

# Accuracii ML HD

Dual Channel Thermal/FHD Camera



## System Specifications



DETECT • RECOGNIZE • IDENTIFY

### SYSTEM OVERVIEW

The **Accuracii ML** is a powerful around the clock, night and day multisensor observation system developed for security applications. It allows long range observation and detection using state of the art thermal imaging and Full HD CMOS technology.

The system features a 1/2.8" Full HD color camera for visible light operation, and a high performance thermal camera with a choice of fixed, dual field of view or continuous zoom lenses for 24/7 operation.

The Accuracii is designed and constructed to withstand the harshest environmental conditions, including rain, direct sunlight, humidity and dust.



### CONFIGURATIONS

Configuration	Thermal Camera Uncooled 17μ 640 x 480	Visible CMOS Camera 1/2.8" 1920 x 1080 CMOS
AC100A/PHDC	100mm - Athermalized	4.4 - 132mm - Continuous Zoom (30x)
AC105Z/PHDC	26 - 105mm - Continuous Zoom	4.4 - 132mm - Continuous Zoom (30x)
AC135D/PHDC	45 / 135mm - Dual Field of View	4.4 - 132mm - Continuous Zoom (30x)
AC150Z/PHDC	25 - 150mm - Continous Zoom	4.4 - 132mm - Continuous Zoom (30x)

### APPLICATIONS

- Perimeter Security
- Public Safety
- Petrochemical
- Nuclear and Electric Power Plants
- Transportation
- Critical Infrastructure
- Petrochemical

### MAJOR COMPONENTS

- CMOS Camera/Lens - Full HD Color Camera for detailed imaging
- Thermal Camera - Thermal (Night) Camera for IR imaging
- Thermal Camera Lens - Fixed, Continuous and Dual FOV Lens Options
- Pan/Tilt Positioner - Highly accurate pan/tilt unit
- Optional Thermal Image Stabilizer



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### SYSTEM SPECIFICATIONS

#### Thermal Camera

- Imager Type: Uncooled Microbolometer
- Spectral Band: 7.5-14 $\mu$
- Pixel Size / Resolution: 17 $\mu$  / 640 x 480 NTSC/PAL
- NETD: <35° or <50° mK  
*dependant on system configuration*

#### Visible Camera

- Imager Type: 1/2.8" CMOS
- Focal Length: 4.4 - 132mm (30x)
- Resolution: 1920 x 1080
- HFOV: 63.4° to 2.1°
- Digital Zoom: x12
- S/N Ratio: >50dB

#### Power Requirements

- Power Input: 24VAC or POE++ (60W)
- Power Consumption: 30w typical (static, no heaters)  
60w max (moving, with heaters)

#### Environmental

- Storage Temperature: -40° C to +75° C  
-40° F to +167° F
- Operating Temperature: -30° C to +60° C  
-22° F to +140° F
- Humidity: Up to 100%
- Environmental Rating: IP66 (camera enclosures IP67)
- Shock: 10G applied in each of 3 perpendicular planes
- Vibration: 5-30Hz sweep @ 0.5g applied in each of 3 mutually perpendicular planes.

#### Mechanical

- Weight: 20.5 kg est. (45 lbs)
- Dimensions: 432mm (h) x 558mm (w) x 381mm (d)  
17" (h) x 22" (w) x 15" (d)
- Construction: Powder Coated Aluminum
- Sunshield: Included as standard.

#### Pan/Tilt Unit

- Pan Range: 360° continuous
- Tilt Range: 360°
- Preset Speed: 120° per second
- Pan/Tilt Speed: 0.1-45° per second
- Position Accuracy: +/- 0.05°
- Presets: Up to 256

#### IP Stream

- Video Streams: 5 or more video streams
- Video Codec: H.264 and MJPEG
- Video Protocols: RTSP/RTP, HTTP Tunneling, RTP Multicast
- Resolution: 1080p, 720p, D1 (Visible)  
VGA, CIF (Thermal)
- Frame Rate: 1 - 30 fps
- Data Rate: 256kbs to 8Mbs
- Video Rate Control: Variable or Constant
- Video GOV: 1 to 600, 30 default
- Video Latency: 4 Frames (0.133 seconds)
- Video Transmission: 99.999% error free

