

ACCURACII™ ML



SYSTEM SPECIFICATIONS



Área Seguridad



DETECT • RECOGNIZE • IDENTIFY

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

SYSTEM OVERVIEW

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 CCD technology.

Accuracii™ ML features a 1/4" Color CCD camera for day time operation, and a choice of high performance thermal camera using either a Dual Field of View (45/135mm) or lens or Continuous Zoom (15-100mm) lens for night operation.

Accuracii™ ML is designed and constructed to withstand the harshest weather and environmental conditions, including rain, direct sunlight, high humidity and dust.



APPLICATIONS

- Port Security
- Airport Perimeters
- Nuclear Power Plants
- Border Surveillance
- Critical Infrastructure
- Oil and Gas facilities

MAJOR COMPONENTS

- CCD Camera/Lens - Color (Day) Camera and lens for detailed imaging
Optional Laser Range Finder module
Optional GPS module
- Thermal Camera - Thermal (Night) Camera for IR Imaging
- Thermal Camera Lens - Continuous and Dual FOV Lens Options
- Pan/Tilt Positioner - High accuracy pan/tilt unit
- Control Cable - Connects system to external power, video, comm.

SYSTEM SPECIFICATIONS

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

POWER REQUIREMENTS:

- Power Input: 24VDC \pm 1%
- Power Consumption: 30w typical (static, no heaters)
350w max (moving, with heaters)

ENVIRONMENTAL:

- Storage Temperature: -40°C to +71°C
-40° F to +160° F
- Operating Temperature: -40°C to +60°C
-40° F to +140° F
- Humidity: +40°C , 93% RH
- Salt Fog: MIL STD 810E method 509.3
- Environmental Rating: IP66

MECHANICAL PARAMETERS:

- Weight: 19 kg (42 lbs)
- Dimensions: 269mm (h) x 542mm (w) x 237mm (d)
10.6" (h) x 21.4" (w) x 9.4" (d)

THERMAL CAMERA

- Imager Type: Uncooled Microbolometer
- Spectral Band: 7.5-14 μ
- Pixel Size / Resolution:
17 μ / 640 x 480 NTSC/PAL
25 μ / 320 x 240 NTSC
25 μ / 384 x 288 PAL
- NETD: <50° mK

VIDEO FORMAT:

- Dual Channel (Thermal/CCD) - 2 BNC's
- RS-170/CCIR, 1.0V p-p, 75ohm

COMMUNICATION:

- RS-422/RS-485 Serial
- Protocol: Pelco D, Vumii (SDK Available)

PAN/TILT UNIT

- Pan/Tilt Speed: 0-50° per second
- Pan Range: 360° continuous
- Tilt Range: -90° to +90°
- Pan/Tilt Resolution: +/- 1.5 mRad

EMC:

- FCC 47 CFR part 15 sub B
- EN 55022
- EN 55024

SAFETY:

- EN 60950-1: 06
- EN 60950-22: 06 and A11:08

CERTIFICATIONS:

- ROHS compliant
- CE
- FCC

OPTIONAL LRF SPECIFICATIONS

- Maximum Range: 2000m
- Minimum Range: 5m
- Range Accuracy @<1500m: +/- 3m
- Range Accuracy @>1500m: +/- 5m
- Laser Safety Rating: Class 1
- Nominal Wavelength: 1550nm

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

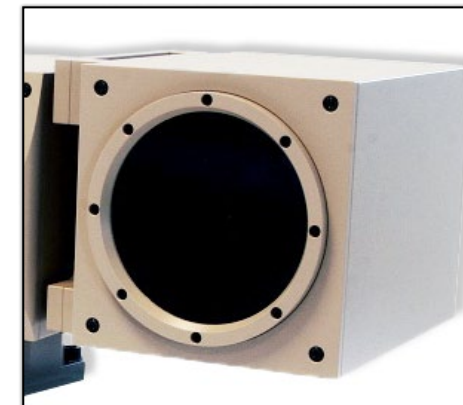
THERMAL CAMERA

OVERVIEW

Accuracii™ ML uses Vumii's high sensitivity un-cooled microblometer thermal cores available in 17μ 640 x 480 resolution (NTSC/PAL) or 25μ 320 x 240 resolution (NTSC) and 25μ 384 x 288 resolution (PAL). Either core can be paired with either a Dual Field of View 45/135mm or a Continuous Zoom 15-100mm lens.

The camera is designed and constructed to withstand the harshest weather and environmental conditions.

Additionally, the 17μ 45mm/135mm configuration has the option of adding **Vumii's innovative Fire Detection** module that allows for Fire Detection and High Risk of Fire (Hot Spot) detection at ranges up to 6km.



