



ARCHITECTURE  
ENGINEERING  
CONSTRUCTION

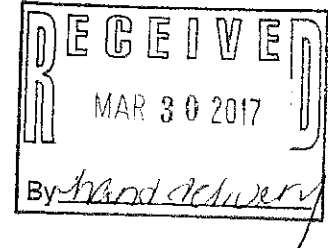
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29 March 2017  
7046-9830

**Via Email (gbrennan@twpunionschools.com) and Mail**

Mr. Gregory E. Brennan  
School Business Administrator/Board Secretary  
Township of Union Public Schools  
2369 Morris Avenue  
Union, NJ 07083



**Re: Proposal for Architectural and Engineering Services  
Security Camera Replacement  
Union High School**

Dear Mr. Brennan:

EI Associates is pleased to submit this proposal to the Township of Union Public Schools to provide professional architectural and engineering services covering the Security Camera Replacement system for the High School. From information gathered during our 21 March 2017 site visit and discussions with Barry Loessel, Director of Building and Grounds, we clearly understand the objectives of the District. We are confident that we are well qualified to execute this project on your behalf. This proposal covers, Phase I Contract Document Phase and Phase II Bidding and Construction Administration Phase Services. Thank you for this opportunity to assist Township of Union Public Schools.

EI Associates has been providing professional design services to the K-12 educational community for over 73 years. We have a highly integrated and professional in-house staff of educational planners, architects and engineers of all disciplines to support all of your facility and program needs. We have successfully completed similar Security Camera Replacement Projects for several school districts including Little Falls, Metuchen and South Orange and Maplewood. In addition, we have installed new fire alarm systems at Summit, Metuchen and Park Ridge schools. Our team is well qualified and we are prepared to commence work promptly on this assignment following receipt of a Board resolution making reference to this proposal.

**PROJECT DESCRIPTION**

The existing Union High School Video Surveillance System has poor video quality including blurred and distorted images, sunlight and fluorescent light glare, cameras that are not capable of accomplishing desired fields of view, over 30 defective cameras not showing any images whatsoever. Operating cameras are consuming an abundant amount of network bandwidth, creating choppy views and lost video.

EIA met with Camera Surveillance System Rep. and Union School Staff to evaluate the existing system and provide an assessment of current video surveillance system before proposing an upgrade, to replace the existing system with the most up-to-date Camera Surveillance System technology. We proposed two options:

**Option #1 Consist of the following:**

- a) Network video recorder NVR recording platform with internal redundant video storage and redundant power supplies.
- b) 360 degree cameras for each hallway intersection. Varifocal lenses on all non-360 degree cameras to adjust field of view for optimal settings.
- c) Replacing all 177 cameras with the most up-to-date technology using existing cabling. (attached please see budgetary cost estimate and equipment cuts).

**Option #2 Consist of the following:**

- a) Network video recorder NVR recording platform with remote cloud storage capability.
- b) Replacing all 177 cameras with most up to date technology using existing cabling.
- d) Redundant offsite video storage for 50 critical cameras, for 60 days of storage (attached please see budgetary cost estimate and equipment cuts).

In a comparison between the two options above, we found that Option #2 will cost about half of Option #1. In addition Option #2 will provide recording and the remote cloud storage capability. In an effort to minimize the construction cost for the work specified above, EIA recommends Union Township replace the Union High School Video Surveillance System in phases, the first phase will be to replace the existing 30 defective cameras and the new Network video recorder NVR.

To assist the District with implementing the Video Surveillance System replacement as described above, we have outlined a 2-phased project approach as follows:

Phase I – Contract Document Phase

Phase II – Bidding and Construction Administration Phase Services

**SCOPE OF PROFESSIONAL SERVICES**

EI Associates proposes to provide professional services as follows:

**Phase I - Contract Document Phase:**

1. Develop detailed design drawings and specifications and review them with the District to obtain comments and suggested changes.
2. As requested by the District, incorporate any additional modifications to our plans and specifications.
3. Prepare a set of 100% complete Contract Documents in sufficient detail for competitive bidding of the project.
4. Assist the District to obtain bids from 3 qualified contractors.
5. Provide plans and specifications to the District for submission to the local code official for permits.

**Phase II – Bidding and Construction Administration Phase:**

1. Distribute the bid documents to three potential bidders. Provide necessary clarification. Review contractor bids.
2. Review contractor submittals as specified in the Contract Documents for conformance with the drawings and specifications.
3. Visit the site to observe the progress of work in order to perform technical reviews of the construction, address any technical questions regarding the design and, review the progress of the work and contractor requisitions for payment. EI will prepare a field report for each site visit. We have budgeted a total of three site visits to the school. The number of site visits can be increased or decreased to accommodate the District's needs. Additional site visits will be invoiced in accordance with the enclosed billing rate schedule.
4. With input from the District, EI will review the project construction schedule prepared by the Contractor for compliance with the project schedule.
5. Provide technical support to resolve technical issues in the field, and to clarify the intent of the design and technical specifications. Respond to technical RFI's.
6. Upon receipt of the contractor's punch list, prepare one final punch list.
7. Perform a final technical inspection of the work upon notification by the Contractor that the work is 100% complete.
8. Review project closeout documents and recommend final payment amounts.

Please note that this does not represent that EI personnel will be managing the construction of the project. Full construction management services can be provided by EI, if so desired, for additional compensation.

**SCOPE OF WORK NOTES**

Our proposal is based upon the following assumptions and qualifications:

1. This proposal covers the scope of professional service described above. In the event that substantial deviations from the proposed scope of work described occur or that client-oriented revisions requiring engineering redesign occur, additional engineering fees may be required.
2. The design will be primarily based on the existing information available (drawings, audits, etc.) and visual data collected during our on-site visits. Our on-site investigation will be limited to information visible without destructive testing and/or exploratory measures. These services, if required, will be provided and paid for by the Township of Union Public Schools or can be provided by EI as an additional service for an additional fee as authorized by the District.
3. EI's scope of work and fee does not include design for or remediation of hazardous materials, such as asbestos. Mitigation of hazardous materials is the exclusive responsibility of the Township of Union Public Schools.
4. The contract for construction is between the District and the contractor. EI Associates and our representatives are not responsible for, nor have authority or control over, construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work as this is the sole responsibility of the contractor(s) performing the work.

5. EI Associates services cover one bidding cycle and award of the Video Surveillance System, I scope of work to a single general contractor. Multiple bid cycles and bid packages can be provided as an additional service for an additional fee if required.
6. EI's compensation proposal cover the following project expenses:
  - Travel to and from Township of Union Public Schools.
  - Reproduction costs for internal and District review sets of prints. Submittal plus two sets of plans for District use.
  - Miscellaneous copies and distribution of meeting minutes, etc., one copy per organization.
  - Normal correspondence and telephone communications.
  - Delivery of all the above documents will be via normal mail services. Overnight and express delivery will be provided at an additional charge.
7. Printing and distribution of documents for bidding are reimbursable expenses and are in addition to the stipulated sum. These expenses will be invoiced in accordance with the enclosed schedule of Charges for Reimbursable Expenses for Design Projects.
8. This proposal assumes EI Associates will assist the district to obtain 3 competitive bids from qualified contractors. Public Bidding Services are not covered.
9. EI Associates construction phase services described above will be provided for the anticipated eight consecutive week construction duration. Should the duration of construction extend beyond the anticipated 8 consecutive weeks, or project closeout extends beyond an additional 60 days, EI Associates construction phase services will be provided during the extended duration as an additional service for an additional fee as authorized by the Township of Union Public Schools.

### **COMPENSATION**

EI Associates proposes to provide professional services as described above in accordance with the following fee schedule:

#### **Phase I – Contract Document Phase**

The lump sum fee of Twelve Thousand Nine Hundred (\$12,900) Dollars

#### **Phase II – Bidding and Construction Administration Phase Services**

The lump sum fee of Seven Thousand Five Hundred (\$7,500) Dollars

Additional Project related expenses covering mail, printing and reproduction costs will be invoiced in accordance with the attached EI Charges for Reimbursable Expenses schedule. Invoices will be submitted monthly and will be due and payable within 30 days. The enclosed Business Terms shall apply to this project.

Our staff is available to commence work on this assignment promptly following receipt of a Board Resolution making reference to this proposal. Should you require any additional information, please contact us and we will respond promptly.

29 March 2017

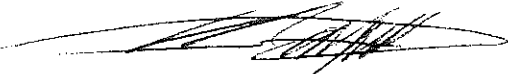
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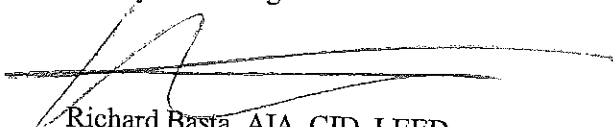
Thank you for this opportunity to assist the Township of Union Public Schools.

Very truly yours,

EI ASSOCIATES  
Architects &  
Engineers, PA



Ralph Nashed, AIA<sub>Assoc.</sub>  
Sr. Project Manager



Richard Basta, AIA, CID, LEED  
Sr. Vice President - Design

Encl. Budgetary Cost Estimate  
Reimbursable Rate Sheet  
Business Terms

Cc: EI Distribution

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**EI**  
ASSOCIATES

**EI ASSOCIATES**  
**BUSINESS TERMS FOR DESIGN PROJECTS**

1. **CONFIDENTIALITY**  
This proposal is for the use of the addressee only and may not be duplicated nor made available to any third party.
2. **PROPOSAL DURATION**  
Proposals presented by EI will remain effective for a period of 30 days. EI is always willing to discuss a mutually agreeable time extension.
3. **DELAYS**  
Should any project be delayed by no fault of EI Associates, then there shall be an equitable fee adjustment to cover EI Associate's unanticipated extra costs.
4. **INVOICES**
  - a. **Invoices submitted monthly will be due and payable within 30 days.**
  - b. Any invoices not paid within 30 days of receipt, will be subject to interest charged at 1-1/2% per month of the unpaid balance.
  - c. If payments are not received within 60 days of receipt, our fee will be increased by 2%. In addition, EI Associates also reserves the right to suspend services under the contract and EI Associates will not be held responsible for resulting damages. The client will be responsible for the additional costs to demobilize and remobilize.
5. **LIMITATIONS OF LIABILITY**  
EI Associates and its consultants will not be responsible for the correctness or accuracy of any information supplied by parties other than EI and its consultants. The aggregate EI Associates liability for damages resulting from its errors, omissions, or other causes, shall not be in excess of its fee. EI shall not render services relating to asbestos. Owner shall indemnify EI against all liability for damages arising out of handling of asbestos and any other hazardous materials.
6. **MUTUAL COVENANT**  
EI and its clients mutually agree not to offer or accept for employment the employees of the other party for a period of six (6) months after completion of any assignment. Should either party hire employees of the other party, the hiring employer will pay the other party, a sum equal to one year's total compensation of the employee who is changing employer.
7. **OWNERSHIP OF DOCUMENTS**  
Owner agrees not to reuse documentation prepared by EI Associates beyond the agreed upon scope of work without the written consent of EI Associates.
8. **EXPERT WITNESS TESTIMONY**  
EI Associates will provide expert witness testimony services at the rate of \$800 per half day and \$1,400 per full day, plus reimbursable expenses as outlined above.

**EI ASSOCIATES**  
**CHARGES FOR REIMBURSABLE EXPENSES**

Expenses incurred in the interest of the project are charged at the following rates, or if not shown, at cost plus 15%.

1. Reproduction expenses as follows:

Digital Bond First Copy – 30 x 42	\$7.98 each
Digital Bond Print – 30 x 42	\$3.50 each
Digital Bond First Copy – 24 x 36	\$5.35 each
Digital Bond Print – 24 x 36	\$2.50 each
Photocopy – 8.5 x 11	\$0.18 per sheet
Photocopy – 11 x 17	\$0.35 per sheet
Color Copy – 8.5 x 11	\$2.00 each
Color Copy – 11 x 17	\$3.00 each
CAD Color Plot – 30 x 42	\$27.00 each
CAD Color Plot – 24 x 36	\$18.00 each
CAD Check Plot – 8.5 x 11	\$2.50 per plot
CAD Check Plot – 11 x 17	\$2.75 per plot
CAD Check Plot – 15 x 21	\$3.00 per plot
Staple Prints	\$1.50 per set
Wire or GBC Punch & Bind	\$11.55 set
Acco Punch & Bind	\$8.60 per set
Acetate 8.5 x 11	\$0.75 each
Scan to Disc	\$18.00 per dwg.

2. Downward conversion of latest version of AutoCAD to earlier version @ \$75 per drawing. Retrieval of archived information: base fee \$250.
3. Bind, purge, audit and publish AutoCAD files @ \$25 per drawing.
4. Fax at \$.50 per Page.
5. Automobile travel at \$.54 per mile. Travel involving airplanes, rental cars, hotels, etc. at cost + 15%.
6. Messenger and overnight delivery charges at cost + 15%.
7. Subconsultants such as geotechnical, surveying, asbestos remediation, and specialty consultants at cost + 25%.

## Union High School Video Surveillance System

### OPTION #1

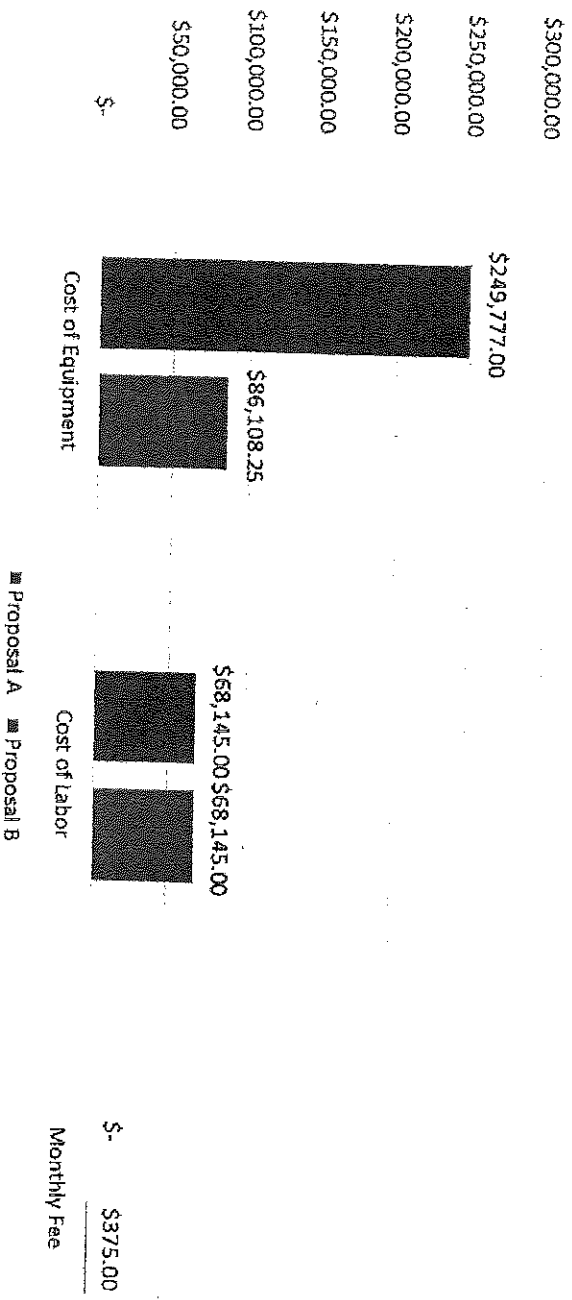
Proposal A For Union High School									
Part Number	Description	List Price	Applicable Discount	Customer Price	Quantity	Extended Price	Quantity	Extended Price	
HNMP E48B486S	48CH NVR, 8X6 TB SAS HARD DRIVE, 8D, RAID-5	\$ 42,805.00	25%	\$ 32,103.75	4	\$ 128,415.00			
HFD6GR1	6 Megapixel Indoor/Outdoor Fisheye IR IP Camera	\$ 995.00	25%	\$ 746.25	100	\$ 74,625.00			
H3W2GR1	Indoor 2MP WDR Dome Camera IR 2.7-12mm MFZ	\$ 748.00	25%	\$ 561.00	57	\$ 31,977.00			
HBW2GR3	Outdoor 2MP WDR Bullet Camera IR 5-50mm MFZ	\$ 949.00	25%	\$ 711.75	20	\$ 14,235.00			
HBG-BB	Backbox for HBW2GR3	\$ 35.00	25%	\$ 26.25	20	\$ 525.00			
Labor	Installation, Configuration & Training				20	\$ 68,145.00			
<b>Total</b>						<b>\$ 317,922.00</b>			

