



## Model No.

**1) Terra-360-1/2EM-101000/202000 (Super Long Range)**

+ 2x 500MIRL-850 + 2x LIR5KM-860

True Color Day-20KM(60,000Ft)/Night-8km(24,000Ft)  
With 10~1000(100x)/20~2000(2x) Motorized Zoom Lens

**2) Terra-360-1/2EM-12750/251500 (Long Range)**

+ 2x 500MIRL-850 + 2x LIR5KM-860

True Color Day-15KM (45,000Ft)/Night-6km(18,000Ft)  
12.5~750mm(60x)/23~1500mm(2x) Motorized Zoom Lens

**3) Terra-360-1/2EM-23506 (High Range)**

+ 2x 500MIRL-850 + 2x LIR5KM-860

True Color Day-6KM(18,000Ft)/Night-4km(12,000Ft)  
With 23~506mm (22x)/ Motorized Zoom Lens

**4) Terra-360-1/2EX-10330 (Medium Range)**

+ 2x 500MIRL-850 + 2x LIR5KM-860

True Color Day-3km/Night-3km(6,000Ft)  
10~330mm (33x) Motorized Zoom Lens

**5) Terra-360-1/2EX-10200 (Short Range)**

+ 2x 500MIRL-850 + 2x LIR5KM-860

True Color Day-2km(6,000Ft)/Night-2KM(6,000Ft)  
with 10~200mm (30x) Motorized Zoom Lens

## Features

- ❖ Turn-key 24/7 CCTV surveillance solution
- ❖ Accurate micro-step, adjustable speed, endless PTZ operation
- ❖ Monitor and control remotely via wired or wireless networks (wireless up to 40km away)
- ❖ Reliable solid state IR bulb exceeds 100,000 hours
- ❖ Day-Night filter, extreme 0.000005 sensitivity at night
- ❖ 1/2EMCCD IR optimized camera renders superb images
- ❖ Dual ASC-LIR5000M for 10KM Active IR Illumination
- ❖ Dual ASC-500MIRL-940 Illuminators for evenly distributed IR
- ❖ IR tuned optics 20~2000mm (2x magnifier) optical 200x zoom
- ❖ Electron Multiplying Charge Coupled Device (EMCCD) intensifies IR light to achieve long range active IR
- ❖ AVA-VPU-180 20 IO ports, H.264 IP Server, & Power Supply
- ❖ IR band pass filter (IBPF) provides 40% better images in fog
- ❖ Built-in RS485/Pelco-D receiver for operation and control
- ❖ 60 PTZ Preset zones & tours for unmanned operation
- ❖ Integrated (AVA) Ascendent Video Analytics



## ASC-1/2EMCCD

### 100 Times More Sensitive Than A Normal Camera

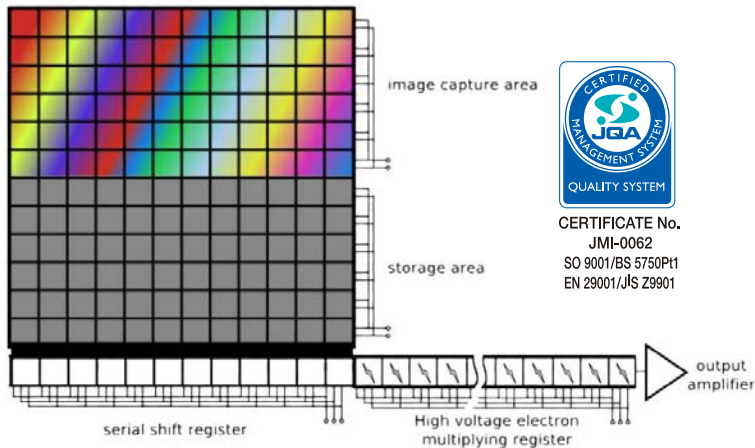
A cutting edge 1/2" EM-CCD with electron multiplication is used to achieve exceptional sensitivity.

- Color in full motion mode      0.008 lx
- Monochrome in full motion mode   0.00005 lx

### Superior Image Reproduction in Low Light Levels

Thermoelectric cooling is used on the EMCCD to reduce the effects of dark current noise along with a new digital signal processor (DSP) that provides digital noise reduction of the luminous signal yields sharp clear pictures with a high S/N ratio.

The ASC-1/2EMCCD is the ultimate low light camera, with a supersensitive integrated 1/2" EM-CCD that provides flawless real-time color images by day and B/W by night with no lag or streaking. The ASC-1/2EMCCD incorporates a revolutionary low light imaging sensor which is extremely effective when combined with Ascendent's IR laser illuminators to provide protection for applications such as: Border Crossings, Military bases, Trade Hubs, Airports, Oil & Gas



CERTIFICATE No.  
JMI-0062  
SO 9001/BS 5750P11  
EN 29001/JIS Z9901

### Electron Multiplication used in the EM-CCD Improves Performance While Reducing Technical Issues

Typical high sensitivity cameras use an Image Intensifier Tube that is subject to burn in, afterimage (lag) and short lifespan. These problems are eliminated with the use of the EM-CCD.