SPECIFICATIONS AND FEATURES

Thermal Engine	17μ 640 x 480 (NTSC/PAL)	25μ 320 x 240 (NTSC)	25μ 384 x 288 (PAL)
Spectral band	7.5-14μ	7.5-14μ	7.5-14μ
NETD	<50° mK	<50° mK	<50° mK
Digital Zoom	1x, 2x, 4x	1x, 2x, 4x	1x, 2x, 4x
Focus control	Motorized, Autofocus on Demand		
Control operation	Polarity, NUC, Image flip, Manual gain/level, Optical & Digital Zoom, Autofocus on Demand		

FIELD OF VIEW BY LENS TYPE

Thermal Engine	17μ 640 x 480 (NTSC/PAL)	25μ 320 x 240 (NTSC)	25μ 384 x 288 (PAL)
Dual Field of View			
Wide (45mm)	14.3°(H) x 10.7°(V)	10.4° (H) x 7.8° (V)	12.6° (H) x 9.5° (V)
Narrow (135mm)	4.6°(H) x 3.5°(V)	3.4° (H) x 2.6° (V)	4.1° (H) x 3.1° (V)
Continuous Zoom			
Wide (15mm)	42.2°(H) x 31.7°(V)	30.8° (H) x 23.1° (V)	37.1° (H) x 27.8° (V)
Narrow (100mm)	6.2°(H) x 4.7°(V)	4.6° (H) x 3.5° (V)	5.5° (H) x 4.1° (V)

THERMAL CAMERA PERFORMANCE

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING

INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

Legend

D/N Detection (Thermal) - 1.5 PoT

D/N Recognition (Thermal) - 6 VPoT



= Human Subject Size
1.83m x 0.75m



= Vehicle Subject Size
2.3m x 2.3m

Detection: 1.5 pixels across critical dimension
Recognition: 6 pixels across critical dimension
Critical Dimension: 0.75m (human); 2.3m (vehicle)

Fire Detection

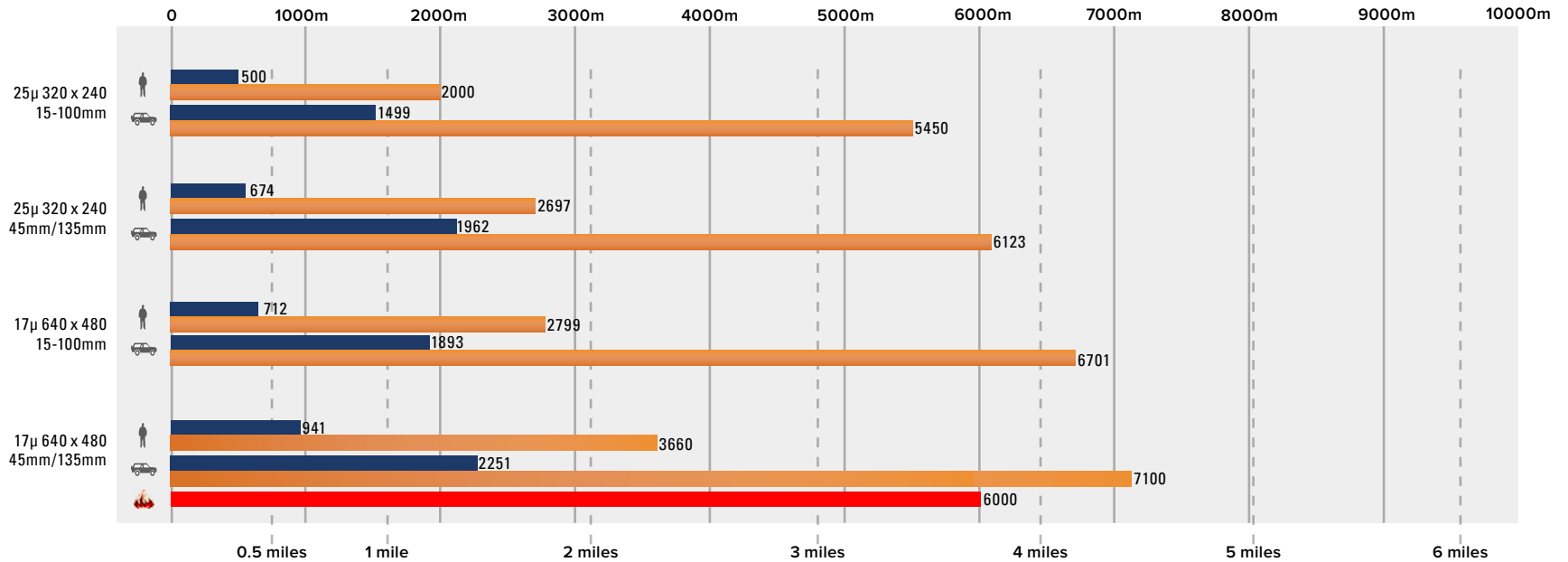
Fire Detection Range



Fire Detection and High Risk of Fire Assessment is an optional feature available with the 17μ 45/135mm lens option.

