

## ORDELA MODEL 4208N-HN

### NEUTRON BEAM MONITOR

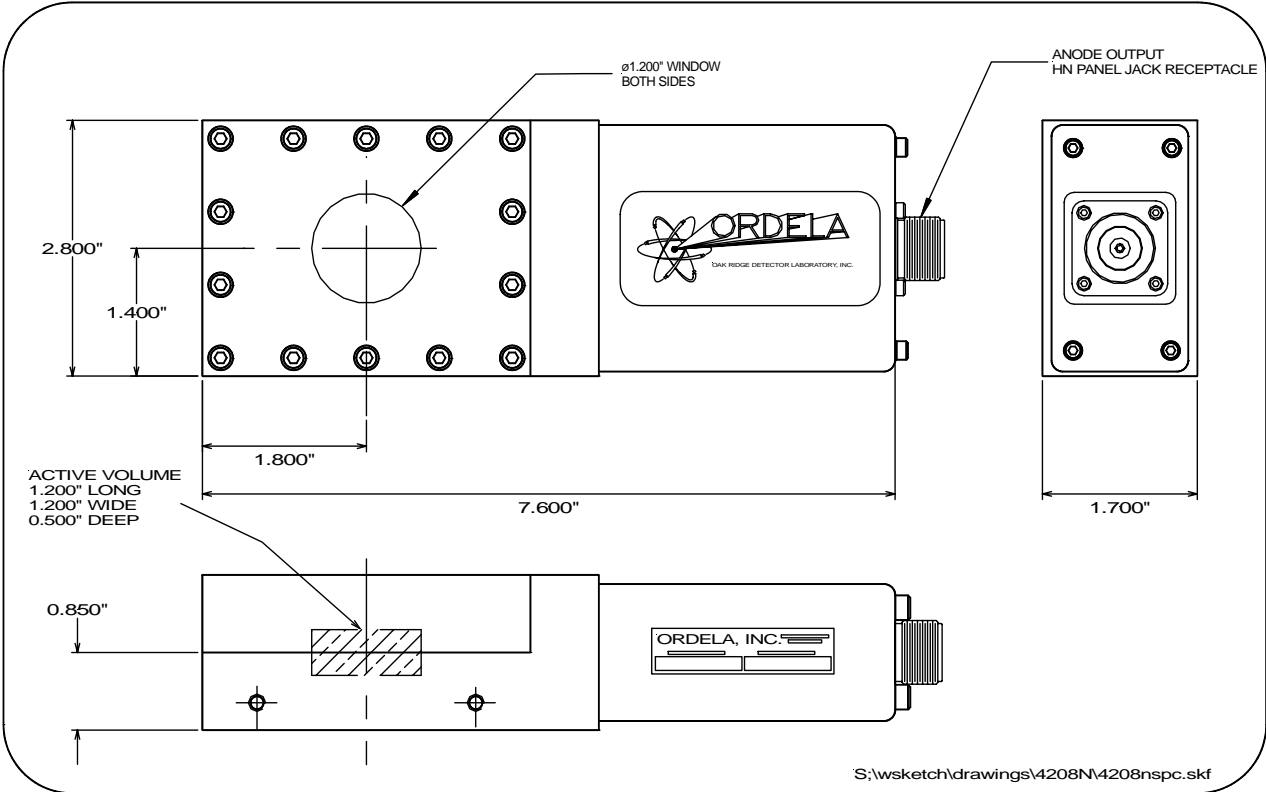
#### DESCRIPTION

The ORDELA Model 4208N-HN is designed and manufactured by ORDELA, Inc. for the detection and counting of thermal neutrons in intense neutron beams. It operates as a dual-anode gas proportional counter. The detection efficiency of this counter is a customer-specified variable that may range from 0.001% to 75%. The gamma background sensitivity has been minimized by using an all-aluminum counter enclosure and He-CF<sub>4</sub> counter gas.<sup>1</sup> The proportional counter operates at low gas multiplication (<20) to extend the life of the anode and allow operation in beam intensities of up to 10<sup>8</sup> neutrons per second per cm<sup>2</sup>. The active volume of the counter is 3 cm in diameter and is 1.3 cm deep. The ORDELA Model 4208N-HN Neutron Beam Monitor is packaged in an 7.1-cm-wide, 17.2-cm-long, and 4.3-cm-high unit.

The Model 4208N-HN does not contain any active electronics. Its anode is connected to a HN Panel Jack Receptacle. It was designed to be directly connected to the ORDELA QS4000 or equivalent module containing a shaping amplifier, discriminator, and high-voltage bias supply. The ORDELA Model QS4000 is recommended for operation of the Model 4208N-HN Neutron Beam Monitor.

#### SPECIFICATIONS

DETECTION EFFICIENCY:	Customer-specified, typically 10 <sup>-4</sup> ±10% for a nominal neutron energy of 0.025 eV (0.18 nm wavelength)
COUNTER GAS:	<sup>3</sup> He + <sup>4</sup> He + CF <sub>4</sub> at 760 torr
SENSITIVE AREA:	3.0 cm diameter
SENSITIVE DEPTH:	1.3 cm
WINDOW THICKNESS:	0.2 cm Aluminum
HIGH-VOLTAGE BIAS:	~800 V
PREAMPLIFIER POWER:	±12 V @ 15 mA
OUTPUT CONNECTOR:	HN Panel Jack Receptacle directly connected to the anode output of the beam monitor. Circuits are installed and interconnected at the factory.



**ORDELA Model 4208N-HN Neutron Beam Monitor outline and dimensions**

**WARRANTY**

ORDELA, Inc. warrants its products to be free from defects in materials and workmanship for 12 months after shipment. No other warranty is included. Specifically, no warranty of merchantability or fitness for a particular purpose is implied. ORDELA's liability under this warranty is limited to repairing or replacing the product at ORDELA's option. This warranty is void if the product is operated improperly, disassembled, or modified other than in the ORDELA laboratory.