#### Network Interface

- Network Format: 802.3u 100Base-T, MDI-X auto-sensing, full duplex
- Network Protocol: TCP, UDP, IPv4, ICMP, DNS, IGMPv2/v3, DHCP, RTP, RTSP, RTCP, NTP, HTTP/S, SOAP, ARP, FTP, SMTP, SNMP/NTCIP, Telnet
- ONVIF: ONVIF Profile S
- Security: 4 Levels: Admin, Operator, User and Anonymous

#### Certifications

- CE / FCC
- IP66
- EN 55022:2010+AC: 2011
- EN 55024:2010
- EN 61000
- RoHS



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### THERMAL CAMERA

**Accuracii ML** uses Vumii's high sensitivity uncooled microblometer thermal cores available in 17 $\mu$  640 x 480 resolution (NTSC/PAL).

The cores are paired with a range of high quality fixed, dual field of view or zoom lenses to fit each individual budget and application. The camera is designed and constructed to withstand the harshest weather and environmental conditions.

### Configurations

Thermal Engine	17 $\mu$ 640 x 480
Spectral band	7.5-14 $\mu$
NETD	<35° mK or <50° mK ( <i>dependant on the configuration</i> )
Digital Zoom	Up to 12x
Focus Control	Athermalized (100mm), Motorized, Autofocus on Demand
Control Operation	Polarity, NUC, Image Flip, Auto Gain Control, Optical & Digital Zoom, Autofocus on Demand
<b>100mm Athermized</b>	
100mm	6.2°(H) x 4.7°(V)
<b>Continuous Zoom 26 - 105mm</b>	
Wide (26mm)	23.6°(H) x 17.7°(V)
Narrow (105mm)	5.9°(H) x 4.5°(V)
<b>Dual Field of View 45/135</b>	
Wide (45mm)	14.3°(H) x 10.7°(V)
Narrow (135mm)	4.6°(H) x 3.5°(V)
<b>Continuous Zoom 25 - 150mm</b>	
Wide (25mm)	25.3°(H) x 18.9°(V)
Narrow (150mm)	4.1°(H) x 3.1°(V)



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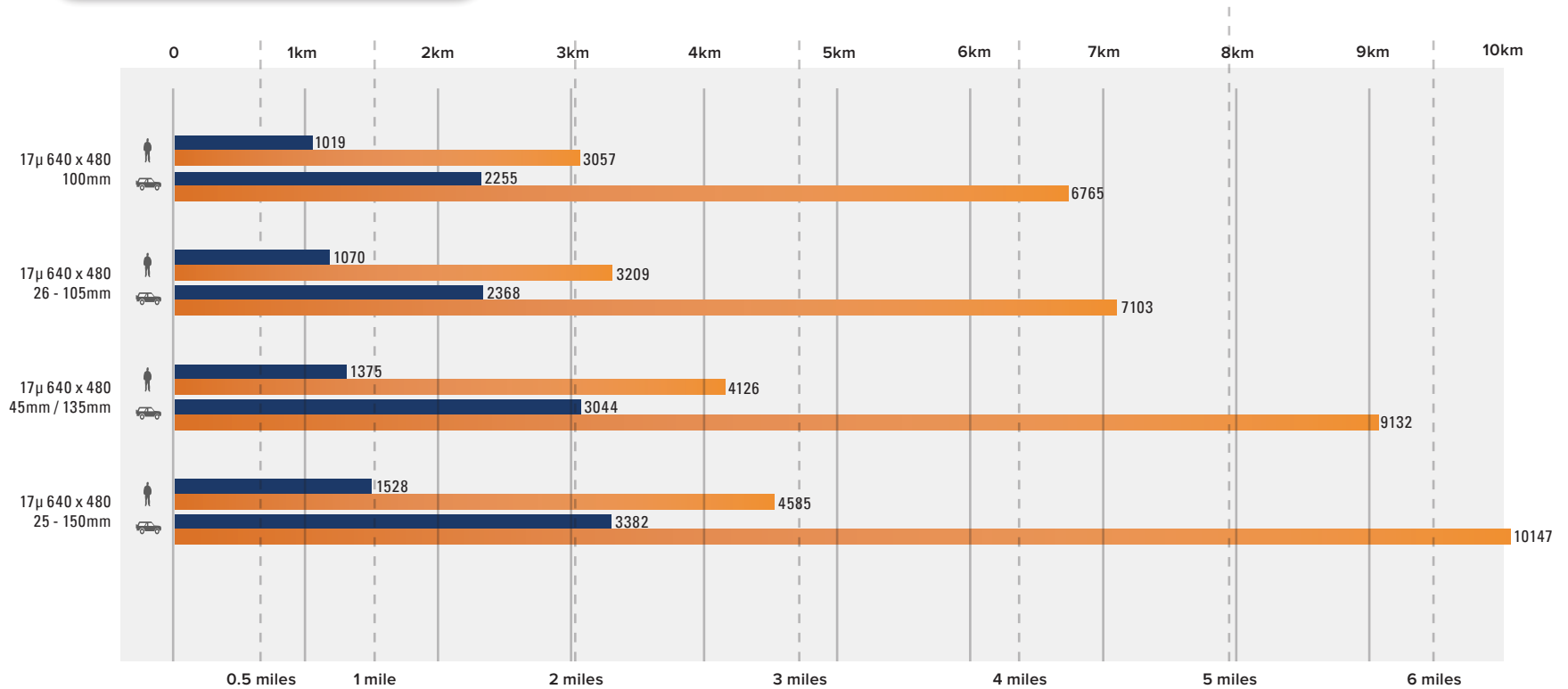
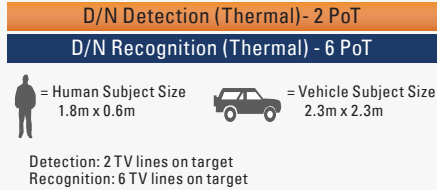
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### THERMAL CAMERA PERFORMANCE

