



# MicroDome Camera 200 Series

NDC-274-P, NDC-274-PT, NDC-284-PT, NCD-274-PM



**BOSCH**

en Installation Manual



# Table of Contents

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<b>1</b>	<b>Safety</b>	<b>5</b>
1.1	Safety precautions	5
1.2	Important safety instructions	6
1.3	FCC & ICES compliance	7
1.4	UL certification	8
1.5	Bosch notices	8
1.6	Copyrights	9
<hr/>		
<b>2</b>	<b>Introduction</b>	<b>10</b>
2.1	Features	10
2.2	Unpacking	11
<hr/>		
<b>3</b>	<b>Installation</b>	<b>12</b>
3.1	Disassembly	12
3.2	Memory card	13
3.3	Desiccant for rugged cameras	13
3.4	Network (and power) connector	14
3.5	Power connection	15
3.5.1	DC power connection	15
3.6	Mounting	16
3.7	Camera set-up	17
3.7.1	Camera positioning	18
3.8	Resetting the camera	19
3.9	Closing the unit	19
<hr/>		
<b>4</b>	<b>Browser connection</b>	<b>20</b>
4.1	Protected network	20
<hr/>		
<b>5</b>	<b>Troubleshooting</b>	<b>21</b>
5.1	Resolving problems	21
5.2	Customer service	22
<hr/>		
<b>6</b>	<b>Maintenance</b>	<b>23</b>
6.1	Repairs	23
6.1.1	Transfer and disposal	23

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<b>7</b>	<b>Technical Data</b>	<b>24</b>
7.1	Specifications	24
7.1.1	Accessories	26

# 1 Safety

## 1.1 Safety precautions

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**DANGER!**

High risk: This symbol indicates an imminently hazardous situation such as "Dangerous Voltage" inside the product. If not avoided, this will result in an electrical shock, serious bodily injury, or death.

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**WARNING!**

Medium risk: Indicates a potentially hazardous situation. If not avoided, this could result in minor or moderate bodily injury.

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**CAUTION!**

Low risk: Indicates a potentially hazardous situation. If not avoided, this could result in property damage or risk of damage to the device.

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## 1.2 Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning** - Generally, using a dry cloth for cleaning is sufficient but a moist, fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.
2. **Heat Sources** - Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. **Water** - Never spill liquid of any kind on the unit.
4. **Lightning** - Take precautions to protect the unit from power and lightning surges.
5. **Controls adjustment** - Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit.
6. **Power sources** - Operate the unit only from the type of power source indicated on the label.
7. **Servicing** - Unless qualified, do not attempt to service this unit yourself. Refer all servicing to qualified service personnel.
8. **Replacement parts** - Use only replacement parts specified by the manufacturer.
9. **Installation** - Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
10. **Attachments, changes or modifications** - Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

## 1.3 FCC & ICES compliance

### FCC & ICES Information

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to *part 15* of the *FCC Rules*. These limits are designed to provide reasonable protection against harmful interference in a **residential installation**. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna;
- increase the separation between the equipment and receiver;
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

## 1.4 UL certification

### Disclaimer

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in UL's *Standard(s) for Safety for Closed Circuit Television Equipment, UL 2044*. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT.

## 1.5 Bosch notices



**Disposal** - Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these devices at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*

### More information

For more information please contact the nearest Bosch Security Systems location or visit [www.boschsecurity.com](http://www.boschsecurity.com)



## 1.6 Copyrights

The firmware 4.1 uses the fonts "Adobe-Helvetica-Bold-R-Normal--24-240-75-75-P-138-ISO10646-1" and "Adobe-Helvetica-Bold-R-Normal--12-120-75-75-P-70-ISO10646-1" under the following copyright:

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Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notices appear in all copies and that both those copyright notices and this permission notice appear in supporting documentation, and that the names of Adobe Systems and Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

This software is based in part on the work of the Independent JPEG Group.

