

## INSTAR IN-9820 4K

# INSTAR IN-9820 4K Outdoor Security Camera User Manual

Model: IN-9820 4K

## 1. INTRODUCTION AND OVERVIEW

The INSTAR IN-9820 4K Outdoor Security Camera offers advanced surveillance capabilities for both indoor and outdoor environments. This manual provides essential information for setting up, operating, and maintaining your camera to ensure optimal performance and security.

Key features include:

- **4K Ultra-HD PTZ Surveillance:** Enjoy precise monitoring with 5x optical zoom, infrared (IR) night vision, and supplementary white-light illumination for enhanced clarity.
- **Smart AI Person Detection:** Benefit from reliable distinction between people, animals, and vehicles, complemented by a Passive Infrared (PIR) motion sensor and pre-alarm recording capabilities.
- **Easy Installation & Connectivity:** The camera supports versatile connectivity options including LAN, dual-band Wi-Fi (866Mbps 2.4/5GHz), and Power over Ethernet (PoE) for flexible deployment.
- **HomeKit Secure Video (HKSVC):** Seamlessly integrate your camera into your Apple smart home ecosystem. It also supports MQTT, is conformant with ONVIF Profile S, and offers RTSP(S) streaming.
- **Professional Data Security:** The device is NDAA/TAA compliant, features WPA3 protection, includes built-in storage (32GB, expandable up to 1TB), and supports FTP/SFTP for secure data management.

## 2. WHAT'S IN THE BOX

Please verify that all components are present in the package:

- Instruction Manual
- Mounting Screw
- Power Adapter
- Wall and Ceiling Bracket
- 32GB Industrial MicroSD (pre-installed)

## 3. PRODUCT OVERVIEW AND COMPONENTS

Familiarize yourself with the camera's physical components:

