Ø 60 mm)

Table 4-1 Mounting accessories

5 Electrical connection



Attention!

The electrical connection of the equipment may only be carried out by qualified and skilled personnel!



Attention!

It is absolutely necessary to ground the RoughCam® series' housing via the PA connection.

The delivered RoughCam® IPM2036 is equipped with an electrical connection cable of the type SKD01-T/ASKD02-T (models without cooling) or type SKD05-HT (models with cool.Jacket). The maximum transmission range from the camera to the next active network interface is 100 meters (without cool.Jacket) or 60 meters (models L.HH) and can be individually specified by the client. The user is NOT authorised to do electrical connection procedures inside the enclosure.

5.1 Potential equalization

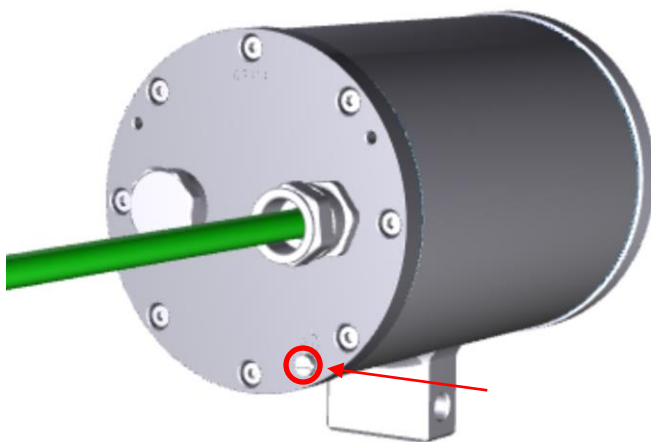


Figure 5-1 RoughCam IPM2036 Potential equalization

Potential equalization/grounding of the camera housing is absolutely necessary, in order to avoid static charges and thus the formation of sparks. For this purpose, a screw terminal is provided at the rear side, at the bottom (right) (see Figure 5-1). The cross-section of the potential equalization should comply with the National Ground Rules (at least 4mm²).

Wiring table:

Potential	Colour (IEC 60757)	Cross-section	Comment
PA	GN/YE	4 mm ² (rigid)	Terminal: Slotted screw M4x0.7 (DIN 84) with washer Ø9mm (DIN 125A), Keep 3 Nm tightening torque!

Table 5-1 Potential equalization

5.2 Connection work at the device (terminal box) and fuses

Power supply for the camera (PoE)

Voltage supply:	PoE, IEEE 802.3af/802.3at type 1 class 3
Reference voltage:	+48 V DC (44...54 V DC)
Maximum power consumption:	12.95 W
Typical power consumption:	5.0 W

The figures 5.2 and 5.3 illustrate the potential cable terminations of the RoughCam IPM2036. Possible terminations are: terminal box or plug.

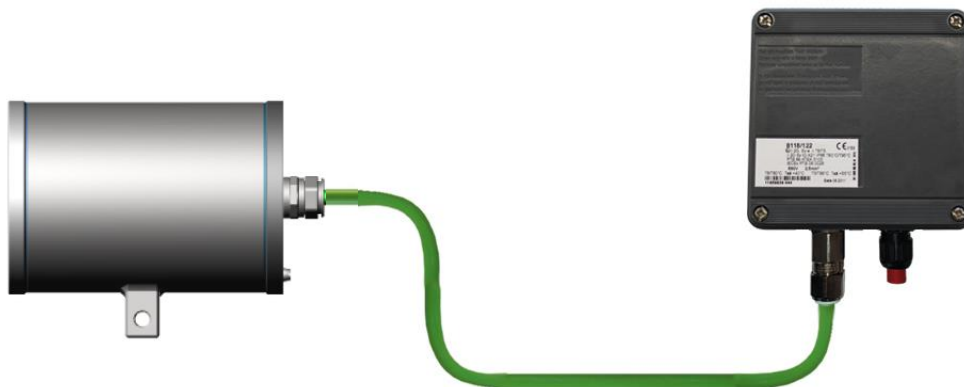


Figure 5-2 RoughCam IPM2036 T10-VA2.0.K1.BOR-LL.H-xxx.N-I

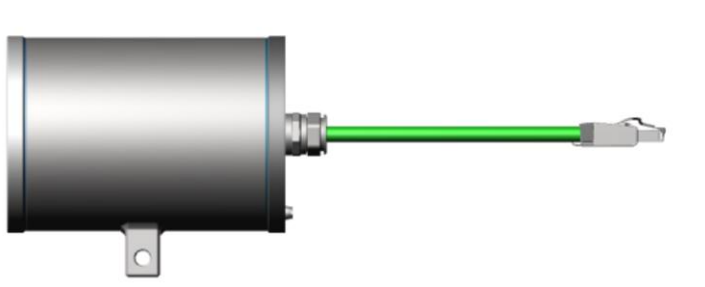


Figure 5-3 RoughCam IPM2036 T10-VA2.0.K1.BOR-LL.H-xxx.N-P

Figure 5.4 shows RoughCam IPM2036 with active cooling cool.Jacket.

