

HONEYWELL CAMERA

A&E Specifications

## GENERAL

### SECTION INCLUDES

Provide a high definition camera system for video surveillance, including design, supply, installation, and commissioning.

### RELATED SECTIONS

NOTE TO SPECIFIER: Include related sections as appropriate if video surveillance system is integrated to other systems.

* + - * Section 26 05 00: Common Work Results for Electrical, for interface and coordination with building electrical systems and distribution.
			* Section 28 05 13: Conductors and Cables for Electronic Safety and Security, for cabling between system servers, panels, and remote devices.
			* Section 28 05 28: Pathways for Electronic Safety and Security, for conduit and raceway requirements.
			* Section 28 23 00: Video Surveillance Equipment, for interface with, and administration of video recording equipment.
			* Section 28 23 23: Video Surveillance Systems Infrastructure.
			* Section 28 23 29: Video Surveillance Remote Devices and Sensors.

### REFERENCES

Reference Standards: Provide systems that meet or exceed the requirements of the following publications and organizations as applicable to the work of this Section.

* + - * Canadian ICES-003.
			* Canadian Standards Association (CSA).
			* Conformity for Europe (CE).
			* Electronic Industry Association (EIA).
			* Federal Communications Commission (FCC).
			* Institute of Electronic and Electrical Engineers (IEEE).
			* Joint Photographic Experts Group (JPEG).
			* National Television Systems Committee (NTSC).
			* Phase Alternating Line (PAL).
			* Underwriters Laboratories Inc. (UL).
			* IP Code (Ingress Protection Rating) per IEC 60529.

### SUBMITTALS

General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedure Section.

Manufacturer’s Product Data: Submit manufacturer’s data sheets indicating systems and components proposed for use, including instruction manuals.

NDAA Complaint: The product should be designed for use as part of video systems which comply with NATIONAL DEFENSE AUTHORIZATION ACT (NDAA) 2019, Section 889.

Shop Drawings: Submit installation drawings, including connection diagrams for interfacing equipment, list of connected equipment, and locations for major equipment components. Shop drawings shall indicate surrounding construction as provided for the Project.

Project Record Drawings: Indicate location of equipment and wiring on project record drawings. Submit an electronic version of the project record drawings not later than Substantial Completion of the Project.

Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data customized to the system installed. Include operator manuals.

Field Tests: Submit results of field testing of every device, including date, testing personnel, retesting date (if applicable), and confirmation that every device passed field testing.

Maintenance Service Agreement: Submit a sample copy of the manufacturer’s maintenance service agreement, including cost and services for a one year period for Owner’s review. Maintenance shall include, but not be limited to, labor and materials to repair the system, tests and adjustments, and regular inspections.

**DELIVERY, STORAGE, AND HANDLING**

Packing and Shipping: Deliver products in manufacturer’s labeled packages.

Storage and Protection: Store and handle products in accordance with manufacturer’s requirements, in a facility where environmental conditions are within recommended limits.

**WARRANTY**

Manufacturer’s Guarantee: Three (3) years from the manufacture date code under normal use and service for the video surveillance system.

### QUALITY ASSURANCE

* + - * Manufacturer: Minimum 10 years experience in manufacturing and maintaining video surveillance systems. Manufacturer shall provide toll-free technical assistance and support available 24/7.
			* Installer: Minimum 2 years experience installing similar systems and shall be acceptable to the manufacturer of the video surveillance system.

### MANUFACTURER SUPPORT

* + - * Manufacturer shall provide customer service, pre-sales applications assistance, after-sales technical assistance, access to online technical support, and online training using Web conferencing.
			* Manufacturer shall provide 24/7 technical assistance and support by means of a toll-free telephone number at no extra charge.

## EXECUTION

### EXAMINATION

* + - * Examine site conditions prior to installation. Notify Architect and Owner in writing if unsuitable conditions are encountered. Do not start installation until site conditions are acceptable.

### INSTALLATION

* + - * All components of the camera system shall be thoroughly tested before shipping to the project location.
			* Camera system shall be installed, programmed, and tested in accordance with manufacturer’s instructions and recommendations.
			* Coordinate interfaces with other products with Owner’s representative where appropriate.
			* Provide conduit, cable, and wire for complete and reliable installation. Obtain Owner’s approval for exact location of cameras, boxes, conduit, cable, and wiring runs prior to installation.
			* Install conduit, cable, and wire parallel and square with building lines, including raised floor areas. Do not exceed 40 percent fill in conduits. Gather and tie wires for orderly installation.
			* Coordinate with other trades to provide proper sequencing of installation.

