November 26,1956

WL-6941
UNCOMPENSATED IONIZATION CHAMBER

The WL-6941 is an uncompensated ionization chamber for the detection of thermal neutrons in the power range of reactor operation. The detecting material is uranium oxide enriched in U-235 isotope coated on aluminum electrodes. The sensitivity of the chamber is approximately 4×10^{-14} amperes per unit neutron flux. It is extremely rugged and may be operated up to 80°C. The tube has an all-aluminum body two inches in diameter and 11-7/8" long, provided with a connector for "HN" cable fittings. It is filled to a pressure of one atmosphere with a nitrogen-argon mixture.

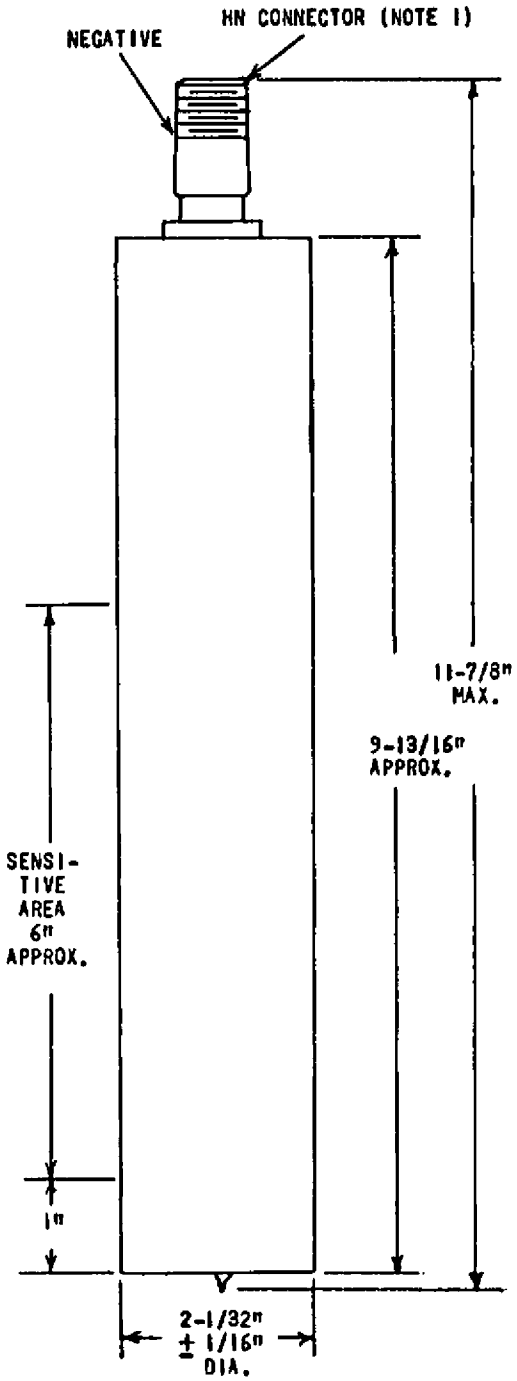
GENERAL DATA

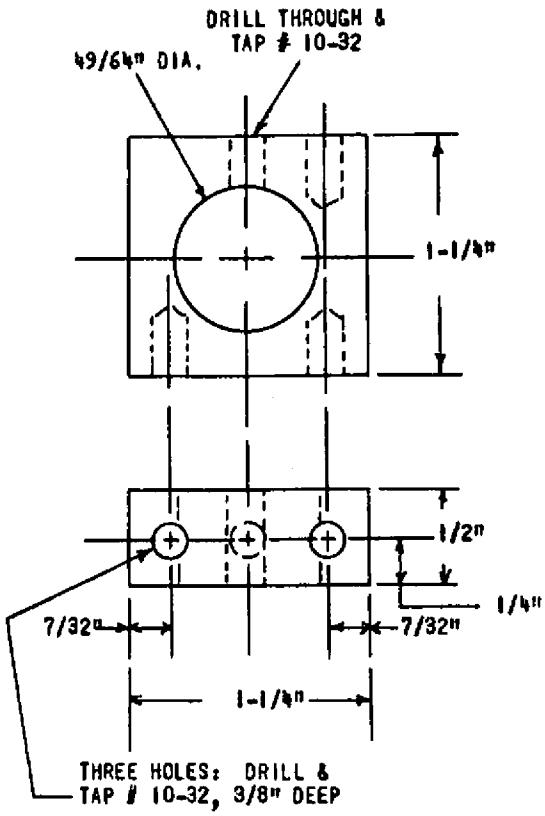
Mechanical:		
Overall Length	11-7/8"	
Diameter, Max.	2-3/32"	
Net Weight	1-3/4 lb	
Shipping Weight, approx.	12 lb	
Insulating Materials	Polystyrene and Alumina	
Sensitive Length, approx.	6"	
Body Material	Aluminum	
Neutron Sensitive Material	U_3O_8 fully enriched in U-235	
Filling	$A\text{-}N_2$ at one atmosphere	
Maximum Ratings:		
Operating Voltage	1000	Volts
Unit Neutron Flux	2.5×10^{10}	nv
Total Integrated Flux	1×10^{17}	nvt
Operating Temperature	80	°C
Operational:		
Operating Voltage	+300 to +800	Volts
Neutron Sensitivity	4×10^{-14}	amp./neutron/cm^2/sec.
Neutron Flux Range (Note 1)	5×10^5 to 2.5×10^{10}	neutrons/cm^2/sec.
Typical Saturated Output:		
1. Neutron Flux	2×10^9	n/cm^2/sec.
Saturated Output	10^{-4}	amperes
Operating Voltage for Saturation	200	volts (min.)
2. Neutron Flux	3×10^{10}	n/cm^2/sec.
Saturated Output	2×10^{-3}	amperes
Operating Voltage for Saturation	800	volts(min.)

Note 1: Lower level limited by alpha background current of about 3×10^{-9} amperes.

from JETEC release #1802, Dec. 10, 1956

Westinghouse





MICARTA MOUNT: MAY BE USED TO SUPPORT THE WL-6376 FROM CABLES, ETC. SUPPLIED WITH TUBE. FITS OVER THE HN CONNECTOR AND SECURED BY MALE HN CONNECTOR (PART NO. 43-73-1)

NOTE 1: THIS CONNECTOR WILL MATE WITH AMPHENOL PLUG 82-38 (MIL-UG59A/U) OR EQIVALENT.

CE-A1253