## Specifications

<b>CCD</b>	<b>Total Pixels</b>	680(H) x 500(W)
	<b>Effective Pixels</b>	658(H) x 496(W)
	<b>Size</b>	1/2 Inch type IMPACTRON CCD (Electron Multiplying CCD)
<b>Sync.</b>	<b>Scanning System</b>	2 : 1 Interlace
	<b>Synchronization</b>	Internal
	<b>Frequency</b>	Horizontal : 15.734KHz Vertical : 59.94Hz
	<b>Resolution</b>	480TV Lines(Color), 540TV Lines(B/W)
	<b>Video Output</b>	1.0Vp-p / 75 ohms
	<b>S/N (Y signal)</b>	50dB (AGC off, Weight on)
	<b>Min. Illumination</b>	0.008Lux (Color), 0.000005 Lux (B/W)
	<b>BLC</b>	On-Off (Selectable 9-area)
	<b>Day &amp; Night</b>	Motorized Changing filter
	<b>Gain Control</b>	Low, High, Turbo, Off selectable
	<b>White Balance</b>	ATW / AWC / Manual (1800°K ~ 10,500°K)
	<b>Electronic Shutter</b>	Auto / Manual (1/60 ~ 1/200,000sec)
	<b>Sens-up</b>	On / Off (Selectable 2~128 times/Manual, 2~64 times/Auto)
	<b>OSD</b>	Built-in
	<b>NDR</b>	Auto / NDR-8 step
	<b>IRIS Control</b>	DC / Video selectable
<b>POWER</b>	DC 12V±10%	
<b>Power Consumption</b>	1.5A MAX.	
<b>Lens Mount</b>	CS Mount (C-Mount : adaptor)	
<b>Dimension</b>		
<b>Operating Temperature</b>	-10°C ~ +50°C	
<b>Operating Humidity</b>	Max. 90% RH	
<b>Weight</b>	600g	

## Features



- IR Illumination up to 500M (1500Ft) for active IR performance
- Selectable IR angle illumination for unmatched versatility and performance
- Can be equipped with military grade IR (940nm) for covert surveillance Rugged IP 66 aluminium chassis designed for operation in harsh environments
- Industry leading 100,000 hour IR lifetime up to 10X that of competitors
- DC- converter provides clean power to illuminator for a lifespan of over 5 years
- ASC-500MIRL provides illumination up to 1KM (3000Ft) at a 20 degree angle
- 27 Hybrid high-output IR LED's provide evenly distributed illumination
- Heater/blower for operating temperature variance of -35~55C

## Overview

The ASC-500MIRL is an IR illuminator that evenly distributes IR while eliminating hotspots, washout, and overexposure usually associated with IR imaging to provide flawless detail rich images in 0 lux (complete darkness) for true 24/7 surveillance. By using Hybrid LED technology that unlike traditional IR LED's give both distance and wide angle illumination to offer active IR performance up to 500M (1500ft) with 10 degrees of illumination. Not only does the ASC-500MIRL offer superior illumination, and greater distance but also has an IR lifetime of 100,000 hours (up to 25x the leading competitor) making it the clear choice for military and homeland security.

- 850NM/10°: Up to 500M(1,500Ft) visible  
up to 1KM(3,000Ft) by two
- 850NM/25°: Up to 250M(750Ft) wide angle
- 940NM/10°: Up to 300M(900Ft) Invisible

Model No.	ASC-500MIRL-850nm	ASC-500MIRL-940nm
No. of IR LEDs	27-Strong "IR" LED with collimator	27-Strong "IR" LED with collimator
Wave Length	850NM, Visible	940NM, Invisible
CdS sensor circuits	Yes	Yes
Cooling blower	Yes	Yes
70°C thermal switch	Yes	Yes
Image pick-up distance by using star-light sensitivity cameras (0.0001 lux)	500M(1,500Ft) AT 850NM/ 5° 250M(7,50t) AT 850NM/ 25°	300M(900Ft) at 940NM/±5°
Power supply	AC24V or DC24V/2.5A DC12V/5.0A (Optional)	AC24V or DC24V/2.5A DC12V/5.0A (Optional)
Dimensions	Φ160-224(L)mm / (Φ6.29"-8.81")	Same
Weight	3.8 kgs	3.8 kgs



Ascendent's laser IR diode module combines laser diode technology, quality optics and sophisticated electronics to create invisible laser IR illumination. The ASC-LIR5000M-860 (IR Laser) synchronizes IR intensity and area illumination with motorized zoom for flawless active IR performance, absolutely eliminating over exposure, washout, and hotspots. When combined two ASC-LIR5000M lasers can provide distances up to 10km classification level performance in complete darkness and up to 20KM by day when paired with Ascendent's PTZ Terra imaging equipment.