### FIELD COMMISSIONING AND CERTIFICATION

* + - * Field Commissioning: Test camera system as recommended by manufacturer, including the following:
			* Conduct complete inspection and testing of equipment, including verification of operation with connected equipment.
			* Test devices and demonstrate operational features for Owner’s representative and authorities having jurisdiction, as applicable.
			* Correct deficiencies until satisfactory results are obtained.
			* Submit written copies of test results.

### TRAINING

Conduct on-site system administrator and security/surveillance operator training in accordance with the manufacturer’s instructions and recommendations. Training shall include, but not be limited to: camera administration, provisioning, configuration, operation, and diagnostics.

### SYSTEM DESCRIPTION

The 5MP Network TDN WDR IR Outdoor Dome Camera shall provide:

* + - 1. Superior Image Quality
				1. 5 MP (2560x1920)/4 MP (2688 × 1520) resolution, 1~50/60fps image with a 1/2.8” 5 Megapixel progressive scan CMOS sensor.
				2. WDR range: 120dB
				3. True day/night functionality providing vivid color images by day and clear black-and-white images at night with ICR.
				4. Excellent low-light performance with 3D noise reduction, and together with H.265 Profile codec saving storage and bandwidth.
			2. Flexible Surveillance Solution

HC60W45R2: Remote Focus, 2.7 mm ~ 13.5 mm, MFZ, P-IRIS, F1.4 ~ F2.8

HC60W45R4: Remote Focus,7 mm - 22 mm, MFZ, P-IRIS, F 1.6 ~ F2.9

* + - * 1. H.265 HEVC/H.264/MJPEG, Smart Codec
				2. Starting:

-40°C ~ 60°C (-40°F ~ 140°F) (802.3at PoE class4)

Working:

-40°C ~ 60°C (-40°F ~ 140°F) (802.3at PoE class4)

* + - * 1. ONVIF Profile G/S
				2. Security features include self-signed signed certificates and data encryption.
				3. Cameras can be retrofitted on many existing NVR installations without requiring additional storage.
			1. Easy to Install and Use
				1. Built-in PoE (Power over Ethernet) eliminates separate power supply and associated wiring; 24V AC /12V DC inputs where PoE power is unavailable.
				2. Remote configuration, motorized focus and zoom adjustments and auto focus through web client or from the NVR.
				3. Wifi dongle and USB adapter (Optional Accessory) for camera configuration
			2. Onboard Video Storage

Supports up to 256GB (Micro SD/SDHC/SDXC) card encryption with LUKS (Linux Unified Key Setup) for local video storage when event triggered.

* + - 1. Cyber Security:

User account and password protection, HTTPS, IP Filter, Digest authentication, TLS1.2 only, Stream encryption, AES128/256, SSH/Telnet closed, PCIDSS compliance, FIPS Chipset Built-In.

## PRODUCTS

### MANUFACTURERS

* + 1. Specified Manufacturer: Honeywell 5MP Network TDN WDR IR Outdoor Dome Camera, [www.security.honeywell.com](http://www.security.honeywell.com).
		2. Accepted Part Numbers:

HC60W45R2: 5MP Network WDR IR Outdoor Dome Camera, WDR 120dB, 1/2.8” CMOS,2.7-12 mm MFZ, 4 IR LEDs, PoE+, H.265.HEVC Smart Codec, IP66/67/IK10/NEMA4X, White.

HC60W45R4: 5MP Network WDR IR Outdoor Dome Camera, WDR 120dB, 1/2.8” CMOS, 7-22mm MFZ, 4 IR LEDs, PoE+, H.265.HEVC Smart Codec, IP66/67/IK10/NEMA4X, White.

### SYSTEM COMPONENTS

5MP Network TDN WDR IR Outdoor Dome Camera, camera housing, cabling, and a web-based GUI that provides complete control of camera settings and live video access.

### OPERATIONAL REQUIREMENTS

* + 1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall meet or exceed the following camera specifications:
			1. Image Sensor: 1/2.8” CMOS
			2. Total Pixels: 2560 x 1920 (5 MP)
			3. Minimum Illumination:

 HC60W45R2: Color: 0.04 Lux @F1.4, B/W: 0Lux @F1.4(IR on)

 HC60W45R4: Color: 0.04 Lux @F1.6, B/W: 0Lux @F1.6(IR on)

* + - 1. WDR range: 120dB
			2. Backlight Compensation: HLC/WDR
			3. Day/Night: Auto/Day/Night/Synchronize with digital input/Schedule
			4. Gain Control: 0-100%.
			5. Noise Reduction: 3D DNR
			6. Privacy Masking: Off / On (5 Areas)
			7. Electronic Shutter Speed: 1/32000 ~ 1/30
			8. Video Standard: NTSC/PAL
			9. White Balance: Auto/Fixed Current/Manual
			10. Signal-to-Noise Ratio: 60dB.
			11. Lens:

HC60W45R2: Remote Focus, 2.7 mm ~ 13.5 mm, MFZ, P-IRIS, F1.4 ~ F2.8

HC60W45R4: Remote Focus,7 mm - 22 mm, MFZ, P-IRIS, F 1.6 ~ F2.9

* + - 1. Angle of View:

HC60W45R2: H: 100° ~ 30°, V: 72° ~ 23°

HC60W45R4: H: 39° ~ 16°, V: 29° ~ 12°

* + - 1. Communication: ONVIF Profile S/G support.
		1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall provide true day/night functionality with an infrared (IR) cut filter for day mode.
		2. 5MP Network TDN WDR IR Outdoor Dome Camera system shall provide, in high contrast lighting conditions, higher quality images and significantly better dynamic range.
		3. 5MP Network TDN WDR IR Outdoor Dome Camera system shall provide up to 5 fully configurable privacy zones to mask sensitive areas of a video image.
		4. 5MP Network TDN WDR IR Outdoor Dome Camera system shall support the ONVIF Profile S/G specification for interoperability between network video products.
		5. 5MP Network TDN WDR IR Outdoor Dome Camera system shall include, as standard, a web based GUI that provides complete control of the camera settings. The web based GUI shall:
			1. Provide role-based access control with password protection.
			2. Be easily discovered through Honeywell Unified Tool or other appropriate device search tools.
			3. Be available to record video streaming and snapshot images to a SD card. The administrators have the ability turning the recording function on or off through the web based GUI.
			4. Require the following hardware as a minimum for the web browser:
				1. Operating system: Microsoft Windows 10
				2. Processor: Intel Core i5 2.9 GHz or above, such as Intel Core i5-4590 Quad Core 3.3Ghz.
				3. System memory (RAM): 8GB, DDR3-1600
				4. Graphics card: 1 GB dedicated video memory, such as NVIDIA GeForce GTX 750 1 GB.
				5. Network card: 10 Base-T/100 Base-TX Ethernet (RJ-45)
				6. Web browser: Chrome 79.0; Internet Explorer 11
		6. Viewer: ActiveX control plug-in for Internet Explorer;

No ActiveX control plug-in for Chrome (Only under H.264)

* + 1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall support IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP/Multicast, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS.

NOTE TO SPECIFIER: Some development may be required in specific user cases to support some of these protocols in the field as naturally the protocols will mature over time.

* + 1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall provide H.265 HEVC/H.264/MJPEG, Smart Codec simultaneously. The streams shall have the following functions (only for H.264 / H.265):
			1. Main Stream:

2560×1440/1920×1080/1600×904/1360×768/1280×720/640×360 (1-25/30fps), 1920x1080/1600x904/1360x768/1280x720/640x360 (1-50/60fps), 2560x1440(1-50fps)

* + - 1. Second Stream:

2560×1440/1920×1080/1600×904/1360×768/1280×720/640×360 (1-25/30fps), 1920x1080/1600x904/1360x768/1280x720/640x360 (1-50/60fps), 2560x1440(1-50fps)

* + - 1. Third Stream:

1280x960/640x480 (1-25/30fps),1280x720/640x360 (1-50/60fps)

* + - 1. 5MP Network TDN WDR IR Outdoor Dome Camera shall transmit additional H.265, H.264 or MJPEG video streams simultaneously with the primary H.265, H.264 or MJPEG stream (up to triple streams).
			2. The bit rate for the H.265, H.264 and MJPEG streams can be set to Constrained bit rate or Fixed quality. The resolutions and frame rates for all streams are adjustable by the administrator.
		1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall feature web GUI menus for programming camera parameters. A minimum of the following menus must be available:
			1. Live
			2. Camera Setup
				1. General setting
				2. Video
				3. Audio
				4. IR control
				5. Image Settings
				6. Exposure
				7. Focus
				8. Privacy Mask
			3. Network Setup
				1. General Settings
				2. Streaming Protocols
				3. DDNS
				4. QoS
				5. SNMP
				6. HTTPS
				7. IEEE 802.1x
			4. Video Analytics
				1. Motion Detection
				2. Tampering Detection
				3. Alarm In and Alarm Out
				4. Event Settings
				5. Package Management
			5. Storage Setup
				1. SD Card Management
				2. Content Management
				3. Recording Settings
			6. System Setup
				1. General Settings
				2. Maintenance
				3. User Accounts
				4. Access List
			7. Information
				1. Log
				2. Version
		2. 5MP Network TDN WDR IR Outdoor Dome Camera system must provide the option of restoring all displays, alarms, camera settings, and diagnostic settings to factory default with a Web GUI command. In addition, the unit shall offer a simple “reboot” with a Web GUI command.
		3. 5MP Network TDN WDR IR Outdoor Dome Camera system should provide a warning message through Email/HTTP, upload an image through Email or record video to a micro SD card/network recorder upon tampering detection / motion detection. The administrators have the ability turning the motion detection function on or off through the web GUI.