Fire Detection - Detects and provides an alarm at a certain range based on the size of the fire.

High Risk of Fire Assessment - Detects and provides an alarm when a portion of the scene rises in temperature above a defined threshold.



SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

CCD CAMERA

Accuracii™ ML includes a 1/4" color CCD camera for daytime threat detection and assessment. Additionally, the CCD camera head will enclose the optional Laser Range Finder and/or GPS position modules.

OVERVIEW

The imager is a high sensitivity, high zoom magnification visible camera providing color video for day-time operation.

CCD CAMERA SPECIFICATIONS

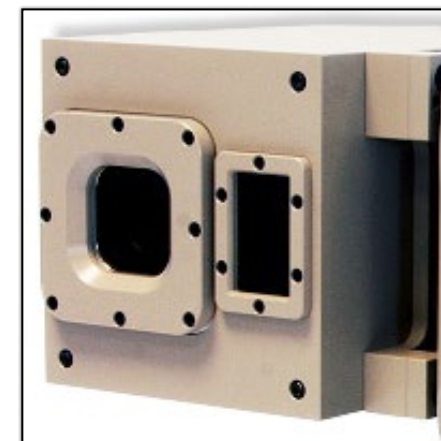
Imager Type	1/4" Color CCD
Effective Pixels	768 x 494 (NTSC) 752 x 582 (PAL)
Lens Type	36x Continuous Zoom
Lens Focal Length	3.3 - 119mm
Imager Horizontal FOV	60.2° to 1.8°
S/N ratio	<50 dB
Digital zoom	12x

LASER RANGE FINDER SPECIFICATIONS (OPTIONAL)

Maximum Range	2000 meters
Minimum Range	5m
Range Accuracy @<1500m	+/- 3m
Range Accuracy @>1500m	+/- 5m
Nominal Wavelength	1550nm
Laser Safety Rating	Class 1

GPS MODULE (OPTIONAL)

The optional GPS module allows transmission of the camera's current GPS coordinates.



SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

PAN / TILT POSITIONER

The variable speed Pan/Tilt unit provides continuous 360° rotation of the cameras at up to 50°/sec (pan/tilt)

The PT platform supports the following modules:

- Thermal (IR) camera enclosure
Thermal camera/lens
- Charge-coupled device (CCD) camera enclosure
CCD camera/lens
Optional LRF module
Optional GPS module



SPECIFICATIONS

Position accuracy (resolution)	+/- 1.5 mRad
Minimum pan speed	0.1°/sec.
Maximum pan speed	50°/sec
Minimum tilt speed	0.1°/sec.
Maximum tilt speed	50°/sec
Tilt range	+90°/-90°

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

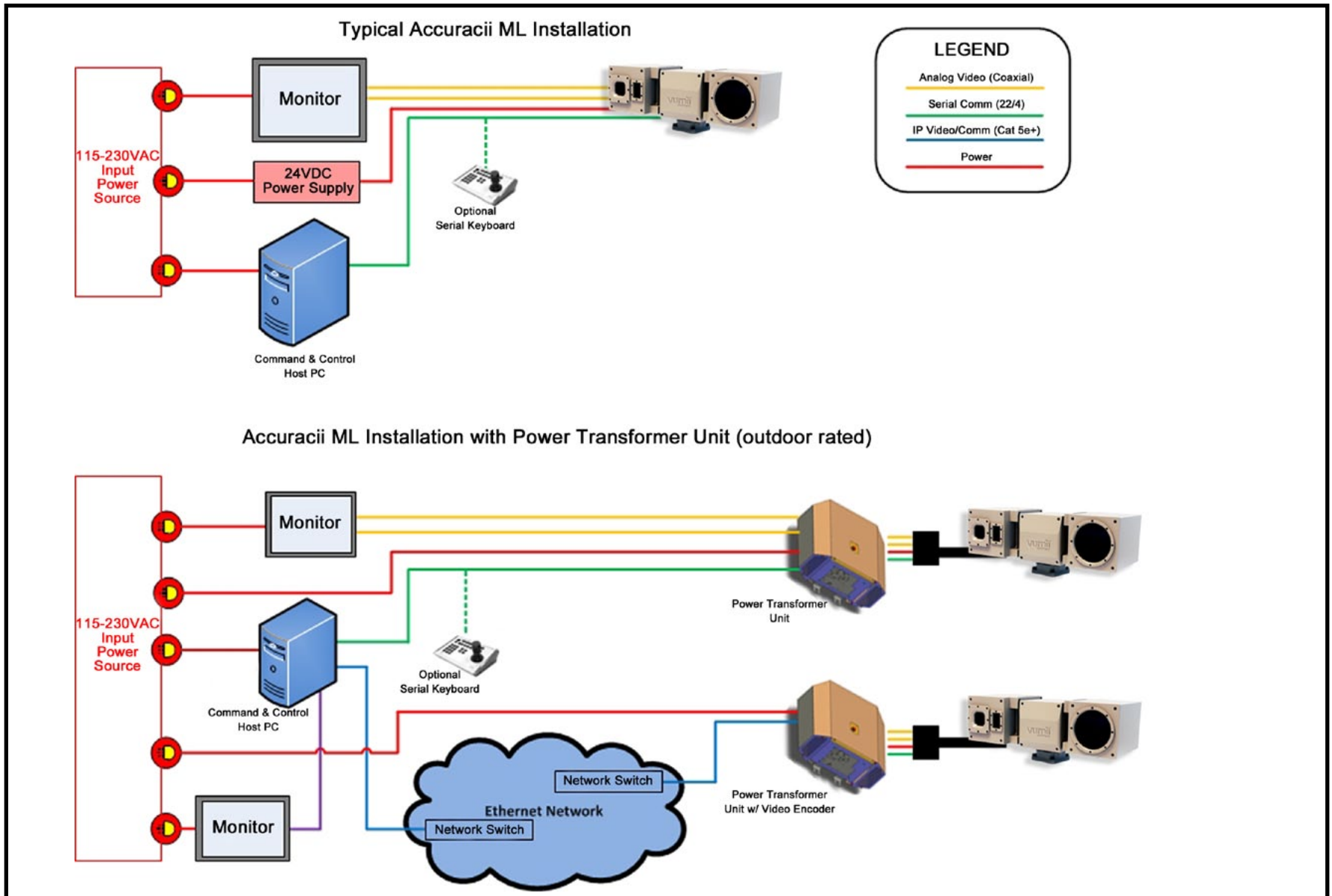
SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

