Ka Band Radar
Ideally suited for demanding performance in next generation Ka band radar systems. Meeting international standards for safety and EMI/EMC.

RF Performance
- Frequency: 32-36GHZ
- RF Output Power: 500W, 57dBm, pk
- Gain 60 dB - adjustable
- Temperature range: -40C to +60C

Built-in protection
- High speed fault detection, <1us
- Output arc detector
- Input/output isolator
- Reverse power detection/c’bar

Additional Options
- <9.5 lbs light weight enclosure
- Airborne certified
- High speed modulator, 1MHz
- Liquid/Conduction cooled

Guaranteed Reliability
- Military proven high viscosity coatings for dust and humidity control.
- Critical component designs have accumulated more than 1 million hours of operation.
- Data logging and analysis for cost effective maintenance

Polarity's 500W peak Ka band pulsed amplifier is ideally suited for demanding performance in next generation Ka band radar systems. This high efficiency, conduction cooled transmitter is densely packaged for light weight airborne applications and has RF modulation rates up to 1MHz.

Outstanding thermal design ensures reliable operation from ambient temperatures of -40C to +85deg C. The POL500KaP offers a design with industry leading reliability and its power supply design ensures rugged performance that is unmatched. High efficiency multi-collector designs meet the demands of today's complex airborne pulsed, shipboard, and ground mobile microwave power systems.

Optional features: A proven control protocol provides serial RS232/422/485, ethernet, and advanced user friendly communication to provide data logging for cost effective maintenance and troubleshooting.
### Performance Specifications: POL500Ka-P

#### Electrical
- **Frequency**: 32 - 36GHz - TWT band
- **Output Power**
  - TWT: 500W (57.0 dBm)
  - HPA Flange: 450W (56.5 dBm) min
- **Gain**: 60 dB (min), adjustable
- **Output Power Variation**: 0.1 dB p-p 35GHz to 36GHz
- **Input VSWR**: 1.3:1 max
- **Output VSWR**: 1.5:1 max
- **Spurious (max)**: -70dBc, 1KHz PRF/2
- **Phase Noise**:
  - 100Hz: < -95dBc/Hz
  - 500Hz: < -100dBc/Hz
  - 1000Hz: < -100dBc/Hz
- **Phase Droop**: <2.5 degrees/us
- **Beam on Noise Power Density**: < -30dBm/MHz
- **Modulation Rates**: Single shot to 1MHz

#### Prime Power
- **Line Input**: 80 to 120VDC
- **Input Power**: 600VA
- **Power Factor**: 0.95 (min)

#### Mechanical
- **RF Input**: 2.92mm, K type
- **RF Output**: WR-28
- **RF Output Monitor**: 2.92 mm , female 50dB coupling (nom)
- **Dimensions (W x H x L)**: 10.5"L x 7"W x 3"H in (267 x 178 x 76) mm
- **Weight**: 9.5 lbs
- **Mounting Brackets**: Side mount fasteners

#### Interface
- **RS-232 /422/485**
- **Ethernet**
- **Remote/Local Control**
  - Status, Transmit, RF Inhibit, Fault Status
  - Attenuator Control
  - Internal data logging
  - Discrete Status
  - Summary fault

#### Environmental
- **Operating Temperature**: -40 deg C to +70deg C
- **Non-Operating**: -40 deg C to +85 deg C
- **Relative Humidity**: 100% non-condensing
- **Altitude**
  - Operating: 40,000 ft
  - Non-Operating: 50,000 ft
- **Shock**: MIL-STD-810G Method 516.6
- **Vibration**: MIL-STD-810G 514.6
- **Acoustic Noise**: na
- **Thermal**: Conduction cooled

**Mechanical Outline**

[Diagram showing the mechanical outline of the POL500Ka-P device.]