

CUMING MICROWAVE

C-RAM MILLIMETER WAVE

RoHS
Compliant

APPLICATION NOTE 300-13

HIGH FREQUENCY RADAR ABSORBER

Cuming Microwave offers various materials that provide excellent absorption at frequencies from 18 GHz to 110 GHz.

The C-RAM MMW absorbers include plastic foam sheet and elastomeric-based materials that have been characterized for peak performance across a wide range of frequencies. C-RAM MMW has proven to be ideal for side lobe suppression of communication antennas, used to separate adjacent antennas, shield or isolate equipment and Anechoic chamber applications.

The reflectivity of C-RAM MMW varies as a function of thickness and frequency. Standard sheet size is 24"x24" for foam and 12"x12" for elastomer in thicknesses shown in the chart below. Non-standard thickness and sizes are available on special order.

TYPICAL PERFORMANCE OF C-RAM MMW-1. LIGHTWEIGHT FOAM

CARBON TREATED, OPEN CELL FOAM

<u>Thickness</u>	<u>Frequency</u>	<u>Reflectivity</u>
0.50"	26 to 110 GHz	>20dB
0.25"	70 to 110 GHz	>20dB

TYPICAL PHYSICAL PROPERTIES:

Color: Black
Density: 3.2kg/m² (0.65lb/ft²)
Temperature Range, °F: -60 to 80°F
(Standard Formula Flammable) note.

TYPICAL PERFORMANCE OF C-RAM MMW-2, LIGHTWEIGHT FOAM

LOSSY, CARBON FILLED, FLEXIBLE FOAM

<u>Thickness</u>	<u>Frequency</u>	<u>Reflectivity</u>
0.125"	70 – 110 GHz	≥17 dB
0.250"	40 – 110 GHz	>20 dB
0.50"	26 – 110 GHz	≥20 dB

TYPICAL PHYSICAL PROPERTIES:

Color: Black
Density (dependent upon grade): 0.06 to 0.13g/cm³ (4 to 8 lb/ft³)
Service Temperature, °F: -60°F to 180°F

TYPICAL PERFORMANCE OF C-RAM MMW-3, ELASTOMERIC

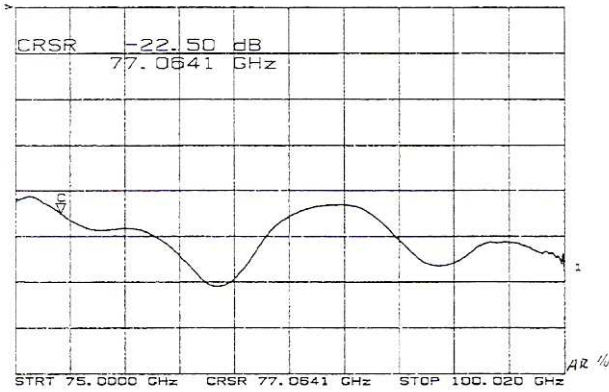
ELECTRICAL PERFORMANCE:

<u>Thickness</u>	<u>Weight</u>	<u>Frequency</u>	<u>Reflectivity</u>
0.040"	.5 lb/ft ²	26 to 40 GHz 40 to 110 GHz	-20dB >-15dB

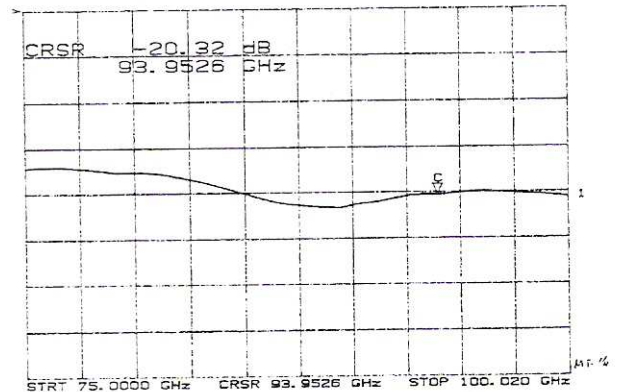
TYPICAL PHYSICAL PROPERTIES:

Color:	Grey
Service Temperature, °F:	-80 to 275°F (-62 to 134°C)
Flammability:	Non-Flammability

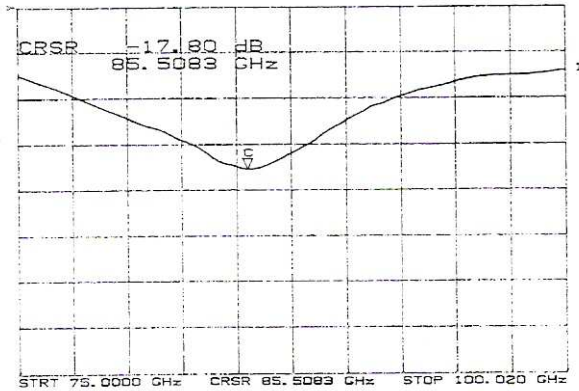
TYPICAL REFLECTIVITY:



**TYPICAL PERFORMANCE C-RAM MMW-1
OPEN CELL FOAM, 0.25" (T)**



**TYPICAL PERFORMANCE C-RAM MMW-2
FLEXIBLE FOAM, 0.25" (T)**



**TYPICAL PERFORMANCE C-RAM MMW-3
TUNED ELASTOMERIC ABSORBER
(SPECIFIED FREQUENCY)**

The information in this technical bulletin, although believed to be accurate, is not to be taken as a warranty for which Cuming Microwave assumes legal responsibility, nor as permission or recommendation to practice any patented invention without license. It is offered for verification by the customer, who must make the final judgment of suitability for any application.