TYPICAL SYSTEM DESIGN



SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

CAMERA MOUNTING

The Pan/Tilt unit (PT) should be pole or surface mounted using the following hardware:

Imperial

- 4 x SCR 1/3" 20NCX7/8" HEX HD SS bolts
- 8 x 1/3" Flat SS lock washers
- 4 x 1/3" SS washer springs
- 4 x 1/3" 20NC HEX nuts

Metric

- 4 x SCR M8 20NCX (22mm length) HEX HD SS bolts
- 8 x M8 Flat SS lock washers
- 4 x M8 SS washer springs
- 4 x M8 20NC HEX nuts

Mounting Options

Vumii Wall Mount Kit: Part #PA1000019A
Includes mounting plate MP1000017A

Vumii Pole Mount Kit: Part #PA1000020A
Includes Vumii Wall Mount Kit Part #PA100019A
Includes mounting plate MP1000017A

Custom Mounting Specifications

The base of the Accuracii ML uses a 77.8mm (3.06") hole pattern

REQUIRED INSTALLATION CLEARANCE

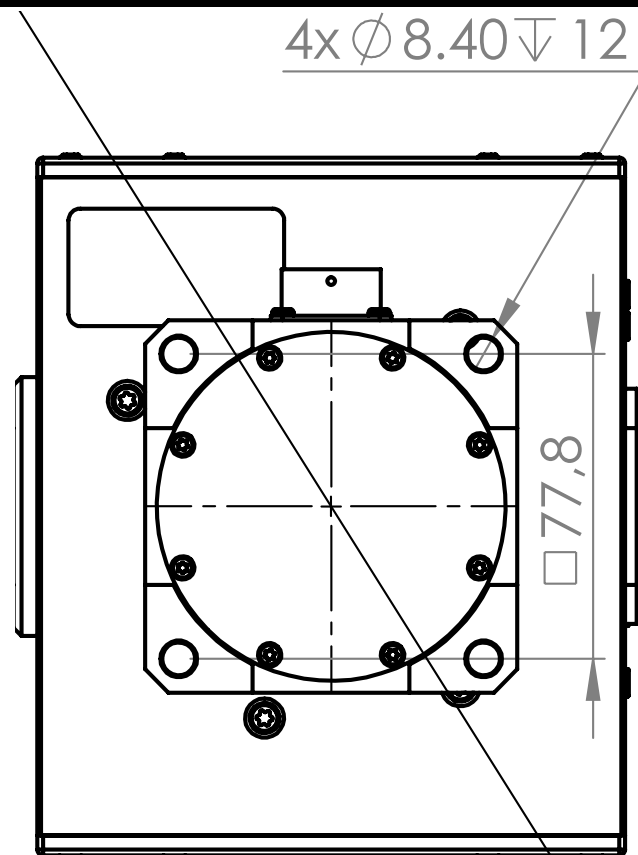
IMPORTANT: The unit should be installed in a location with at least the listed amount of required clearance:

Minimum Total Tilt Clearance (Vertical): 335mm (13.2")

The minimum tilt clearance height is calculated starting from the base of the Accuracii ML unit

Minimum Total Pan Clearance (Horizontal): 590mm (23.3") (Diameter)

The minimum pan clearance width is calculated as the diameter, the radius needed from the center of the mounting location would be 295mm (11.62")



All Dimensions in millimeters

*Fire Detection/Analytics Applications require a very stable mounting platform, refer to Vumii's Analytics Camera Mounting Guide for detailed information on mounting for this application.