### OPTION #2

Proposal B For Union High School									
Part Number	Description	List Price	Applicable Discount	Customer Price	Quantity	Extended Price	Quantity	Extended Price	
HEN16162	16CH NVR Built-in PoE 6TB Cloud Ready	\$ 1,399.00	25%	\$ 1,049.25	12	\$ 12,591.00			
HAW4PRV2	4 MP WDR, IR Mini Dome 2.7-12mm MFZ	\$ 499.00	25%	\$ 374.25	157	\$ 58,757.25			
HBW2GR3	Outdoor 2MP WDR Bullet Camera IR 5-50mm MFZ	\$ 949.00	25%	\$ 711.75	20	\$ 14,235.00			
HBG-BB	Backbox for HBW2GR3	\$ 35.00	25%	\$ 26.25	20	\$ 525.00			
OCS-60	Offsite Cloud Storage for 60 days/Monthly Fee	\$ 10.00	25%	\$ 7.50	50	\$ 375.00			Monthly Fee
Labor	Installation, Configuration & Training					\$ 68,145.00			
<b>Total</b>						<b>\$ 154,628.25</b>			



# Comparative



# Honeywell | MAXPRO® NVR Series

## MAXPRO® NVR PE (Professional Edition)

### 32/48/64-Channel Enterprise Network Video Recorder (NVR)

Honeywell's MAXPRO NVR PE is an open, flexible and scalable Enterprise IP video surveillance system. Utilizing Honeywell's high definition cameras, MAXPRO NVR PE is a powerful, high definition IP recording system with support for standards, remote viewing clients for enterprise installations.

#### Open – Broad Device Integrations

- Integrates to full line of Honeywell IP cameras and HVE encoders
- Support for ONVIF Profile S, PSIA, real time streaming protocol (RTSP) standards
- Native device integrations including 360° camera support

#### Easy to Install and Use - Turnkey Solution

- Pre-installed with all required software and pre-licensed for 32, 48 or 64 channels with no extra channel license costs
- Easy 3-Click\* wizard to live video for auto configuration - quick and efficient IP system install
- Simple and logical configuration pages make setup a breeze even for the novice installer
- Supports simultaneous recording, live monitoring, search and system management for up to 64 IP cameras including high definition formats with easy to use clients
- Easy to use desktop clients, web client and mobile apps
- Learn One, Know them All - Common feature-rich user experience across the MAXPRO NVR Family and MAXPRO VMS / Viewer provides familiarity across a broad range of Honeywell products saving training costs

\*With default settings and in a local area network for specific models

#### Scalable Integrated Security Solution

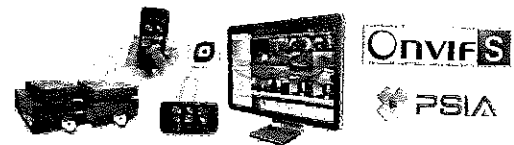
- Multiple MAXPRO NVRs deployed for system expansion using a distributed architecture and integrated with the MAXPRO Viewer multi-site software or MAXPRO VMS enterprise video management system

## MARKET OPPORTUNITIES

The continual growth of IP networks and the demand for high definition video have led to the need for convergence of building security systems and IT systems for many companies across the globe. This has resulted in a strong demand for an all-IP end-to-end enterprise security system deployment. MAXPRO NVR PE provides an open, flexible and scalable system with operational power to address the needs of a wide variety of enterprise applications. The 2U rack mount small form factor, high performance, and reliability of the MAXPRO NVR PE unit makes it an ideal solution in installations where digital video is mission critical.



MAXPRO NVR PE **HD**  
Rev B Server



- Integration with Honeywell WIN-PAK® and Pro-Watch® Access Control Systems providing an integrated Access Control, Intrusion and Video solution

#### Enterprise class NVR Hardware

- Provides the processor and RAID enclosure in one chassis, resulting in both space and cost savings
- RAID 5 and 6 support for video storage is available through a hardware-based RAID controller, removes the loading on the processor that software RAID can bring
- Convenient web browser interface to manage the RAID controller
- Rack mountable with dual redundant power supplies and mirrored 2.5" operating and application solid state drives (SSDs) for high availability
- 8 removable storage drives with more reliable and robust SAS hard drives used for video storage
- Dual 1 GB NICs are optimized to separate record and viewing data to ensure 100% recording and smooth playback even with multiple client connections

# MAXPRO® NVR PE (Professional Edition)

32/48/64-Channel Enterprise Network Video Recorder (NVR)

## FEATURES

### Software

#### Multi-Platform Support

- Allows local or remote operations including live and recorded video monitoring, configuration and system management in a single desktop client interface.
- Support for Web Client on Windows PC (Internet Explorer, Chrome and Firefox browsers) and Mac (Safari browser). Supports live, playback/search of recorded video for up to 1080p resolution on all cameras, taking snapshots and viewing presets for PTZ cameras.
- Support for mobile monitoring clients on iOS and Android Phones and Tablets with MAXPRO NVR apps: Login securely with https communication, Create favorite salvos (cameras up to 3x3 on tablets and 2x4 on phones per salvo), View Live and Recorded Video, Perform PTZ control through Presets and Monitor & Manage Alarms

#### Enhanced Monitoring with Desktop clients

- Multi-zoom views on HD video and support for Profile cameras to create virtual cameras by digitally zooming into the field of view. Example: Zoom in on a cash register in one view of the HD camera while at the same time monitoring the cash operator in the zoom out view of the HD camera
- Ability to investigate events and alarms by simultaneously viewing alarm videos at various stages. For every alarm, users can view the video captured during pre-alarm, on-alarm, and post-alarm, and also view live video from the camera which triggered the alarm.
- Enriched video viewing experience through the intuitive video rendering engine that optimizes CPU utilization by altering the video frame rate
- Cost-effective enhanced HD video rendering on remote desktop clients with support for monitoring of up to 18 1080p HD cameras in real time (30 fps)/540 fps 1080p HD with no-time lapse using the GPU capabilities of in-built processor graphics with 4th generation Intel® Core™ Processors for client systems. Up to 4 1080p HD @ 30 fps/120 fps on local client
- Video Surround feature simplifies the process of tracking subjects through a set of surrounding cameras
- Create, save and name salvos under My Salvos or Shared Salvos. Support for aspect ratio - 16:9, 4:3 and Stretched for video salvos
- IP PTZ control and digital zoom on fixed cameras. 360° immersive viewing experience providing heightened situational awareness and increased video surveillance coverage
- Support for auto switching of streams utilized by the client and flexibility to manually override the stream required with multi-stream cameras

#### React Fast and Protect your Assets

- Fast search by date/time, enhanced time line, time jump, bookmarks, SMART Motion search, calendar, preview, film strip view and events. Increase productivity with more efficient search/investigation: Get to the relevant video in few clicks without having to review hours of recordings.
- SMART Motion search - Fast and efficient forensic search and investigation for objects/motion on recorded video using Honeywell SMART motion detection Analytics algorithms on the Client PC without impacting the NVR Server load
- Capture and export clips and still images in simple .wmv, .asf, .mpvc and .bmp formats. Clips (.wmv) signed with digital signature for authentication.
- MAXPRO Video Container (.mpvc) format support - only playable in MAXPRO desktop clients and standalone Clip Player, quicker exports of raw video and support for estimating clip size and split to multiple clips to ensure clip storage media matches, include clip player with exported clip for easier review of video evidence and efficient investigation
- Clip Player - Portable standard secure player for archived and exported clips (\*.mpvc), 360 camera de-warping and 2x2 Salvo support, Smooth playback support with up to 256x review speed, No software installation required to run on a Windows PC, option to include with clip export
- Email notification on camera, system and operator events.

#### Enhanced Recording Engine

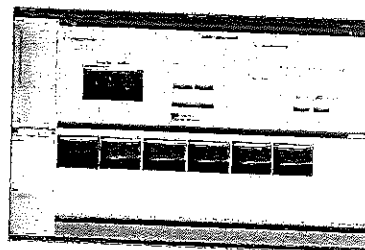
- Separate event video, continuous recording and archived video retention times
- Flexible Motion detection (VMD) options with Server (SMART VMD) or Camera based motion events support. Reduced false alarms with object based motion detection analytics with SMART VMD
- Video Archival - Archive large amounts of recorded Video data for long term storage either scheduled or manually, review through NVR desktop client or standalone Clip Player
- Multi-stream support - Support multiple streams from camera for varying resolutions and frame rates for live, recording, low bandwidth desktop clients, web clients and mobile apps
- Single channel license\* for Encoders and Multi-imager 360 cameras (\* - Max system capacity of 64 channels)

#### More Great Software Features

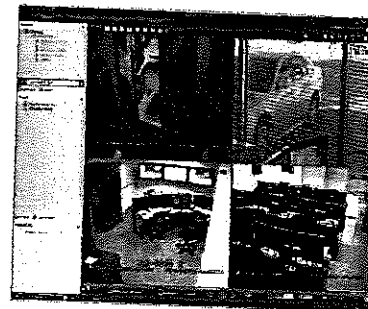
- Easy to use and enhanced camera configuration & discovery workflow - Reduce over configuration using NVR System Load and Storage Calculator and ensure the system is configured to meet requirements for retention and reliability
- Status Monitor - Save operational costs with an integrated Dashboard to easily monitor the health and recording status of all the MAXPRO NVRs from any workstation or PC in the network
- Role-based operator privileges supporting Windows and local users.
- Advanced security features with encryption support for communication between desktop client to NVR and secure https login for Web Client and Mobile apps
- Keyboard control with UltraKey Plus and UltraKey Lite over Ethernet
- Event history and operator log reporting with export in .pdf, Crystal Reports, Excel or Word
- Local and multi-language support



6 Split



SMART Motion Search



Quad

# MAXPRO® NVR PE (Professional Edition)

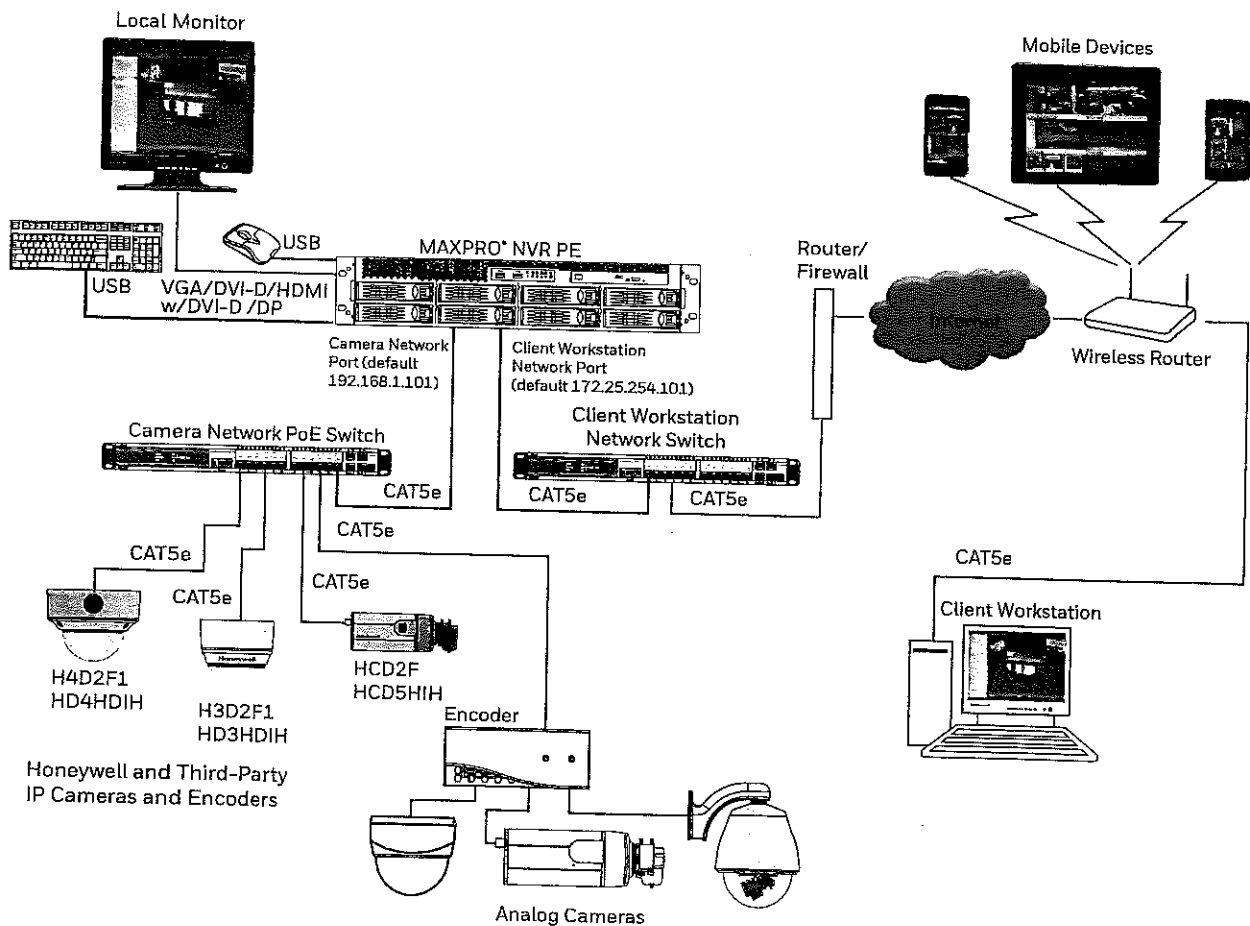
32/48/64-Channel Enterprise Network Video Recorder (NVR)

## FEATURES

### Hardware

- Record and monitor up to 64 channels at 1920 fps @ 4CIF/VGA or 1920 fps @ 720p HD or 1920 fps @ 1080p (4 Mbps bitrate) HD per MAXPRO NVR PE. Network bandwidth/throughput supported per NVR with Incoming: 256 Mbps, Outgoing: 425 Mbps; Total: 681 Mbps.
- Archival support of 25 channels @ 4 Mbps bitrate each / 100 Mbps total archival throughput capacity per MAXPRO NVR PE, with outgoing archival storage throughput of 275 Mbps
- Multi-stream support with maximum 128 streams per MAXPRO NVR PE. Support for configuring 1 preferred stream for continuous recording and 1 preferred stream for live video / motion based recording per camera
- Supports One-Way Audio (for specific IP cameras) with live, playback and clip export on desktop clients for up to 64 IP channels.
- Includes dual 1 GB NICs optimized to separate record and viewing data to ensure 100% recording and smooth playback even with multiple client connections.
- Redundant power supplies and separate RAID 1 Operating System 2.5" solid state drives (SSDs) from storage drives.
- 8 x RAID 5/6 removable storage drives
- Reliable and robust SAS hard drive options (1 TB, 2 TB, 3 TB, 4 TB, 6 TB hard drives) providing raw storage capacities up to 48 TB.
- Includes HDMI w/ DVI-D to HDMI adapter or VGA or DVI-D or Display port for single monitor support for local client and rendering performance using GPU of up to 4 1080p HD @ 30 fps/120 fps on local client
- 2U rack mount form factor with optional locking front bezel. Rack rails included for use with four post racking systems.