## 2 Introduction

### 2.1 Features

This MicroDome camera is a ready-to-use, complete network video surveillance system inside a compact camera. The camera offers a cost-effective solution for a broad range of applications. It uses H.264 compression technology to give clear images reducing bandwidth and storage. The camera can be used as a stand-alone video surveillance system with no additional equipment or it can easily integrate with the Bosch DVR 700 Series recorders.

Features include:

- MicroSD/SDHC/SDXC card slot supports edge recording up to 2 TB
- Tri-streaming: Two H.264 streams and one M-JPEG stream
- Progressive scan for sharp images of moving objects
- Built-in microphone (NDC-274-P only)
- Tamper, motion and audio detection
- Conforms to the ONVIF standard for wide compatibility
- Power over Ethernet (IEEE 802.3af compliant)

## 2.2 Unpacking

Unpack carefully and handle the equipment with care.

The packaging contains:

- IP camera with lens
- Installation paper sticker
- Quick installation guide
- Torx screwdriver for dome cover
- Optical disk
  - Bosch Video Client
  - Documentation
  - Tools

If equipment has been damaged during shipment, repack it in the original packaging and notify the shipping agent or supplier.



### **WARNING!**

Installation should only be performed by qualified service personnel in accordance with the National Electrical Code or applicable local codes.



### **CAUTION!**

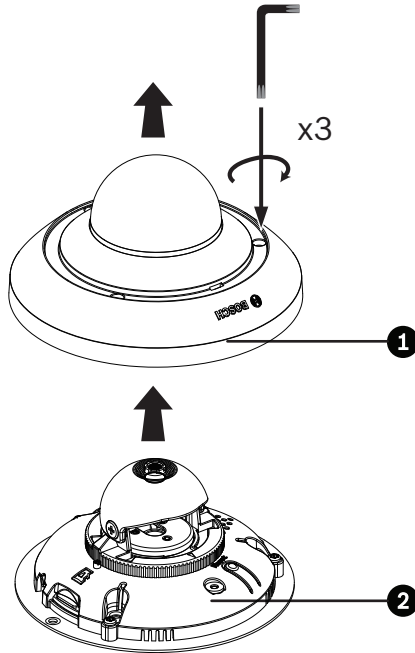
The camera module is a sensitive device and must be handled carefully.

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## 3 Installation

### 3.1 Disassembly

The camera/housing unit consists of the following parts:

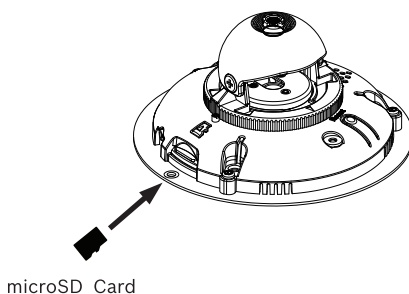


- ❶ Dome
- ❷ Camera module and mounting base

To disassemble the unit proceed as follows:

1. Using the special screwdriver bit supplied, loosen the three tamper-resistant screws in the dome (the screws remain in place).
2. Remove the dome from the base.

## 3.2 Memory card



**Figure 3.1** Memory card

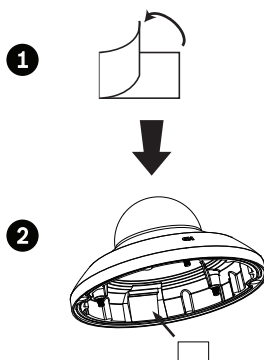
1. Disassemble the camera.
2. Slide the microSD card into the slot.

The camera supports most microSD/SDHC/SDXC cards.

**Note:**

Use high speed SD cards, class 6 or above (the higher read/write speed the better).