### Features

Precision engineered laser diode module for superior performance, efficiency, and reliability

IR either 860nm or 940nm wavelength  
 IR intensity and area illumination sync with motorized zoom for flawless active IR performance at distance up to 10km or 5km-10km (selectable)  
 Safe distances for naked eye as close as 20 feet away

Laser Diode Class : 4 (IEC 60825-1)

IR intensity and area can also be manually adjusted

Long IR lifetime of 10,000 over 3x that of competitors  
 Efficient design; low power draw of only 1.7W max  
 APC, and temperature control for constant performance

Rear View



Rear Part	① MODE s/w S : Short distance mode(500M~4km) L : Long distance mode(4km~8km)
	② Turn on point control of Laser S : Short distance (About 500M) L : Long Distance (4km Fixed)
	③ Power Connector 12V / GND
	④ Power Switch (12V)
	⑤ Manual Control : Image pick-up distance adjust by beam size control
	⑥ Synchronizes IR beam with motorized zoom providing flawless active IR performance

### Optical

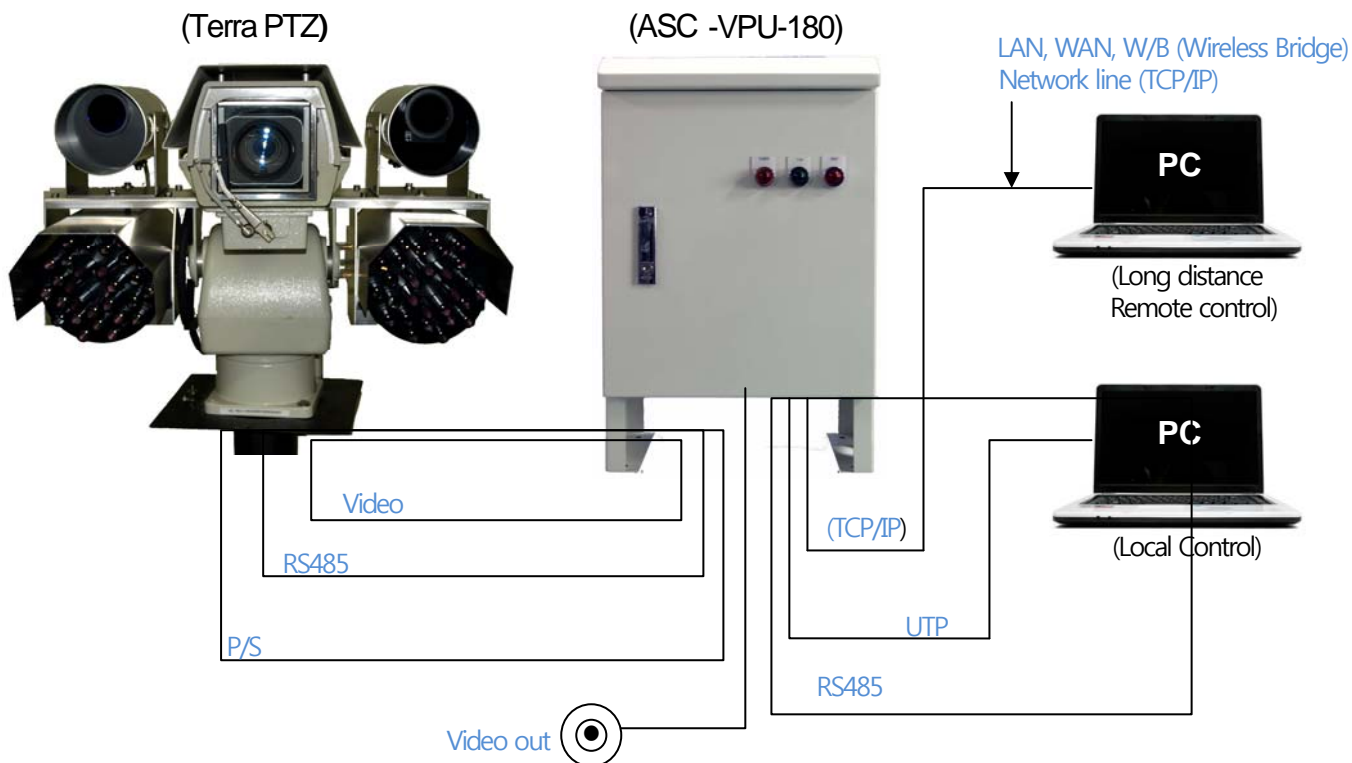
Optical power(mW)	1700(Tc=25°C)
LD power(mW)	2000 (Max)
Wavelength(nm)	860 ±10
Beam Dia(M) typ.	7.1 x 5.3 (at 4KM)
Beam Div(degree) *full	0.1~7
LD Pin Connection	Case Positive

