

**AWARE** ≡  
Electronics

**RM-80  
MICRO-ROENTGEN  
RADIATION MONITOR  
COMPUTER INTERFACE  
--SUPPLEMENT--**

***Aware Electronics Corp.***

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**Visit our Web Site at [HTTP://WWW.AW-EL.COM](http://WWW.AW-EL.COM)**

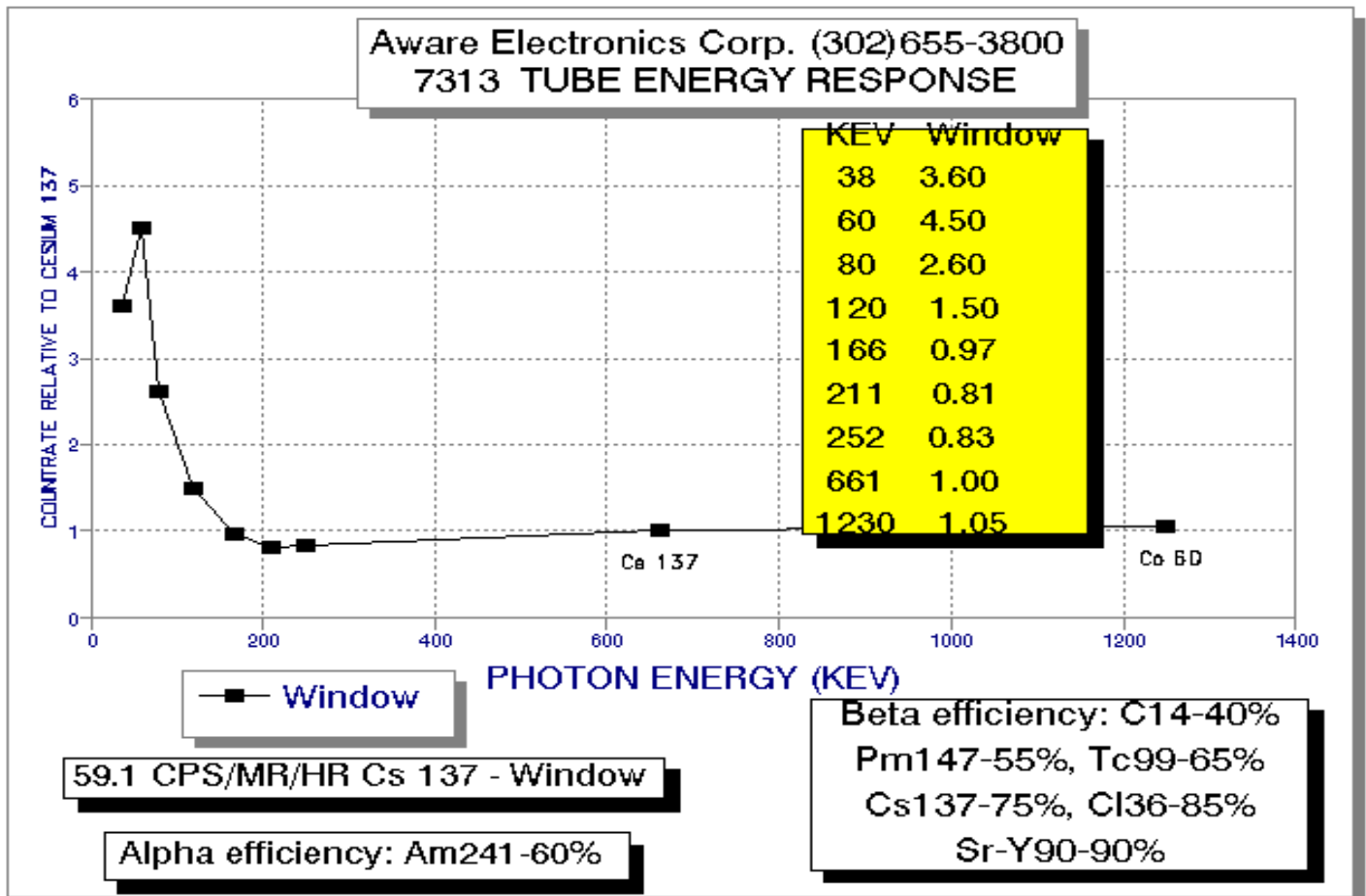
# RM-80 with 7313 TUBE -SUPPLEMENT

The RM-80 radiation monitor is intended for use in conjunction with a P.C. compatible computer, an Aware USB-MSP and/or LCD-90. The monitor is based on the RM-60 microR monitor, but uses professional grade type 7313 pancake detector. For general operating instructions, refer to the RM-60 operating manual.

When operating the Windows software Aw-Radw.exe with an RM-80, change the "RM Calibration Factor" setting (found as a sub-menu selection under the "Rad Options" menu) to 354. This will cause the software to display the generated data calibrated to Cs 137 gamma, in microR/hr., with the beam directed toward the window, which