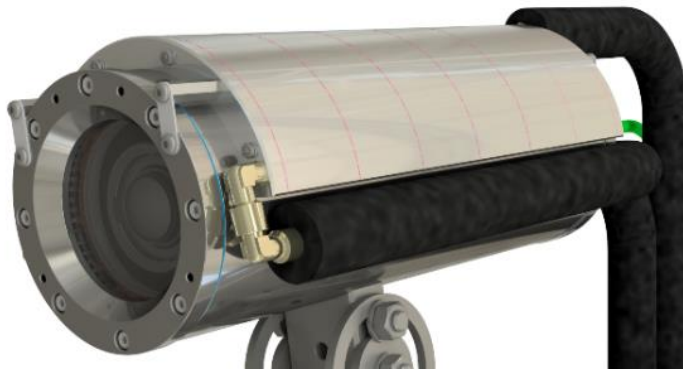


Figure 5-4 RoughCam IPM2036 T10-VA2.0.K1.BOR-LL.HH-010.N-I

Video Tutorial:

Observe our video tutorial:

“SAMCON 01 Wiring the cable SKDP03-T to the junction box ExTB-3”

<https://go.samcon.eu/v01>



Figure 5-5 Video Tutorial ExTB-3

The pin assignment of the SKD01-T is executed in accordance with the standard EIA/TIA-568B as follows:

Camera (T568B)	Colour SKD01-T (IEC60757)	Terminal Box	Cross-sec- tional sur- face	Comment
Tx+	WH / OG	1	0.32 mm ²	Solid conductor
Tx-	OG	2	0.32 mm ²	Solid conductor
Rx+	WH / GN	3	0.32 mm ²	Solid conductor
Rx-	GN	4	0.32 mm ²	Solid conductor
(PoE +48 VDC)	WH / BU	5	0.32 mm ²	Solid conductor
(PoE +48 VDC)	BU	6	0.32 mm ²	Solid conductor
(PoE GND)	WH / BN	7	0.32 mm ²	Solid conductor
(PoE GND)	BN	8	0.32 mm ²	Solid conductor
GND/SHD	YE / GN	PE	2.5 mm ²	Flex

Table 5-2. Wire assignment of terminal box ExTB-2

The pin assignment of the ASKD02-T is executed in accordance with the standard EIA/TIA-568B as follows:

Camera (T568B)	Colour ASKD02-T (IEC60757)	Terminal Box	Cross-sectional surface	Comment
Reinforcement	YE / GN	PE	2.5 mm ²	Flex
Tx+	WH / OG	1	0.26 mm ²	Solid conductor
Tx-	OG	2	0.26 mm ²	Solid conductor
Rx+	WH / GN	3	0.26 mm ²	Solid conductor
Rx-	GN	4	0.26 mm ²	Solid conductor
(PoE +48 VDC)	WH / BU	5	0.26 mm ²	Solid conductor
(PoE +48 VDC)	BU	6	0.26 mm ²	Solid conductor
(PoE GND)	WH / BN	7	0.26 mm ²	Solid conductor
(PoE GND)	BN	8	0.26 mm ²	Solid conductor
GND/SHD	YE / GN	PE	2.5 mm ²	Flex

Table 5-3 Wire assignment of terminal box ExtB-2/3 (ASKD02-T)