#### Legend



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### VISIBLE CAMERA

**Accuracii ML** is equipped with a 2.1 megapixel 1/2.8" color CMOS sensor for threat detection and assessment.

The imager is a high sensitivity, high zoom magnification visible camera providing color video for daytime or black and white video for low-light operation (through the removal of the IR Cut Filter).

### Specifications

Imager Type	1/2.8" Color CMOS
Effective Pixels	1920 x 1080
Lens Type	30x Continuous Zoom
Lens Focal Length	4.4 - 132mm
Imager Horizontal FOV	63.4° to 2.1°
Frame Rate	30 fps
Aperture	f1.4 to f4.6
Camera Format	Day/Night (IR Cut Filter)
Day/Night Modes	Auto, Color, B/W
S/N ratio	> 50 dB
Digital zoom	12x
Sensitivity	Standard: Color 0.25 lux, B/W 0.024 lux Digital Slow Shutter: Color 0.015 lux, B/W 0.0015 lux
Image Processing	Defog Mode, Image Stabilization, Enhanced Intensity, Dynamic Range Control, Back Light Compensation, Shutter (AES), Slow Shutter, White Balance, AGC, Sharpness and Noise Reduction.
Privacy Masks	Up to 8 Rectangular Masks



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### PAN / TILT POSITIONER

The accurate, variable speed pan and tilt positioner provides continuous 360° rotation of the cameras in both the pan and tilt axes at up to 45°/sec.

The PT platform supports the following modules:

- Thermal (IR) Camera Enclosure  
Thermal Camera and Lens
- CMOS Visible Light Camera Enclosure  
Full HD CMOS Camera and Lens

### Specifications

Position Accuracy (Resolution)	+/- 0.05°
Pan Range	360° Continuous
Tilt Range	360°
Pan/Tilt Speed	0.1° - 45° /sec
Preset Speed	120° /sec
Presets	Up to 256 (includes pan and tilt position, zoom and focus)
Features	High wind/vibration mode and set north calibration.



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## CAMERA MOUNTING

### REQUIRED INSTALLATION CLEARANCE

**IMPORTANT:** The unit should be installed in a location with at least the listed amount of required clearance:

**Minimum Total Pan Clearance** The minimum pan clearance width is calculated as the radius from the center of the base mount.

**Minimum Total Tilt Clearance** The minimum tilt clearance height is calculated starting from the base of the Accuracii ML unit.