## SYSTEM DIAGRAM



# MAXPRO® NVR PE (Professional Edition)

32/48/64-Channel Enterprise Network Video Recorder (NVR)

## SPECIFICATIONS

### OPERATIONAL

#### MAXPRO NVR SOFTWARE - VERSION 4.0 OR ABOVE

DATABASE	Microsoft® SQL Server® 2012 Express
OPERATING SYSTEM	Windows Embedded Standard 7 SP1, 64-bit
IMAGE COMPRESSIONS SUPPORTED	MJPEG, MPEG-4, H.264
SUPPORTED HONEYWELL IP CAMERAS AND ENCODERS	Supports Performance Series IP, eQIP® Series cameras. Refer to <a href="http://www.security.honeywell.com/hota/compatibility/index.html">www.security.honeywell.com/hota/compatibility/index.html</a>
SUPPORTED THIRD PARTY IP CAMERAS AND ENCODERS	Refer to the MAXPRO® NVR Compatibility for a comprehensive list of compatible products to which this device is integrated. <a href="http://www.security.honeywell.com/hota/compatibility/index.html">www.security.honeywell.com/hota/compatibility/index.html</a>
AUDIO SUPPORT	1-way audio for specific IP camera models. Refer to <a href="http://www.security.honeywell.com/hota/compatibility/index.html">www.security.honeywell.com/hota/compatibility/index.html</a>
MAXIMUM NUMBER OF DESKTOP CLIENT CONNECTIONS	Desktop Client - 38 per unit from 19 remote workstations + 1 local on NVR
SALVO LAYOUTS	Desktop Client - Full, 2x2, 1x5, 3x3, 2x8, 1x12, 4x4. Web Client - 2x2, 1x1, 1x2, 1x3. Mobile app (Phone) - 2x2, 2x4, 1x2, 1x1. Mobile app (Tablet) - 3x3, 2x2, 1x1.
PICTURE CONTROLS PER CAMERA	Sharpness, blur, brightness, contrast, hue, saturation, maintain aspect ratio, stretched, original size and picture mirror
OSD	Concealed text option
PLAYBACK CONTROLS PER CAMERA - DESKTOP CLIENT	FWD/REV Play x (1, 2, 4, 8, 16) Slow FWD/REV Play x (1/2, 1/4, 1/8)
SEARCH TYPES	Time/date timeline, time jump FWD/REV, bookmarks, calendar, preview, film strip, event search and SMART Motion Search
RECORDING SCHEDULE	Constant and event based with H/M/D and holiday and exception days
RECORDING METHODS PER CAMERA	Constant, event based and user activated
LIVE SETTINGS PER CAMERA	Compression format, resolution and frame rate
RECORD SETTINGS PER CAMERA	Same as live or reduced frame rate
CLIP FORMAT	Honeywell MPVC playable with standalone MAXPRO Clip Player for faster and secure exports. WMV with digital certificate for authentication playable with Windows media player. ASF for faster exporting of longer than an hour backup clips in native compression format.
VIDEO CLIP AUTHENTICATION	Digital signature, verification tool provided
MOTION DETECTION LOCATION	Camera based for supported models or Server based (SMART VMD) for all models (except 360 fisheye/panomorph views)
EVENT RECORDING	Pre and post duration setting
OPERATOR REPORTING	Per user, configurator, session and viewer
EVENT REPORT	Per camera or recorder events
OPERATORS	1024

### OPERATIONAL

#### MAXPRO NVR PE HARDWARE

PROCESSOR	Intel® Core™ i7-4790, 3.6 GHz, Intel® HD Graphics 4600
MEMORY	8 GB
POWER SUPPLY	Dual Redundant 820 W
OS HARD DRIVE	2x 2.5" 128 GB SSD, RAID1
STORAGE CAPACITIES	4 TB to 48 TB raw storage
STORAGE HARD DRIVE OPTIONS	8 field upgradable 1 TB or 2 TB or 3 TB or 4TB or 6TB SAS hard drive options
OPTICAL	22x DVD-RW
NETWORK	Dual 1 Gigabit Ethernet
CHASSIS WITH LOCKING BEZEL	2U 8 bay including rack mount kit
RAID CARD	6 GB/s SAS/SATA RAID Card, PCI Express x8, supports RAID levels up to 6+0
<b>REAR PANEL CONNECTIONS</b>	
MOUSE AND KEYBOARD	2x USB
USB	2x Front, 4x Back
NETWORK	2x RJ45
MONITOR OUTPUT	HDMI cw DVI-D to HDMI adapter or VGA or DVI-D or Display port
<b>ELECTRICAL</b>	
INPUT VOLTAGE	110/220 VAC 50/60 Hz
OPERATING VOLTAGE	110V/220V Auto Sensing
POWER DISSIPATION	Average BTU rating = 880 BTU/HR Peak BTU rating = 2800 BTU/HR
<b>MECHANICAL</b>	
CONSTRUCTION	Chassis: Black matte paint
DIMENSIONS (W X H X D)	16.9" x 3.5" x 26" 430 mm x 88.8 mm x 660 mm
WEIGHT	Shipping: 65 lbs / 29.5kg
<b>ENVIRONMENTAL</b>	
TEMPERATURE OPERATING	32°F to 95°F (0°C to 35°C)
RELATIVE HUMIDITY	5-95% non-condensing
<b>REGULATORY</b>	
EMISSIONS	FCC part 15B Class A; EN 55022 class A
IMMUNITY	EN 50130-4
SAFETY	ANSI / UL 60950-1, CAN/CSA C22.2 No 60950-1, IEC 60950-1
ROHS	EN 50581
COUNTRY OF ORIGIN	Assembled in the USA
<b>WARRANTY</b>	
WARRANTY AND ADVANCED REPLACEMENTS	Refer to: <a href="http://www.honeywellvideo.com/support/warranty/index.html">http://www.honeywellvideo.com/support/warranty/index.html</a>

### RECORDING AND MONITORING PERFORMANCE

#### MAX VIDEO STREAMS SUPPORT

#### SERVER BASED VMD (SMART VMD) PERFORMANCE - CHANNELS SUPPORTED

#### ARCHIVAL PERFORMANCE

#### MULTI-STREAM PERFORMANCE

1920 fps @ 4CIF/VGA or 1920 fps @ 720p HD or 1920 fps @ 1080p (4 Mbps bitrate) HD. 1-way audio for up to 64 IP channels. Network bandwidth/throughput - incoming: 256 Mbps, Outgoing: 425 Mbps, Total: 681 Mbps. Rendering performance using GPU of up to 4 1080p HD @ 30 fps/120 fps on local client. Note: OnCam Grandeye 360 Cameras are not supported with GPU rendering and use CPU rendering by default.

Web Client: Live - 64 streams, Playback - 32 streams. Note: Live streams consumed are per camera being viewed live and duplicate live views of the same camera in multiple or same web client instance are allowed without consuming additional streams. Playback streams consumed are per playback stream being viewed and each playback stream being viewed consumes 1 additional stream. Desktop Client: Live - 256 streams, Playback/Video retrieval sessions - 32. Sync playback - 9 streams. 256 live streams limit excludes 1 stream used per camera if SMART VMD is enabled. Maximum live streams per camera is 1.5 with SMART VMD enabled. Mobile App: 16 streams of 1080p HD @ 5 fps each. Note: During archival operations, maximum no of playback streams recommended from Desktop Client and Web Client is 16 streams.

Channels at max fps: 64 ch at 1920 fps @ 4CIF/VGA or 64 ch at 1920 fps @ 720p or 64 ch at 1920 fps @ 1080p or total 128 Megapixel. All Channels at fps: 64 ch at 1920 fps @ 4CIF/VGA or 1920 fps @ 720p or 1920 fps @ 1080p or total 128 Megapixel.

25 channels @ 4 Mbps bitrate each / 100 Mbps total archival throughput capacity. Outgoing archival storage throughput of 275 Mbps.

Support for maximum 128 streams. Support for configuring 1 preferred stream for continuous recording and 1 preferred stream for live video / motion based recording per camera.

# MAXPRO® NVR PE (Professional Edition)

32/48/64-Channel Enterprise Network Video Recorder (NVR)

## SPECIFICATIONS

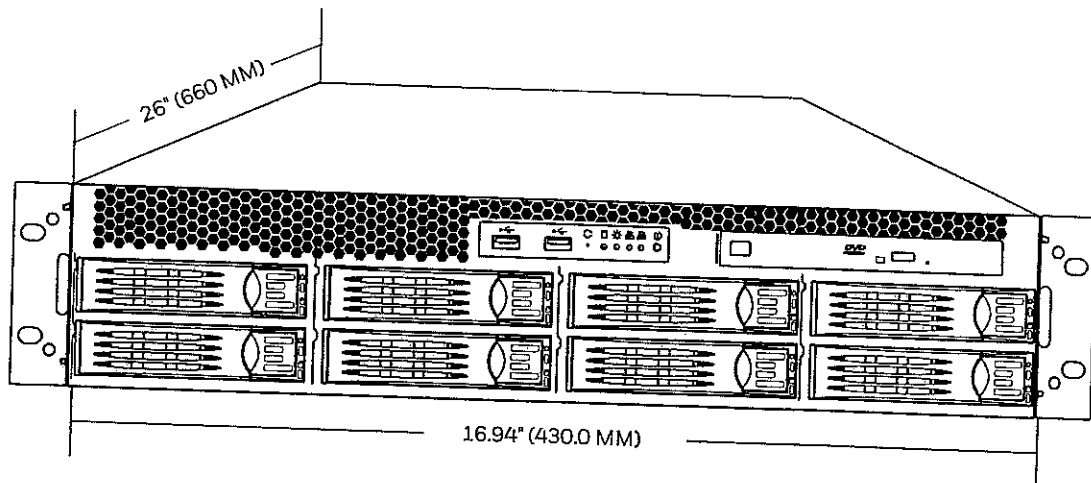
MAXPRO NVR DESKTOP CLIENT ONLY WORKSTATION SPECIFICATIONS			
	With GPU Rendering Capability		Without GPU Rendering Capability
	Minimum	Recommended	Recommended
PERFORMANCE CONFIGURATION	Up to 13 1080p HD Cameras, 1 Monitor (390fps @1080p HD)	Up to 18 1080p HD cameras, 2 Monitors (540fps @1080p HD)	Up to 9 HD Cameras (1 selected panel only, Throttle Frame Rate setting enabled)
PROCESSOR*	Intel® Core™ i5-4460 or equivalent 4th generation Intel® Core™ Processors for client systems	Intel® Core™ i7-4790 or equivalent 4th generation Intel® Core™ Processors for client systems	Intel® Core™ 2 Duo Processor E6750 2.66 GHz or Quad Core Intel® Xeon® E5405 2.0 GHz
GRAPHICS ADAPTER	In-built Processor Graphics (GPU): Intel® HD Graphics 4600 or equivalent		512 MB or higher Display Card (Optional)
SYSTEM MEMORY (RAM)	8 GB		4 GB
OS & APPLICATION - HARD DISK DRIVE OR PARTITION	Minimum 100 GB Partition drive or separate hard drive		
NETWORK INTERFACE	Minimum - 1 Gigabit network interface card		
OPERATING SYSTEM	Microsoft® Windows 7 Professional SP1, Windows 8.1, Windows 10 (64bit)		Microsoft® Windows 7 Professional SP1, Windows 8.1, Windows 10 (64bit/32bit)
OPTICAL DRIVE	DVD-RW		
MONITOR RESOLUTION	Video resolution 1280x1024 pixels, 32 bit		
KEYBOARD/MOUSE	102-key keyboard and mouse		

NOTE: The performance specifications above are recommended for systems with fixed or PTZ cameras only. Oncom Grandeye 360 cameras are not supported with GPU rendering and use CPU rendering by default. On Windows 7 workstations, GPU rendering is only supported through the motherboard monitor outputs and any additional graphics cards should be disabled in BIOS. On Windows 8.1, Windows 10 workstations with Intel GPU and any additional graphics cards, at least one monitor should be connected to the motherboard monitor output.

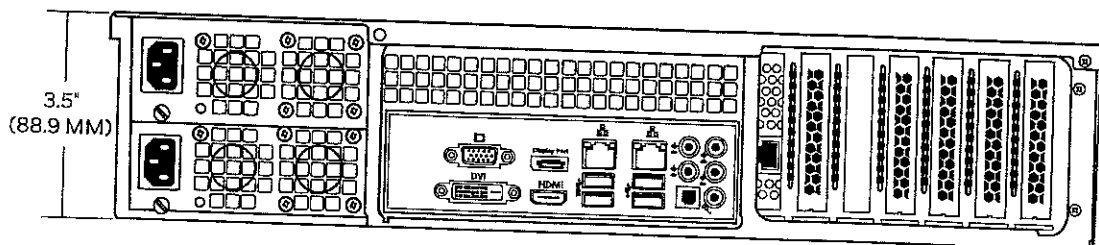
\* - GPU rendering by NVR client is not currently supported on 6th Generation Intel® Core™ processors (Skylake processors) and CPU rendering should be used by uninstalling the GPU driver.