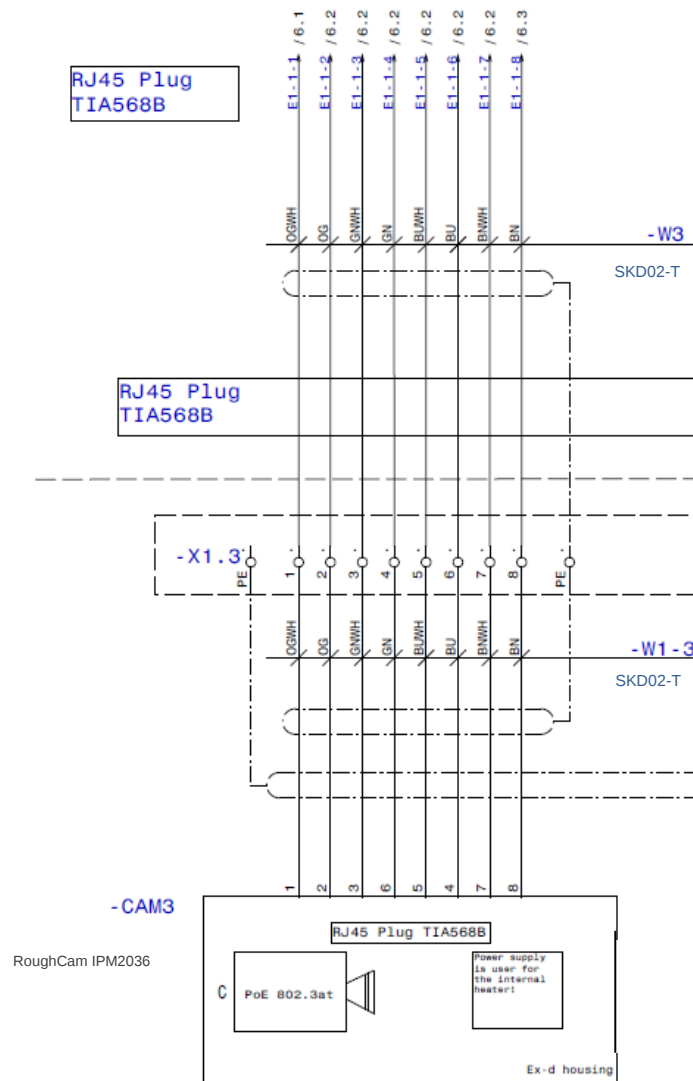


Figure 5-6 Sample circuit of terminal box ExtB-2

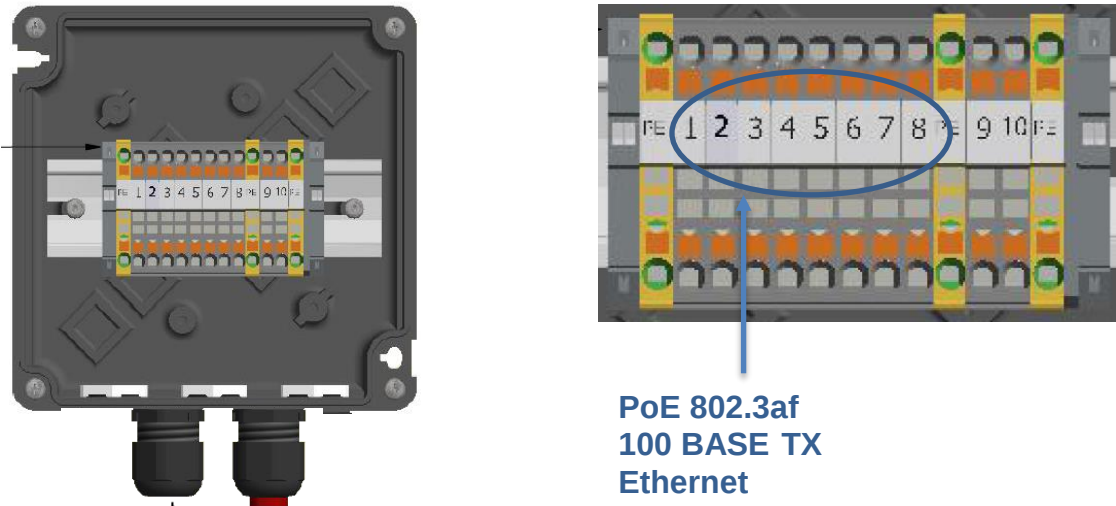


Figure 5.7 – Connection to the terminal box



Attention!

Introduce the foiling up to about 15 mm close to the terminals, in order to prevent alien crosstalk. Make sure that the foiling cannot cause any short circuit of the data pairs!



Attention!

Bring the twisted pair composite up to about 10 mm close to the terminals, in order to ensure interference immunity.



Attention!

Use only terminals approved by SAMCON.



Attention!

Finally, check your network installation with a Class-D Link Test.

Note:

If the camera is equipped with a camera cooling system (SAMCON cool.Jacket for model key type X.HH), the wiring is executed via the cable SKD05-HT. An appropriate water supply has to be provided by the customer.

The pin assignment of the SKD05-HT is executed in accordance with the standard EIA/TIA-568B as follows:

Camera (T568B)	Colour SKD05-HT (IEC60757)	Terminal Box	Cross-sec- tional sur- face	Comment
Tx+	WH / OG	1	0.14 mm ²	Solid conductor
Tx-	OG	2	0.14 mm ²	Solid conductor
Rx+	WH / GN	3	0.14 mm ²	Solid conductor
Rx-	GN	4	0.14 mm ²	Solid conductor
(PoE +48 VDC)	WH / BU	5	0.14 mm ²	Solid conductor
(PoE +48 VDC)	BU	6	0.14 mm ²	Solid conductor
(PoE GND)	WH / BN	7	0.14 mm ²	Solid conductor
(PoE GND)	BN	8	0.14 mm ²	Solid conductor
GND/SHD	YE / GN	PE	2.5 mm ²	Flex

Table 5-4 Wire assignment of terminal box ExTB-2 (SKD05-HT)

5.2.1 Fusing

PoE power supply requires no fuses. The power supply fusing depends on the cable cross-section and length.