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

ORDERING INFORMATION

ACCURACII ML MODELS

A standard order **Accuracii ML** ships as an integrated unit consisting two camera heads, one camera head contains the thermal camera and lens and the other camera head contains the CCD camera and lens and will also contain the optional laser range finder unit when ordered. The system will ship with a mating connector for connection the the pan/tilt base mounted connector, and a CD containing product documentation and test/setup software. See the next page for optional accessories

CCD Camera/Lens	Thermal Lens	Thermal Engine	Video Type	Camera Options	Part Number
3.3 - 119mm Continuous Zoom	45-135mm Dual FOV	17μ 640 x 480	NTSC	None	AC135D17V-PAN00
				LRF	AC135D17V-PAN10
				GPS	AC135D17V-PAN20
			PAL	LRF & GPS	AC135D17V-PAN30
				None	AC135D17V-PAP00
				LRF	AC135D17V-PAP10
	25μ 320 x 240	NTSC	GPS	AC135D17V-PAP20	
			LRF & GPS	AC135D17V-PAP30	
			None	AC135D25Q-PAN00	
		PAL	LRF	AC135D25Q-PAN10	
			GPS	AC135D25Q-PAN20	
			LRF & GPS	AC135D25Q-PAN30	
3.3 - 119mm Continuous Zoom	15-100mm Continuous Zoom	17μ 640 x 480	NTSC	None	AC100Z17V-PAN00
				LRF	AC100Z17V-PAN10
				GPS	AC100Z17V-PAN20
			PAL	LRF & GPS	AC100Z17V-PAN30
				None	AC100Z17V-PAP00
				LRF	AC100Z17V-PAP10
	25μ 320 x 240	NTSC	GPS	AC100Z17V-PAP20	
			LRF & GPS	AC100Z17V-PAP30	
			None	AC100Z25Q-PAN00	
		PAL	LRF	AC100Z25Q-PAN10	
			GPS	AC100Z25Q-PAN20	
			LRF & GPS	AC100Z25Q-PAN30	
25μ 384 x 288	NTSC	None	AC100Z25Q-PAP00		
		LRF	AC100Z25Q-PAP10		
		GPS	AC100Z25Q-PAP20		
	PAL	LRF & GPS	AC100Z25Q-PAP30		
		None	AC100Z25Q-PAP00		
		LRF	AC100Z25Q-PAP10		
25μ 384 x 288	PAL	GPS	AC100Z25Q-PAP20		
		LRF & GPS	AC100Z25Q-PAP30		
		None	AC100Z25Q-PAP00		
	PAL	LRF	AC100Z25Q-PAP10		
		GPS	AC100Z25Q-PAP20		
		LRF & GPS	AC100Z25Q-PAP30		

ACCESSORY ORDERING INFORMATION

Accuracii ML can be ordered with the following optional accessories and mounts:

Accessory	Description	Part #
Cables		
5m (15') Integration Cable	Mating connector to Dual BNC's (video), DB9 (comm), and power leads	WC1000009A
15m (45') Integration Cable	Mating connector to Dual BNC's (video), DB9 (comm), and power leads	WC1000010A
Power		
Power Transformer Unit	Outdoor rated enclosure with 24VDC 20 amp power transformer 120-230VAC	PA1000018A
Power Transformer Unit & Encoder	Outdoor rated enclosure with 24VDC 20 amp power transformer 120-230VAC and H.264 video encoder	PA1000014A
24VDC Power Supply	24VDC 20 amp (480w) indoor rated power supply	PS1000016A
Video & Communication		
H.264 Video Encoder	H.264 TCP/IP Encoder with four video input channels and one serial communication input channels	PA1000013A
Video Capture Card	USB card allows for the display and recording of 1 analog video channel	880518
Keyboard / Joystick	Pelco -D compatible Serial Communication Keyboard with joystick for camera control	805199
Mounts		
Wall Mount Kit	Wall Mount Kit	PA1000019A
Pole Mount Kit	Pole Mount Adaptor and Wall Mount Kit	PA1000020A
Fire Detection		
Fire Detection Module	Fire Detection and High Risk of Fire Feature upgrade	FDU-C1000

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

MECHANICAL ICD'S-DIMENSIONS

MECHANICAL ICD'S-CLEARANCE

SHIPPING CONTENTS

STANDARD ORDER

■ **Accuracii™ ML** includes:

- 1) Accuracii ML system
 - Thermal camera
 - Pan/tilt positioner
 - CCD camera

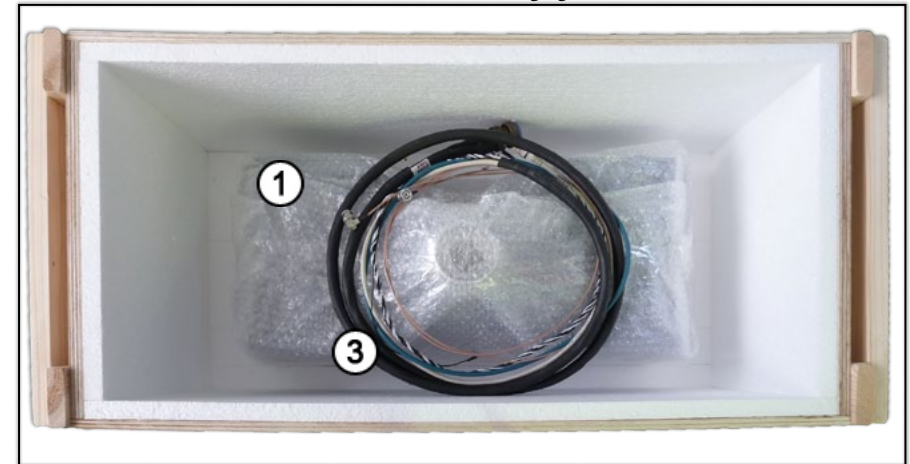
- 2) Software & Documentation CD containing:
 - User Manual
 - Test & Configuration Software (Sensorii)

- Pan/Tilt base mating connector (not shown)

OPTIONAL EQUIPMENT:

- 5m (15') Integration Cable (4)
- 15m (45') Integration Cable (4)
- Power Transformer Unit (packaged separately)
- Power Transformer Unit & Encoder (packaged separately)
- 24VDC Power Supply (packaged separately)
- H.264 Video Encoder (packaged separately)
- Video Capture Card (packaged separately)
- Keyboard / Joystick (packaged separately)
- Wall Mount (packaged separately)
- Pole Mount Adaptor (packaged separately)

Accuracii ML Packaging



SYSTEM OVERVIEW

SYSTEM SPECIFICATIONS

THERMAL CAMERA

THERMAL CAMERA PERFORMANCE

CCD CAMERA

PAN/TILT POSITIONER

TYPICAL SYSTEM DESIGN

CAMERA MOUNTING

ORDERING INFORMATION

ACCESSORY ORDERING INFORMATION

SHIPPING CONTENTS

WIRING ASSIGNMENT

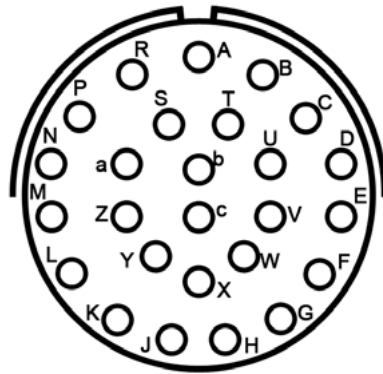
MECHANICAL ICD'S-DIMENSIONS

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WIRING ASSIGNMENT

Accuracii Pedestal Connector & Pinout

Pan/Tilt Base Connector



Pin	Signal
E	+24VDC
U	+24VDC
b	+24VDC
F	GND (0V)
V	GND (0V)
W	GND (0V)
A	RS422/RS485 RX-
T	RS422/RS485 RX+
B	RS422/RS485 TX-
C	RS422/RS485 TX+
H	VIDEO 1 GND
G	VIDEO 1
K	VIDEO 2 GND
J	VIDEO 2

