

## **HMD-500-SERIES**

### **SCANNING HOT METAL DETECTOR**

**NON-CONTACT, RELIABLE, PRECISE, LONG-RANGE  
DETECTION FOR ALL PRODUCTS FROM 150°C (300°F) EVEN IN  
THE PRESENCE OF STEAM, SCALE AND WATER**



#### **FEATURES:**

- **Visible Aiming Laser**
- **Detects at a distance of 0.2 Meters to 8 Meters**
- **Modern microcontroller-based design with digital conditioning of detect signal**
- **Mill-duty Housing with Water-Cooling and Positive-Pressure Air-Purge**
- **Normal/High Sensitivity selection remotely and on the back of sensor**
- **24 VDC or 100 - 240 VAC, 50 hz / 60 hz**

#### **APPLICATIONS:**

The **HMD-500** is the best designed, and the most precise detection system for all hot metal applications including:

- **Tracking**
- **Cooling Beds**
- **Caster Torches**
- **Cut-to-Length**
- **Width Control**
- **Annealing**
- **Positioning**

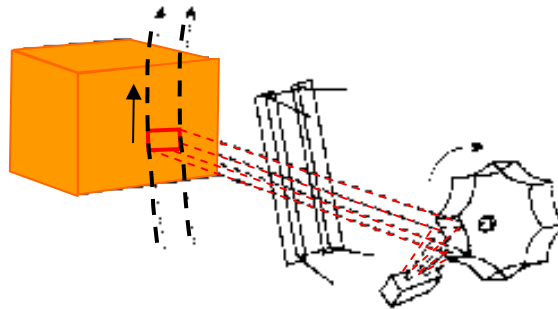


MADE IN THE USA

## DESCRIPTION:

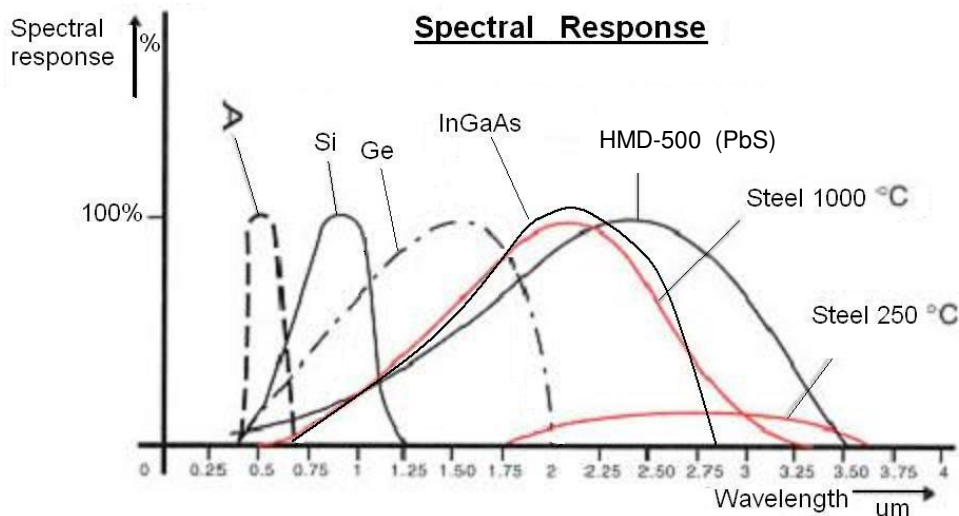
### SCANNING PRINCIPLE:

Sensing is accomplished without the use of a lens, which enhances reliability while maintaining precise detection at distances in excess of 16.7m (50 ft). The narrow field of view is **vertically scanned** by a rotating drum with multiple facets that reflects IR energy to the photodiode (PbS). The resultant spot size is approximately 4mm x 4mm at 4m through a viewing field of +/- 20 degrees. The small spot size results in **precise detection** of head and tail ends.



### CHOICE OF PHOTOCELL:

The **HMD 500** Series is designed to use a **lead sulfide (PbS)** photocell. Lead sulfide has superior hot metal detection capabilities. The output level is sufficient to provide reliable detection even with product temperatures as low as 150°C (300°F) and is continuous when the hot product is within the viewing field. These characteristics allow the lead sulfide photocell to provide reliable hot product detection, even through steam, dust and water.