Attention!

Please pay attention to the national and international regulations regarding selectivity and line protection.

5.2.2 Plug assignments (RJ45)

The data transfer of the RoughCam IPM2036 uses a 100 Mbit/s Ethernet connection (100BASE-TX). If the cable termination uses a plug, the latter should be plugged into the RJ45 PoE slot of the network device (PSE). Prior to connecting it to the camera, the network device (PSE) can already be supplied with power, hence there is no „power ON“ priority which has to be observed.



Attention!

Use appropriate RJ45 plugs! Check the cable shielding, cross-section and the outside diameter!



Attention!

It is imperative to ensure a correct routing of the individual wires according to the EIA/TIA-568B"



Attention!

Finally, check your network installation with a Class-D Link Test.

Detailed instructions on how to connect a RJ45 plug are available in our video tutorial: "SAMCON 03 Mounting and installing the RJ45 jack to SAMCON cables" <https://go.samcon.eu/v03>



Figure 5-8 Plug assignment, RJ45

5.2.3 Tests prior to switching on voltage



Attention!

Prior to starting the device, perform all tests as indicated by the national regulations. Furthermore, check the correct function and installation of the device in accordance with this User Manual and other applicable regulations.



Attention!

Incorrect installation or operation of the camera may lead to a loss of warranty!



Attention!

Do not switch on the camera at temperatures below 0°C!

6 Working inside the camera housing

The customer may open the housing only if it is absolutely necessary. Only exchanging the SD memory card or a hardware reset are reasons for this.

6.1 Preparation for work:



Attention!

Prepare your work carefully and in accordance with the relevant regulations.

6.2 Opening the housing

If the RoughCam IPM2036 is equipped with a weather protection roof this has to be removed prior to starting your work! To do so, loosen the 4x12mm button head screws M4*0.7 at the front and rear sides of the bracket holders (Figure 6-1).

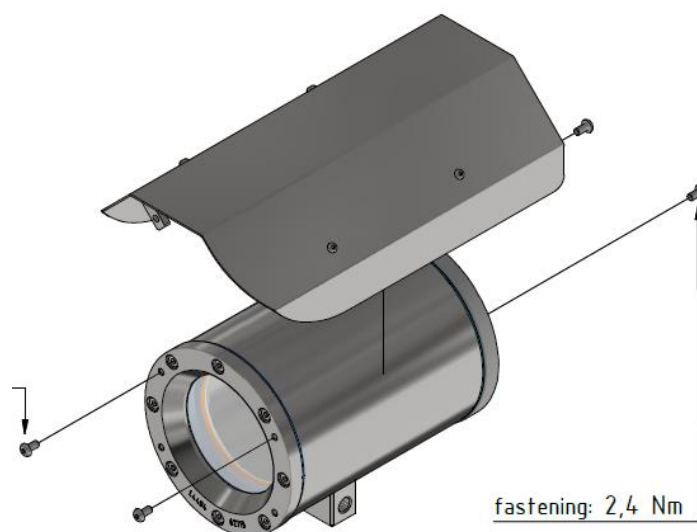


Figure 6-1 Removing the weather protection roof

To open the stainless-steel housing (T11 VA2.0.x.x) of RoughCam IPM2036, loosen the eight cylinder-head hexagon screws (DIN 912/ ISO 4762) together with their spring rings (DIN 127A) on the rear side of the cable and power supply flange (see Figure 6-3). Caution: do not touch the screw threads with your skin or clothes! On the threads, there is LOC-TITE® 243™ (chemical basis is dimethacrylate ester) applied to prevent the bolted connection from unintentional loosening because of impacts and vibrations and to seal them tightly. It is not permitted for the customer to open the front-side sight glass flange! There is no need of such an action.

