CUMING MICROWAVE

Technical Bulletin 320-1

C-RAM LF AND LF-W

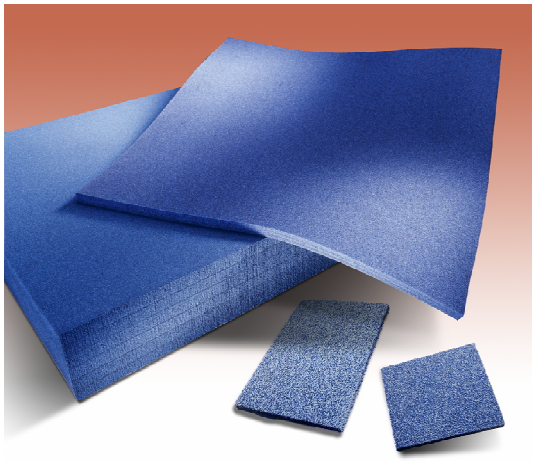
FLEXIBLE FOAM SHEET BROADBAND MICROWAVE ABSORBER

RoHS Compliant

C-RAM LF is a series of lightweight, flexible, broadband radar absorbers made from graded layers of lossy open-cell plastic foam. It is designed to provide typically 20 dB of reflectivity reduction in a frequency range dependent upon grade. The product is flexible enough to conform to moderately contoured surfaces. C-RAM LF is useful for reducing reflections in radar test ranges, inside radomes, around antennas, and for modifying antenna radiation patterns. It is also available in two weatherproof versions:

C-RAM LF-W is standard LF absorber wrapped in a thin weatherproof fabric tarp. The coating on this tarp is polychloroprene. Color is olive green. For severe weathering conditions, the product can be supplied wrapped in a white colored hypalon tarp which will withstand long term sun and rain exposure, but with a penalty of reduced reflectivity performance.

C-RAM LF-WP is standard LF absorber which has been spraycoated with a thin film of polyurethane elastomer, which provides a waterproof barrier. This is the preferred version for protecting complex shapes.



TYPICAL PROPERTIES

Color: Black, painted blue on front & sides
Max. service temperature: 120°C (250°F)
Thermal conductivity: 6.5×10^{-5} cal-cm/sec-cm^2-°C

Grade	Thickness, mm (in)	Weight, kg (lb)	Density g/cm^3	Frequency range of use
LF-72	6.4 (0.25")	0.25 (0.55)	0.10	-20dB 18 GHz – 40 GHz
LF-73	9.5 (0.38")	0.40 (0.90)	0.10	-20dB 7.5 GHz – 40 GHz
LF-74	19.1 (0.75")	0.70 (1.55)	0.10	-20dB 3.5 GHz – 40 GHz
LF-75	28.6 (1.13")	0.80 (1.75)	0.08	-20dB 2.5 GHz – 40 GHz
LF-77	57.2 (2.25")	1.50 (3.30)	0.07	-20dB 1.3 GHz – 40 GHz
LF-79	114.3 (4.5")	2.95 (6.50)	0.07	-20dB 0.6 GHz – 40 GHz

Note that the material should be in intimate contact with an electrically conductive surface for proper reflectivity performance. If the material is being bonded onto a non-conductive surface, Cuming Microwave can supply the product with a bonded-in-place metal foil backing, designated LF-ML or LF-W-ML.

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METHOD OF APPLICATION

C-RAM LF and LF-W sheets can be bonded to many metal, plastic, or wooden surfaces using a polychloroprene contact adhesive. We recommend C-BOND 287. The adhesive is sprayed or rolled onto both the substrate and the back of the absorber panel. When the adhesive is still tacky, but not wet to the touch, the panel is pressed into place for an immediate and permanent fit.

AVAILABILITY

Standard product size for all grades of LF and LF-W is a flat panel 610 x 610 mm (24 x 24 in.). Other dimensions are possible, including larger parts formed by butt-joining sections together.

Cuming Microwave can machine and/or die cut C-RAM LF and LF-W to specified drawings. Note that, since it is a foam product, dimensional tolerances on parts should be reviewed by our engineering staff. Note also that machining the thickness of the material may affect its reflectivity performance.

Complex shapes can be made weatherproof by spraying a polyurethane elastomeric coating on the machined piece; this is referred to as LF-WP. Call for more information.

Order as C-RAM LF-xx (-W) (-WP) (-ML), where xx is the grade, and the suffixes in parentheses are for the various weatherproofing and metal-backed options.