



ALPINE  
HYDROMET

# CRD

COSMIC RAY DETECTOR  
SNOW WATER EQUIVALENT MONITORING

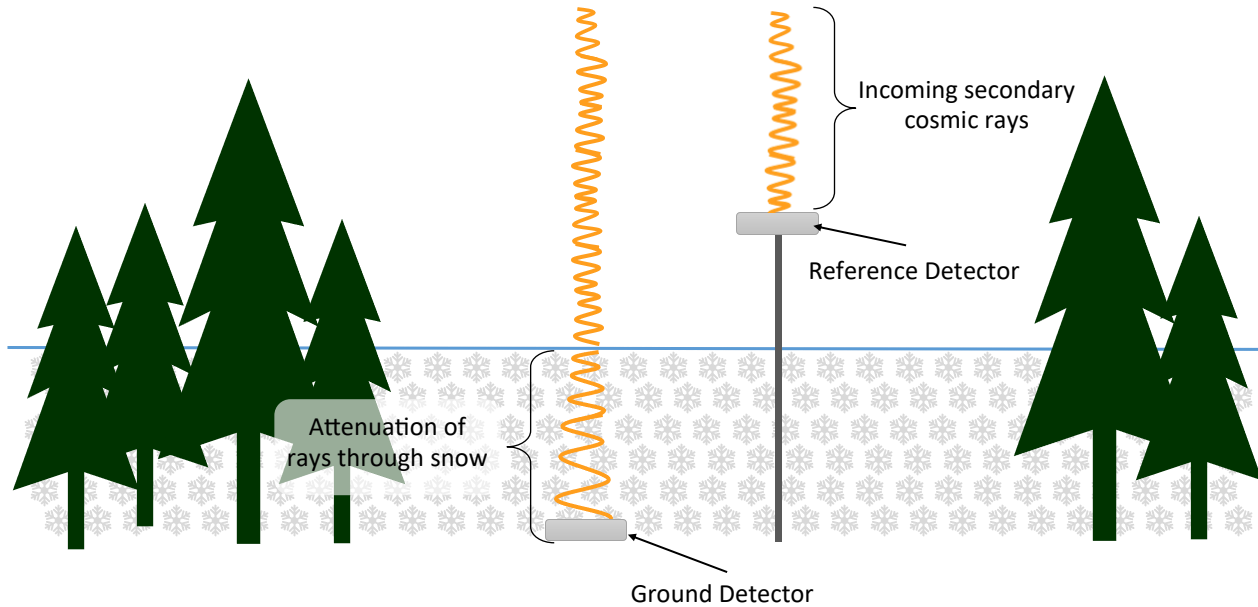


## KEY FEATURES:

- \* Unaffected by ice or crust layers
- \* Expected SWE range to exceed 7000mm\*
- \* Maintenance Free
- \* Small installation foot print
- \* Minimal soil preparation
- \* 12V DC power supply
- \* Compatible with most Campbell Scientific data loggers
- \* IP68
- \* Local fabrication & support

## INTRODUCTION

The CRD passively measures naturally occurring incoming cosmic radiation. The cosmic rays are attenuated by the snow water equivalent content. The amount of attenuated cosmic rays correlates to the Snow Water Equivalent (SWE). The CRD allows SWE to be measured regardless of changing snow dynamics and formation ice layers, which is a considerable advantage over the legacy snow pillows.

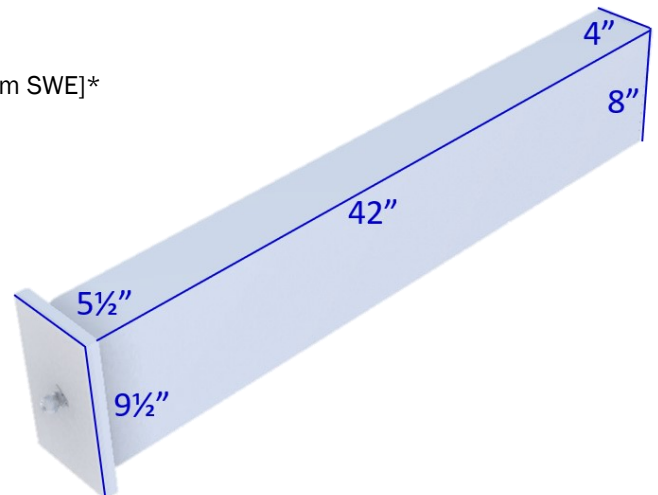


A ground detector is installed flush with the soil and a reference detector is installed above the maximum snow height. The reference detector will correct for any moisture that is attenuated through the atmosphere as well as allow for change over space in the natural variation of incoming cosmic radiation.

The CRD is compatible with Campbell Scientific data loggers and operates on 12 V DC and solar panel power supply without the need for heating or fluid components. The most advantageous aspect of the CRD is its ability to read through complex snow layers from shallow to deep snow conditions.

## TECHNICAL SPECIFICATIONS

SWE ranges .....	Tested up to 66" SWE [ $\sim 1,760$ mm SWE]*
Sensitivity .....	0.1" or 1 mm
Power Supply.....	12V
Ingress Protection .....	IP 68
Output .....	Cat5 Connector
Temperature Range .....	-40°F to 140°F [-40°C to 60°C]



\*Preliminary data research shows SWE range will exceed 7000mm SWE without impacting accuracy. Please contact us for further information regarding our measurement range and accuracy data.