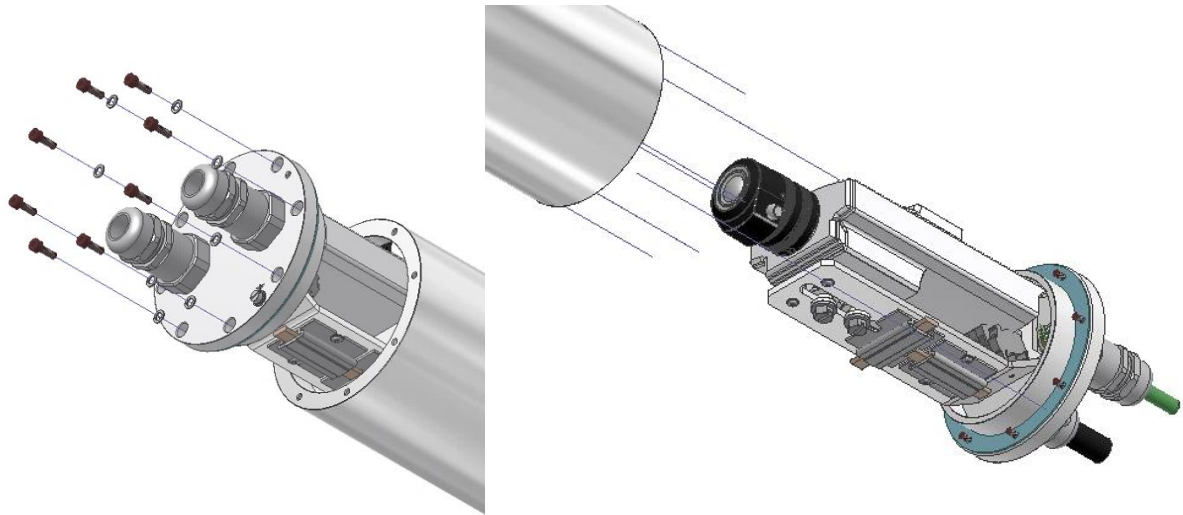


Figure 6-2 Opening the RoughCam IPM2036 (similar illustration)

Carefully pull out the cable and supply flange to the rear, as straight as possible. Because of negative pressure, it may be difficult to remove the flange.

Attention: The mounting adapter with the housing's PTC heater, camera module and optics, as well as the temperature control, and (if applicable) auxiliary relays and terminal block are fixed on the cable and supply flange. Dealing with these components, too, you have to work very carefully and precisely in order to avoid canting and damage to the in-built components! Caution: do not touch the cylindrical fit surface with your skin or clothes! On the surface, there is oil lubricating paste to protect the surface against fretting corrosion and mechanical stresses.

When you open the housing, pay attention that you do not damage the GYLON® flat seal (blue, RAL5012) and do not make it dirty! The flat gasket is loosely attached to the cable and power supply flange. It is fixed only by the bolted connections!

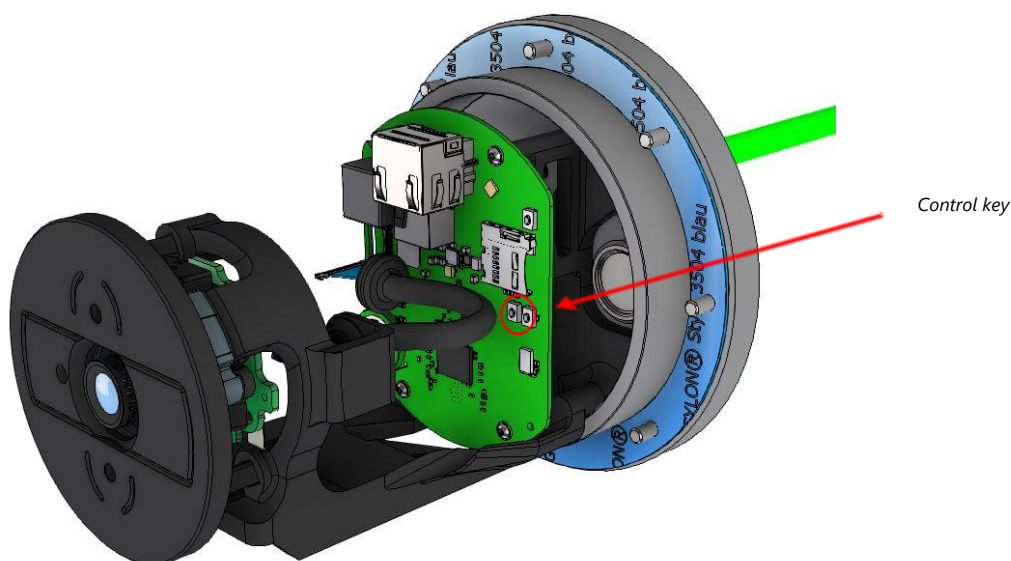


Figure 6-3 Structure of the camera

6.3 Removing / inserting a SD memory card

Note:

The RoughCam IPM2036 has a slot for a micro SDHC memory card (card not included). Saved video files can be played and deleted via the web interface. They are also available in a download list. Moreover, the videos available in the memory card can also be accessed via FTP server in the network.

If the memory card has to be replaced by the user, it should be, as far as possible, empty and pre-formatted with an ext4 or vFAT file system.



When touching electrical components, observe potential equalization (grounding of the body): carry electrostatic-discharge clothes, a PE wristband etc.!

6.4 Hardware Reset

To set all the parameters of the RoughCam IPM2036 (including the IP address) to default values, you should run a hardware reset.

