



# CUMING MICROWAVE

## C-RAM MILLIMETER WAVE

RoHS  
Compliant

### APPLICATION NOTE 300-13

#### HIGH FREQUENCY RADAR ABSORBER

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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/m <sup>2</sup> (0.65lb/ft <sup>2</sup> )
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/cm <sup>3</sup> ( 4 to 8 lb/ft <sup>3</sup> )
Service Temperature, °F:	-60°F to 180°F

# TYPICAL PERFORMANCE OF C-RAM MMW-3, ELASTOMERIC

## ELECTRICAL PERFORMANCE:

**Thickness**  
0.025"

**Weight**  
.5 lb/ft<sup>2</sup>

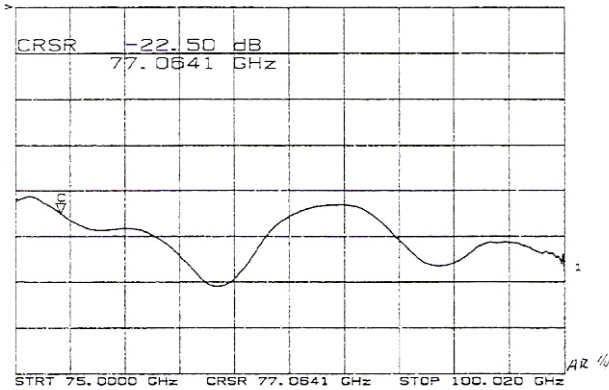
**Frequency**  
26 to 40 GHz  
40 to 110 GHz

**Reflectivity**  
-20dB  
>-15dB

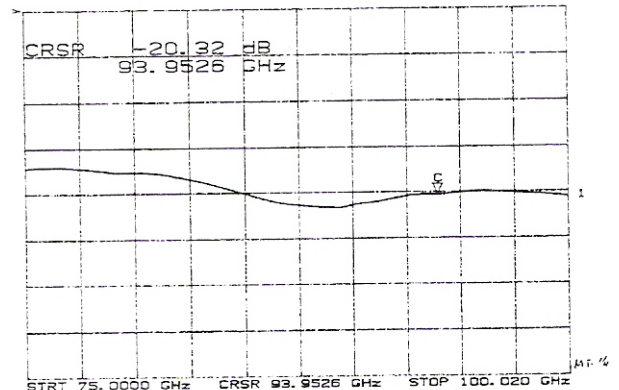
## TYPICAL PHYSICAL PROPERTIES:

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

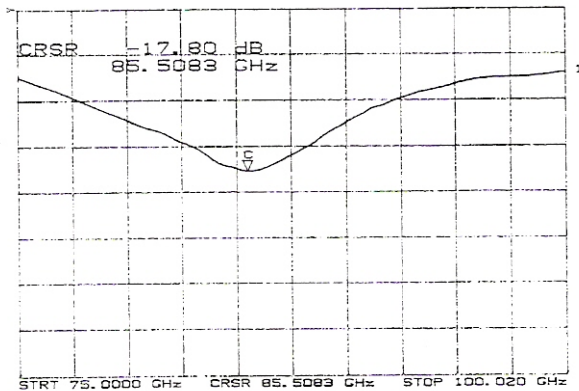
## TYPICAL REFLECTIVITY:



**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)**

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