#### ALL CONFIGURATIONS

**Minimum Total Pan Clearance: 332.8mm (13.1")**

**Minimum Total Tilt Clearance: 513.1mm (20.2")**

### Mounting Options

Pedestal Extension:	Part # 1003227A
Wall Mount Kit:	Part # MP1002902A
Pole Mount Kit:	Part # MP1002903A

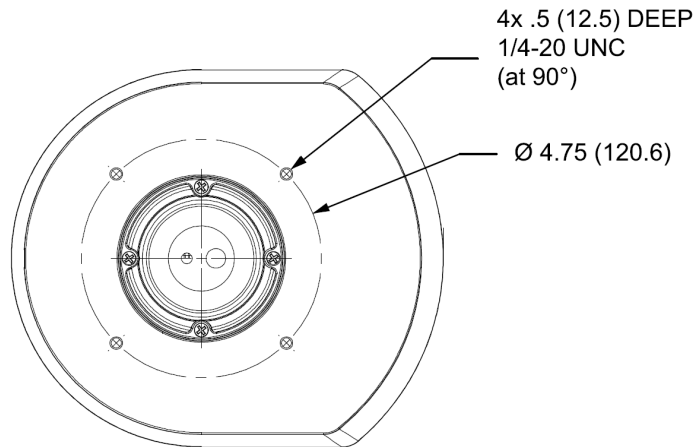
### Mounting Hardware (included)

- 4 x Bolt, Hex Head 1/4-20x3/4"L, SS
- 4 x Washer, Spring Lock 1/4", SS
- 4 x Washer, Flat 1/4", SS

### Custom Mounting Specifications

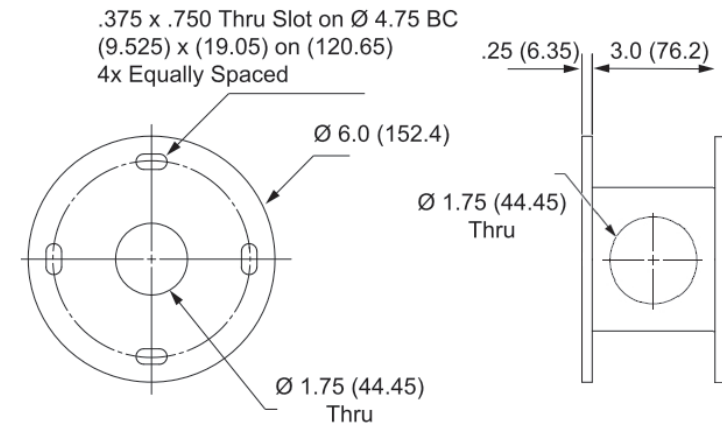
The base of the Accuracii ML uses a 120.6mm diameter hole pattern.

#### Camera Mount Base



\* inches (mm)

#### Pedestal Extension - 1003227A



Large Flange not Shown  
for Clarity

\* inches (mm)



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### ORDERING INFORMATION

All orders include mating connector, and setup/test software, integration cables should be ordered separately (see next page).

CMOS Camera/Lens	Thermal Lens	Thermal Engine	Power Type	Part Number
4.4 - 132mm 1920 x 1080 Continuous Zoom	100mm Athermalized (Fixed)	17 $\mu$ 640 x 480	POE++	AC100A17V1-PHDC
			24VAC	AC100A17V4-PHDC
4.4 - 132mm 1920 x 1080 Continuous Zoom	26 - 105mm Continuous Zoom (x4)	17 $\mu$ 640 x 480	POE++	AC105Z17V1-PHDC
			24VAC	AC105Z17V4-PHDC
4.4 - 132mm 1920 x 1080 Continuous Zoom	45 / 135mm Dual FOV	17 $\mu$ 640 x 480	PoE++	AC135D17V1-PHDC
			24VAC	AC135D17V4-PHDC
4.4 - 132mm 1920 x 1080 Continuous Zoom	25 - 150mm Continuous Zoom (6x)	17 $\mu$ 640 x 480	POE++	AC150Z17V1-PHDC
			24VAC	AC150Z17V4-PHDC

Accessory	Description	Part #
<b>Cables</b>		
15m (49') Integration Cable	15m POE++ / 24 VAC Cable with Dry Contact	WCC102615MA
20m (65') Integration Cable	20m POE++ Cable with Dry Contact	WCC102620MA
<b>Mounts</b>		
Pedestal Mount	Pedestal Extension Adaptor with two mounting patterns on top and bottom	1003227A
Wall Mount	Wall Mount Bracket	MP1002902A
Pole Mount	Pole Mount Bracket	MP1002903A
Parapet Mount	Parapet Mount Bracket	MP1002905A
Adapter Plate	Large Base Adapter Plate	MP1002906A