The parameters can be reset via the web interface or manually. If the camera placed in the network can no longer be reached or its state is uncontrollable, the reset should be performed manually. To do so, proceed as follows:

1. Disconnect the camera installation module (Axis M2036-LE) from power supply.
2. Press and hold the control button (see the illustration below) and, at the same time, connect the system to the voltage supply (PoE).
3. Hold the control button pressed for about 30 seconds.
4. Release the control button. After about a minute, the AXIS M2036-LE will return to factory defaults. If there is a DHCP server in the network, the IP address will be the following: 192.168.0.90 (subnet masking 255.255.255.0).
5. IP address and password can be redefined. If the hardware reset is not satisfactory or the network camera shows serious conflicts or does not work as usual (errors in the browser visualisation, frozen images, control commands no longer processed, slowing down of the system, etc.), it may be necessary to re-install the current firmware, or to install an update (see Chapter 7).

6.5 Closing of the pressure-resistant housing

For closing the housing, proceed in reverse order as when opening. Use exclusively original screws included in the supply. The cable and power-supply flange (K1) is fixed by 8 cylinder-head screws M4*0.7 (ISO metric right-turning) with 12 mm thread length (DIN 912/ ISO 4762, grade 6g). Materials of bolted connections are identical to the stainless steel housing (standard material no. 1.4404 AISI316L).



Attention!

Do not lock-in any foreign objects in the housing.

Dismantled screw locks (spring washers DIN 127A) must be used again. The GYLON® gasket must be used in undamaged condition, according to the flange hole pattern, and placed between the flange and the hull. The lateral position of the flat surface / contact surface is arbitrary. If, when closing the housing, you see that the surface of the fitting gap is dirty or insufficiently lubricated, clean it with a clean cloth and de-grease it with a suitable cleaning agent. Then re-grease it with lubricant suitable for this specific application (e.g., Molykote® P-40 gel for standard applications or special grease OKS 403 in the event of heavy seawater influence).



Cylinder-head bolts for connection of the camera body with the flange component must be tightened at a 3 Nm torque - crosswise and evenly!

7 Network access and visualization

The most important procedures of the first starting up the camera are described below. The configuration menu of the web surface allows an intuitive navigation and offers several configuration possibilities. For detailed documentation and information how to use the web Interface, please see the User Manual for Axis or visit the following website:

<https://help.axis.com/axis-m2036-le>
https://help.axis.com/api/download/um_m20_bullet_camera_series_t10175189_de_2204.pdf

The delivered RoughCam IPM2036 is set to the applicable net frequency (50Hz or 60Hz). If the camera is used at a location with a differing net frequency, the image might start to flicker, particularly in surroundings with fluorescent tubes. In such a case, the applicable settings have to be carried out inside the menu “System Options > Advanced > Plain Config”.

User: root
Password: root

7.1 Browser Support

A list of the currently supported web browsers, operating systems, required add-ons, etc. can be viewed at:

<https://help.axis.com/access-your-device>
<https://www.axis.com/support>

7.2 Assigning the IP address

The RoughCam IPM2036 is intended for use in an Ethernet network and requires an IP address to access and control it. In the most today's networks, a DHCP server is integrated. This server automatically assigns an IP address.

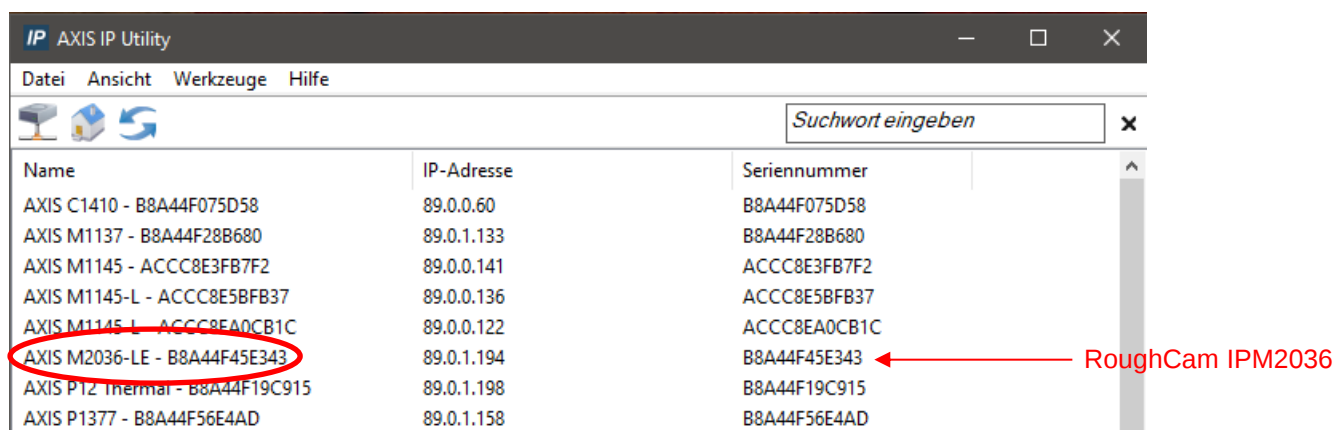
If there is no DHCP server available in the network, the IP default address of RoughCam IPM2036 is **“192.168.0.90” (subnet masking 255.255.255.0)**. With the “AXIS IP Utility”, it is possible to determine the IP address under Windows; the included USB stick contains this application.