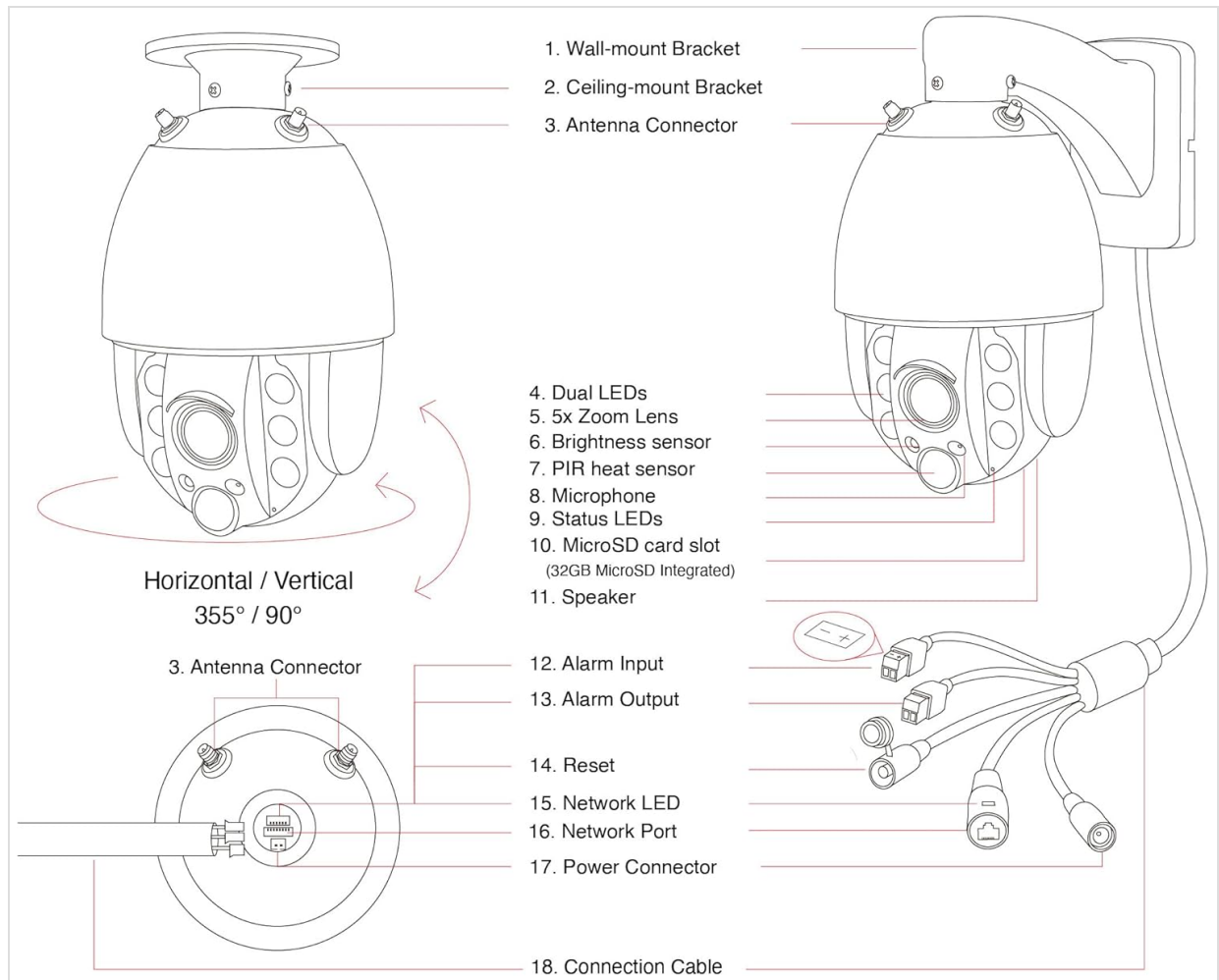


Figure 3.1: INSTAR IN-9820 4K Camera with labeled components. Key parts include the lens, LEDs, microphone, speaker, MicroSD card slot, network port, and various connectors.

The camera features a robust design suitable for outdoor use, with clearly labeled ports and mounting points for easy installation.

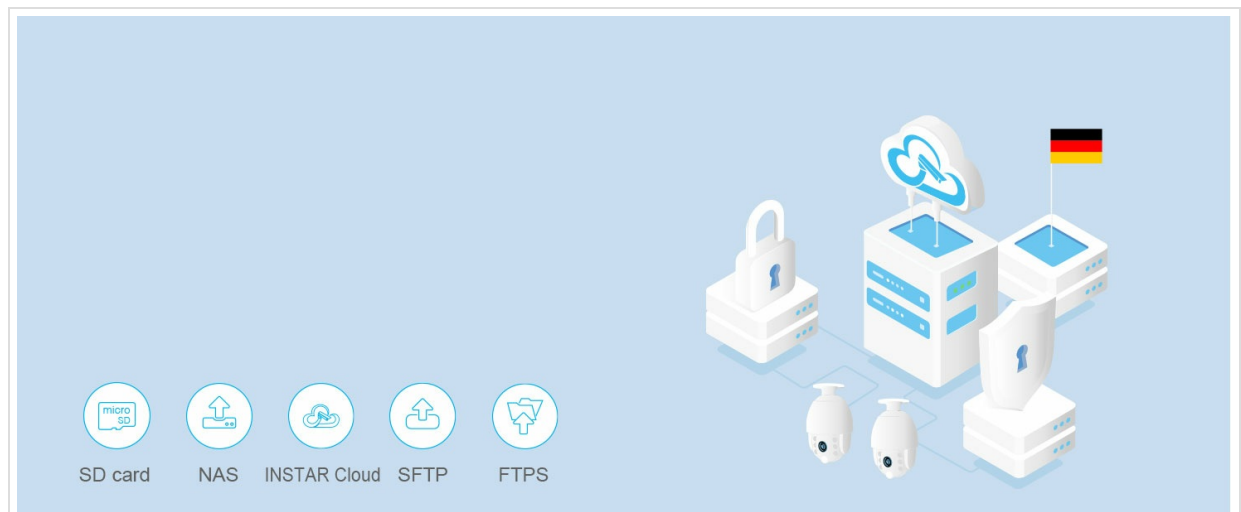


Figure 3.2: Detailed view of the INSTAR IN-9820 4K Camera highlighting various components such as the wall-mount bracket, ceiling-mount bracket, antenna connector, dual LEDs, 5x zoom lens, brightness sensor, PIR heat sensor, microphone, status LEDs, MicroSD card slot, speaker, alarm input/output, reset button, network LED, network port, and power connector.

## 4. SETUP AND INSTALLATION

The IN-9820 4K camera offers flexible installation options for both wall and ceiling mounting. Ensure you have a stable surface and appropriate tools for secure installation.

## 4.1 Mounting Options

The camera comes with both wall-mount and ceiling-mount brackets. Choose the appropriate bracket based on your desired installation location.

## 4.2 Power and Connectivity

The camera supports multiple power and connectivity methods:

- **Wi-Fi:** Connect wirelessly using dual-band 2.4/5GHz Wi-Fi (866Mbps).
- **LAN:** Use an Ethernet cable for a stable wired connection.
- **PoE (Power over Ethernet):** Simplify installation by delivering both power and data through a single Ethernet cable.