NOTE TO SPECIFIER: IMPORTANT! Any damaged files on an installed micro SD card incurred by malfunction or error in files saved on the micro SD card, regardless of the cause, are not guaranteed by Honeywell.

* + 1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall provide Network share recording for backup when there is an event (motion detection/ tampering detection…) or scheduling. The administrator must have the ability to turn the recording function on or off through the web GUI.
		2. 5MP Network TDN WDR IR Outdoor Dome Camera system shall provide event analytics capability. It shall detect the event of video motion detection, periodically, alarm input, system boot, recording notify, camera tampering detection. Once an event is detected, it shall trigger one of following linkages in camera.
			1. Snapshot to SD/Email
			2. Recording to SD/Email
			3. System log to SD/Email
		3. 5MP Network TDN WDR IR Outdoor Dome Camera housing shall consist of metal (die casting aluminum with power coating,) with coating RAL (120-1 Lyric White) and shall be waterproof.
		4. 5MP Network TDN WDR IR Outdoor Dome Camera shall include two (2) on-board alarm inputs for normally open or normally closed dry contacts.
		5. 5MP Network TDN WDR IR Outdoor Dome Camera shall include one (1) on-board alarm dry contact output, the contact rating shall be no more than 1A@30VDC.
		6. 5MP Network TDN WDR IR Outdoor Dome Camera shall include Audio Interface: Line In/Out, the Voltage of Audio Line In Interface shall be no more than 3.3V.

### SERIES INTEGRATIONS

* + 1. The following accessories are compatible with 5MP Network TDN WDR IR Outdoor Dome Camera:
			1. HB4G-PM / HA30PLM01: Pole Mount Adapter
			2. HB34G-CM / HA30CNM01: Corner Mount Adapter
			3. H4G-PK: Pendant Mount Adapter, G1.5
			4. HA60WLM4: Wall mount bracket for 4-inch dome, white
			5. HA60PMC4: Pendent Mount Adapter, 1.5NPT(outside), 3/4NPT (inside)
			6. HLR1001: IP over Coax Converter
			7. HA60CB4: Replacement Dome, 60 series outdoor bubble (Clear)
			8. HA60SB4: Replacement Dome, 60 series outdoor bubble (Smoke)
			9. HA60WIF: WIFI dongle and USB adapter for camera configuration
		2. The following NVRs are compatible with 5MP Network TDN WDR IR Outdoor Dome Camera:
			1. MAXPRO NVR (MAXPRO NVR PE, MAXPRO NVR SE, MAXPRO NVR XE and MAXPRO NVR SOFTWARE)
			2. ADPRO NVR (ADPRO NVR FastTrace 2E, ADPRO NVR iFT-E, ADPRO NVR iFT, ADPRO NVR eFT and ADPRO NVR iFT GATEWAY)
			3. Performance Series NVR (HEN\*3 and HEN\*4)
			4. Third Party systems (Milestone, Openeye…)
			5. Honeywell DVM (Honeywell DVM R700, DVM R620)

NOTE TO SPECIFIER: Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

### SYSTEM HARDWARE

* + 1. 5MP Network TDN WDR IR Outdoor Dome Camera system shall have the following mechanical specifications:
			1. Unit Dimensions: 159mm x 159mm x 118.3mm (6.26’’ x 6.26’’ x 4.66’’)
			2. Product Weight: 1.08kg
			3. Body Material: Metal (die casting aluminum with power coating)
		2. 5MP Network TDN WDR IR Outdoor Dome Camera system shall have the following electrical specifications:
			1. Power Supply: 12VDC / 24VAC (50/60Hz), Heat On: PoE (IEEE 802.3at, Class 4), Heat Off: PoE (IEEE 802.3at, Class 3)
			2. Power Consumption: 25.5W
		3. 5MP Network TDN WDR IR Outdoor Dome Camera system shall be designed to meet the following environmental conditions and regulatory:
			1. Operating temperature:

Starting:

-40°C ~ 60°C (-40°F ~ 140°F) (802.3at PoE class4)

Working:

-40°C ~ 60°C (-40°F ~ 140°F) (802.3at PoE class4)

* + - 1. Relative Humidity: Less than 90%, non-condensing.
			2. Emissions: FCC PART 15, CE (EN 55032)
			3. Immunity: CE (EN 50130-4)
			4. Safety: UL LISTED TO UL/CSA 62368-1, CE (EN 62368-1), UL/CSA 60950-22, CE (EN 60950-22)
			5. RoHS: CE (EN 50581), EAC (TR EAEU 037/2016), UAE (Cabinet Decree No.10 of 2017)
			6. Country or Region of Origin: Taiwan.

 END OF SECTION