<https://www.axis.com/support/tools/axis-ip-utility>



If it is not possible to assign the IP address, it might be necessary to change the firewall settings!

The "AXIS IP Utility" tool automatically recognizes all RoughCam devices and visualises them in the device list. It can also be used to manually assign a static IP address. For this purpose, the RoughCam IPM2036 network camera has to be installed in the same physical network segment (physical subnet) as the computer on which the AXIS IP Utility is running. The network signature of RoughCam IPM2036 is "AXIS M2036-LE" (see Figure 7-1). MAC address and serial number for clear device identification are also detected and displayed.



Name	IP-Adresse	Seriennummer
AXIS C1410 - B8A44F075D58	89.0.0.60	B8A44F075D58
AXIS M1137 - B8A44F28B680	89.0.1.133	B8A44F28B680
AXIS M1145 - ACCC8E3FB7F2	89.0.0.141	ACCC8E3FB7F2
AXIS M1145-L - ACCC8E5BF837	89.0.0.136	ACCC8E5BF837
AXIS M1145-L - ACCC8EA0CB1C	89.0.0.122	ACCC8EA0CB1C
AXIS M2036-LE - B8A44F45E343	89.0.1.194	B8A44F45E343
AXIS P12 Thermal - B8A44F19C915	89.0.1.198	B8A44F19C915
AXIS P1377 - B8A44F56E4AD	89.0.1.158	B8A44F56E4AD

Figure 7-1 Axis IP Utility

7.3 Password/ Identification

The following user name is set at the factory: **root**

The following password is set at the factory: **root**

8 Maintenance / Modification

The required maintenance intervals are specific to the individual devices. The operating company has to determine these intervals depending on the application parameters. If maintenance measures are necessary they have to be initiated and/or executed.

Repairs may only be carried out with original parts of SAMCON Prozessleittechnik GmbH. In case of doubt, send the part in question back to SAMCON Prozessleittechnik GmbH. Rebuilding of or alterations to the devices are not permitted.