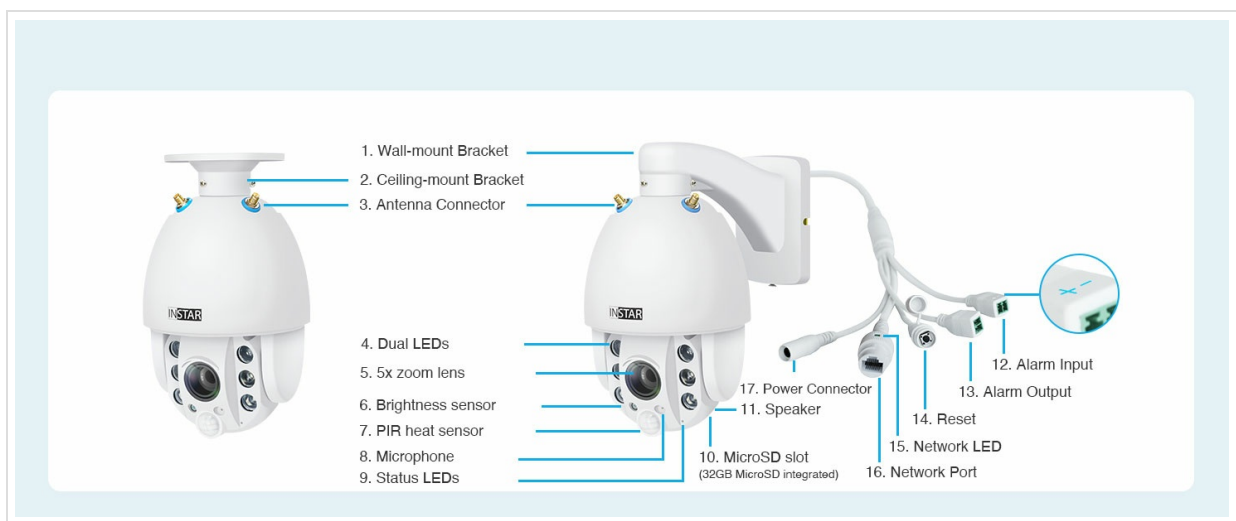


Figure 4.1: Illustration of a Power over Ethernet (PoE) setup, demonstrating how a single Ethernet cable can provide both power and network connectivity to the camera, simplifying installation.

## 4.3 Initial Setup

Follow the instructions in the included Instruction Manual for initial setup and pairing with the INSTAR app or your preferred smart home system.

# 5. OPERATING INSTRUCTIONS

## 5.1 4K Ultra-HD PTZ Surveillance

The camera provides 4K (3840x2160) resolution for clear images and videos. The PTZ (Pan-Tilt-Zoom) functionality allows for remote adjustment of the camera's viewing angle and 5x optical zoom.

# 5x Optical Zoom

The IN-9820 4K uses the lens with an optical zoom, the view angle is about 30 - 130° (2,7mm~13,5mm). It doesn't need an additional wide angle lens because it can monitor near and far objects. The built-in auto focus also make the image to be always clear display.



Figure 5.1: The IN-9820 4K camera's 5x optical zoom allows monitoring of objects at various distances with clarity. The view angle is approximately 30-130 degrees (2.7mm-13.5mm).

# IN-9820 4K

With the new 8 megapixel STARVIS Sensor from Sony , the number of pixels compared to regular 2K+ cameras is doubled. 4 million additional image points help to display even more distant objects in detail.



Figure 5.2: Comparison of 4K (2160P) and 1440P resolutions, showcasing the superior detail captured by the 8-megapixel STARVIS Sensor from Sony in the IN-9820 4K camera.

## 5.2 Smart AI Person Detection and PIR Sensor

The camera's advanced AI can differentiate between people, animals, and vehicles, reducing false alarms. The integrated PIR heat sensor further enhances detection accuracy. Pre-alarm recording ensures that events are captured even before they fully unfold.

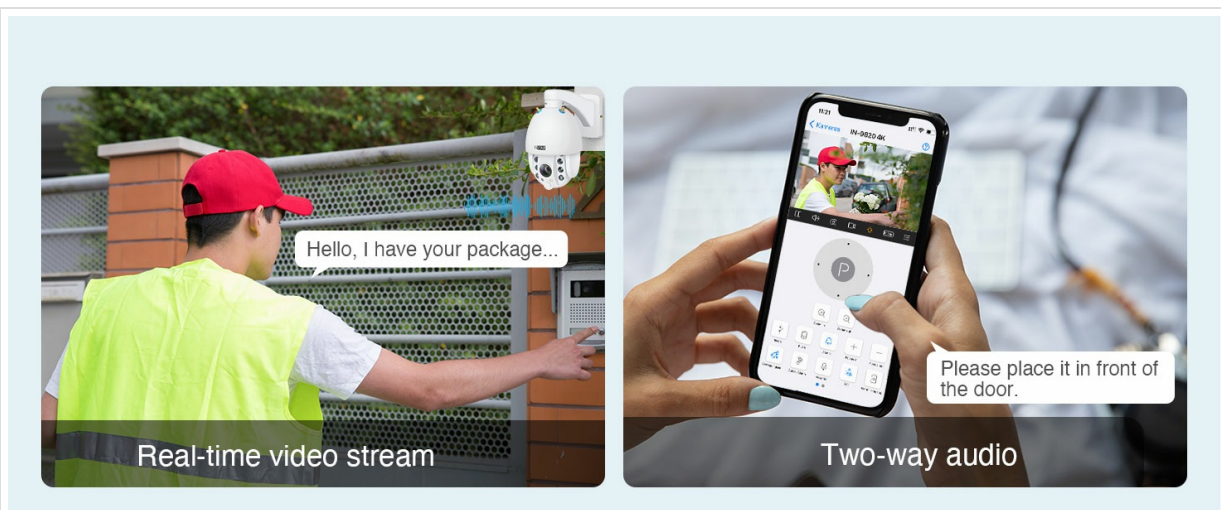


Figure 5.3: The camera's Smart AI Person Detection and PIR heat sensor accurately identify people, vehicles, and animals, providing reliable security monitoring.