Part Numbers

Optional Integration cable 5m (15'): WC1000009A

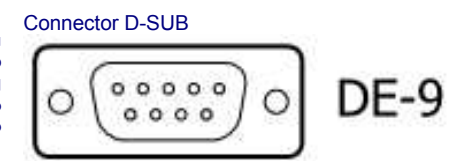
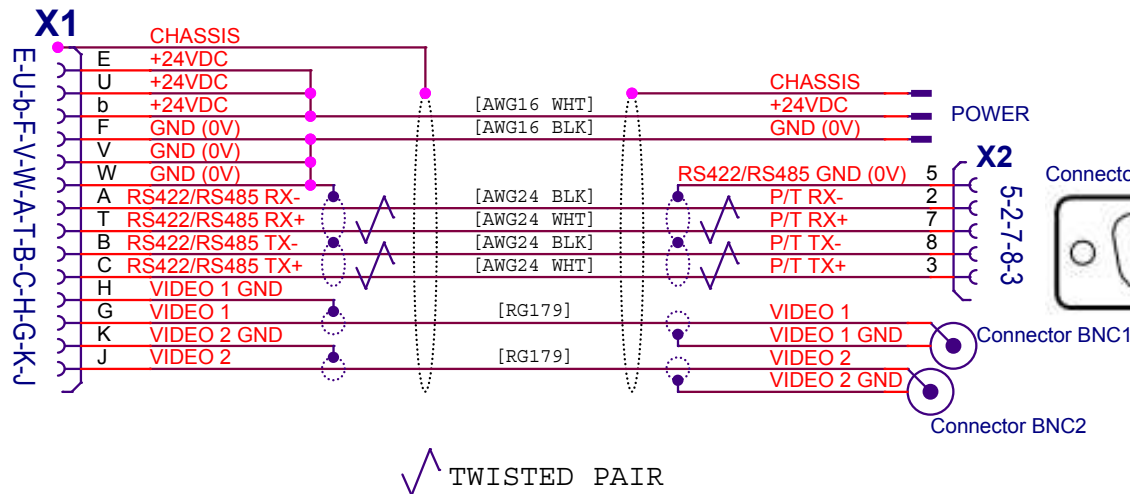
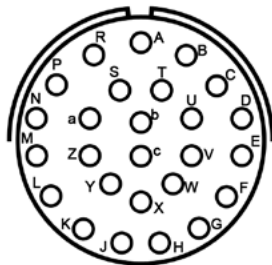
Optional Integration cable 15m (45'): WC1000010A