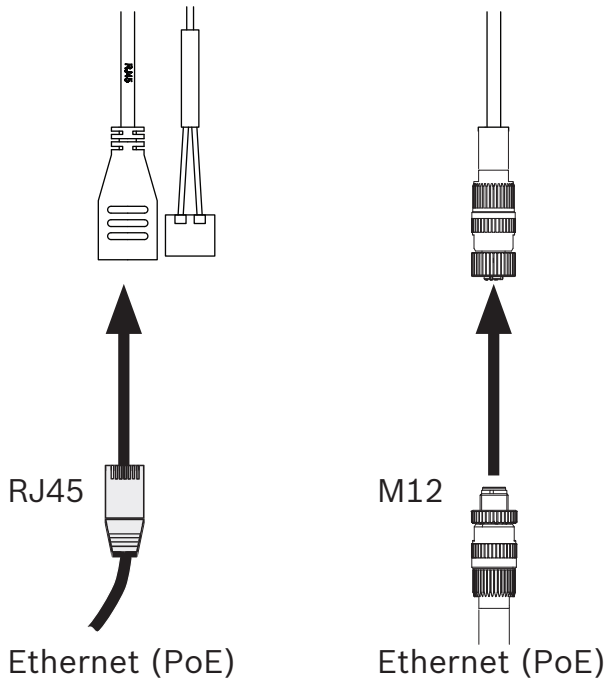
## 3.3 Desiccant for rugged cameras



**Figure 3.2** Desiccant for PT and PM camera versions.

1. Remove backing from desiccant package.
2. Stick the package to the inside of the dome cover as indicated.

## 3.4 Network (and power) connector



**Figure 3.3** Network connection

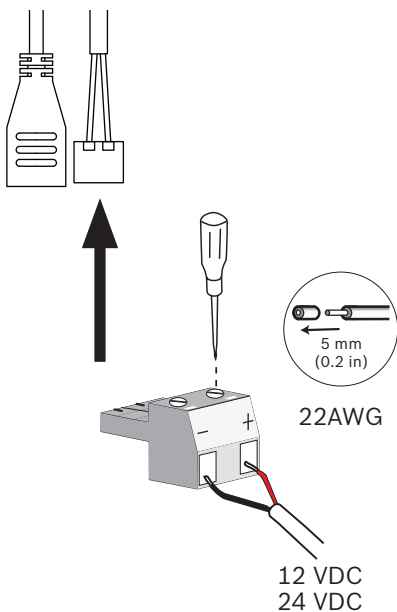
- Connect the camera to a 10/100 Base-T network.
- Use a shielded UTP Category 5e cable with RJ45 connectors (M12 connector for PM version).
- Power can be supplied to the camera via the Ethernet cable compliant with the Power-over-Ethernet (IEEE 802.3af) standard.

## 3.5 Power connection

The camera can accept power from both the DC12/24V power input and the Ethernet input at the same time. (Changing the power source might lead to a camera reboot.)

### 3.5.1 DC power connection

*(Not present on NDC-274-PM version.)*



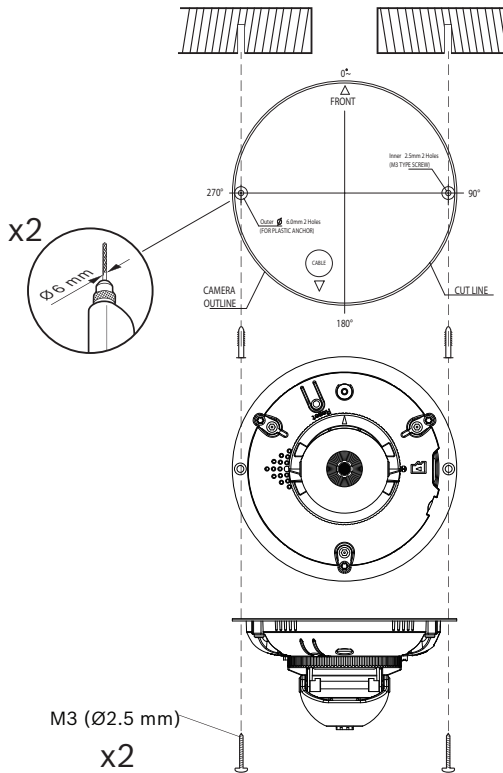
**Figure 3.4** DC power connection

1. Slide the plug adapter that matches your outlet socket onto the supplied power supply.
2. Insert the power connector jack from the power supply into the DC12/24V socket of the camera.
3. Connect the power supply to either a 230 VAC or a 120 VAC power supply outlet.