# PIR Heat Sensor / Microphone

An integrated PIR heat sensor from Panasonic guarantees that the camera does not trigger false alarms. In addition, the built-in microphone allows you to record the sound in the video.



Figure 5.4: An integrated PIR heat sensor from Panasonic prevents false alarms, while the built-in microphone allows for audio recording with video.

## 5.3 Night Vision and White-Light Illumination

Equipped with IR night vision and additional white-light illumination, the camera provides clear surveillance even in low-light conditions. The automatic IR-CUT filter ensures natural colors during the day.

# Infrared Night Vision

Make the night to the day! With 6 high-power infrared LEDs you will not miss anything anymore during the night, while you can enjoy natural colors in the video during the day thanks to the automatic IR-CUT filter.



Figure 5.5: Comparison of a scene in full color during the day and in black and white using infrared night vision, demonstrating the camera's capability in different lighting conditions.

## 5.4 Two-Way Audio

Communicate directly through the camera using its built-in microphone and speaker. This feature is useful for interacting with visitors or deterring intruders.

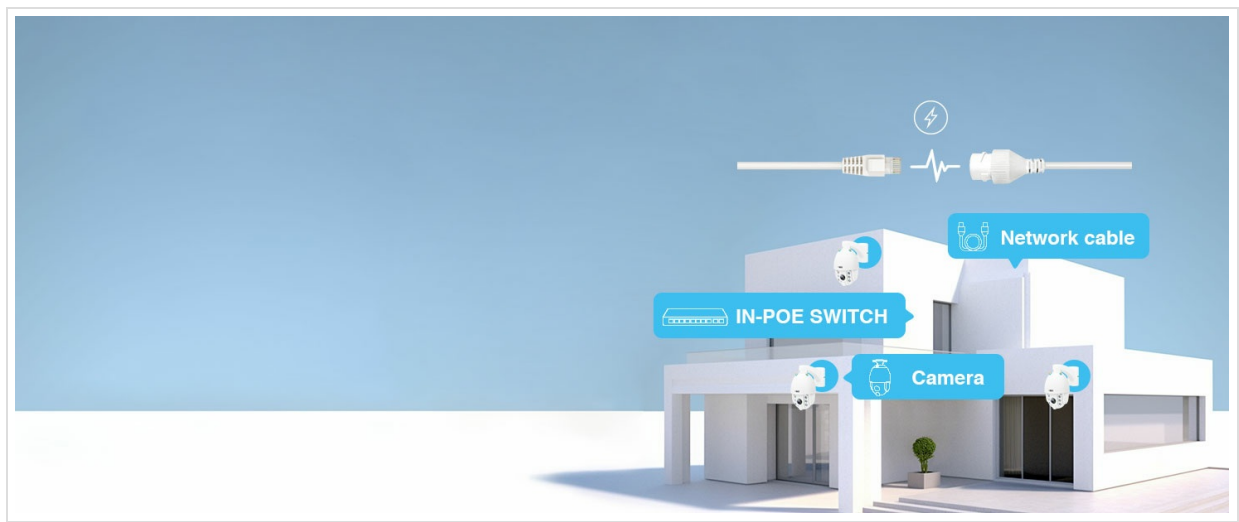


Figure 5.6: The two-way audio feature allows for real-time communication through the camera, enabling interaction with individuals in the camera's vicinity.

## 5.5 HomeKit Secure Video (HKSU) and Smart Home Integration

The IN-9820 4K camera seamlessly integrates with Apple HomeKit Secure Video, allowing you to manage your surveillance within your Apple smart home ecosystem. It also supports MQTT, ONVIF Profile S, and RTSP(S) for broader compatibility.