Mating Connector*: 851-36RG1626S50

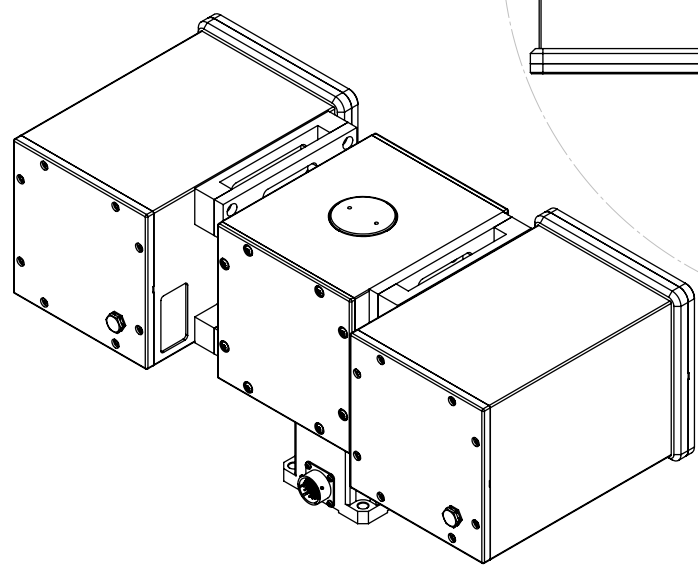
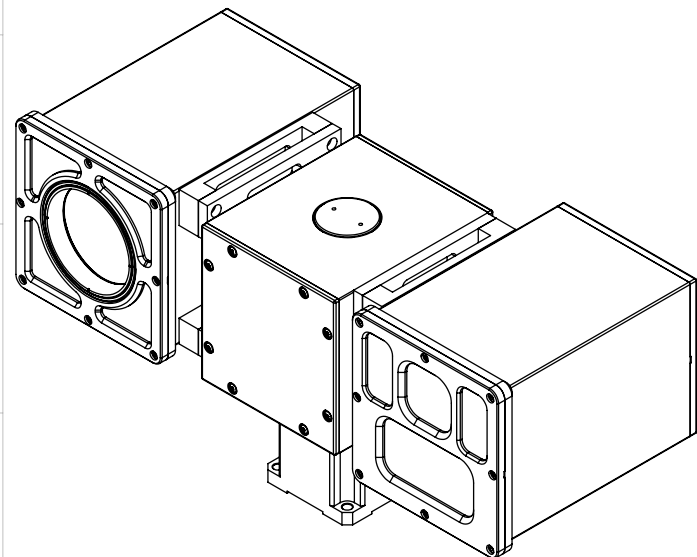
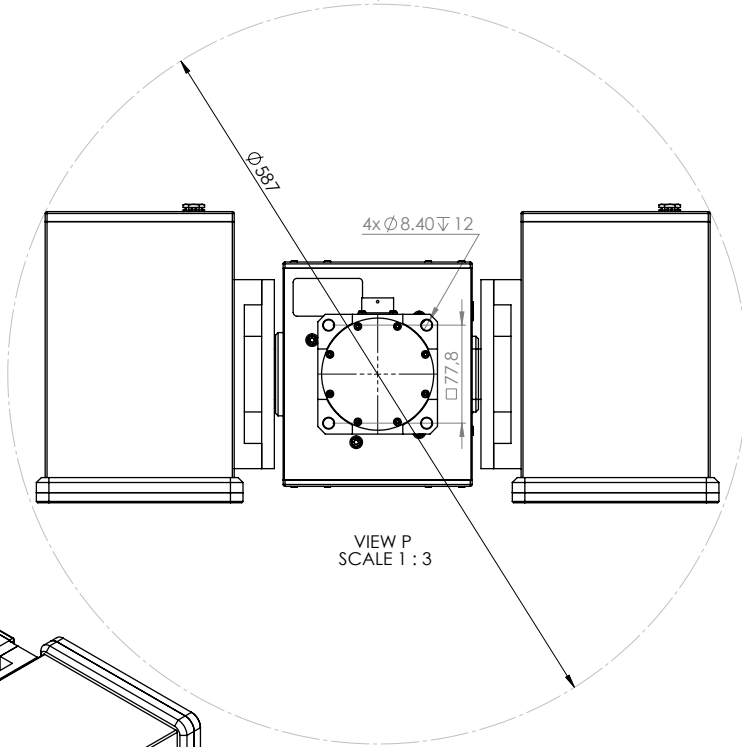
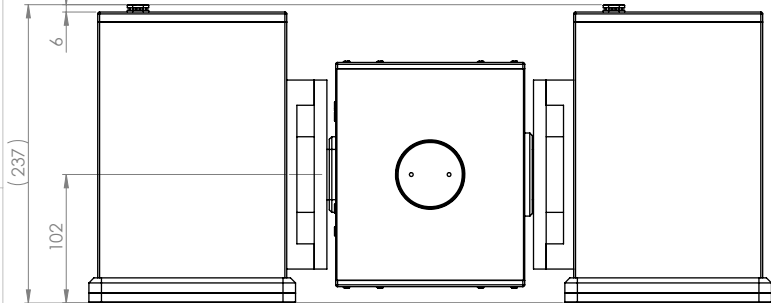
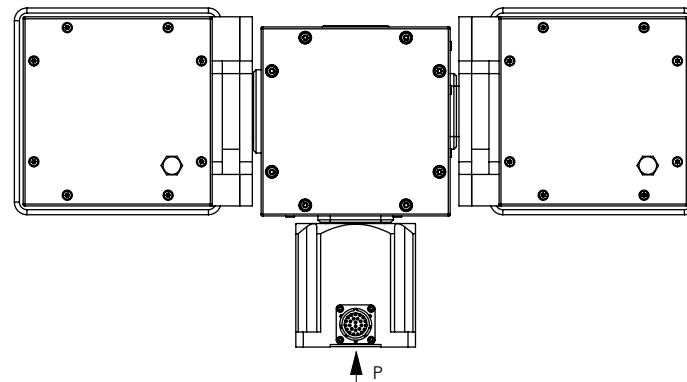
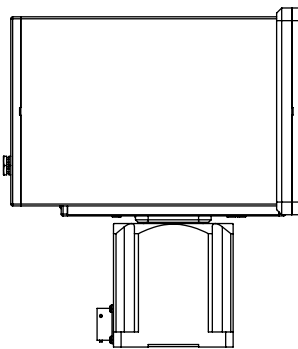
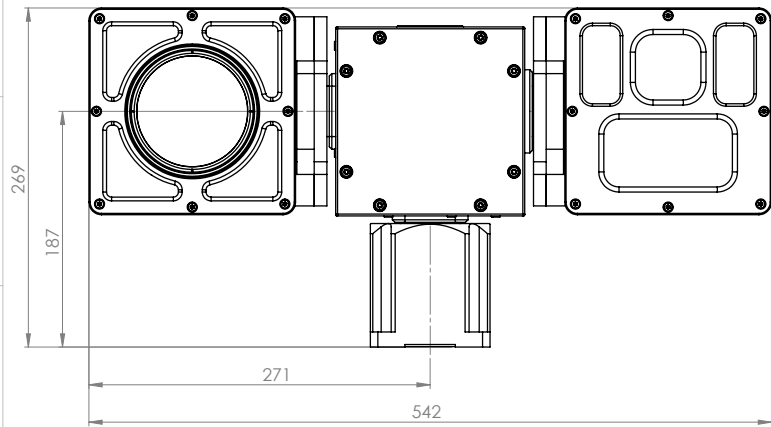
* All Accuracii orders include a mating connector

Optional Integration Cable Pinout and Connectors

Mating Connector Part # 851-36RG1626S50



SYSTEM DRAWINGS



3				
2				
1				
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DRAW:	Ing. Gregor	26.2.2013		
APPR. DGN.	Ing. Matusinec	26.2.2013		
TECHNOL.				
CHECKED:				
MATERIAL:				
MAT. SPEC:				
PART NAME:	Monitoring system		ACCURACII	
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