## SPECIFICATIONS

Front View



Rear View



# MAXPRO® NVR PE (Professional Edition)

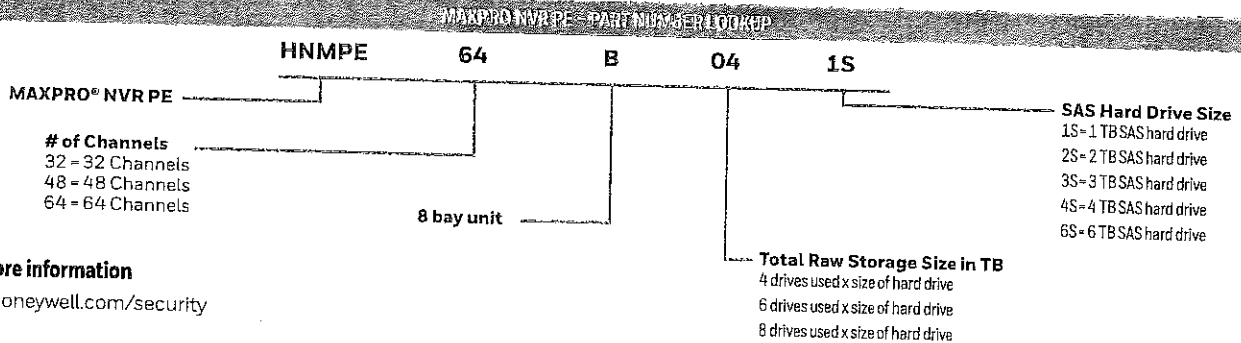
32/48/64-Channel Enterprise Network Video Recorder (NVR)

## ORDERING

MAXPRO NVR PE			MAXPRO NVR PE		
HNMPE32B041S	32CH, 4X1 TB SAS HARD DRIVE, 8D		HNMPE32B243S	32CH, 8X3 TB SAS HARD DRIVE, 8D	
HNMPE48B041S	48CH, 4X1 TB SAS HARD DRIVE, 8D	1.819 TB RAID 6, 2.728 TB @ RAID 5	HNMPE48B243S	48CH, 8X3 TB SAS HARD DRIVE, 8D	16.370 TB RAID 6, 19.099 TB @ RAID 5
HNMPE64B041S	64CH, 4X1 TB SAS HARD DRIVE, 8D		HNMPE64B243S	64CH, 8X3 TB SAS HARD DRIVE, 8D	
HNMPE32B061S	32CH, 6X1 TB SAS HARD DRIVE, 8D		HNMPE32B164S	32CH, 4X4 TB SAS HARD DRIVE, 8D	
HNMPE48B061S	48CH, 6X1 TB SAS HARD DRIVE, 8D	3.638 TB RAID 6, 4.547 TB @ RAID 5	HNMPE48B164S	48CH, 4X4 TB SAS HARD DRIVE, 8D	7.276 TB RAID 6, 10.914 TB @ RAID 5
HNMPE64B061S	64CH, 6X1 TB SAS HARD DRIVE, 8D		HNMPE64B164S	64CH, 4X4 TB SAS HARD DRIVE, 8D	
HNMPE32B081S	32CH, 8X1 TB SAS HARD DRIVE, 8D		HNMPE32B244S	32CH, 6X4 TB SAS HARD DRIVE, 8D	
HNMPE48B081S	48CH, 8X1 TB SAS HARD DRIVE, 8D	5.457 TB RAID 6, 6.366 TB @ RAID 5	HNMPE48B244S	48CH, 6X4 TB SAS HARD DRIVE, 8D	14.552 TB RAID 6, 18.189 TB @ RAID 5
HNMPE64B081S	64CH, 8X1 TB SAS HARD DRIVE, 8D		HNMPE64B244S	64CH, 6X4 TB SAS HARD DRIVE, 8D	
HNMPE32B082S	32CH, 4X2 TB SAS HARD DRIVE, 8D		HNMPE32B324S	32CH, 8X4 TB SAS HARD DRIVE, 8D	
HNMPE48B082S	48CH, 4X2 TB SAS HARD DRIVE, 8D	3.368 TB RAID 6, 5.457 TB @ RAID 5	HNMPE48B324S	48CH, 8X4 TB SAS HARD DRIVE, 8D	21.828 TB RAID 6, 25.466 TB @ RAID 5
HNMPE64B082S	64CH, 4X2 TB SAS HARD DRIVE, 8D		HNMPE64B324S	64CH, 8X4 TB SAS HARD DRIVE, 8D	
HNMPE32B122S	32CH, 6X2 TB SAS HARD DRIVE, 8D		HNMPE32B246S	32CH, 4X6 TB SAS HARD DRIVE, 8D	
HNMPE48B122S	48CH, 6X2 TB SAS HARD DRIVE, 8D	7.276 TB RAID 6, 9.095 TB @ RAID 5	HNMPE48B246S	48CH, 4X6 TB SAS HARD DRIVE, 8D	11.444 TB RAID 6, 17.166 TB @ RAID 5
HNMPE64B122S	64CH, 6X2 TB SAS HARD DRIVE, 8D		HNMPE64B246S	64CH, 4X6 TB SAS HARD DRIVE, 8D	
HNMPE32B162S	32CH, 8X2 TB SAS HARD DRIVE, 8D		HNMPE32B366S	32CH, 6X6 TB SAS HARD DRIVE, 8D	
HNMPE48B162S	48CH, 8X2 TB SAS HARD DRIVE, 8D	10.915 TB RAID 6, 12.734 TB @ RAID 5	HNMPE48B366S	48CH, 6X6 TB SAS HARD DRIVE, 8D	22.888 TB RAID 6, 28.61 TB @ RAID 5
HNMPE64B162S	64CH, 8X2 TB SAS HARD DRIVE, 8D		HNMPE64B366S	64CH, 6X6 TB SAS HARD DRIVE, 8D	
HNMPE32B123S	32CH, 4X3 TB SAS HARD DRIVE, 8D		HNMPE32B486S	32CH, 8X6 TB SAS HARD DRIVE, 8D	
HNMPE48B123S	48CH, 4X3 TB SAS HARD DRIVE, 8D	5.456 TB RAID 6, 8.185 TB @ RAID 5	HNMPE48B486S	48CH, 8X6 TB SAS HARD DRIVE, 8D	34.332 TB RAID 6, 40.054 TB @ RAID 5
HNMPE64B123S	64CH, 4X3 TB SAS HARD DRIVE, 8D		HNMPE64B486S	64CH, 8X6 TB SAS HARD DRIVE, 8D	
HNMPE32B183S	32CH, 6X3 TB SAS HARD DRIVE, 8D				
HNMPE48B183S	48CH, 6X3 TB SAS HARD DRIVE, 8D	10.913 TB RAID 6, 13.642 TB @ RAID 5			
HNMPE64B183S	64CH, 6X3 TB SAS HARD DRIVE, 8D				

ACCESSORIES	
HNMPEBHD1S	1 TB SAS Upgrade Kit, MAXPRO NVR PE Rev B / Hybrid PE Server
HNMPEBHD2S	2 TB SAS Upgrade Kit, MAXPRO NVR PE Rev B / Hybrid PE Server
HNMPEBHD3S	3 TB SAS Upgrade Kit, MAXPRO NVR PE Rev B / Hybrid PE Server
HNMPEBHD4S	4 TB SAS Upgrade Kit, MAXPRO NVR PE Rev B / Hybrid PE Server
HNMPEBHD6S	6 TB SAS Upgrade Kit, MAXPRO NVR PE Rev B / Hybrid PE Server
HNMPEBBZL	Front Locking Bezel, MAXPRO NVR PE Rev B / Hybrid PE Server

MAXPRO NVR PE - CHANNEL UPGRADE LICENSES	
HNM01UP	MAXPRO NVR - 1 Channel License Upgrade to add support for up to 64 Channels per NVR
HNM04UP	MAXPRO NVR - 4 Channel License Upgrade to add support for up to 64 Channels per NVR
HNM08UP	MAXPRO NVR - 8 Channel License Upgrade to add support for up to 64 Channels per NVR
HNM16UP	MAXPRO NVR - 16 Channel License Upgrade to add support for up to 64 Channels per NVR
HNM32UP	MAXPRO NVR - 32 Channel License Upgrade to add support for up to 64 Channels per NVR



For more information  
[www.honeywell.com/security](http://www.honeywell.com/security)

**Honeywell Security and Fire**  
 2700 Blankenbaker Pkwy, Suite 150  
 Louisville, KY 40299  
 1.800.323.4576  
[www.honeywell.com](http://www.honeywell.com)

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**Honeywell**

# Honeywell | equip® Cameras

## 6 Megapixel Indoor/Outdoor Fisheye IR IP Cameras

HFD6GR1

Honeywell is taking quality and reliability to the next level with the new equip® line of fisheye IP cameras. The Honeywell outdoor TDN superior HD IR fisheye cameras offer incomparable picture clarity, an incredibly wide coverage area, hassle-free flexible system integration, and secure data transmission—and they install easily too!

### Superior Image Quality

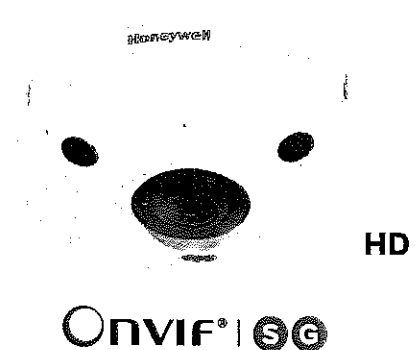
- Full HD 6 megapixel 25/30 fps image with a 1/1.8" 6 megapixel sensor
- Digital WDR (DWDR) ensures glare-free images
- True Day/Night provides vivid color images by day and clear black-and-white images at night using a removable IR cut filter
- Image dewarping makes the fisheye output easy to view and scan for intruders
- Embedded PTZ control within the fisheye video allows users to control the part of the 360° view to focus on
- Excellent low-light performance with 3D noise reduction, saving storage and bandwidth together with H.265 Profile codec

### Flexible Surveillance Solution

- 1.7 mm, F2.0, fixed fisheye lens
- H.265, H.264 and MJPEG codec, triple stream support
- IR LEDs provide up to 25 ft (8 m) of illumination in dimly lit or nighttime scenes (depending on scene reflectance)
- Smart IR technology provides even distribution of IR
- Waterproof (IP67) and IK10 impact-resistant camera housing
- -22°F to 140°F (-30°C to 60°C) working temperature
- ONVIF Profile S and G compliant
- Security features include individual signed certificates and data encryption
- Cameras can be retrofitted on many existing NVR installations without requiring additional storage

### Easy to Install and Use

- Built-in PoE (Power over Ethernet) eliminates separate power supply and associated wiring; 12 V DC inputs where PoE power is unavailable
- Remote configuration through web client or from the NVR
- Included accessories: security screw driver, mounting screws, mounting template, mount adapter, IR led cover, and waterproof joint for network cable



### Onboard Video Storage

Supports up to 128 GB microSDHC (Class 10) card for local video storage when network is interrupted. Card not included.

### Market Opportunities

These fully featured attractive cameras are perfect for outdoor installations that require excellent picture quality at minimal bandwidth while offering maximum protection against dust, dirt, and water. Boasting a sleek modern design and offering the widest angle of view possible, the cameras are suited for a wide range of applications.

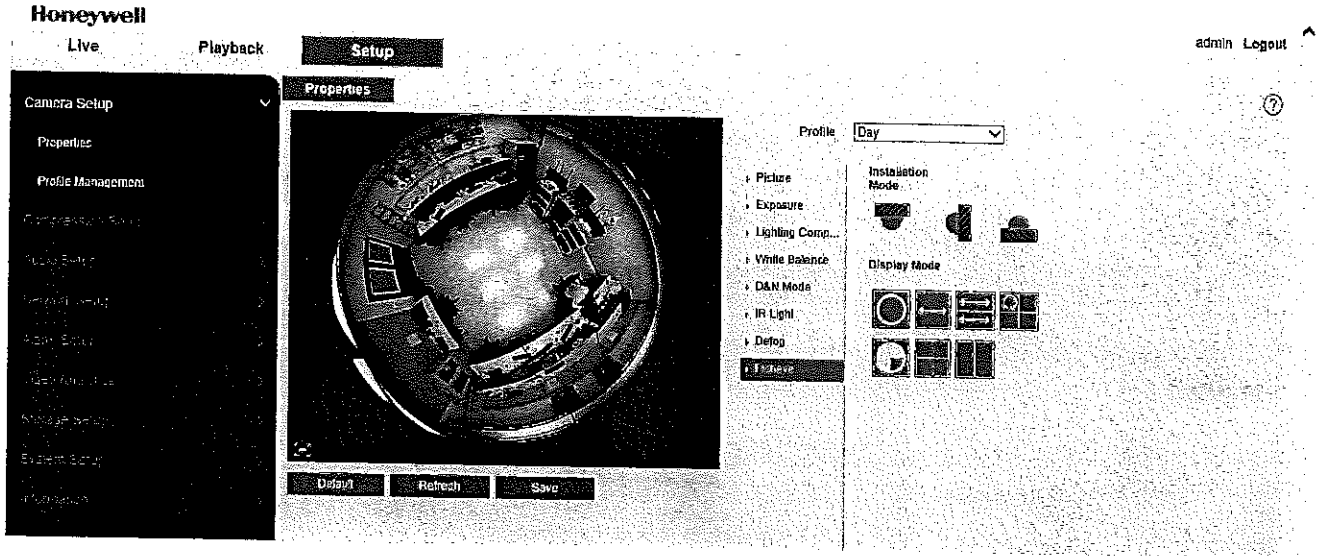
## FEATURES AND BENEFITS

- 1/1.8" 6 megapixel progressive scan imager
- 16x digital zoom
- Digital WDR
- 25/30 fps
- Built-in cybersecurity hardware chipset
- Excellent low-light performance down to 0 lux BW (with IR LEDs on)
- 1.7 mm, F2.0, fixed fisheye lens
- Global language support with 15 languages for all QIGs. Web GUI, and
- Rugged outdoor housing with IP67 ingress protection rating and IK10 impact resistance rating
- Onboard camera storage up to 128 GB microSD card (not included)
- Image dewarping and embedded PTZ













# HFD6GR1 Features

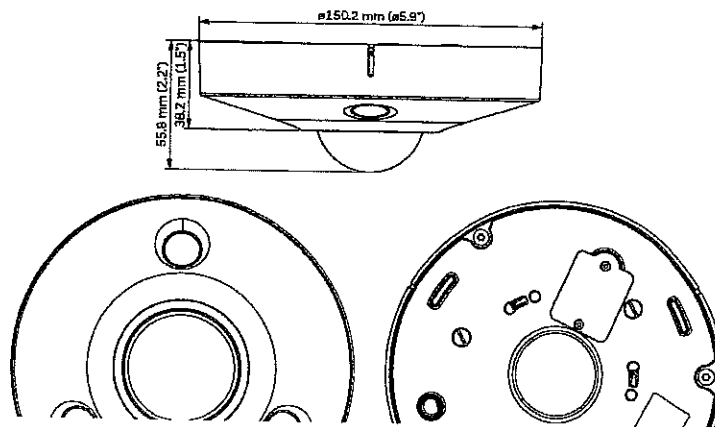
The camera can be configured to automatically detect and respond to events such as motion in the scene, alarm inputs, network failure, and/or camera tampering. Automated responses include: sending a notification through email, FTP, and/or HTTP; sending a still image of the event through email and/or FTP; and recording a video clip of the event to a configured microSDHC card. Setup can be done through the web client.