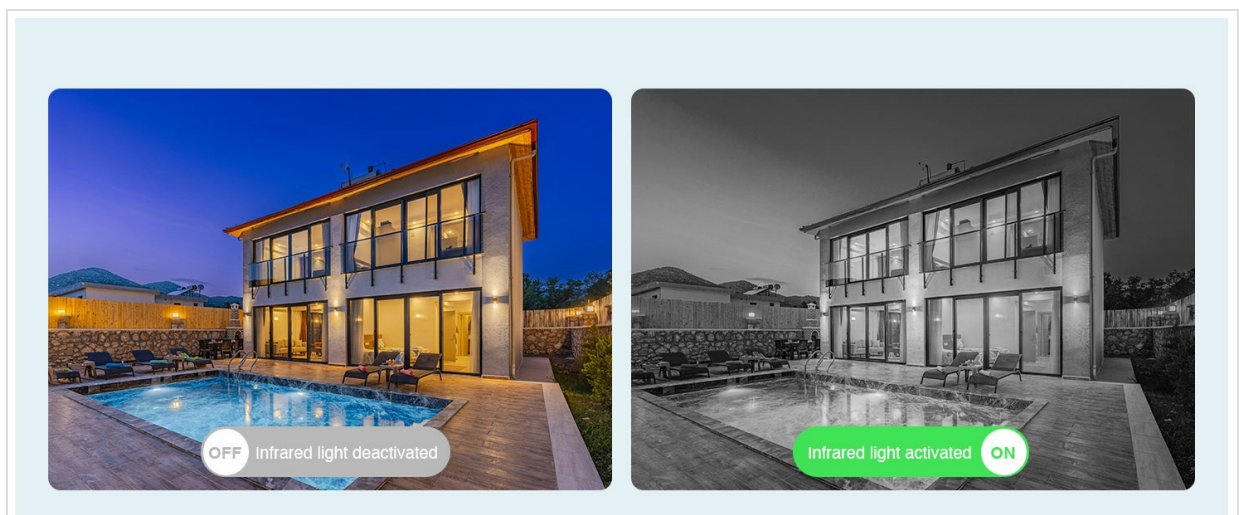


Figure 5.7: The camera's integration with Apple HomeKit allows for control and monitoring through the Home app on various Apple devices.

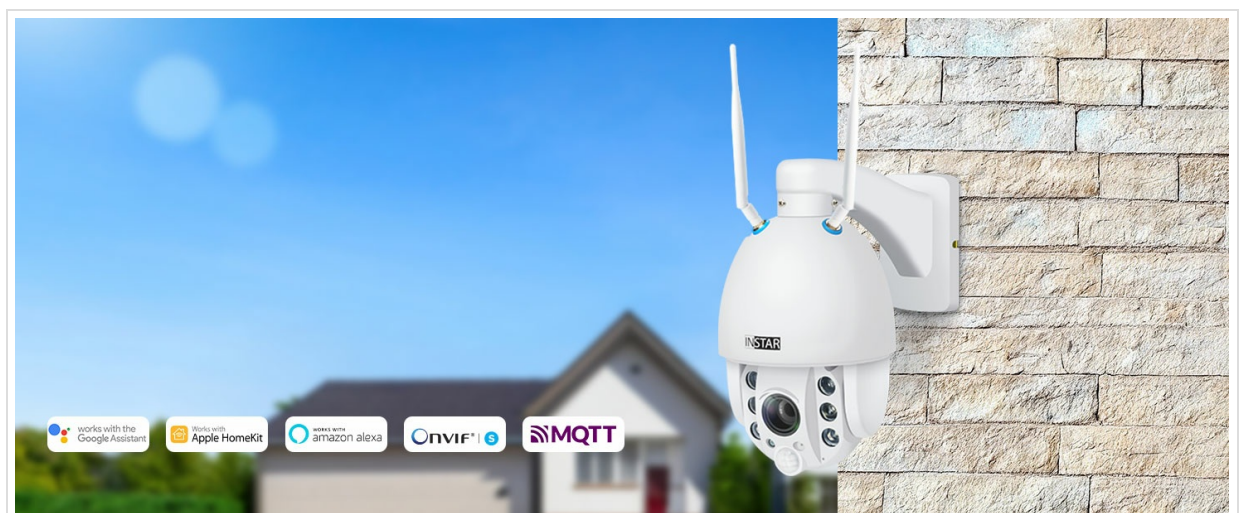


Figure 5.8: The IN-9820 4K camera is compatible with Amazon Alexa and Google Assistant, allowing voice control and

integration into broader smart home systems.

## 5.6 Scheduled Photo Series

Create time-lapse recordings by setting up scheduled photo series. Individual images can be saved to the SD card or uploaded to an external server via FTP for web integration.

# Scheduled Photo Series

Create stunning time-lapse recordings. The photo series allows you to save individual images with a fixed time interval as well as according to schedule directly to the SD card. Alternatively, the recordings can also be stored via FTP on an external server in order to integrate them on a private website.



Figure 5.9: The camera can capture scheduled photo series to create time-lapse recordings, offering flexible storage options to SD card or external FTP server.

## 5.7 Integrated HTML5 Web Interface

Access and manage your camera settings and live feed through a user-friendly HTML5 web interface, compatible with various browsers and mobile devices.

# Integrated HTML5 Web Interface



## Compatible with:

Internet Explorer   Firefox   Safari   Google Chrome   iOS   Android

Figure 5.10: The camera features an integrated HTML5 web interface for easy access and management from desktop browsers and mobile applications.

## 6. STORAGE AND DATA SECURITY

The IN-9820 4K camera prioritizes data security and offers flexible storage options.

### 6.1 Local Storage

The camera comes with a 32GB industrial MicroSD card pre-installed, expandable up to 1TB. This allows for continuous local recording of events.

### 6.2 Cloud and Network Storage

For additional storage and backup, the camera supports FTP/SFTP protocols, allowing you to upload recordings to external servers or Network Attached Storage (NAS) devices.

### 6.3 Professional Data Security

The camera is NDAA/TAA compliant and features WPA3 protection for secure wireless communication, ensuring your data remains protected.



Figure 6.1: The camera provides instant alarm notifications through email and push alerts to your mobile device, keeping you informed of detected events.