### Electrical

Operating voltage(DC V)	12V
Operating current(A)	2.5A
Laser Diode MTBF	10,000 hours
Control Beam Size and Motor	Manual or RS485

### Mechanical

Dimensions(mm)	70*110*240 (WxHxL) (Refer to drawings)
Weight (kg)	1.9
Housing material	Aluminium



3-Axis Joystick

- **Stainless steel outdoor housing with special coating (IP66)**
- **Built-in cooling fan with temperature control box**
- **Built-in Heater with temperature control box**
- **Built-in VPU (Video Processing Unit) with Intellivix - Farsight II-300 (Terra PTZ control software) program to use 40-Preset 180 degree PANORAMIC still image display, Auto or Manual tour of all preset zones, compare night time image with Day time still image to easily check intruders, Auto focus at manual PTZ, Auto close-up by “DRAG” on the screen, camera position display & Target image distance, direction data on the screen)**
- **Built-in TCP/IP server inside VPU**
- **Built-in 4CH. HUB**
- **Built-in RS232C to 485 converter to use 3-Axis joystick controller**
- **Built-in 5CH. AUX. control Board to use Main Power on-off of PTZ, Speaker on-off, etc.**
- **Built-in main power supply to use PTZ operation (DC24V/8.4A)**
- **Weight: 20kgs**
- **Dimension: 412(W)x259(D)x623(H)mm**

**AVA: Intelligent Video Analytics**

AVA (Ascendent Video Analytics) is an innovative product that overcomes the constraints of traditional CCTV monitoring systems in covering wide areas. AVA utilizes multiple fixed cameras for a 180°panoramic high resolution display, a PTZ camera, and intelligent video analytics module. The 180° panoramic camera allows monitoring of a wide area and eliminates blind spots. The video analytics module analyzes video to detect and track moving objects the in real-time. After motion or an object is detected, telemetry is sent to the PTZ camera automatically tracks and focuses on moving objects. Effectively integrating the 180°panoramic cameras and PTZ camera with infrared illuminators, allows the AVA-VPU-180 to monitor a large area, while reducing man-power requirements.



**180° Panorama video motion detection & Tracking (VIA PTZ)**



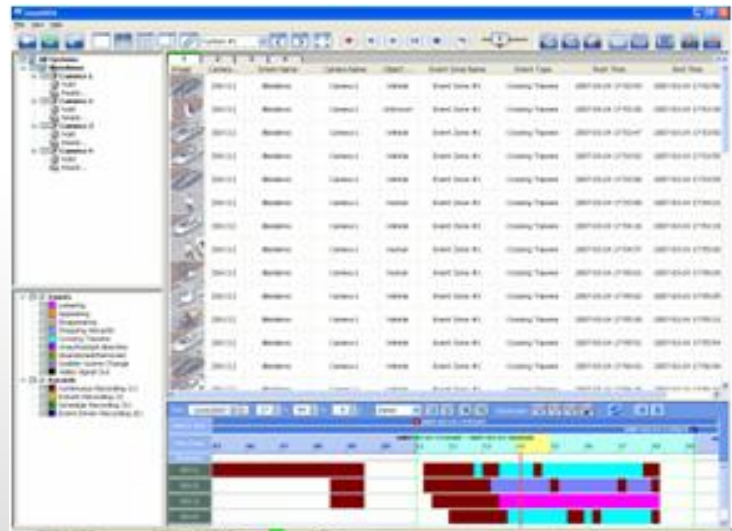
**High Detail Live and Recorded video via PTZ**

**Flexibility**

AVA-VPU-180 is designed for a wide range of applications: Military (border, base and perimeter guarding), Construction (civil and corporate), Law Enforcement (police, prison, etc.) and Critical Infrastructure (airports, roads, bridges, hospitals, schools, dams, malls, parks, parking lots, sea-ports, etc).

**Designed for Performance**

AVA-VPU-180; designed to robustly respond to the various video noises (shadow, light, swaying tree branches, lapping waves, etc.) that occur in outdoor environments. Incorporating intelligent object detection/tracking /classification and video analysis by user specified parameters; provides unparalleled monitoring, recording, and playback to ensure efficient operation of the DVR. Additionally, the system is designed to allow remote monitoring, backup, playback, system setup via LAN or WAN networks.



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