is the same as 1/100th of a micro sievert/hr. standardized to Cs 137 gamma. Changing the "RM Calibration Factor" has no effect on the binary radiation files, but only on how the raw data is interpreted and displayed. (See RM-60 manual). When calibrated in this manner, background readings will be a little lower than those from the standard RM-60 with 712 tube due to the reduced side response of the 7313 tube. (Compare the polar response graph of the 7313 tube, found in this supplement to the polar response graph of the 712 tube found at the end of RM-60 manual). Note: To display in counts per TBU, set "RM Calibration Factor " to Zero.

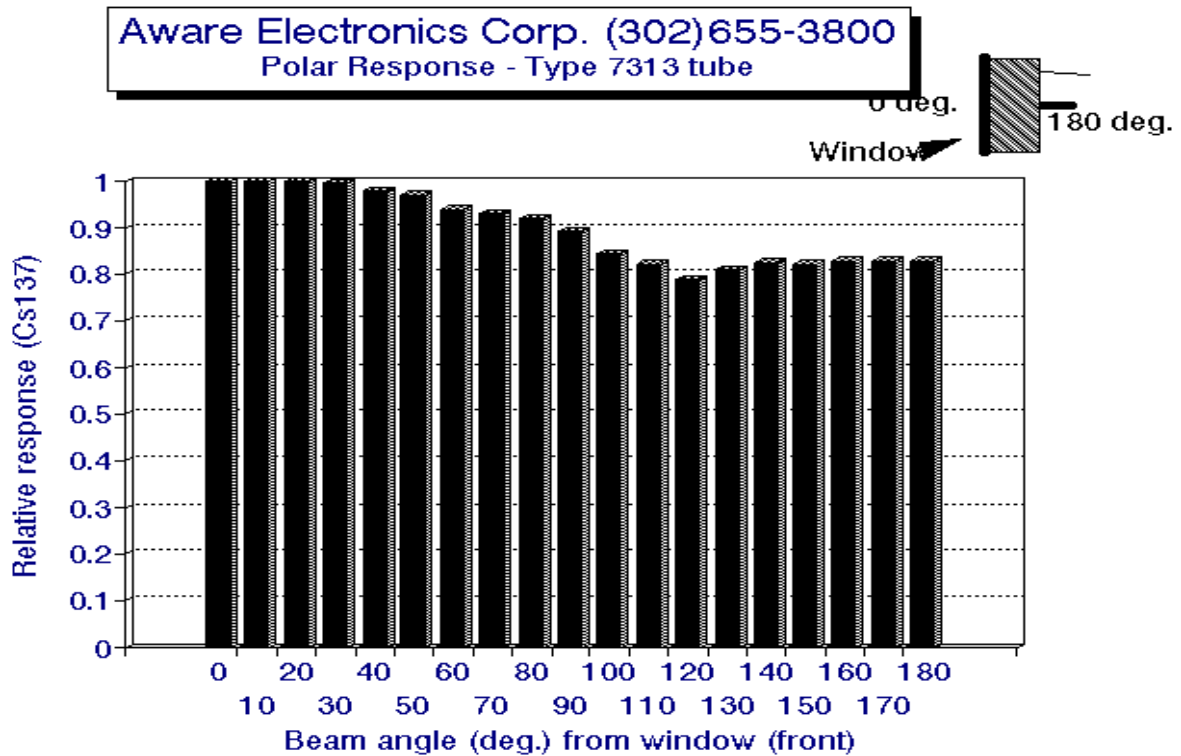
*(For use with the DOS software Aw-Srad.exe., change the "Factor Rad. Calibration" setting (found as a sub-menu selection under the "Setup" menu) to 354 for the 60 sec. TBU mode and 59 for the 10 sec. TBU mode. To display in counts per TBU, set both "Factor Rad. Calibrations" to 100).*

