

PAVLight 622/s Free Space Optical System

Outdoor Unit

The ODU is based around PAV's best selling FSO systems, with the added enhancement of digital electronics throughout, to improve fade margin and jitter performance.

The ODU has been simplified from the previous generation of product, relocating delicate circuitry away from the roof vastly improving reliability and immunity to radio frequency interference. The ODU comprises the Free Space Transmission circuitry, and a simple fibre interface for connection to the Indoor Unit (IDU).

Indoor Unit



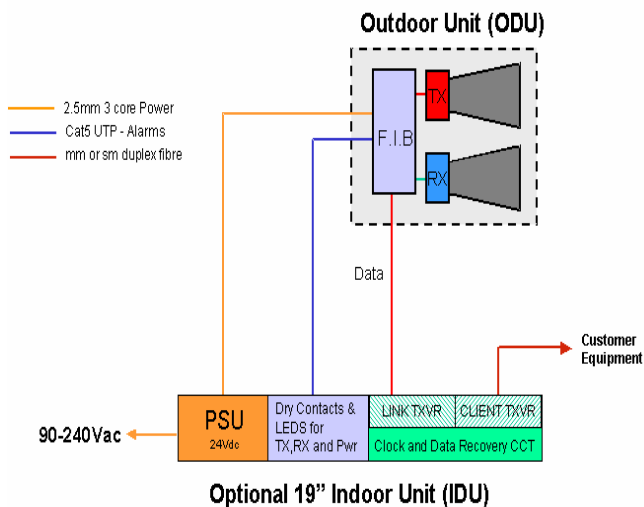
The 19" Indoor Unit (IDU) has been designed to allow remote monitoring of PAVLight high data rate, free space infrared links. The IDU has been designed to allow non-technical staff to give clear, concise information to technical personnel for sites where there is no on-site technical capability. Status indicators are simple and clear, allowing "at a glance" reading of link status and immediate indication of fault conditions.

Alarm information is presented on external relay terminals, allowing simple integration into existing management platforms. An optional SNMP interface board is available for those customers who require SNMP management of the link.

The IDU houses the Personality Interface Module (PIM) for the link, specifying the speed and physical presentation of the interface presented to the end-user. This enables upgrades to the link without the need to disturb the head. This will greatly simplify the upgrade process, as no disturbance of weather covers or link realignment will be necessary. The "PIM" also adds retiming/regeneration functionality on systems with a data rate of 100Mb/s.

The rear of the IDU provides the connections to the ODU and client network. Data for the head unit is provided over multimode fibre. A dual SC connector is provided for this purpose. The interface to the client device will be dependant on the Personality Interface Module installed.

The IDU provides controlled power (24 VDC) to the ODU, keeping mains voltages away from the roof, thus enhancing the health & safety performance of the system. A standard IEC60320 mains socket is provided for 110/240 VAC mains electricity input. A 3-pole connector is provided for supply of 24 VDC to the head unit. A key switch is provided on the front of the unit for power isolation. The key can be removed from the unit in both "On" and "Off" positions. This feature discourages tampering with the system.



The new generation of PAVLight Free Space Optical Systems provide totally modular solutions to a wide range of communications bandwidth and interface requirements. Features of the systems are:

- **Modular**
Common electronics across the range minimises spares holding.
- **Scalable**
Modular approach enables easy upgrades without roof access.
- **Digital Electronics throughout**
Improved jitter and bandwidth performance
- **Simple to Manage**
Clear LED information with alarm relay output
- **Integrated Retiming**
Ensures data/timing integrity on onward links



The PAVLight product has been designed to incorporate two separate elements.

PAVLight 622Free Space Optical System – Specifications

Model	Product Code	PAVLight 622	
		PL-622-1TX	PL-622-3TX
Outdoor Unit			
Performance	Effective Data Rate	1.5 - 622Mb/sec	1.5 - 622Mb/sec
	Range (Metres)	500	1000
	Bit Error Rate	>10 E ⁻¹⁰	
	MTBF (hours)	105,000	
Transmitter	Number of Transmitters	1	3
	Light Source	Laser Diode	
	Laser Class	1M	1M
	Wavelength (nm)	830	830
	Output Power	35mW	18.75dBm
	Nominal Ocular Hazard Distance (m)	0	
	Beam Divergence (mrad)	3	3x3
Receiver	Detector Type	APD	APD
	Field Of View	15 Degrees	15 Degrees
	Sensitivity (dBm)	-45 to -20	-45 to -20
Interface To IDU	Presentation	Fibre Optic	
	Connectors	Dual SC	
	Cable	Multimode or Singlemode Fibre	
Power Supply	Input Voltage	19.5-72V DC	
	Power Consumption (watts)	10	15
Environmental Information	Operating Temperature (°C)	-40 to +65	
	Operating Humidity	95% (non condensing)	
	Enclosure	IP66	
Mechanical Design	Dimensions (mm)	340 x 185 x 550	340 x 370 x 550
	Weight (kg)	8.5	14.9
Indoor Unit			
ODU Interface	Presentation	Fibre Optic	
	Connectors	Dual SC	
	Cable	Multimode or Singlemode Fibre	
Client Interface	Presentation	Fibre Optic	
	Connectors	Dual SC	
	Systems	ATM622,STM-4,STS-12,OC-12	
	Cable	Multimode or Singlemode Fibre	
Power Supply	Input Voltage	90-240 VAC (autoranging)	
	Power Consumption (watts)	10	
Environmental Information	Operating Temperature (°C)	-0 to +40	
	Operating Humidity	90% (non condensing)	
	Enclosure	IP30	
Mechanical Design	Dimensions (mm)	438 x 44 x 140	
	Weight (kg)	2	
Indicators	Indicator LEDs	ODU RX Data (Green), Client RX Data (Green), Retiming Sync (Orange), ODU RX Data (Yellow), Power Input (Green)	
	Alarm LEDs (Red)	ODU Power Fail, ODU RX Fail, ODU TX Fail	
	Alarm Relay Output	ODU Power Fail, ODU RX Fail, ODU TX Fail	

PAV Data Systems maintain a continuous process of research and development, and as such, all specifications within this document are subject to change without notice.