## Fisheye Display Options and Installation Modes

- |   |  |   |  |
|---|--|---|--|
|  | Ceiling Installation Mode  |  | Double Panorama Image Display Mode (two 180° views in panoramic layouts)     |
|  | Wall Installation Mode   |  | Original 360° Image with Three EPTZ (virtual PTZ) Region Images Display Mode |
|  | Floor Installation Mode  |  | Single Image Display Mode (displays a single view from within the 360° view) |
|  | Original 360° Image Display Mode                                     |  | Four EPTZ Region Images Display Mode   |
|  | Single Panorama Image Display Mode (360° view in a panoramic layout) |  | Two Vertical Panorama Images Display Mode                                    |

## Dimensions



# HFD6GR1 Technical Specifications

## OPERATIONAL

Video Standard	NTSC/PAL
Scanning System	Progressive scan
Image Sensor	1/1.8" 6 MP progressive CMOS
Number of Pixels (H×V)	3072 × 2048
Minimum Illumination	0.01 lux color/0 lux BW with IR LEDs on @ F2.0
S/N Ratio	50 dB
Electronic Shutter Speed	Auto, Manual, 1/3(4)–1/100 000 s
IR Distance	Up to 25 ft (8 m), depending on scene reflectance
IR Light Control	Smart IR/Manual/Off
Day/Night	Auto(ICR)/Color/BW
Backlight Compensation	BLC/HLC/DWDR
Wide Dynamic Range	Digital WDR (DWDR)
White Balance	Auto/Natural/Street Lamp/ Outdoor/Customize Region
Gain Control	Auto/Manual
Noise Reduction	3DNR
Privacy Masking	Up to 4 areas
Corridor Mode	Yes
Focus Mode	Manual
Lens	1.7 mm, fixed fisheye lens; F2.0
Horizontal Angle of View	185°
Audio/Two-Way	Line In/Out; 1 built-in mic
Alarm Input/Output	2/2
Ethernet	RJ-45 (10/100/1000Base-T)

## IP SPECIFICATIONS

Video Compression	H.265/H.264/MJPEG Bit rate control (CBR and VBR)
Resolution	4:3 3MP (2048×1536) / UXGA (1600×1200) / 1.3MP (1280×960)
	Other 6MP (3072×2048) / 4MP (2048×2048) / D1 (704×576/704×480) / CIF (352×288/352×240)
Main Stream	6MP (3072×2048) / 4MP (2048×2048) / 3MP (2048×1536) / UXGA (1600×1200) at up to 25/30 fps
Frame Rate	Sub Stream D1/CIF up to 25/30 fps
	Triple Stream 1.3MP/D1 up to 25/30 fps
Dewarping Mode	Original, Panoramic, Double Panoramic, 1+3 EPTZ, 4 Pictures, 2 Pictures, Single
Audio Compression	G.711a/G.711Mu/AAC/G.726/MPEG2-Layer2/ G.722.1/G.729
Audio Stream	Full duplex, simplex
SD Card Function	Event trigger recording Continuous and scheduled recording Automatic recording when network fails

## IP SPECIFICATIONS (CONT'D)

Protocols*	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, SSL, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, Bonjour, DNS, DDNS, IEEE 802.1X, QoS, NTP, IP Filter, Multicast, ONVIF
Compatibility	ONVIF Profile S/G
Max. User Access	20 users
Supported Web Browsers	Internet Explorer (11.0+), Firefox, Chrome
Supported OS	Windows 7 32-bit/64-bit, Windows 10
Security	Multiple user access levels with enhanced password policy, IP filtering, IEEE 802.1X, strong digest authentication for access permission, HTTPS, TLS1.2 only, high-strength encrypted algorithm AES-256, SSH/Telnet closed, FTP disabled to reduce surface being attacked, PCI-DSS compliant, built-in cybersecurity hardware chipset
Languages Supported	English, Arabic, Czech, Dutch, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Turkish

## ELECTRICAL

Power Supply	PoE (802.3af) Class 0, 12 V DC
Power Consumption	10 W max. (IR LEDs on)

## MECHANICAL

Dimensions	ø5.9 × 2.2 in. (ø150.2 × 55.8 mm)
Product Weight	1.1 lb (0.5 kg)
Construction	Die-cast aluminum housing with powder coat
Construction Color	RAL 9003 (White)

## ENVIRONMENTAL

Temperature	-22°F to 140°F (-30°C to 60°C)
Relative Humidity	Less than 95%, non-condensing
Ingress Protection	IP67
Impact Resistance	IK10

## REGULATORY

Emissions	EN 55032, FCC Part 15B AS/NZS CISPR 22:2009+A1 (2010)
Immunity	EN 50130-4
Safety	EN 60950-1 UL Listed to UL/CSA 60950-1
RoHS	EN 50581


\*Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

# ORDERING

**SYSTEM INTEGRATION**





**OPEN IP INTEGRATION**

ONVIF support and open API software integration. Refer to [www.onvif.org](http://www.onvif.org) for the ONVIF specification and the Honeywell Open Technology Alliance website (<http://www.security.honeywell.com/hota/>) to learn more about our open and integrated solutions.



**ACCESSORIES**

**MOUNTS**

HFG-WK		Wall Mount Bracket
HFG-PK		Pendant Mount Bracket
HB4G-PM		Pole Mount Adapter
HB34G-CM		Corner Mount Adapter

**HONEYWELL DEVICE INTEGRATION**

MAXPRO® NVR FAMILY	Entry to Enterprise Level Network Video Recorders (version 4.0 and greater)
MAXPRO® VMS FAMILY	Entry to Enterprise Level Network Video VMS (version R410 and greater)
DVM	DVM R600.1 SP1
HUS	HUS 5.1

**ORDERING**

**CAMERAS**

HFD6GR1	Network TDN Superior HD IR Rugged Fisheye Camera, 1/1.8" CMOS, 6 MP, 1.7 mm Fixed Fisheye Lens, 3 IR LEDs, PoE, H.265
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NOTE: Honeywell reserves the right, without notification, to make changes in product design or specifications.

**For more information**

[www.honeywell.com/security](http://www.honeywell.com/security)

**Automation and Control Solutions**

# Honeywell | equip® Cameras

## Indoor WDR IR Minidome IP Cameras

H3W2GR1/H3W2GR2/H3W4GR1

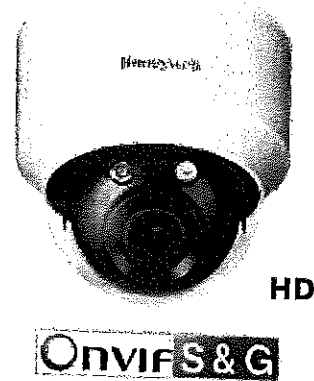
Honeywell is taking quality and reliability to the next level with the New equip® line of indoor IP cameras. The Honeywell indoor TDN low-light IR minidome cameras offer outstanding picture clarity, hassle-free flexible system integration, and secure data transmission—and they look great too!

### Superior Image Quality

- Full HD 1080p 25/30 fps image with a 1/2.7" 2 MP sensor, or full HD 4 MP 20 fps image with a 1/3" 4 MP sensor
- True WDR (120 dB) ensures glare-free images
- True Day/Night provides vivid color images by day and clear black-and-white images at night with ICR
- Excellent low-light performance with 3D noise reduction, saving storage and bandwidth together with H.264 High Profile codec

### Flexible Surveillance Solution

- 2.7-12 mm or 7-22 mm, F1.4, motorized focus/zoom lens
- H.264 and MJPEG codec, triple stream support
- IR LEDs provide up to 65' (20 m) of illumination in dimly lit or nighttime scenes (depending on scene reflectance)
- Smart IR technology provides even distribution of IR
- -22°F to 122°F (-30°C to 50°C) working temperature
- ONVIF Profile S and G compliant
- Security features include individual signed certificates and data encryption
- Cameras can be retrofitted on many existing DVR/NVR installations without requiring additional storage



### Easy to Install and Use

- Built-in PoE (Power over Ethernet) eliminates separate power supply and associated wiring; 24 V AC/12 V DC inputs where PoE power is unavailable
- Remote configuration, motorized zoom adjustments and auto focus through web client or from the NVR

### Onboard Video Storage

- Supports up to 128 GB microSDHC (Class 10) card for local video storage when network is interrupted. Card not included.

## FEATURES AND BENEFITS

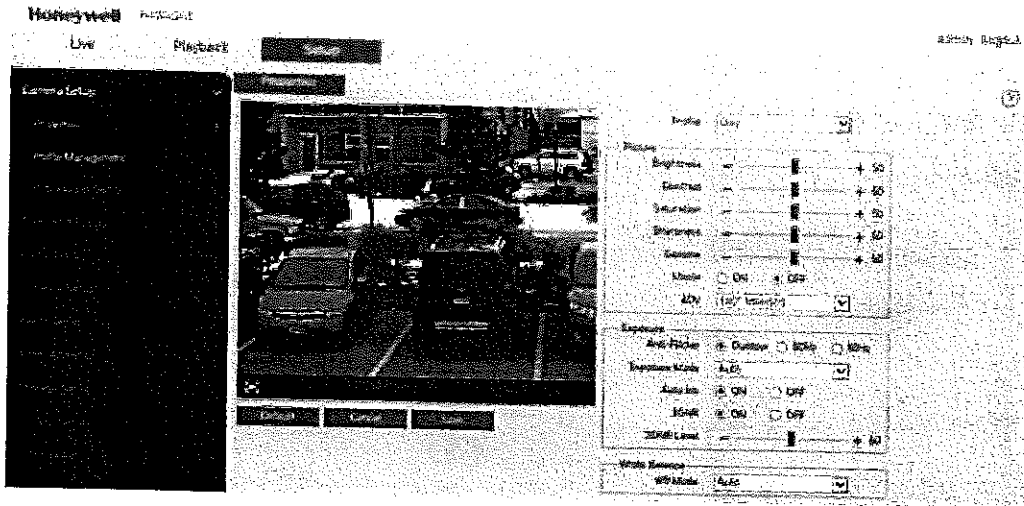
These fully featured attractive cameras are perfect for indoor installations that require excellent picture quality at minimal bandwidth while offering maximum installation flexibility with three mounting options. Boasting a sleek modern design and offering two different lens options, the cameras are suited for a wide range of applications.

- 1/2.7" 2 MP progressive scan imager or 1/3" 4 MP progressive scan imager
- 65' (20 m) IR distance, depending on scene reflectance
- True WDR: 120 dB
- Excellent low light performance with down to 0 lux BW (with IR LEDs on)
- Up to triple stream support
- 4 MP resolution at 20 fps, or 1080p at 25/30 fps
- 2.7-12 mm or 7-22 mm, F1.4, motorized focus and zoom lens
- Built-in PoE for simple cabling options; 12VDC/24VAC inputs are also available
- Corridor mode viewing capability
- On board camera storage: up to 128 GB micro SD card (not included)
- ONVIF profile S and G compliant

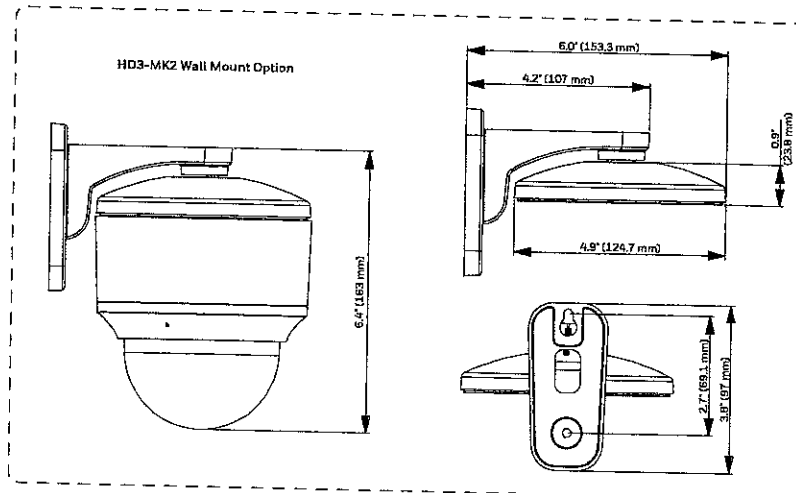
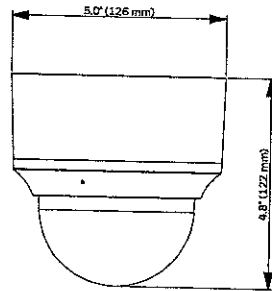
# Indoor WDR IR Minidome IP Cameras

H3W2GR1/H3W2GR2/H3W4GR1

The camera can be configured to automatically detect and respond to events such as motion in the scene, alarm inputs, network failure, and/or camera tampering. Automated responses include: sending a notification through email, FTP, and/or HTTP; sending a still image of the event through email and/or FTP; and recording a video clip of the event to a configured microSDHC card. Setup can be done through a web client or from an NVR.



## DIMENSIONS



# Indoor WDR IR Minidome IP Cameras

H3W2GR1/H3W2GR2/H3W4GR1

## SPECIFICATIONS

OPERATIONAL		IP SPECIFICATIONS (CONT)	
VIDEO STANDARD	NTSC/PAL	FRAME RATE	TRIPLE STREAM
SCANNING SYSTEM	Progressive scan		
IMAGE SENSOR	H3W2GR1/H3W2GR2: 1/2.7" 2 MP progressive CMOS H3W4GR1: 1/3" 4 MP progressive CMOS	H3W2GR1/H3W2GR2 (PAL): 720p 1-14 fps, D1 (704x576) 1-25 fps, CIF (352x288) 1-25 fps H3W2GR1/H3W2GR2 (NTSC): 720p 1-3 fps, D1 (704x480) 1-9 fps, CIF (352x240) 1-30 fps H3W4GR1 (PAL): 1-20 fps (720p, D1-704x576, CIF-352x288) H3W4GR1 (NTSC): 1-20 fps (720p, D1-704x480, CIF-352x240)	
NUMBER OF PIXELS (HxV)	H3W2GR1/H3W2GR2: 1920x1080 H3W4GR1: 2560x1440	AUDIO COMPRESSION	G.711a/G.711u/AAC
MINIMUM ILLUMINATION	0.01 lux color/0 lux with IR LEDs on @ F1.4	AUDIO STREAM	Dual Channel
S/N RATIO	50 dB or more	ETHERNET	RJ-45 (10/100Base-T)
ELECTRONIC SHUTTER SPEED	Auto, Manual, 1/3(4)-1/10 000 s	PROTOCOLS*	IPv4/IPv6, HTTP, HTTPS, TCP/IP, UDP, UPnP, ICMP, IGMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, QoS, SNMP v2c/v3, LDAP (Client), NFS, RTCP, Bonjour
IR DISTANCE	Up to 65' (20 m), depending on scene reflectance	COMPATIBILITY	ONVIF Profile S/G
DAY/NIGHT	Auto(ICR)/Color/BW	MAX. USER ACCESS	20 users
BACKLIGHT COMPENSATION	BLC/HLC	LANGUAGES SUPPORTED	English, Arabic, Czech, Dutch, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Turkish
WIDE DYNAMIC RANGE	120 dB	<b>ELECTRICAL</b>	
WHITE BALANCE	Auto/Manual	INPUT VOLTAGE	12VDC +/-10%, 24VAC +/-10%, PoE IEEE 802.3af
GAIN CONTROL	Auto/Manual	AC FREQUENCY	50/60 Hz
NOISE REDUCTION	3DNR	POWER CONSUMPTION	12VDC/24VAC 9W max, PoE (802.3af) Class 0
PRIVACY MASKING	Up to 4 areas	<b>MECHANICAL</b>	
CORRIDOR MODE	Yes	DIMENSIONS	4.96" x 4.80" (126.0 x 122.0 mm)
LENS	H3W2GR1/H3W4GR1: 2.7-12 mm, MFZ, F1.4 H3W2GR2: 7-22 mm, MFZ, F1.4	PRODUCT WEIGHT	1.26 lb (0.57 kg)
HORIZONTAL ANGLE OF VIEW	H3W2GR1/H3W4GR1: 99°-34° H3W2GR2: 41°-18°	PACKAGE WEIGHT	1.54 lb (0.7 kg)
AUDIO/TWO-WAY	Line In/Out	CONSTRUCTION	Plastic Housing
<b>IP SPECIFICATIONS</b>		CONSTRUCTION COLOR	RAL 9003 (White)
VIDEO COMPRESSION	H.264/H.264H/H.264B/MJPEG	RECORDING AND STORAGE	Up to 128 GB microSDHC card Class 10 (not included)
RESOLUTION	H3W2GR1/H3W2GR2: 1080p (1920x1080)/SXGA (1280x1024)/1.3M (1280x960)/720p (1280x720)/D1 (704x576/704x480)/CIF (352x288/352x240) H3W4GR1: 4M (2688x1520 with Analog video output off, or 2560x1440 with Analog video output on)/3M (2304x1296)/1080p (1920x1080)/SXGA (1280x1024)/1.3M (1280x960)/720p (1280x720)/D1 (704x576/704x480)/CIF (352x288/352x240)	<b>ENVIRONMENTAL</b>	
FRAME RATE	MAIN STREAM	TEMPERATURE	-22°F to 122°F (-30°C to 50°C)
		RELATIVE HUMIDITY	0% to 95%, non-condensing
FRAME RATE	SUB STREAM	<b>REGULATORY</b>	
		EMISSIONS	FCC Part 15, CE (EN 55022), Complies with RCM (AS/NZS)
		IMMUNITY	CE (EN 50130-4)
		SAFETY	North America UL Listed to UL/CSA 60950-1, CE (EN 60950-1)

**NOTE:**

\* Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

# Indoor WDR IR Minidome IP Cameras

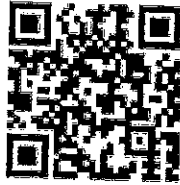
H3W2GR1/H3W2GR2/H3W4GR1

## ORDERING

### SYSTEM INTEGRATION

#### OPEN IP INTEGRATION

ONVIF support and open API software integration. Refer to [www.onvif.org](http://www.onvif.org) for the ONVIF specification and the Honeywell Open Technology Alliance website (<http://www.security.honeywell.com/hota/>) to learn more about our open and integrated solutions.