## 7. MAINTENANCE

To ensure the longevity and optimal performance of your INSTAR IN-9820 4K camera, regular maintenance is recommended.

- **Lens Cleaning:** Periodically clean the camera lens with a soft, dry cloth to remove dust and smudges that may affect image clarity.
- **Firmware Updates:** Check for and install any available firmware updates to ensure your camera has the latest features and security enhancements.
- **Physical Inspection:** Regularly inspect the camera's mounting and cables for any signs of wear or damage, especially in outdoor installations.

## 8. TROUBLESHOOTING

If you encounter any issues with your INSTAR IN-9820 4K camera, refer to the following common troubleshooting tips:

- **No Power:** Ensure the power adapter is securely connected and the power source is active. If using PoE, verify the Ethernet cable connection and PoE switch functionality.
- **No Network Connection:** For Wi-Fi, check your network settings and ensure the camera is within range. For LAN/PoE, verify the Ethernet cable connection.
- **Poor Image Quality:** Clean the camera lens. Check your network bandwidth and ensure sufficient lighting conditions. Adjust resolution settings if necessary.
- **False Alarms:** Adjust the sensitivity settings for AI detection and PIR sensor. Define activity zones to focus detection on specific areas.
- **HomeKit Issues:** Ensure the camera is connected directly to Wi-Fi (not HomeBase) for HomeKit setup. Refer to Apple HomeKit documentation for specific integration steps.

## 9. SPECIFICATIONS


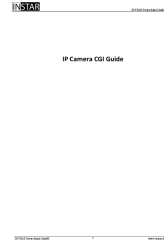
Feature	Detail
Model Name	IN-9820 4K





Video Capture Resolution	4K, 1080p
Effective Still Resolution	8 MP
Optical Zoom	5 x
Night Vision Range	30 Meters
Connectivity Technology	Wired, Wireless (Wi-Fi, LAN, PoE)
Connectivity Protocol	Ethernet, MQTT, ONVIF, RTSP, Wi-Fi
Controller Type	Amazon Alexa, Android, Apple HomeKit, Google Assistant, IFTTT
Indoor/Outdoor Usage	Indoor, Outdoor
International Protection Rating	IP65
Built-in Storage	32 GB MicroSD (expandable up to 1TB)
Product Dimensions	9.06 x 5.91 x 5.91 inches
Item Weight	4.19 pounds

## 10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official INSTAR website or contact their customer service. Details can typically be found in the included Instruction Manual or on the product packaging.

### Related Documents - IN-9820 4K

	<p><a href="#">INSTAR 5907HD Anleitung zum Wechseln der Hauptplatine</a></p> <p>Detaillierte Schritt-für-Schritt-Anleitung zum Austausch der Hauptplatine Ihrer INSTAR 5907HD IP-Kamera. Enthält Informationen zu benötigten Werkzeugen und dem Prozess.</p>
	<p><a href="#">INSTAR IP Camera CGI Guide</a></p> <p>Comprehensive guide to INSTAR IP Camera CGI commands, parameters, and software version updates, detailing various CGI functions for camera control and configuration.</p>

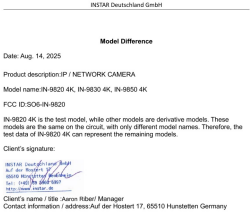
	<p><a href="#">INSTAR IN-8015 IP Camera User Manual and Installation Guide</a></p> <p>Comprehensive user manual and installation guide for the INSTAR IN-8015 IP Network Camera, covering component overview, status LEDs, installation steps, smartphone app usage, remote access, camera reset, and lens adjustment.</p>
	<p><a href="#">INSTAR IN-8815 4K Indoor Camera User Manual</a></p> <p>Comprehensive user manual for the INSTAR IN-8815 4K Indoor Camera, detailing features, installation, operation, and technical specifications. Learn about its Sony STARVIS 8MP sensor, HTML5 web interface, cloud storage, and connectivity options.</p>
	<p><a href="#">Reolink Argus 3 Ultra 4K 8MP Smart Battery/Solar Powered WiFi Camera - Specifications &amp; Features</a></p> <p>Detailed specifications and features for the Reolink Argus 3 Ultra, a 4K 8MP smart camera with battery/solar power, dual-band WiFi, color night vision, and advanced detection capabilities.</p>
	<p><a href="#">VIKVIZ PTZ IP Camera: Web Interface and PTZ Function Guide</a></p> <p>This guide explains how to access the VIKVIZ PTZ IP camera's web interface, log in, and utilize its Pan-Tilt-Zoom (PTZ) functions, including setting guard positions and enabling auto-tracking. It also provides a comprehensive table of PTZ commands.</p>



[pdf] User Manual

IN 9820 4K Außenkamera Mar 19 2025 — Ermöglicht die Anbindung an Amazon Echo Alexa IFTTT  
Smarthome Geräte This user manual is a printed version Therefore it represents the QuickInstallation  
2160p 9820QFHD wiki instar dl |||

