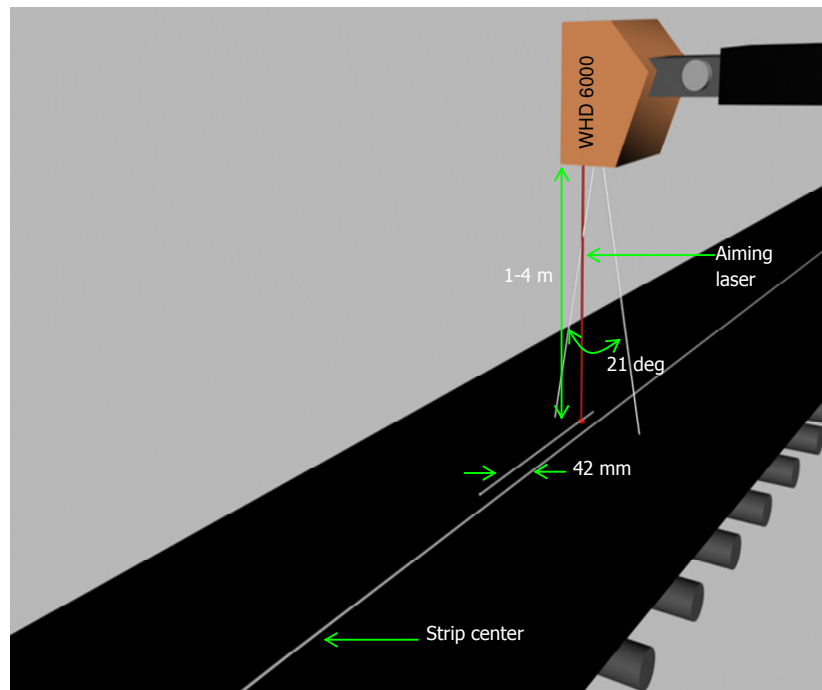


## WHD-6000-S

# WELD HOLE DETECTION SYSTEM

***STATE-OF-THE-ART SYSTEM PROVIDES RELIABLE AND FAST  
DETECTION OF WELD HOLES IN PROCESS LINES***



### **FEATURES:**

- CAPTURES SINGLE EVENTS AS SHORT AS 100  $\mu$ S
- 60 MS OUTPUT PULSE UPON DETECTION
- WIDER FIELD-OF-VIEW
- TYPICALLY COVERS SPEEDS FROM 0.2M T 20M/SEC.

### **APPLICATIONS:**

- Detection of Weld Holes in Product
- Cold Strip Processing

### **DESCRIPTION:**

The WHD-6000-S Weld Hole Detection System can provide reliable and fast detection of weld holes in process lines. This sophisticated, state of the art sensor responds in less than 50  $\mu$ seconds to a light pulse as short as 100  $\mu$ seconds. The wide field of view allows the sensor to work even with off-center strip.

The sensor is equipped with an ultra fast Silicon photo cell and comes with a compatible infrared light source to ensure detection at distances between three and 10 feet. It also comes with a pointing laser to help in alignment of the sensor and light source.

The WHD-6500 Sensor can operate with any radiant bar emitting in the 750nm to 1000 nm range. The operating range of the strip speed depends on the weld hole size, and typically covers speeds from 0.2m to 20m/sec.

For applications requiring a lower minimum speed, ASC offers a solid-state modulated radiant bar (RB-6000-WHD), which allows fully static operation down to 0m/sec. The radiant bar must be longer than the maximum spread of the weld holes across the strip, and placed under the strip as close as possible to the bottom surface of the strip.

The Weld Hole Sensor generates approximately 60ms long detect output, upon detecting a flash of radiation. The detect output will be terminated after 40ms, even if the source of radiation is still present.