### ACCESSORIES

#### HOUSINGS AND MOUNTS

H3G-CB

Replacement Dome (Clear)

H3G-SB

Replacement Dome (Smoke)

HD3-MK2

Wall Mount Bracket

### CAMERAS

H3W2GR1

Network TDN Low-Light, 120 dB Wide Dynamic, IR Indoor Dome Camera, 1/2.7" Imager, 2 MP, 2.7-12 mm MFZ Lens, 3 IR LEDs, PoE, H.264

H3W2GR2

Network TDN Low-Light, 120 dB Wide Dynamic, IR Indoor Dome Camera, 1/2.7" Imager, 2 MP, 7-22 mm MFZ Lens, 3 IR LEDs, PoE, H.264

H3W4GR1

Network TDN Low-Light, 120 dB Wide Dynamic, IR Indoor Dome Camera, 1/3" Imager, 4 MP, 2.7-12 mm MFZ Lens, 3 IR LEDs, PoE, H.264

#### For more information

[www.honeywell.com/security](http://www.honeywell.com/security)

#### Honeywell Security and Fire

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Louisville, KY 40299

1.800.323.4576

[www.honeywell.com](http://www.honeywell.com)

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L/H3WDRCD/D | 06/16

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# Honeywell

# Honeywell | equip® Cameras

## WDR IR Rugged IP Bullet Cameras

HBL2GR1/HBW2GR1/HBW2GR3/HBW4GR1

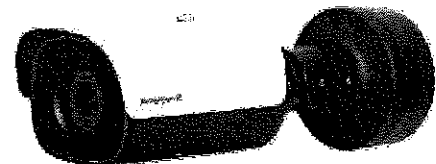
Honeywell is taking quality and reliability to the next level with the New equip® line of rugged IP bullet cameras. The Honeywell TDN ultra low-light IR rugged bullet cameras offer outstanding picture clarity, hassle-free flexible system integration, and secure data transmission—and they look great too!

### Superior Image Quality

- Full HD 1080p 25/30 fps image with a 1/2.7" or 1/2.8" 2 MP sensor, or full HD 4 MP 20 fps image with a 1/3" 4 MP sensor
- True WDR, up to 140 dB, ensures glare-free images
- True Day/Night provides vivid color images by day and clear black-and-white images at night with ICR
- Excellent low-light performance with 3D noise reduction, saving storage and bandwidth together with H.264 High Profile codec
- Ultra Low Light technology is able to capture high quality color images in low light environments

### Flexible Surveillance Solution

- 2.7-12 mm or 5-50 mm, F1.4, motorized focus/zoom lens
- H.264 and MJPEG codec, triple stream support
- IR LEDs provide up to 195' (60 m) of illumination in dimly lit or nighttime scenes (depending on scene reflectance)
- Smart IR technology provides even distribution of IR
- Waterproof (IP67) and IK10 vandal resistant camera housing
- -40°F to 140°F (-40°C to 60°C) working temperature
- ONVIF Profile S and G compliant
- Security features include individual signed certificates and data encryption
- Cameras can be retrofitted on many existing DVR/NVR installations without requiring additional storage



HD

Back box sold separately

ONVIF S & G

### Easy to Install and Use

- Built-in PoE (Power over Ethernet) eliminates separate power supply and associated wiring; 24 VAC/12 V DC inputs where PoE power is unavailable
- Remote configuration, motorized zoom adjustments and auto focus through web client or from the NVR
- Included accessories: security screw driver, mounting screws, and mounting template

### Onboard Video Storage

- Supports up to 128 GB microSDHC (Class 10) card for local video storage when network is interrupted. Card not included.

## FEATURES AND BENEFITS

These fully featured attractive cameras are perfect for outdoor installations that require excellent picture quality at minimal bandwidth while offering maximum protection against dust, dirt, and water. Boasting a sleek modern design and offering two different lens options, the cameras are suited for a wide range of applications.

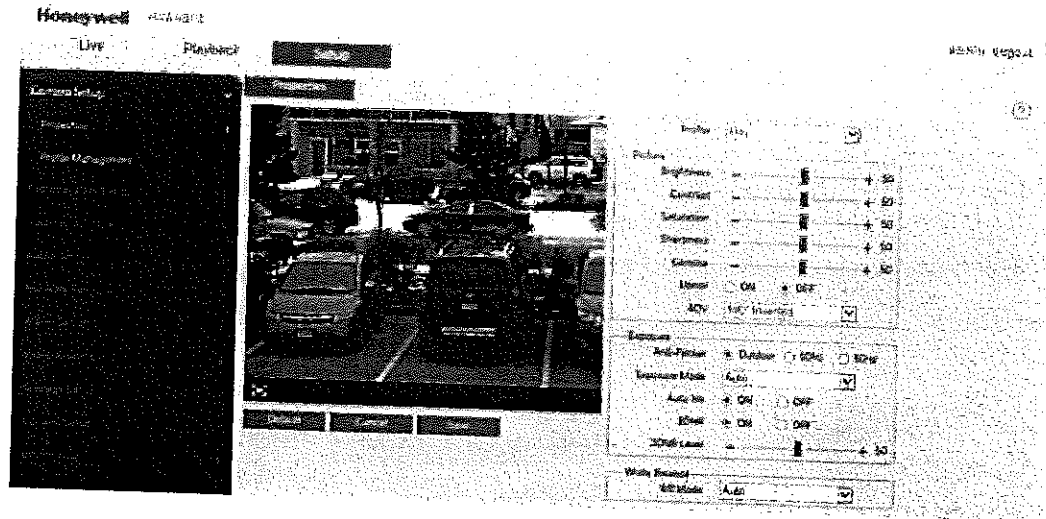
- 1/2.7" or 1/2.8" 2 MP progressive scan imager or 1/3" 4 MP progressive scan imager
- Ultra-low light performance
- 195' (60 m) IR distance, depending on scene reflectance
- True WDR: up to 140 dB
- Excellent low light performance with down to 0 lux BW (with IR LEDs on)
- Up to triple stream support
- Up to 4 MP resolution at 20 fps or 1080p at 25/30 fps
- 2.7-12 mm or 5-50 mm, F1.4, motorized focus and zoom lens
- Rugged outdoor housing with IP67 ingress protection rating and IK10 vandal resistance rating
- Corridor mode viewing capability
- On board camera storage: up to 128 GB micro SD card (not included)
- ONVIF profile S and G compliant



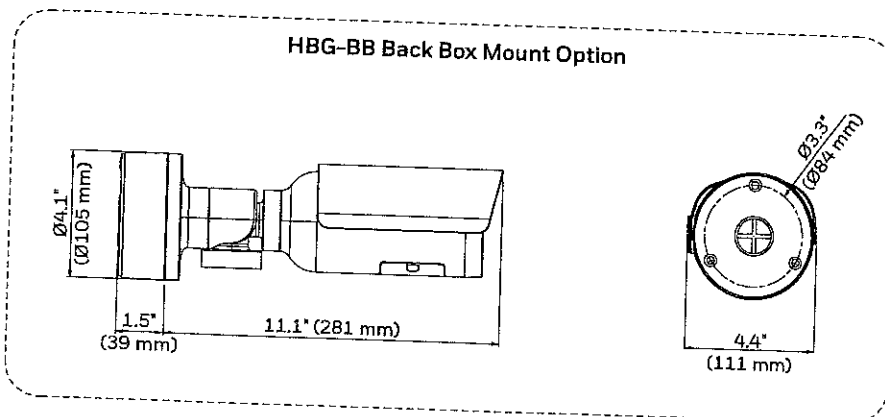
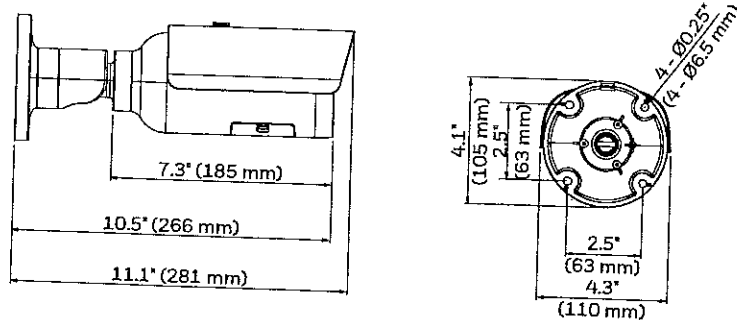
# WDR IR Rugged IP Bullet Cameras

HBL2GR1/HBW2GR1/HBW2GR3/HBW4GR1

The camera can be configured to automatically detect and respond to events such as motion in the scene, alarm inputs, network failure, and/or camera tampering. Automated responses include: sending a notification through email, FTP, and/or HTTP; sending a still image of the event through email and/or FTP; and recording a video clip of the event to a configured microSDHC card. Setup can be done through a web client or from an NVR.



## DIMENSIONS



# WDR IR Rugged IP Bullet Cameras

HBL2GR1/HBW2GR1/HBW2GR3/HBW4GR1

## SPECIFICATIONS

OPERATIONS		SPECIFICATIONS (CONT.)	
VIDEO STANDARD	NTSC/PAL	<b>SUB STREAM</b> HBW2GR1/HBW2GR3/HBL2GR1 (PAL): 1-25 fps (D1-704x576, CIF-352x288) HBW2GR1/HBW2GR3/HBL2GR1 (NTSC): 1-30 fps (D1-704x480, CIF-352x240) HBW4GR1 (PAL): 1-20 fps (D1-704x576, CIF-352x288) HBW4GR1 (NTSC): 1-20 fps (D1-704x480, CIF-352x240)  <b>TRIPLE STREAM</b> HBW2GR1/HBW2GR3 (PAL): 720p 1-14 fps, D1 (704x576) 1-25 fps, CIF (352x288) 1-25 fps HBW2GR1/HBW2GR3 (NTSC): 720p 1-3 fps, D1 (704x480) 1-9 fps, CIF (352x240) 1-30 fps HBW4GR1 (PAL): 1-20 fps (720p, D1-704x576, CIF-352x288) HBW4GR1 (NTSC): 1-20 fps (720p, D1-704x480, CIF-352x240) HBL2GR1 (PAL): 1080p 1-20 fps, 1-25 fps (720p, D1-704x576) HBL2GR1 (NTSC): 1080p 1-15 fps, 1-30 fps (720p, D1-704x480)  <b>PROTOCOLS*</b> IPv4/IPv6, HTTP, HTTPS, TCP/IP, UDP, UPnP, ICMP, IGMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, QoS, SNMP v2c/v3, LDAP (Client), NFS, RTCP, Bonjour  <b>COMPATIBILITY</b> ONVIF Profile S/G  <b>MAX. USER ACCESS</b> 20 users  <b>LANGUAGES SUPPORTED</b> English, Arabic, Czech, Dutch, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Turkish	<b>ELECTRICAL</b> <b>INPUT VOLTAGE</b> 12VDC +/-10%, 24VAC +/-10%, PoE IEEE 802.3af  <b>AC FREQUENCY</b> 50/60 Hz  <b>POWER CONSUMPTION</b> 24VAC 12W max (zoom/focus/IRs/heater active), typical 10.5W PoE (802.3af) Class 0 HBL2GR1 PoE (802.3at) 24VAC 14.5W Class 4  <b>MECHANICAL</b> <b>DIMENSIONS</b> 11.1" x 4.3" (281.0 x 110.0 mm) <b>PRODUCT WEIGHT</b> 4.4 lb (2.0 kg) <b>PACKAGE WEIGHT</b> 5.0 lb (2.3 kg) <b>CONSTRUCTION</b> Die-cast aluminum housing with powder coat <b>CONSTRUCTION COLOR</b> RAL9003 (White) and RAL 7022 (Gray) <b>RECORDING AND STORAGE</b> Up to 128 GB microSDHC card Class 10 (not included)  <b>ENVIRONMENTAL</b> <b>TEMPERATURE</b> -40°F to 140°F (-40°C to 60°C) <b>RELATIVE HUMIDITY</b> 10% to 100%, condensing <b>INGRESS PROTECTION</b> IP67 <b>VANDAL RESISTANCE</b> IK10  <b>REGULATORY</b> <b>EMISSIONS</b> FCC Part 15, CE (EN 55022); Complies with RCM (AS/NZS) <b>IMMUNITY</b> CE (EN 50130-4) North America UL Listed to UL/CSA 60950-1, CE (EN 60950-1) North America UL Listed to UL/CSA 60950-22, CE (EN 60950-22)  <b>SAFETY</b> North America UL Listed to UL/CSA 60950-22, CE (EN 60950-22)
SCANNING SYSTEM	Progressive scan		
IMAGE SENSOR	HBL2GR1: 1/2.8" 2 MP progressive CMOS HBW2GR1/HBW2GR3: 1/2.7" 2 MP progressive CMOS HBW4GR1: 1/3" 4 MP progressive CMOS		
NUMBER OF PIXELS (HxV)	HBL2GR1/HBW2GR1/HBW2GR3: 1920 x 1080 HBW4GR1: 2560x1440		
MINIMUM ILLUMINATION	HBL2GR1: 0.005 lux color/0 lux with IR LEDs on @ F1.4 HBW2GR1/HBW2GR3/HBW4GR1: 0.01 lux color/0 lux with IR LEDs on @ F1.4		
S/N RATIO	50 dB or more		
ELECTRONIC SHUTTER SPEED	Auto, Manual, 1/3(4)-1/10 000 s		
IR DISTANCE	Up to 195' (60 m), depending on scene reflectance		
DAY/NIGHT	Auto(ICR)/Color/BW		
BACKLIGHT COMPENSATION	BLC/HLC		
WIDE DYNAMIC RANGE	HBL2GR1: 140 dB HBW2GR1/HBW2GR3/HBW4GR1: 120 dB		
WHITE BALANCE	Auto/Manual		
GAIN CONTROL	Auto/Manual		
NOISE REDUCTION	3DNR		
PRIVACY MASKING	Up to 4 areas		
CORRIDOR MODE	Yes		
LENS	HBL2GR1/HBW2GR1/HBW4GR1: 2.7-12 mm, MFZ, F1.4 HBW2GR3: 5-50 mm, MFZ, F1.4		
HORIZONTAL ANGLE OF VIEW	HBL2GR1: 97°-34° HBW2GR1/HBW4GR1: 99°-34° HBW2GR3: 66°-6.2°		
AUDIO/TWO-WAY	Line In/Out		
<b>SPECIFICATIONS</b>			
VIDEO COMPRESSION	H.264/H.264H/H.264B/MJPEG		
RESOLUTION	HBL2GR1/HBW2GR1/HBW2GR3: 1080p (1920x1080)/SXGA (1280x1024)/1.3M (1280x960)/720p (1280x720)/D1 (704x576/704x480)/CIF (352x288/352x240)		
	HBW4GR1: 4M (2688x1520 with Analog video output off, or 2560x1440 with Analog video output on)/3M (2304x1296)/1080p (1920x1080)/SXGA (1280x1024)/1.3M (1280x960)/720p (1280x720)/D1 (704x576/704x480)/CIF (352x288/352x240)		
FRAME RATE	MAIN STREAM	HBW2GR1/HBW2GR3/HBL2GR1 (PAL): 1-25 fps (1080p, SXGA-1280x1024, 1280x960, 720p, D1-704x576) HBW2GR1/HBW2GR3/HBL2GR1 (NTSC): 1-30 fps (1080p, SXGA-1280x1024, 1280x960, 720p, D1-704x480)	
		HBW4GR1 (PAL): 1-20 fps (2688x1520 with Analog video output off, 2560x1440), 1-25 fps (2304x1296, 1080p, SXGA-1280x1024, 1280x960, 720p)	
		HBW4GR1 (NTSC): 1-20 fps (2688x1520 with Analog video output off, 2560x1440), 1-30 fps (2304x1296, 1080p, SXGA-1280x1024, 1280x960, 720p)	

**NOTE:**

\*Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

# WDR IR Rugged IP Bullet Cameras

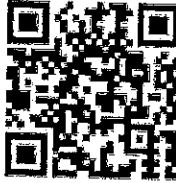
HBL2GR1/HBW2GR1/HBW2GR3/HBW4GR1

## ORDERING

### SYSTEM INTEGRATION

#### OPEN IP INTEGRATION

ONVIF support and open API software integration. Refer to [www.onvif.org](http://www.onvif.org) for the ONVIF specification and the Honeywell Open Technology Alliance website (<http://www.security.honeywell.com/hota/>) to learn more about our open and integrated solutions.



