VIVOTEK’s FE9191 and FE9391-EV are the next generation of market-leading 12-Megapixel 360° panomorph network cameras, both featuring a detailed 12-Megapixel CMOS sensor which guarantees superb image quality. Utilizing the latest in panomorph lens technology for 180° panoramic view (wall mount) or 360° surround view (ceiling/wall mount) with zero blind spots, these cameras are able to provide comprehensive coverage of open areas such as airports, shopping malls, parking lots, retail stores, offices and more.

The FE9191 and FE9391-EV (IP66, IK10 rated) are the successors to FE8191 and FE8391-V in the VIVOTEK 360° surround view family. Both new models are equipped with a removable IR-cut filter and WDR Pro technology, allowing the cameras to maintain optimal image quality around the clock for unparalleled visibility under high-contrast lighting environments. 3D Noise Reduction technology enables the cameras to capture clear, polished video under low-light conditions. The FE9191 and FE9391-EV’s use of the latest in panomorph lens technology has led to much improved image quality with a huge drop in edge distortion. The FE9391-EV is also updated with the latest in IR illumination, VIVOTEK’s Smart IR II technology with Adaptive IR. Adaptive IR enables the FE9391-EV’s IR illuminators to adjust to the scene together or individually to provide the best possible IR image, reducing glaring hotspots and/or underexposed dark spots.

The FE9191 and FE9391-EV also now include a new wave of advanced Video Content Analyses (VCA) - Smart VCA, including intrusion detection, crowd detection, and loitering detection. These features are the next steps in elevating surveillance cameras from image capturing devices to advanced notification instruments, allowing users to see more in smarter ways.

**Key Features**

- 12-Megapixel CMOS Sensor
- Real-time H.265, H.264 and MJPEG Compression (Triple Codec)
- 30 fps @ 2816x2816
- 1.29 mm Panomorph Lens for 180° Panoramic View and 360° Surround View
- Removable IR-cut Filter for Day & Night Function
- 360° 20M IR with Smart IR II (FE9391-EV)
- WDR Pro (120dB) to Provide Extreme Visibility in High Light Contrast Scenes
- Panoramic PTZ Function with Speed Dome Camera for Monitoring Detailed Regional View
- Trend Micro IoT Security within Standard Warranty Period
- Smart Motion Detection to Reduce False Alarms
- Smart VCA (Intrusion Detection, Crowd Detection, Loitering Detection)

- ePTZ for Data Efficiency
- Support Client Side Dewarping
- Pixel Calculator for Image Clarity Measurement
- Vandal-proof IK10-rated and Weather-proof IP66-rated Housing (FE9391-EV)
# Technical Specifications

## Model
- FE9191: 12MP 360° Panomorph Camera
- FE9391-EV: 12MP 360° Panomorph Camera, 360° 20M IR, IP66, IK10, EN50155

## System Information
- **CPU**: Multimedia SoC (System-on-Chip)
- **Flash**: 256 MB
- **RAM**: 1 GB

## Camera Features
- **Image Sensor**: 1/1.7" Progressive CMOS in 4000x3000
- **Maximum Resolution**: 2816x2816
- **Lens Type**: Fixed-focal
- **Focal Length**: \( f = 1.29 \text{ mm} \)
- **Aperture**: F2.2
- **Field of View**:
  - 180° (Horizontal)
  - 180° (Vertical)
  - 180° (Diagonal)
- **Shutter Time**: 1/5 sec. to 1/16,000 sec.
- **WDR Technology**: WDR Pro
- **Day/Night**: Removable IR-cut filter for day & night function
- **Minimum Illumination**:
  - 0.18 Lux @ F2.2 (Color)
  - <0.001 Lux @ F2.2 (B/W)
- **Pan/Tilt/Zoom Functionalities**: ePTZ: 12x digital zoom (12x on IE plug-in)
- **Storage**: Seamless Recording to MicroSD/SDHC/SDXC card and recording to network-attached storage (NAS)
- **Built-in Installation Aids**: Pixel calculator

## Video
- **Compression**: H.265, H.264, MJPEG
- **Maximum Frame Rate**: 30 fps @ 2816x2816
- **Maximum Streams**: 4 simultaneous streams
- **S/N Ratio**: 42.9 dB
- **Dynamic Range**: 120 dB
- **Video Streaming**: Adjustable resolution, quality and constant bit rate control, Smart Stream III

## Image Settings
- General settings: video title and time stamp overlay, video orientation (flip, mirror), day/night settings; Illuminators; Illuminators, anti-overexposure; Image settings: white balance, image adjustment (brightness, contrast, saturation, sharpness, gamma curve), defog, 3DNR; Exposure: BLC, exposure control, AE speed adjustment, WDR; Privacy mask; Scheduled profile settings; Pixel calculator

