STP-36-12-S1

WR-12, Direct Reading and Programmable Phase Shifter

STP-36-12-S1 is a dual function direct reading and programmable rotary vane type Phase Shifter for use in millimeter wave systems across the standard E-band frequency range of 60 to 90 GHz. The phase shifter is an ideal piece of equipment in waveguide systems where a broad direct reading of phase is required. In manual mode, the phase is adjustable with the large knob and digital LCD screen displays the phase shift value. The LCD screen is powered by an internal, rechargeable battery, which is charged via the 2.5 mm DC jack by a provided DC to AC adapter. The 2.5 mm DC jack also provides power to the stepper motor, encoder, and internal microprocessor for the programmable mode function. The user can quickly switch to programmable mode by connecting the powered-up phase shifter to a computer with the USB Type-B port. In programmable mode, the phase is finely adjusted with a precision stepper motor by the internal microprocessor via user-entered serial port commands from the computer. The small, but powerful stepper motor is able to change the phase from 0° to 360° in 10 seconds. The phase shifter is packaged individually in a rugged equipment box with additional hardware and tools.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	60 GHz		90 GHz
Phase Shift Range	0°		360°
Accuracy		±5°	
Resolution		0.5°	
Insertion Loss		1.7 dB	
Return Loss		20 dB	
Operating Voltage	+24 V_{DC} (100 to 240 V_{AC} Adapter is Supplied)		
Power Handling			0.3 W (CW)
Specification Temperature		+25°C	
Operating Temperature	+5°C		+35°C

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FEATURES

- Full Band Coverage
- Manual and Programmable Operation
- Rechargeable Internal Battery
- USB Type B Port Communication Interface
- Digital LCD Display Screen With Backlight

APPLICATIONS

- Test Lab
- Instrumentation

SUPPLEMENTAL DETAILS

Mechanical Specifications:

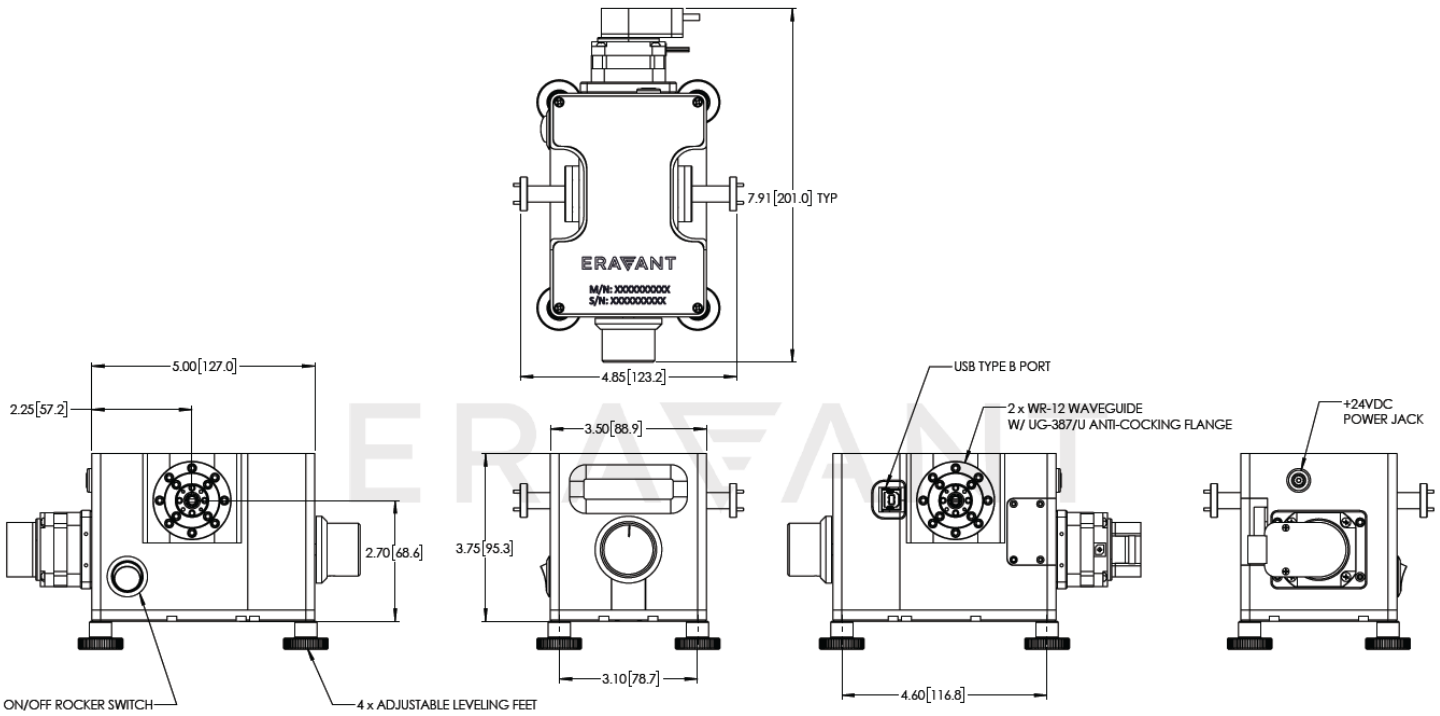
Item	Specification
RF Ports	WR-12 Rectangular Waveguide with UG-387/U Anti-Cocking Flange
Communications Port	USB Type-B
Power Supply Port	2.5 mm DC Jack (AC-to-DC power adapter included)
Finish	Gold Plated Waveguide, Black Anodized Body
Weight	4.9 lbs
Outline	TP-SE-A

Included Accessory Components

Item	Eravant Model Number	Quantity
Waveguide Quick Connect, 0.75” Circular Flange	SWH-QC-0750C-R2	2
Waveguide Screwdriver, 3/32 Hex Head	SWH-332-DS	1
Waveguide Flange Hardware Kit		2
AC to DC Power Adapter		1
USB 2.0 A Male to USB B Male Shielded Cable, 2.0m Long		1
USB Flash Drive with Calibration/Test Data		1

Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters])



NOTE:

- The product presented in this datasheet is at a preliminary design stage. Final electrical and mechanical specifications may differ than what is presented.
- The datasheet product photo used is not representative of the final product.
- All testing is performed under +25°C room temperature.
- AC-to-DC power adapter and USB Type B to Type A adapter cable are included.
- When the DC power supply is unplugged, the internal battery only provides power to the necessary internal functions for manual mode operation. The battery does not provide power for programmable mode operation; the DC power supply must be always plugged in during programmable mode operation.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- **The adjustable knob should not be turned when the attenuator is powered and operating under programmable mode. In programmable mode, the stepper motor receives power from the DC power supply. Turning the adjustable knob while the stepper motor is powered can generate back-EMF, which can damage the motor and impair the function of the unit.**
- Exceeding absolute maximum ratings shown will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and may damage the device. When not in use, use dust covers on the waveguide ports to prevent the ingress of dust and particles into the waveguides.