### ACCESSORIES

#### HOUSINGS AND MOUNTS

- HBG-BB IP66 Back Box (for Cable Termination)
- HBG-FP Front Lens Plate (for Replacement if Vandalized)

### CAMERAS

HBL2GR1	Network TDN Ultra Low-Light, 140 dB Wide Dynamic, IR Bullet Camera, 1/2.8" Imager, 2 MP, 2.7-12 mm MFZ Lens, 4 IR LEDs, PoE, H.264
HBW2GR1	Network TDN Low-Light, 120 dB Wide Dynamic, IR Bullet Camera, 1/2.7" Imager, 2 MP, 2.7-12 mm MFZ Lens, 4 IR LEDs, PoE, H.264
HBW2GR3	Network TDN Low-Light, 120 dB Wide Dynamic, IR Bullet Camera, 1/2.7" Imager, 2 MP, 5-50 mm MFZ Lens, 4 IR LEDs, PoE, H.264
HBW4GR1	Network TDN Low-Light, 120 dB Wide Dynamic, IR Bullet Camera, 1/3" Imager, 4 MP, 2.7-12 mm MFZ Lens, 4 IR LEDs, PoE, H.264

**For more information**  
[www.honeywell.com/security](http://www.honeywell.com/security)

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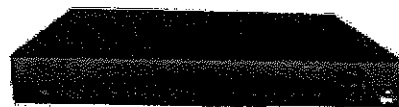


# Honeywell | Performance Series IP

## Performance Series IP NVRs

4, 8 & 16 Channel PoE Embedded NVRs

Introducing Honeywell's Performance Series PoE Embedded NVRs, our newest affordable, fully featured NVRs. Choose a 4-, 8- or 16-channel NVR, with the ability to expand to up to 12 TB\* of internal storage, for an ideal and flexible solution to fit your surveillance situation.



HD

### Fully-featured NVRs

- High decoding capability for full HD viewing and recording.
- View up to 16 channels simultaneously on your monitor (depending on your model).
- Up to eight channels live view and play back at full frame rate 1080p resolution.
- Up to 16 channels recording at full frame rate 1080p, 3MP, 4MP or 5MP resolution at maximum 8Mbps per channel.

### Easy to Use

- The Quick wizard and full PoE support make setup fast and easy.
- Quick physical installation with the help of a simple NVR design and easy-to-understand quick installation guides.
- Simple remote configuration and firmware updating through the Honeywell Viewer web client and the Honeywell Config tool.

### Convenient, Flexible Storage Options

- Internal storage supports two HDDs expandable up to 12 TB (6 TB each)\*.
- Store video clips and snapshots to external storage, such as the client's PC, through the Internet connection.
- Store video clips and snapshots to an external network storage server such as an FTP site.
- Store video clips and snapshots to a USB memory device.

### Dynamic, Accessible Monitoring

- Monitor from anywhere using the mobile apps for both Apple® and Android™ devices (smartphones, tablet computers, and laptops).
- Password-protected access to the NVR's video and network setup.

### Privacy Masking

- Conceal up to 4 areas of a scene from viewing and recording.

### Market Opportunities

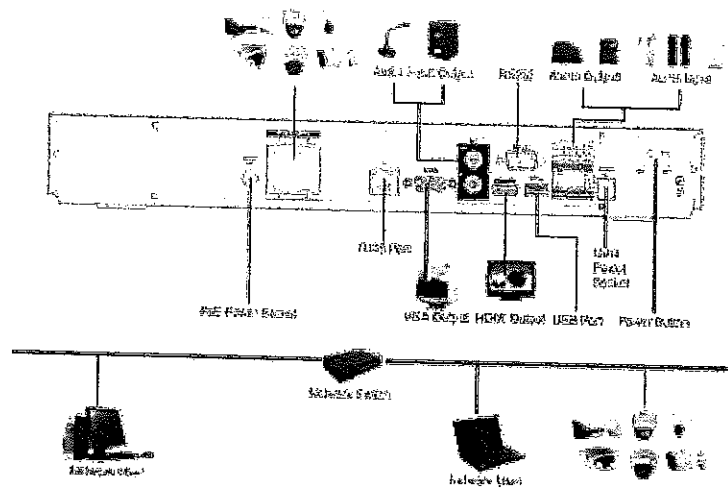
The flexible storage options of the Performance Series IP Embedded NVRs make these NVRs perfect for a wide range of security applications.

## FEATURES & BENEFITS

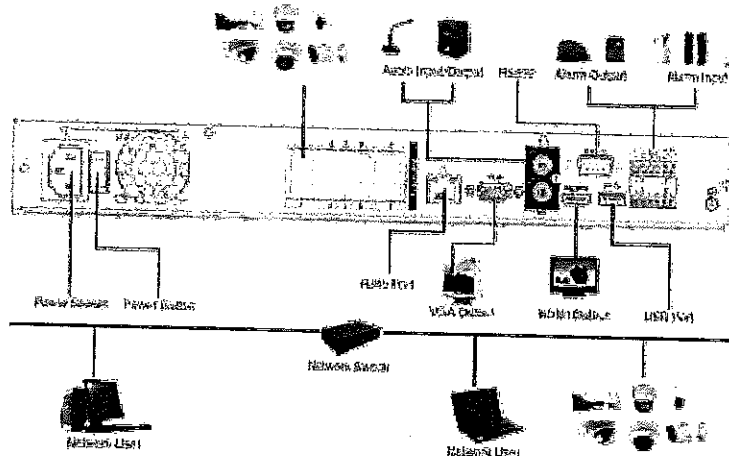
- |   |  |   |  |
|---|--|---|--|
| • H.264/MJPEG dual codec decoding   | • UL listed  | • Supports uploading still images at the time of the event through email and/or FTP | • Supports visual or auditory notifications (a flashing light, a bell, or a siren) |
| • HDMI/VGA simultaneous video output  | • Configurable to automatically detect and respond to motion in the scene, alarm inputs, and network failure or tampering. | • Supports recording a video clip of events for distribution                        | *See User Guide for compatible HDD listings  |
| • Supports up to 4 alarm input channels and 2 alarm relay output channels (model dependent) | • Supports sending notifications through email, FTP and/or HTTP  |   |  |

# Performance Series IP NVRs

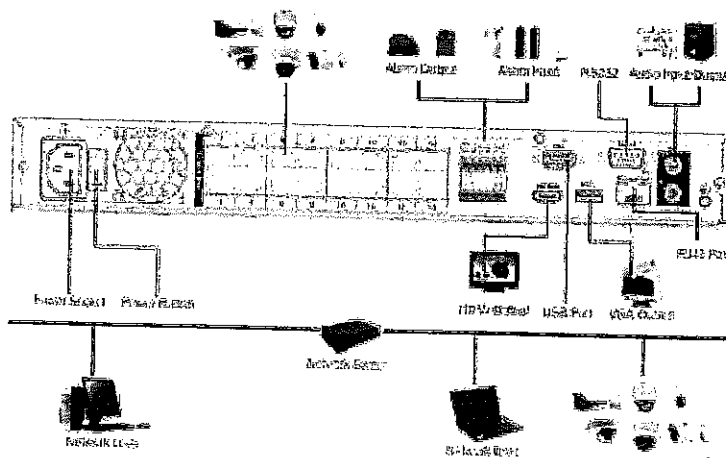
## 4-channel NVRs



## 8-channel NVRs



## 16-channel NVRs



# Performance Series IP NVRs Technical Specifications

SYSTEM	
MAIN PROCESSOR	Dual-core embedded processor
OPERATING SYSTEM	Embedded LINUX
VIDEO	
IP CAMERA INPUTS	4/8/16 channels
BIDIRECTIONAL AUDIO	1 channel input; 1 channel output; RCA
DISPLAY	
INTERFACE	1 HDMI; 1 VGA
RESOLUTION	1920 x 1080; 1280 x 1024; 1280 x 720; 1024 x 768
DISPLAY SPLIT	4-channel NVRs: 1/4 8-channel NVRs: 1/4/8 16-channel NVRs: 1/4/8/9/16
OSD	Camera title; Time; Video loss; Camera lock; Motion detection; Recording
RECORDING	
COMPRESSION	H.264 / MJPEG
RESOLUTION	5MP (2560 x 1920); 4MP (2688 x 1520 and 2560 x 1440); 3MP (2304 x 1296 and 2048 x 1536); 1080p (1920 x 1080); 720p (1280 x 720); D1 (704 x 480); SXGA (800 x 600); 1.3MP (1280 x 1024)
RECORDING RATE	4-channel NVRs: 100/120 fps @ 1080p; 8-channel NVRs: 200/240 fps @ 1080p; 16-channel NVRs: 400/480 fps @ 1080p
BIT RATE*	48 to 8192 Kbps
RECORDING MODE	Manual; Schedule (Regular [Continuous], Motion Detection, Alarm, Motion Detection+Alarm); Stop
RECORDING INTERVAL	1 to 120 minutes (default: 60 minutes); Pre-recording: 1 to 30 seconds.
VIDEO DETECTION AND ALARMS	
TRIGGER EVENTS	Recording; Tour; Alarm; Email; FTP; Buzzer; Screen Tips
VIDEO DETECTION	Motion Detection; Motion Detection Zones (396: 22 x 18); Video Loss and Camera Blank; Privacy Masking
ALARM INPUT	4 channels
RELAY OUTPUT	2 channels
PLAYBACK AND BACKUP	
SYNC PLAYBACK	4-channel NVRs: 1/4 8-channel NVRs: 1/4/8 16-channel NVRs: 1/4/8/16
SEARCH MODE	Time/Date; Alarm; Motion Detection; Exact Search (accurate to a second)
PLAYBACK FUNCTION	Play; Pause; Stop; Rewind; Fast play; Slow play; Full Screen; Backup
BACKUP MODE	USB Device; Network
COMPATIBILITY	

NETWORK	
OPERATING SYSTEM	Windows® XP; Windows Vista; Windows 7
CPU REQUIREMENTS	Pentium M 2.16 GHz or Intel Core 2 Duo 2 GHz
SYSTEM MEMORY	At least 2 GB
NETWORK CARD	RJ-45 (10/100 Base-T)
WEB BROWSER	Microsoft Internet Explorer 6.0 or later; Mozilla Firefox®
SUPPORTED PROTOCOLS**	HTTP; TCP/IP; IPv4/IPv6; UPnP; RTSP; UDP; SMTP; NTP; DHCP; DNS; IP filter; PPPoE; DDNS; FTP; Alarm server; IP search
MAXIMUM NUMBER OF USERS	20 users
SMART PHONE COMPATIBILITY	iOS; Android™
STORAGE	
INTERNAL STORAGE	2 SATA ports; up to 12 TB; RAID (redundancy)
CONNECTORS	
ETHERNET POE	1 x RJ-45 port (10/100/1000 Mbps) 4-channel NVRs: 4 ports (IEEE802.3at/af) 8-channel NVRs: 8 ports (IEEE802.3at/af) 16-channel NVRs: 16 ports (IEEE802.3at/af)
USB	2 ports: USB 3.0 on rear panel; USB 2.0 on front panel
RS232	1 port, for PC communication
ELECTRICAL	
4-CHANNEL NVRs POWER SUPPLY	NVR: 12 V DC; 4 A external adaptor. PoE: 48 V DC; 1.04 A external adaptor
8-/16-CHANNEL NVRs POWER SUPPLY	100 ~ 240 V AC; 50/60 Hz internal PSU
4-CHANNEL NVRs POWER CONSUMPTION	35 ~ 115 W depending on the number of HDD installed and PoE loading (maximum 393 Btu/hr)
8-/16-CHANNEL NVRs POWER CONSUMPTION	30 ~ 225 W depending on the number of HDD installed and PoE loading (maximum 768 Btu/hr)
ENVIRONMENTAL	
OPERATING TEMPERATURE	14°F to 131°F (-10°C to 55°C)
STORAGE TEMPERATURE	-4°F to 158°F (-20°C to 70°C)
HUMIDITY	10% to 90%
PHYSICAL	
DIMENSIONS	4-channel NVRs: 14.8 x 11.2 x 2.1 inches (375 x 285 x 53 mm) 8-/16-channel NVRs: 14.8 x 12.6 x 2.1 inches (375 x 320 x 53 mm)
WEIGHT (WITHOUT HDD)	4-channel NVRs: 4.41 pounds (2.0 kg) 8-/16-channel NVRs: 5.51 pounds (2.5 kg)
PHYSICAL	
EMISSIONS	FCC Part 15B, CE EN55022
IMMUNITY	CE EN50130-4
SAFETY	EU: EN60950-1 North America UL listed to UL/CSA 60950-1

\* Actual bitrate is scene and motion dependent with H.264 stream.

\*\* Some development might be required in specific user cases to support some of these protocols in the field as they mature over time.

# Performance Series IP NVRs Technical Specifications

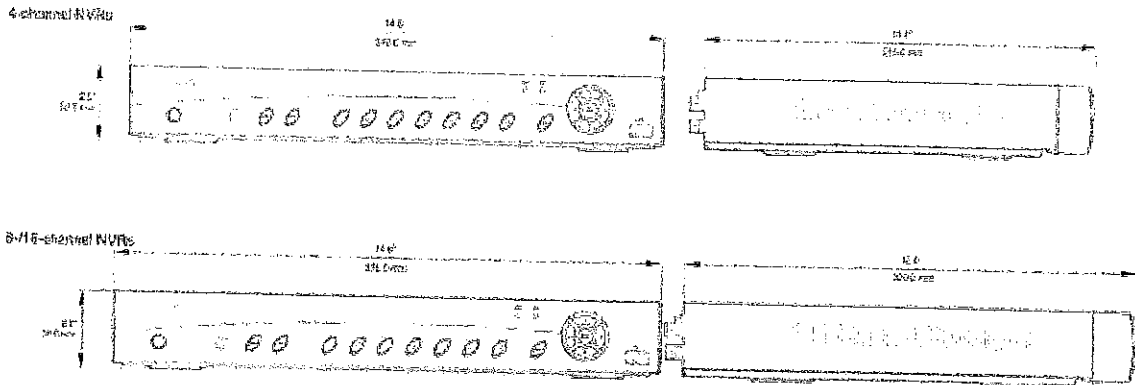
## 5/3/2016 (REVISED)

ONVIF support and OPEN API for software integration. Refer to [www.ONVIF.org](http://www.ONVIF.org) for the ONVIF specification and the Honeywell OPEN TECHNOLOGY ALLIANCE (<http://www.security.honeywell.com/hota>) to learn more about our open and integrated solutions.