## Display Mode
- **Client Dewarping**: Ceiling mounted: 1O Fisheye, 1P Panoramic, 2P Two Panoramics, 1R One Region, 4R Four Regions, 1O3R One Fisheye Three Regions, 1O6R One Fisheye Eight Regions
  - Wall mounted: 1O Fisheye, 1P Panoramic, 1R One Region, 4R Four Regions, 1P2R One Panoramic Two Regions, 1P3R One Panoramic Three Regions, 1O3R, One Fisheye Three Regions
- **Local Dewarping**: Ceiling mounted: 1O Fisheye, 1P Panoramic, 2P Two Panoramics, 1R One Region, 4R Four Regions
  - Wall mounted: 1O Fisheye, 1P Panoramic, 1R One Region, 4R Four Regions

## Audio
- **Audio Capability**: Two-way Audio (full duplex)
- **Compression**: G.711, G.726
- **Interface**: Built-in microphone
  - External microphone input
  - External line output
- **Effective Range**: 5 meters

## Network
- **Users**: Live viewing for up to 10 clients
- **Security**: Access list, digest authentication, HTTPS, IEEE 802.1X, password protection, signed firmware, Trend Micro IoT Security (brute force attack event, cyberattack event, quarantine event), user access log, user account management
- **Protocols**: 802.1X, ARP, Bonjour, CIFS/SM, DDNS, DHCP, DNS, FTP, HTTP, HTTPS, ICMP, IGMPv3, IPv4, IPv6, NTP, PPPoE, QoS (CoS/DCP), RTP/RTCP, SMTP, SNMP, SSL, TCP/IP, TLS 1.2, UDP, UPnP
- **Interface**: 10 Base-T/100 Base-TX/1000 Base-T Ethernet (RJ-45)
  - It is highly recommended to use standard CAT5e & CAT6 cables which are compliant with the 3P/ETL standard.
- **ONVIF**: Profile G, S, T supported, specification available at www.onvif.org

## Intelligent Video
- **Smart Motion Detection**: Five-window video motion detection, people detection, time filter
- **Smart VCA**: Intrusion detection, loitering detection, line crossing detection, unattended object detection, video motion event, digital input, manual trigger, motion detection, periodical trigger, recording notification, SD card life expectancy, shock detection, system boot
- **VADP Package**: Deep Learning VCA (Smart Motion Detection, Smart VCA), Trend Micro IoT Security (3-year free trial)

## Alarm and Event
- **Event Trigger**: Audio detection, camera tampering detection, cybersecurity events (brute force attack event, cyberattack event, quarantine event), digital input, manual trigger, motion detection, periodical trigger, recording notification, SD card life expectancy, shock detection, system boot
Technical Specifications

Event Action
Event notification via audio clip, digital output, email, HTTP, FTP, NAS server, SD card
File upload via email, HTTP, FTP, NAS server, SD card

General

Connectors
RJ-45 cable connector for 10/100/1000 Mbps PoE network connection
Audio input
Audio output
DC 12V power input
Digital input
Digital output

LED Indicator
System power and status indicator

Power Input
FE9191: PoE 802.3af Class 2, DC 12V
FE9391-EV: PoE 802.3at Class 4, DC 12V

Power Consumption
FE9191: Max. 6.49 W
FE9391-EV: Max. 25 W

Dimensions
FE9191: Ø 139 x 39 mm
FE9391-EV: Ø 160 x 61.7 mm

Weight
FE9191: 345 g
FE9391-EV: 846 g

Certifications
FE9191: EMC: CE (EN55032, EN55024 Class B), FCC (FCC Part 15 Subpart B Class B), RCM (AS/NZS CISPR 32 Class B), VCCI (VCCI-CISPR 32 Class B); Safety: UL (UL 60950-1)

FE9391-EV: EMC: CE (EN55032, EN55024 Class A, EN50121-4, EN50155), FCC (FCC Part 15 Subpart B Class A), RCM (AS/NZS CISPR 32 Class A), VCCI (VCCI-CISPR 32 Class A); Safety: UL (UL 60950-1); Environment: IK10 (IEC 62262), IP66 (IEC 60529)

Operating Temperature
FE9191:
Starting Temperature: 0°C ~ 50°C (32°F ~ 122°F)
Working Temperature: -10°C ~ 50°C (14°F ~ 122°F)

FE9391-EV:
Starting Temperature: -25°C ~ 50°C (-13°F ~ 122°F)
Working Temperature: -40°C ~ 55°C (-40°F ~ 131°F) (IR off)
Working Temperature: -40°C ~ 50°C (-40°F ~ 122°F) (IR on)

Humidity
90%

Warranty
36 months

System Requirements

Operating System
Microsoft Windows 10/8/7
Mac: 10.12 (Chrome only)

Web Browser
Chrome 58.0 or above
Internet Explorer 10/11

Other Players
VLC: 1.1.11 or above

Included Accessories

Packaging Contents
Quick installation guide, alignment sticker, desiccant bag, screw driver, screws pack, mounting bracket, I/O cable
* For USA and Canada markets, the I/O cable is not included.

Dimensions

Mounting Kits

Compatible Accessories

Mounting Kits

AM-114
Pendant Head (Outdoor)

AM-118
Pendant Head (Indoor)

AM-116/AM-117
Pendant pipe (20cm/40cm)

AM-S14
Adapting Plate for 4" Electrical Box & Single Gang Box (for FE9191)

AM-520
Mounting Adapter [3/4" NPT Female Connector & 1-1/2" PS Male Connector]