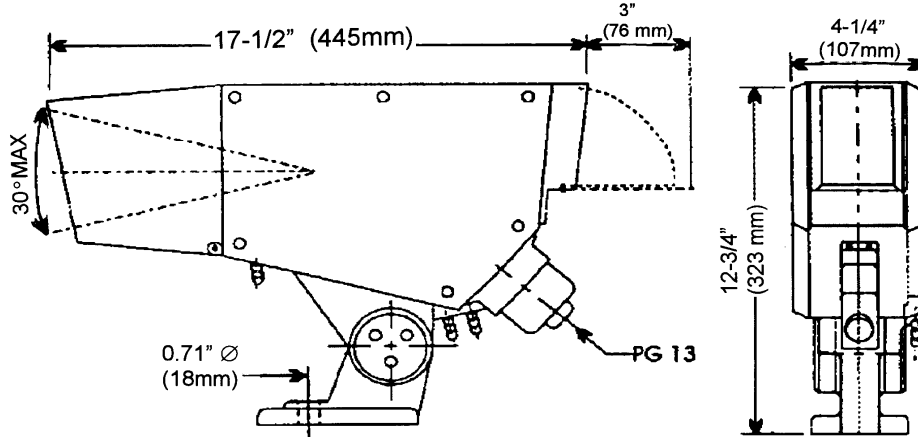


## **SPECIFICATIONS:**

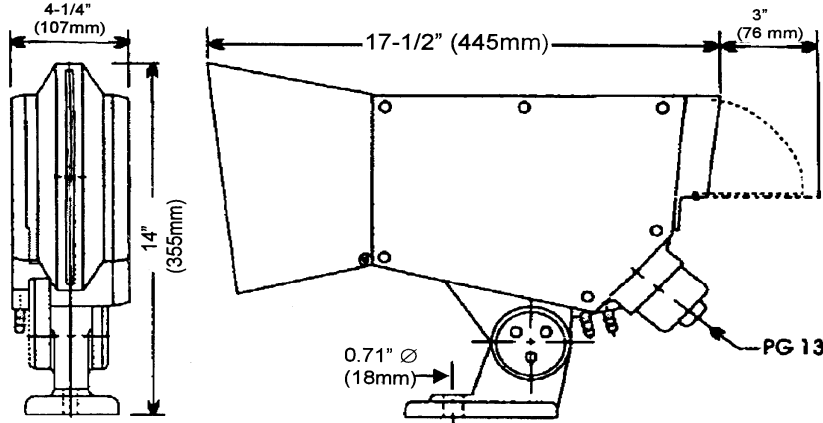
VERTICAL ANGLE DETECTION	+/- 5°; +/- 15°; +/- 22°
HORIZONTAL ANGLE DETECTION	Adjustable max. 3
LASER POSITIONING	650nm (Red), Class 2
DETECT DISTANCE	0.2m – 8m
DETECTION THRESHOLD	Adjustable via potentiometer at back of sensor
ENERGY	Signal amplitude 0-13.5V and displayed at back of sensor
SWITCHING POWER	350VA with 250V Max. 10A Max
RELAY CLOSING TIME	7.5 ms
RELAY OPENING TIME	3ms
RELAY OUTPUT	SPDT Relay 5 Amp at 250 VAC
SOLID STATE OUTPUT	TTL Transistor Output 24V Push/Pull
RESPONSE TIME (TRANSISTOR OUTPUT)	1 ms (5°) 2 ms (15°); 4ms (22°)
GAIN LEVELS	High & Low
THRESHOLD SETTINGS	TH / TL
ENERGY OUTPUT	0-10V
TEST FUNCTION	Built-in self-test and diagnostics
POWER SUPPLY	Universal Input 100 to 240VAC, 50-60 Hz. Or 24VDC
POWER CONSUMPTION	20VA or 10VA (for 24V)
HOUSING	Cast aluminium housing rating IP66 (NEMA4)
WATER/AIR COOLING	Water / Air-cooling Jacket
PROTECTIVE HOOD	Hinged protective hood with positive pressure air purge: 4-16 liters/min. (0.14 to 0.56 ft <sup>3</sup> /min ) at 2 bars (29 PSI)
MOUNTING	Fully adjustable foot mount swivel stand
CABLE	2 meter, Standard, high-temperature Teflon shielded
CONNECTOR	Standard: Quick-disconnect Harting plug
SERIAL LINK DIGITAL COMMUNICATION	n.a.
OPERATING TEMPERATURE	-10°C to 60°C (14°F to 140°F) Above 60°C (140°F), auxiliary cooling is required: 1-2 bars at 1-2 liters/min (14.5 to 29 PSI at 0.035 to 0.07 ft <sup>3</sup> /min)
INSIDE TEMPERATURE	Alarm (fail safe)
STORAGE TEMPERATURE	-20°C to 70°C (-4°F to 158°F)
TOTAL WEIGHT	12.25 kg / 27 lbs

**DIMENSIONS:**

**HMD-510 / HMD-530**



**HMD-540**



**Notes:**

\* All models are equipped with adjustable sensitivity switch on back of sensor. The standard model has remote sensitivity switch and potentiometer as well as analog signal amplitude output.

**ORDERING INFORMATION**

**SENSOR:**

	Vertical Scan Angle	Input Voltage
HMD-	510 – +/- 5°.	• 100-240 VAC
	530 – +/- 15°.	• 24V DC
	540 – +/- 22°.	

**CABLE:**

Part #	Standard Cable	Length	Additional Length
HL20015	Teflon-shielded with female Harting connector	2 meters	___ meters

Our standard cable length is 2 meters (HL20015). ASC can supply any length of cable. When ordering, please specify if additional length is required.