## RECOMMENDED CAMERAS

3-INCH INDOOR MINI DOME CAMERAS	H3D2F1; H3D2S2; H3D2SR2; H3S1P1; H3W1F1; H3D1F1; H3D1F2; H3D1F3
4-INCH RUGGED MINI DOME CAMERAS	H4D2F1; H4D2S2; H4S1P1; H4W1F1; H4D1F1; H4D1F2; H4D1F3; H4D1FR1; H4D3PRV3; H4D3PRV2
BOX CAMERAS	HCD1F; HCD2F; HCW1F; HCW2S2
BULLET CAMERAS	HBD2FR1; HBD2FR2; HBD2PR1; HBD1PR1; HBD3PR1; HBD3PR2
BALL/MICRO DOME CAMERAS	H2D2PR1; H2S1P6; H2S2P6; HED1PR3; HED3PR3



## ORDERING

HEN04112	H.264 4CH NVR 1 TB, 4 PoE
HEN04122	H.264 4CH NVR 2 TB, 4 PoE
HEN08112	H.264 8CH NVR 1 TB, 8 PoE
HEN08122	H.264 8CH NVR 2 TB, 8 PoE
HEN08142	H.264 8CH NVR 4 TB, 8 PoE
HEN16122	H.264 16CH NVR 2 TB, 16 PoE
HEN16142	H.264 16CH NVR 4 TB, 16 PoE
HEN16162	H.264 16CH NVR 6 TB, 16 PoE

NOTE:  
Honeywell reserves the right, without notification, to make changes in product design or specifications.

## For more information

[www.honeywellvideo.com](http://www.honeywellvideo.com)

## Honeywell Security and Fire

2700 Blankenbaker Pkwy, Suite 150

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**Honeywell**

## TDN WDR IR MFZ Mini Dome Camera

H4W2PRV2/H4W4PRV2

Honeywell's rugged H4W2PRV2/H4W4PRV2 mini dome cameras are taking quality and reliability to the next level, providing outstanding picture clarity and hassle-free flexible system integration.

### Superior Image Quality

- Full HD 1080p 25/30 fps image with a 1/2.7" 2 megapixel sensor or full HD 4 MP 20 fps image with a 1/3" 4 megapixel sensor
- Wide Dynamic Range, up to 120 dB, ensures glare-free images
- True Day/Night provides vivid color images by day and clear black-and-white images at night with ICR
- Excellent low-light performance with 3D noise reduction, saving storage and bandwidth

### Flexible Surveillance Solution

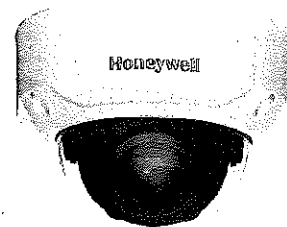
- 2.7–12 mm motorized focus/zoom lens at F1.4
- H.264 and MJPEG codec, triple stream support
- IR LEDs provide up to 100 ft (30 m) of illumination in dimly lit or nighttime scenes (depending on scene reflectance)
- Smart IR technology provides even distribution of IR
- Weatherproof (IP66) and vandal-resistant (IK10) camera housing
- -22°F to 140°F (-30°C to 60°C) working temperature
- Plug-and-play compatible with Honeywell 4/8/16-channel Performance Series Embedded NVRs

### Easy to Install and Use

- Built-in PoE (Power over Ethernet) eliminates need for separate power supply and associated wiring; 12 VDC inputs where PoE power is unavailable
- Remote configuration through web client or from the NVR
- Compatible with Honeywell's HQA-BB2 junction box, HQA-WK wall mount, HQA-PM pole mount, and HB34S2-CM corner mount

### Market Opportunities

These flexible, fully featured cameras are ideal for a wide range of surveillance applications, providing excellent picture quality at minimal bandwidth while offering reliable protection against dust, dirt, and water.



## FEATURES AND BENEFITS

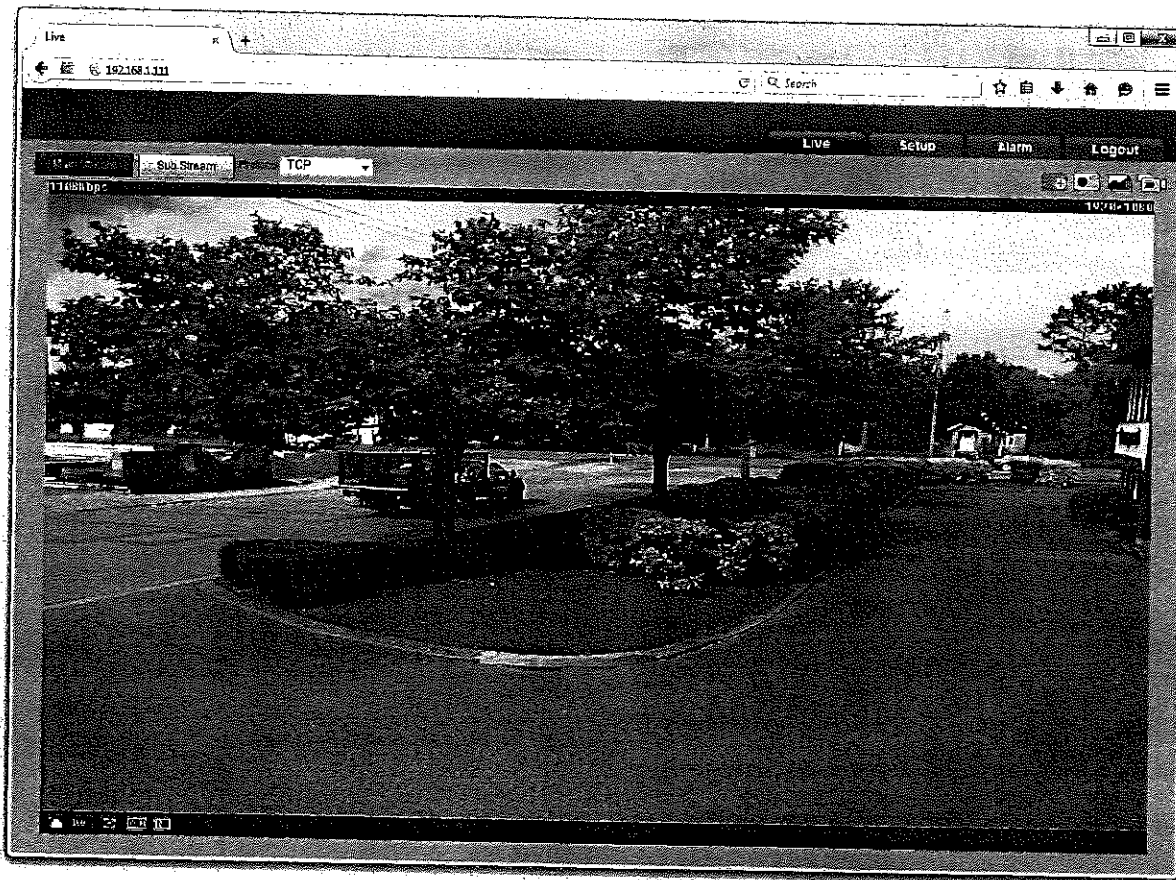
- 1/2.7" 2 MP or 1/3" 4 MP progressive scan imager
- 2.7–12 mm MFZ fixed lens
- True day/night (IR-cut filter)
- Wide dynamic range up to 120 dB
- Low-light performance down to 0.01 lux (color) or 0 lux with IR LEDs on
- Up to 100 ft (30 m) IR illumination, depending on scene reflectance
- H.264 Main Profile compression
- Triple stream support
- Supports up to 20 connections
- Corridor mode
- PoE, 12 VDC support
- Plug-and-play compatible with Honeywell Performance Series Embedded NVRs
- IP66 and IK10-rated rugged housing



# TDN WDR IR MFZ Mini Dome Camera

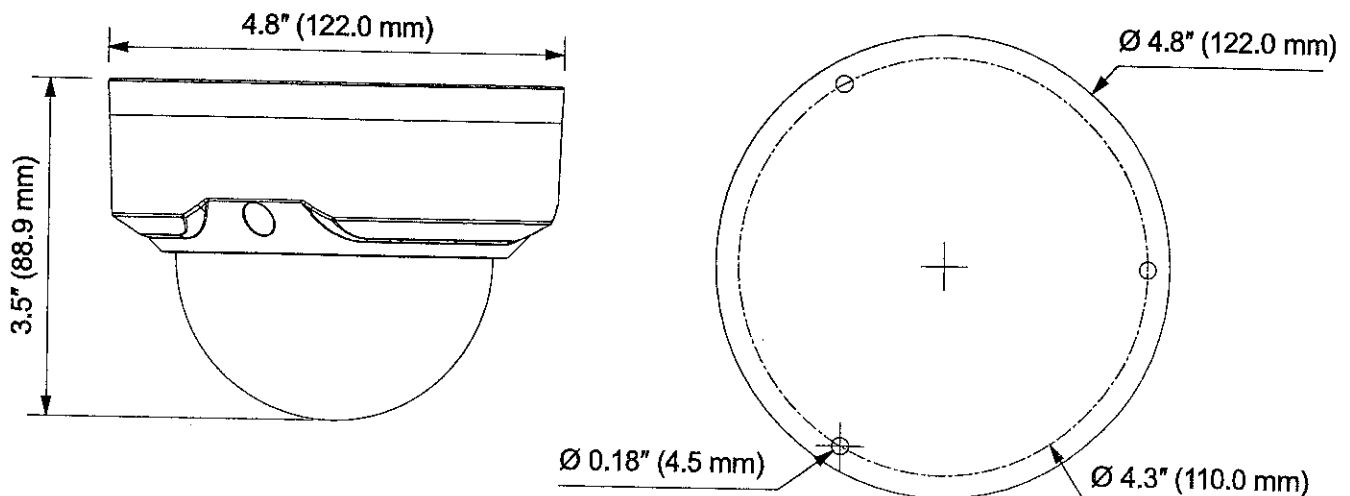
## Security Features

The camera can be configured to automatically detect and respond to events such as motion in the scene and/or camera tampering. Automated responses include sending a notification through email, FTP, and/or HTTP, and sending a still image of the event through email and/or FTP. Setup can be done using the web client or from an NVR.



## DIMENSIONS

### H4W2PRV2/H4W4PRV2 Dimensions



# TDN WDR IR MFZ Mini Dome Camera

## SPECIFICATIONS

### OPERATIONAL

VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive scan
IMAGE SENSOR	H4W2PRV2: 1/2.7" 2 MP CMOS H4W4PRV2: 1/3" 4 MP CMOS
NUMBER OF PIXELS (H×V)	H4W2PRV2: 1920×1080 (2 MP) H4W4PRV2: 2688×1520 (4 MP)
MINIMUM ILLUMINATION	0.01 lux, F1.4 (color) 0 lux (B/W with IR LEDs on)
S/N RATIO	50 dB or more
ELECTRONIC SHUTTER SPEED	1/3-1/100 000 s
IR DISTANCE	Up to 100 ft (30 m), depending on scene reflectance
DAY/NIGHT	Auto(ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC/HLC/WDR (120 dB)
WHITE BALANCE	Auto/Manual
GAIN CONTROL	Auto/Manual
NOISE REDUCTION	3DNR
PRIVACY MASKING	Up to 4 areas
MOTION DETECTION	Up to 4 areas
LENS	2.7-12 mm, MFZ, F1.4
HORIZONTAL ANGLE OF VIEW	H4W2PRV2: 93° - 35° H4W4PRV2: 86° - 30°
CORRIDOR MODE	Yes

### VIDEO

VIDEO COMPRESSION	H.264/H.264H/H.264B/MJPEG
FRAME RATE	H4W2PRV2: 25/30 fps @ 1920×1080 (2 MP), 25/30fps @ 1280×1024 (SXGA), 25/30fps @ 1280×960 (1.3 MP), 1280×720 (720p), 704×576/704×480 (D1), 352×288/352×240 (CIF) H4W4PRV2: 20 fps @ 2688×1520 (4 MP); 20 fps @ 2560×1440 (4 MP); 25/30 fps @ 2304×1296 (3 MP), 1920×1080 (1080p), 25/30fps @ 1280×1024 (SXGA), 25/30fps @ 1280×960 (1.3 MP), 1280×720 (720p), 704×576/704×480 (D1), 352×288/352×240 (CIF)
BIT RATE (H.264)	32 Kbps - 10 Mbps
LOCAL STORAGE	microSD, 128 GB max.

### NETWORK

ETHERNET	RJ-45 (10/100Base-T)
PROTOCOLS*	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, IP Filter, QoS, Bonjour, 802.1X
COMPATIBILITY	ONVIF Profile S, Profile G
MAX. USER ACCESS	20 users
MOBILE DEVICES	HonView Touch for iPhone and Android devices

### ELECTRICAL

POWER SUPPLY	PoE (802.3af), 12 VDC
POWER CONSUMPTION	8.0 W max

### Mechanical

DIMENSIONS	4.8 × 3.5 in. (122.0 × 88.9 mm)
WEIGHT	1.1 lb (0.5 kg)
CONSTRUCTION	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)

### ENVIRONMENTAL

TEMPERATURE	-22°F to 140°F (-30°C to 60°C)
RELATIVE HUMIDITY	0-95%, non-condensing
INGRESS PROTECTION	IP66
VANDAL RESISTANCE	IK10

### REGULATORY

EMISSIONS	FCC Part 15, CE (EN 55032)
IMMUNITY	CE (EN 50130-4)
SAFETY	North America UL Listed to UL/CSA 60950-1, CE (EN 60950-1)

\*Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

# TDN WDR IR MFZ Mini Dome Camera

## SPECIFICATIONS

### SYSTEM INTEGRATION

#### OPEN IP INTEGRATION

ONVIF support and open API software integration. Refer to [www.onvif.org](http://www.onvif.org) for the ONVIF specification and the Honeywell Open Technology Alliance website (<http://www.security.honeywell.com/hota/>) to learn more about our open and integrated solutions



### SYSTEM COMPATIBILITY

#### NVRS

HEN041\*2(X)

H.264 4-Channel 1080p  
Embedded Network Video Recorder

HEN081\*2(X)

H.264 8-Channel 1080p  
Embedded Network Video Recorder

HEN161\*2(X)

H.264 16-Channel 1080p  
Embedded Network Video Recorder

## ORDERING

### ACCESSORIES

#### MOUNTS

HQA-BB2

Junction box

HQA-WK

Wall mount

HQA-PM

Pole mount

HB34S2-CM

Corner mount

### CAMERAS

H4W2PRV2

Network TDN WDR IR Bullet Camera, 1/2.7" CMOS, 2 MP, 2.7-12 mm MFZ, 4 High Power IR LEDs, PoE, H.264

H4W4PRV2

Network TDN WDR IR Bullet Camera, 1/3" CMOS, 4 MP, 2.7-12 mm MFZ, 2 High Power IR LEDs, PoE, H.264

### For more information

[www.honeywell.com/security](http://www.honeywell.com/security)

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