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### SHIPPING CONTENTS

#### STANDARD ORDER

■ **Accuracii ML** includes:

- 1) Accuracii ML system
  - Thermal Camera
  - Pan/Tilt Positioner
  - CMOS Visible Camera
  - Sunshields
  - 26-pin Mating Connector
- 2) Software & Documentation CD containing:
  - User Manual
  - System Specifications
- 3) Quick Start Guide

#### OPTIONAL EQUIPMENT:

Not mounted to Accuracii before shipping:

- 20m (65') POE++ Integration Cable
- Pedestal Mount
- Wall Mount
- Pole Mount
- Parapet Mount
- Adapter Plate



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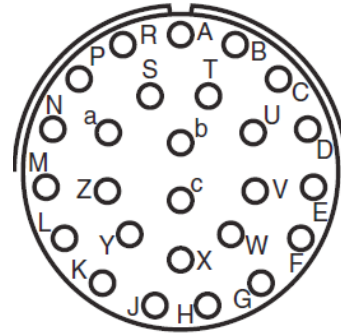
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### WIRING ASSIGNMENT

#### Connector Pinout

Connector Pin	Function
A	Analog Video
B	Analog Video GND
C	RS422 Rx+
D	RS422 Rx-
E	RS422 Tx+
F	RS422 Tx-
G	Data, I/O Common
H	DIO 1
J	DIO 2
K	DIO 3
L	DIO 4
M	DIO Common
N	Ethernet Tx+
P	Ethernet Tx-
R	Ethernet Rx+
S	Ethernet Rx-
T	PoE++ VPort+
U	PoE++ VPort+
V	PoE++ VPort-
W	PoE++ Vport-
X	24VAC
Y	24VAC
Z	AC Common
a	No Connection
b	No Connection
c	No Connection