Bedienungsanleitung **IN-9820 4K** Auenkamera [www.instar.com](http://www.instar.com) - Sony STARVIS 8MP  
QFHD-Bildsensor - Benutzerfreundliche und moderne HTML5-Weboberfläche Web-UI  
- Unterstützt alle modernen Webbrowser Edge, Firefox, Chrome, Safari, etc. -  
Unterstützt microSD max 1024GB / 1TB fr Alarm- und manuelle Aufnahm...  
lang:de **score:34** filesize: 1.69 M page\_count: 40 document date: 2025-03-18



[pdf]

tom Model DifferenceINSTAR Deutschland GmbH IN 9820 IP NETWORK CAMERA SO6 SO6IN9820 in  
9820

INSTAR Deutschland GmbH Date: Aug. 14, 2025 Model Difference Product  
description:IP / NETWORK CAMERA Model name:**IN-9820 4K**, IN-9830 4K, IN-9850  
4K FCC ID:SO6-IN-9820 **IN-9820 4K** is the test model, while other models are  
derivative models. These models are the same on the circuit, with only differe...  
lang:nl **score:29** filesize: 89.12 K page\_count: 1 document date: 2025-08-15


Size: 30mm\*40mm



[pdf] Label

20250418 lable 9420 4mp label and locationINSTAR Deutschland GmbH IN 9820 IP NETWORK  
CAMERA SO6 SO6IN9820 in 9820

Size: 30mm\*40mm IP / NETWORK CAMERA Modell Nr:**IN-9820 4K** 12VDC - 2A  
P2P UID: INSTAR-000001-ABCDEF FCC ID: SO6-IN-9820 SerienNr: 9820XXXXX  
INSTAR Deutschland GmbH Auf Der Hostert 17, 65510 H nstetten, Germany ...  
lang:nl **score:26** filesize: 1.66 M page\_count: 1 document date: 2025-08-15

INSTAR Deutschland GmbH  
Date: 2025-8-14  
Product Model Number:IN-9820 4K, IN-9830 4K, IN-9850 4K  
FCC ID:SO6-IN-9820  
To whom it may concern,  
Re: Product Certification Representative Authorization Letter  
We authorize QAI Laboratories Ltd. 3980 North Fraser Way, Burnaby B.C. Canada V5J 5K5 to act on our behalf on all matters concerning the above named equipment.  
This shall include the following:  
• Testing  
• Approval applications and procedures  
We declare that QAI Laboratories Ltd. is allowed to forward all information related to the approval project to the applied certification body and to the notification entities and to discuss any issues concerning the approval application. Any and all acts carried out by QAI Laboratories Ltd. on our behalf shall have the same effect as acts of our own.  
By:  
  
Contact Listed on FCC Website  
Title: Manager  
Email: fctsch@femail.com  
Telephone:775-61156511  
On behalf of: INSTAR Deutschland GmbH

[pdf] Agent Authorization

Administrator Agent Authorization Letter TemplateINSTAR Deutschland GmbH IN 9820 IP NETWORK CAMERA SO6 SO6IN9820 in 9820

Date 2025-8-14 INSTAR Deutschland GmbH Product Model Number:IN-9820 4K, IN-9830 4K, IN-9850 4K FCC ID:SO6-IN-9820 To whom it may concern, Re: Product Certification Representative Authorization Letter We authorize QAI Laboratories Ltd. 3980 North Fraser Way, Burnaby B.C. Canada V5J 5K5 to act o...


lang:en score:25 filesize: 117.57 K page\_count: 1 document date: 2025-08-15



[pdf] User Manual

user manualINSTAR Deutschland GmbH IN 9820 IP NETWORK CAMERA SO6 SO6IN9820 in 9820 Bedienungsanleitung IN-9820 4K IP / NETWORK CAMERA Serienmodelle: IN-9821 4K www.instar.com - Sony STARVIS 8MP QFHD-Bildsensor - Benutzerfreundliche und moderne HTML5-Weboberfläche Web-UI - Unterstützt alle modernen Webbrowser Edge, Firefox, Chrome, Safari, etc. - Unterstützt microSD max 1024GB / ...

lang:de score:22 filesize: 1.36 M page\_count: 44 document date: 2025-07-08

INSTAR Deutschland GmbH  
FCC Software Configuration Control Declaration  
Date: Aug. 14, 2025  
Federal Communications Commission  
7435 Oakland Mills Road  
Columbia, MD 21046  
USA  
Attn: OET Dept.  
Product Model Number:IP / NETWORK CAMERA/IN-9820 4K, IN-9830 4K, IN-9850 4K  
Regarding FCC Country Code Selection guidelines identified in KDB 594280.  
\*All applications for equipment authorization for transmitters that can have radio parameters, or other technical parameters, reported to the Commission set by software must have an attestation indicating that no third party will have software, or configuration control, to program the device out of compliance of the technical rules under which it has been certified.  
We declare that no third party will have software, or configuration control, to program the device out of compliance of the technical rules under which it has been certified.  
Name:Aaron Riber Date: Aug. 14, 2025  
Title:Manager  
Signature of applicant:  