**Note:**

A power supply is not included in the package.

## 3.6 Mounting



**Figure 3.5** Mounting the camera

To mount the camera to a wall or ceiling:

1. Stick the supplied installation paper sticker to the surface taking care to orientate it correctly.
2. Drill two holes with a diameter of 6 mm.
3. Insert the supplied plugs into the holes.
4. Attach the camera and base unit securely to the surface using the two supplied M3 screws.



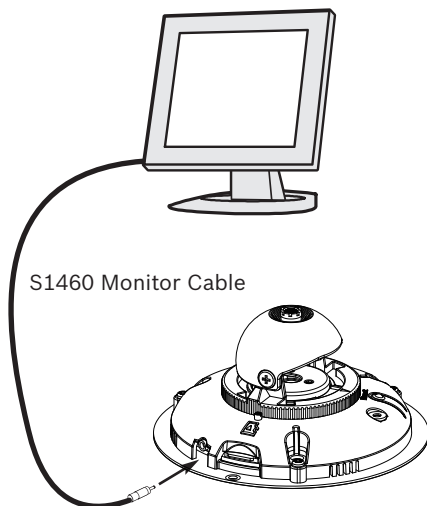
### CAUTION!

Do not point the camera/lens into direct sunlight as this may damage the sensors.



## 3.7 Camera set-up

To help set up the camera, connect a monitor to the miniature 2.5 mm jack socket using a S1460 monitor cable which can be ordered separately. This monitor jack socket provides a composite video signal (NTSC) for installation purposes only.



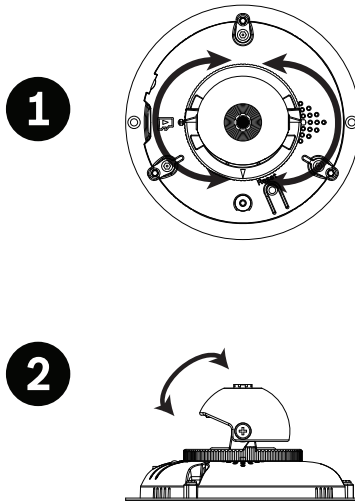
### 3.7.1 Camera positioning

The camera module position can be adjusted along two axes. When adjusting the camera position ensure that the picture display on the monitor is level.

#### CAUTION!



The image sensors are highly sensitive and require special care for proper performance and extended lifetime. Do not expose them to direct sunlight or bright spotlights in operating and non-operating conditions. Avoid bright lights in the field of view of the camera.

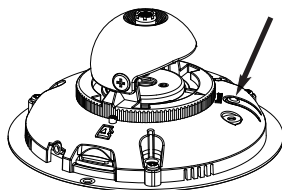


Set the camera to the desired position by performing the following steps:

1. For horizontal adjustment (pan) rotate the camera module in the base. Do not rotate more than 350°.
2. For vertical adjustment (tilt) rotate camera. Do not rotate more than 55°.

## 3.8 Resetting the camera

If the camera cannot be connected because the IP address has changed, press and hold the reset button (7 seconds approximately) to recall the factory default values. The factory default IP address is 192.168.0.1



**Figure 3.6** Reset button

## 3.9 Closing the unit

When the camera position is set and all adjustments have been made, close the unit.

1. Remove the monitor cable from the jack socket.
2. If necessary, clean the inner surface of the dome with a soft cloth.
3. Position the dome on the base by aligning the two screw holders with fins with the openings beside the screw sockets and slot it home.
4. Use the supplied special screwdriver bit to tighten the three tamper-resistant screws.

## 4 Browser connection

A computer with Microsoft Internet Explorer can be used to receive live images from the camera, control the camera, and replay stored sequences. The camera is configured over the network using the browser.

**Note:**

The camera can also be configured using the supplied Bosch Video Client or the Bosch Video Management System.

### 4.1 Protected network

If a RADIUS server is used for network access control (802.1x authentication), the camera must be configured first. To configure the camera for a Radius network, connect it directly to a PC via a crossed network cable and configure the two parameters, **Identity** and **Password**. Only after these have been configured can communication with the camera via the network occur.