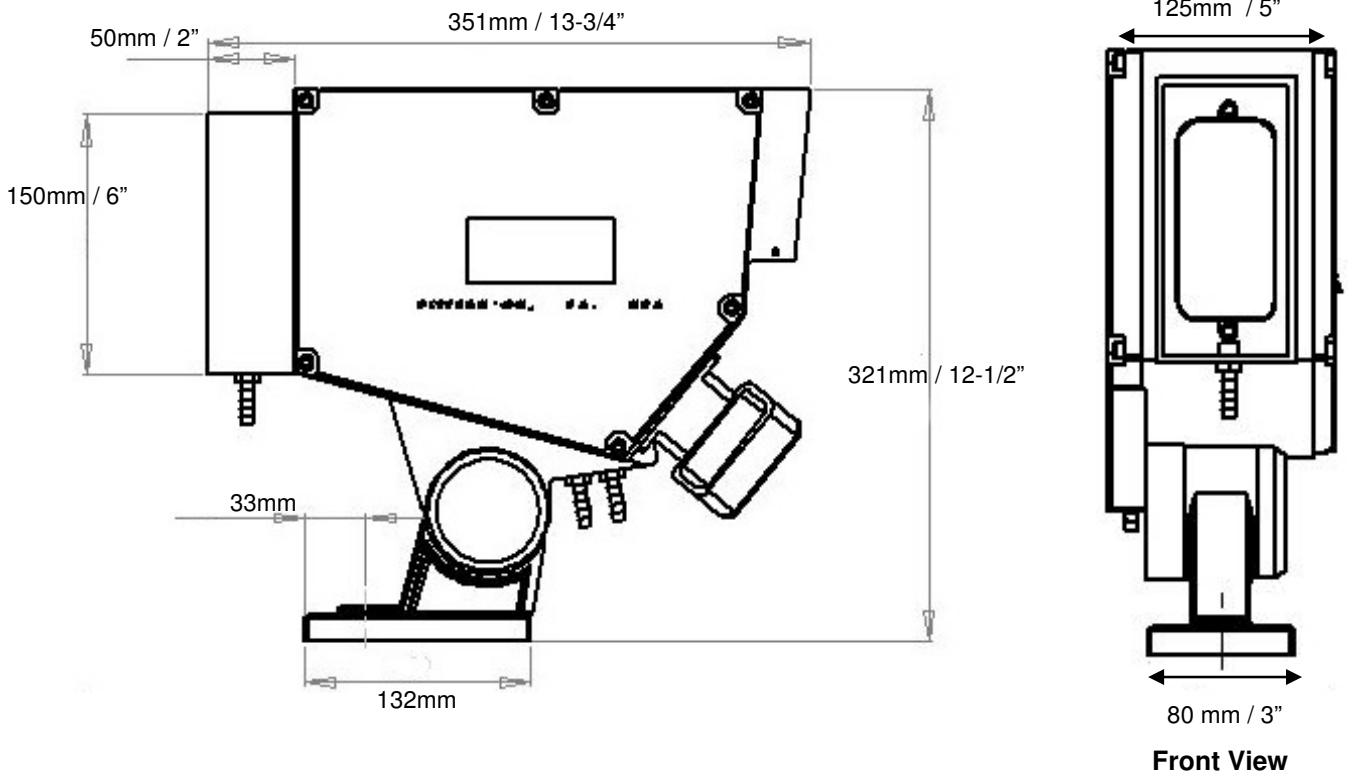
The proper installation and alignment of the WHD-6000-S is crucial for the operating performance. The narrow field-of-view requires precision alignment on the product, and the high sensitivity requires proper adjustment of the threshold and gain to prevent false triggering from background radiation and a wide dynamic range of signal detection.

## **SPECIFICATIONS**

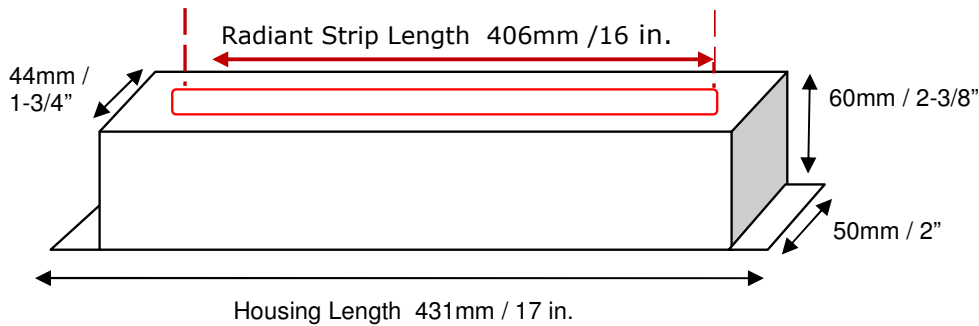
<b>SYSTEM:</b>	
OPERATING RANGE	1 to 4 meters – typical
MINIMUM LIGHT PULSE DURATION	100 $\mu$ s
RESPONSE TIME: MOSFET RELAY	< 50 $\mu$ s (typical 30 $\mu$ s) 7 ms - typical
MINIMUM LIGHT PULSE DURATION	60 ms
<b>SENSOR:</b>	
FIELD OF VIEW	21° Horizontal, 9° Vertical
RESPONSE TIME: MOSFET RELAY	< 50 $\mu$ s (typical 30 $\mu$ s) 7 ms - typical
OUTPUT PULSE UPON DETECTION	60 ms
POWER SUPPLY	100 to 240 VAC / 15 W (50-60 Hz) or 24 VDC / 8 W
DIGITAL OUTPUT	RS232 / RS485
LASER POSITIONING	650nm (Red), Class 2 laser
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	High-temperature Teflon shielded, 2 meter Standard
CONNECTOR	Standard: Quick-disconnect Harting plug
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.
<b>RADIANT BAR:</b>	
LIGHT SOURCE	IR Light Emitting Diodes (LED)
POWER SUPPLY	24VDC $\pm$ 2V (ripples <1%)
WAVE LENGTH	940 nm
SPECTRAL BANDWIDTH	45 nm
OUTPUT	Modulated optical output
RECOMMENDED LENGTH	Longer than the maximum spread of weld holes

**DIMENSIONS:**

**WHD-6500 Sensor**



**RB-6000-WHD**



**ORDERING INFORMATION:**

<b>Model</b>
WHD-6000-S

<b>Input Voltage</b>
• 100-240V AC
• 24V DC

<b>Cable Length for Sensor &amp; Radiant Bar</b>
___ Meters for Sensor
___ Meters for Radiant Bar

The Weld Hole Detection System , WHD-6000-S includes:  
 (1) WHD-6500 Sensor with 10m cable to Junction Box,  
 (1) RB-6000-WHD Light source with 10m cable to Box, and  
 (1) CB-3000-WHD Junction Box with 2.4m power cable