#### Connector



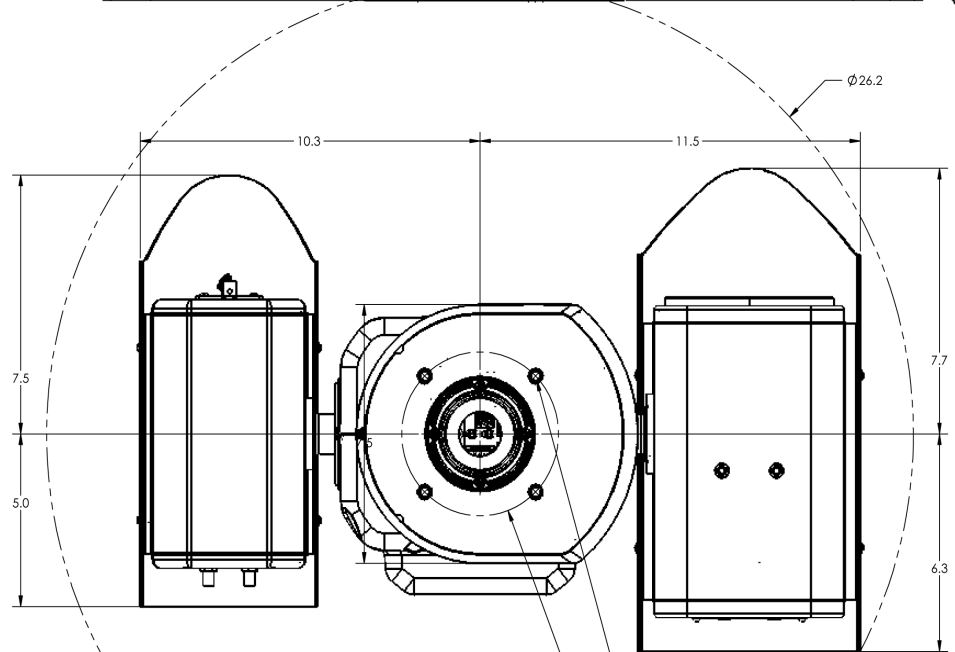
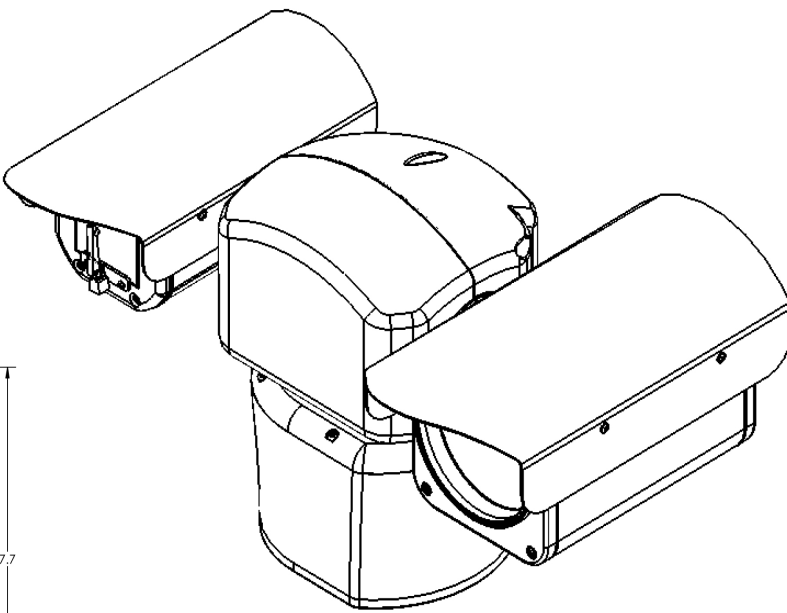
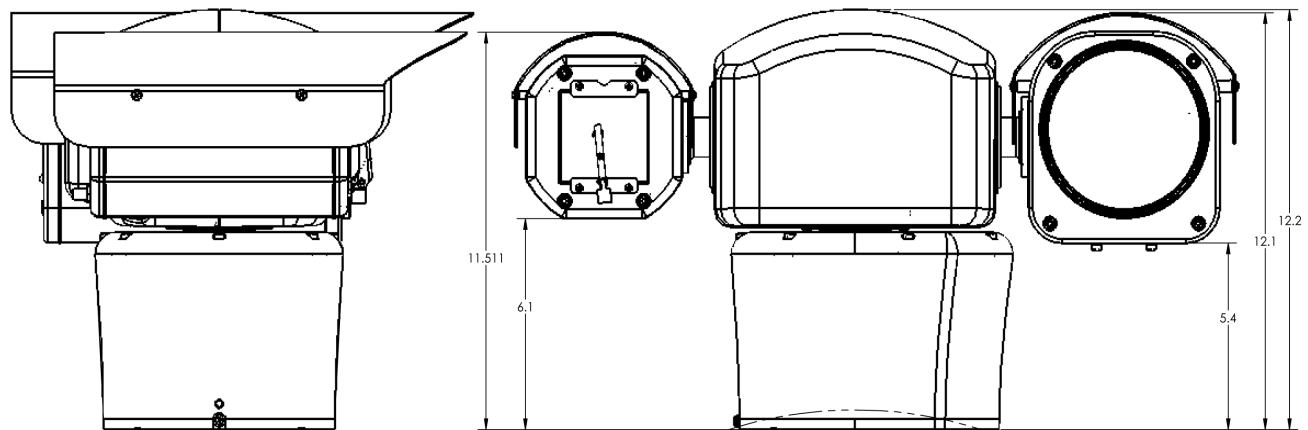
**Pan/Tilt Connector: Amphenol PT01E-16-26P (476)**

Mating Connector: Amphenol PT01E-16-26S (476)

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# SYSTEM DIMENSIONS

8 7 6 5 4 3 2 1



$\text{Ø} .201 \nabla .600$   
1/4-20 UNC  $\nabla .500$

R2.375

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS

TOLERANCES ARE		ANGLES	
INCHES	MILLIMETERS	(0.0)	$\pm 0.30^\circ$
00 $\pm$ 0.01	(0.0) $\pm$ 0.25		
000 $\pm$ 0.005	(0.00) $\pm$ 0.13		
HOLE TOLERANCES			
INCHES	MILLIMETERS		
013 THRU +.004	(.30) THRU +.10		
.125 -.001	(3.20) -.02		
.126 THRU +.005	(3.21) THRU +.13		
.250 -.001	(6.35) -.02		
.251 THRU +.006	(6.36) THRU +.16		
.500 -.001	(12.70) -.02		
.501 THRU +.008	(12.71) THRU +.20		
.750 -.001	(20.0) -.02		

MATERIAL NOTED  
FINISH NOTED

# SYSTEM CLEARANCE

8 7 6 5 4 3 2 1

D

D

C

C

B

B

A

A