## 5 Troubleshooting

### 5.1 Resolving problems

The following table is intended to help identify the causes of malfunctions and correct them when possible.

<b>Malfunction</b>	<b>Possible causes</b>	<b>Solution</b>
No image transmission to remote location.	Faulty cable connections.	Check all cables, plugs, contacts and connections.
No connection established, no image transmission.	The unit's configuration.	Check all configuration parameters.
	Faulty installation.	Check all cables, plugs, contacts and connections.

## 5.2 Customer service

If a fault cannot be resolved, please contact your supplier or system integrator, or contact Bosch Security Systems Customer Service directly.

The Installer should write down all information regarding the unit so that it can be referenced for warranty or repair. The version numbers of the firmware and other status information can be seen when the unit starts or by opening the **Service** menu. Note down this information and the information found on the camera label before contacting customer service.

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## 6 Maintenance

### 6.1 Repairs

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**CAUTION!**

Never open the casing of the camera. The unit does not contain any user serviceable parts. Ensure that all maintenance or repair work is performed only by qualified personnel (electrical engineering or network technology specialists). If in doubt, contact your dealer's technical service center.

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#### 6.1.1 Transfer and disposal

The camera should only be passed-on together with this installation guide. The unit contains environmentally hazardous materials that must be disposed of according to law. Defective or superfluous devices and parts should be disposed of professionally or taken to your local collection point for hazardous materials.

# 7 Technical Data

## 7.1 Specifications

Input voltage	+12 VDC, +24 VDC, or Power-over-Ethernet
Power consumption	3.84 W (max)
Sensor type	1/2.7-inch CMOS 1/3.2-inch CMOS (NDC-284-PT)
Sensor pixels	1920 x 1080 2592 x 1944 (NDC-284-PT)
Sensitivity	0.3 lx
Video resolution	1080p, 720p, 480p, 240p 5 Megapixels, 480p (NDC-284-PT)
Video compression	H.264 MP (Main Profile); M-JPEG
Max. frame rate	30 fps 12 fps (NDC-284-PT) (M-JPEG frame rate can vary depending on system loading)
Lens type	4.37 mm fixed, F2.0 3.74 mm fixed, F2.0 (NDC-284-PT)
Audio Input	Built-in microphone (NDC-274-P only)
Audio compression	G.711, L16 (live and recording)
Analogue video out	2.5 mm jack for installation only (NTSC) (not for NDC-274-PM)



Memory card slot	Supports up to 32 GB microSDHC / 2 TB microSDXC card (An SD card of Class 6 or higher is recommended for HD recording)
Recording	Continuous recording, ring recording, alarm/ events/schedule recording
Unit Configuration	Via web browser or PC surveillance software
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP, IGMPV2/V3, ICMP, RTSP, FTP, Telnet, ARP, DHCP, SNMP,SNMP (V1, MIB-II), 802.1x, SMTP, iSCSI, UPnP(SSDP)
Encryption	TLS 1.0, SSL
Ethernet	10/100 Base-T, auto-sensing, half/full duplex
Ethernet connector	RJ45 M12 D-coded female (NDC-274-PM)
PoE	IEEE 802.3af compliant
Dimensions (NDC-274-P)	Diameter: 105 mm (4.13 in) Height: 56 mm (2.2 in)
Weight (NDC-274-P)	255 g (8.99 oz) approx.
Dimensions	Diameter: 110 mm (4.33 in) Height: 55 mm (2.17 in)
Weight	330 g (11.64 oz) approx.
IP protection	IP66 (PT and PM versions only)
Impact protection	IK08 (PT and PM versions only)
Operating Temperature	-20 °C to +50 °C (-4 °F to +122 °F)

Storage Temperature	-20 °C to +70 °C (-4 °F to +158 °F)
Humidity	10% to 80% relative humidity (non-condensing)

### 7.1.1 Accessories

Contact a Bosch representative in your area for the latest available accessories or visit our website at [www.boschsecurity.com](http://www.boschsecurity.com)



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