## RM-80 Energy Response Graph



About the "Tube Energy Response" graph, the X-ray machine used for generating this graph was capable of generating X-rays with energies as low as 38 KEV, hence the lower end of the X-axis stops at 38 KEV. On the other hand, the "Tube Energy Response" graph on page 17 of the RM-60 manual was created with an X-ray machine capable of energies down to 10 KEV, hence the X-axis extends down to 10 KEV. Since the thickness of the RM-80 window is the same as the thickness of the RM-60 window, the shape of the response curve below 38 KEV should be similar.

## RM-80 Polar Response Graph



## Tube Data

7313 (RM-80)

Nominal cpm/mR/hr for Cs-137: 3545

Min. Dead Time: 30  $\mu$ S

*Window*

Areal Density: 1.5 to 2.0 mg/cm<sup>2</sup>

Eff. Diameter: 1.75" (44.45mm)

Area: 2.41 Sq. In.

Material: Mica

*Wall*

Thickness: 0.187"

Eff. Length: 0.5" (12.7mm)

Eff. Diameter: 1.75" (44.45mm)

Material: 466 SS

RM-80 Nominal cpm/mR/hr for Cs-137 Gamma: 3545

Neutron Sensitivity for Pu-Be inclusive of Gamma Emission @ the given neutron flux:  
1.5 CPS/N/CM2/SEC (Window)  
0.8 CPS/N/CM2/SEC (Side)

The RM-80 tube is halogen quenched. The RM-80 includes a screw-on stainless steel wire mesh cover to help protect the mica window from damage. The open area of the mesh is 72%. You can carefully unscrew the cover, if so desired, but do not allow anything to touch the mica window. To clean dust off window, use a gentle stream of air supplied for example from "Dust Remover Spray" (Radio Shack) normally used to blow dust from cameras, keyboards, etc.

The RM-60/80 case is ABS. You could cement ABS or PVC mounting brackets, etc. unto the case, using "Universal ABS-PVC" cement.

Country of Origin for the RM-80: USA  
HS Tariff Number: 903039

#### Certificate of Compliance

RM-80 systems are digital in nature. The software and/or LCD-90 are digitally locked to the tube(s). No analog adjustments are necessary. The RM-80 uses the LND 7313 tube. Each tube has passed all examinations, inspections, tests and calibrations of the LND Quality Assurance Procedures including DCAS MIL-Q985A, MIL-E-I and appendix B of 10CFR50. Calibration is accomplished in accordance with MIL-STD-45662. Sources for calibration and/or dose rates have calibration traceable to National Bureau of Standards.

#### CE Certifications:

Emissions: EN 55011:98 + A2 (Class B emissions limits); EN 61326: 98 (Class B)

#### RF Emissions

Immunity: EN 61326: 98 (Annex C)

#### Portable Test and Measurement

Equipment; EN 61000-4-2: 95 (ESD); EN 61000-4-3: 97 (EM); ENV 50204: 95

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