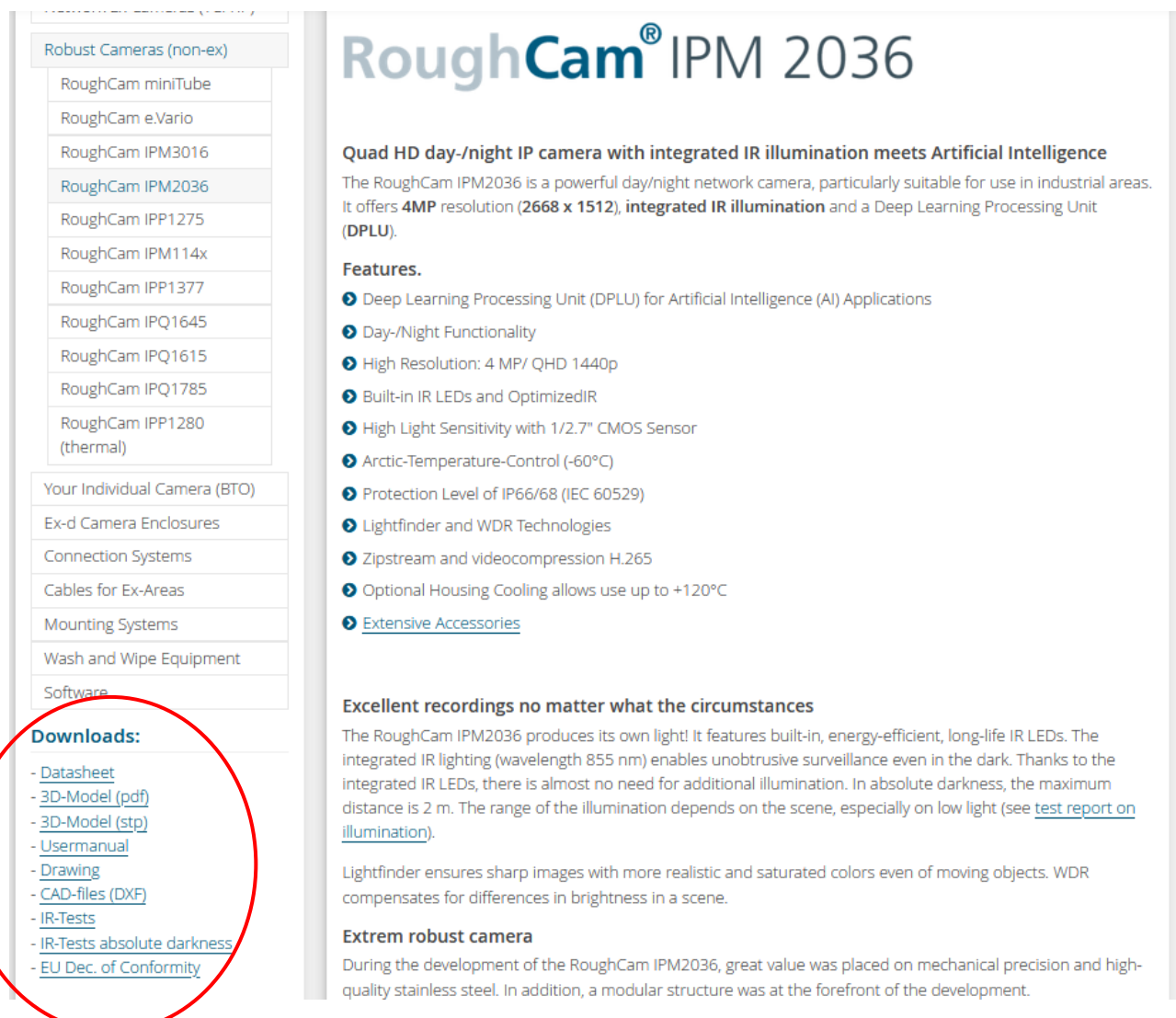
9 Disposal / Recycling

When disposing of the device, nationally applicable regulations must be observed.
 This Document is subject to alterations and additions.

10 Drawings, 3D models, certificates & further documentation

All drawings, 3D models, certificates and other information are available in the download area of the product page on our website:

<https://www.samcon.eu/en/products/roughcam/roughcam-ipm2036/>



Robust Cameras (non-ex)

- RoughCam miniTube
- RoughCam e.Vario
- RoughCam IPM3016
- RoughCam IPM2036**
- RoughCam IPP1275
- RoughCam IPM114x
- RoughCam IPP1377
- RoughCam IPQ1645
- RoughCam IPQ1615
- RoughCam IPQ1785
- RoughCam IPP1280 (thermal)

Your Individual Camera (BTO)

Ex-d Camera Enclosures

Connection Systems

Cables for Ex-Areas

Mounting Systems

Wash and Wipe Equipment

Software

Downloads:

- [Datasheet](#)
- [3D-Model \(pdf\)](#)
- [3D-Model \(stp\)](#)
- [Usermanual](#)
- [Drawing](#)
- [CAD-files \(DXF\)](#)
- [IR-Tests](#)
- [IR-Tests absolute darkness](#)
- [EU Dec. of Conformity](#)

RoughCam® IPM 2036

Quad HD day-/night IP camera with integrated IR illumination meets Artificial Intelligence

The RoughCam IPM2036 is a powerful day/night network camera, particularly suitable for use in industrial areas. It offers **4MP** resolution (**2668 x 1512**), **integrated IR illumination** and a Deep Learning Processing Unit (DPLU).

Features.

- Deep Learning Processing Unit (DPLU) for Artificial Intelligence (AI) Applications
- Day-/Night Functionality
- High Resolution: 4 MP/ QHD 1440p
- Built-in IR LEDs and OptimizedIR
- High Light Sensitivity with 1/2.7" CMOS Sensor
- Arctic-Temperature-Control (-60°C)
- Protection Level of IP66/68 (IEC 60529)
- Lightfinder and WDR Technologies
- Zipstream and videocompression H.265
- Optional Housing Cooling allows use up to +120°C
- [Extensive Accessories](#)

Excellent recordings no matter what the circumstances

The RoughCam IPM2036 produces its own light! It features built-in, energy-efficient, long-life IR LEDs. The integrated IR lighting (wavelength 855 nm) enables unobtrusive surveillance even in the dark. Thanks to the integrated IR LEDs, there is almost no need for additional illumination. In absolute darkness, the maximum distance is 2 m. The range of the illumination depends on the scene, especially on low light (see [test report on illumination](#)).

Lightfinder ensures sharp images with more realistic and saturated colors even of moving objects. WDR compensates for differences in brightness in a scene.

Extrem robust camera

During the development of the RoughCam IPM2036, great value was placed on mechanical precision and high-quality stainless steel. In addition, a modular structure was at the forefront of the development.

If you wish additional technical information, please contact us at: support@samcon.eu



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