[pdf] Decleration of Conformity

emc Software Configuration Control DeclarationINSTAR Deutschland GmbH IN 9820 IP NETWORK CAMERA SO6 SO6IN9820 in 9820

INSTAR Deutschland GmbH FCC Software Configuration Control Declaration Date: Aug. 14, 2025 Federal Communications Commission 7435 Oakland Mills Road Columbia, MD 21046 USA Attn: OET Dept. Product/ Model Number:IP / NETWORK CAMERA/IN-9820 4K, IN-9830 4K, IN-9850 4K Regarding FCC Country Code Selectio...

lang:en score:15 filesize: 215.86 K page\_count: 1 document date: 2025-08-18

**FCC TEST REPORT**  
**FCC ID:SO6-IN-9820**

Report No.: ZHT-250428133W02-1  
Product: IP / NETWORK CAMERA  
Trademark: INSTAR  
Model(s): IN-9820 4K, IN-9820 4K  
Model Difference: IN-9820 4K is the test model, while other models are derivative models. These models are the same on the circuit, with only different model names. Therefore, the test data of IN-9820 4K can represent the remaining models.  
Applicant: INSTAR Deutschland GmbH  
Address: Auf der Heide 17, 65510 Hunsletten Germany  
Manufacturer: INSTAR Deutschland GmbH  
Address: Auf der Heide 17, 65510 Hunsletten Germany  
Prepared by: Guangdong Zhongshan Testing Technology Co., Ltd.  
Address: Room 104201, Building 1, Yibao Industrial Park, Qianhai, Futai Subdistrict, Bao'an District, Shenzhen, Guangdong, China  
Date of Receipt: Apr. 28, 2025  
Date of Test(s): Apr. 28, 2025 to Aug. 18, 2025  
Date of Issue: Aug. 18, 2025  
Test Standard(s): FCC Part 15 Subpart C Section 15.247  
Test procedure: KC8558(14) D01 15.247 Miss Guidance V05r02  
ANSI C63.10:2013

In the configuration tested, the EUT complied with the standards specified above.

Prepared by: Kimi Lu  
Reviewed by: Bao.S.Wu  
Approved by: Leo Lee

Note: The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of ZHT. This document may be altered or revised by ZHT, personnel only, and shall be noted in the revision of the document.

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[pdf] Test Report

Measurement Report Kent Test ReportINSTAR Deutschland GmbH IN 9820 IP NETWORK CAMERA

SO6 SO6IN9820 in 9820

Project No.: ZHT-250428133W02-1 Page 1 of 86 FCC TEST REPORT FCC ID:SO6-IN-9820 Report No..... : ZHT-250428133W02-1 Product.....

: IP / NETWORK CAMERA Trademark..... : INSTAR Model s

..... : **IN-9820 4K** IN-9830 4K, IN-9...

lang:en score:13 filesize: 5.2 M page\_count: 86 document date: 2025-08-18

**FCC TEST REPORT**  
**FCC ID:SO6-IN-9820**

Report No.: ZHT-250428133W02-2  
Product: IP / NETWORK CAMERA  
Trademark: INSTAR  
Model(s): IN-9820 4K, IN-9820 4K  
Model Difference: IN-9820 4K is the test model, while other models are derivative models. These models are the same on the circuit, with only different model names. Therefore, the test data of IN-9820 4K can represent the remaining models.  
Applicant: INSTAR Deutschland GmbH  
Address: Auf der Heide 17, 65510 Hunsletten Germany  
Manufacturer: INSTAR Deutschland GmbH  
Address: Auf der Heide 17, 65510 Hunsletten Germany  
Prepared by: Guangdong Zhongshan Testing Technology Co., Ltd.  
Address: Room 104201, Building 1, Yibao Industrial Park, Qianhai, Futai Subdistrict, Bao'an District, Shenzhen, Guangdong, China  
Date of Receipt: Apr. 28, 2025  
Date of Test(s): Apr. 28, 2025 to Aug. 18, 2025  
Date of Issue: Aug. 18, 2025  
Test Standard(s): FCC Part 15 Subpart E 15.407  
Test procedure: KC8558(14) D01 General LAN Test Procedures New Rules V02r01  
ANSI C63.10:2013

In the configuration tested, the EUT complied with the standards specified above.

Prepared by: Kimi Lu  
Reviewed by: Bao.S.Wu  
Approved by: Leo Lee

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[pdf] Test Report

Measurement Report Kent Test ReportINSTAR Deutschland GmbH IN 9820 IP NETWORK CAMERA

SO6 SO6IN9820 in 9820

Project No.: ZHT-250428133W02-2 Page 1 of 50 FCC TEST REPORT FCC ID:SO6-IN-9820 Report No..... : ZHT-250428133W02-2 Product.....

: IP / NETWORK CAMERA Trademark..... : INSTAR Model s

..... : **IN-9820 4K** IN-9830 4K, I...

lang:en score:11 filesize: 1.19 M page\_count: 50 document date: 2025-08-18