Technical Data Sheet

Engineered Materials

C-RAM™ FLX

Thin, flexible, narrowband, magneticily loaded RF absorber

Description

C-RAM™ FLX is a series of Thin, flexible, narrow banded, magnetically loaded sheet absorber tuned to a specific frequency.

C-RAM™ FLX provides reflectivity of -20 dB or less of the normal incident energy at the design frequency.

Availability

- Standard sheet size is 12” x 12” (305 mm x 305 mm).
- Each grade is only available in the thickness listed in the above table.
- C-RAM™ FLX can be supplied in other sizes or per customer specified configurations upon request.
- C-RAM™ FLX can be supplied with a peel-and-stick pressure sensitive adhesive backing, specify by adding a /PSA suffix to the part name. It is also available with a metal foil backing; specify by adding a /ML suffix.
- As a standard, The C-RAM™ FLX base material is silicone, but it can also be supplied in a urethane or neoprene base version. Specify a urethane sheet as FLX-U, neoprene as FLX-N. FLX without a suffix designates silicone as a default. See application note available online for more info on properties and benefits of each type of elastomer.
- Specify the part as C-RAM™ FLX-xx, where xx is the nominal resonant frequency.

Applications

C-RAM™ FLX is intended for attachment to aircraft structures, nose cones, ship masts, instrument housings, and other surfaces for the reduction of specular radar reflections.

Lining metal surfaces to attenuate surface currents.

Method of application

- C-RAM™ FLX can be cut with a sharp knife, die cut, waterjet cut or kiss-cut. Material is flexible and can be bonded to contoured surfaces.
- C-RAM™ FLX can be applied to a substrate by using a silicone RTV adhesive. For best results, the material should be scuffed with sandpaper, wiped with alcohol to remove dust and grease, and have a silicone primer applied to the substrate. C-RAM™ FLX can also be supplied with a pressure sensitive adhesive backing.
- C-RAM™ FLX will need to be adhered to a metal surface for best performance.

Typical Properties

Frequency range:	1 – 35 GHz
Color:	Grey
Reflectivity performance:	<-20 dB at the nominal resonant frequency.
Service temperature:	-60 to +163 °C (-80 to +325 °F)
Outgassing (%TML) (%CVCM):	0.32 / 0.10
Typical hardness-shore A:	60-70

Grade	Approx. Thk. mm (inches)	Weight kg/m^2 (lb/ft^2)	
FLX-1.0	6.4 (.250”)	24.4	(5.0)
FLX-1.5	5.3 (.210”)	19.0	(3.9)
FLX-2.0	3.2 (.125”)	14.6	(3.0)
FLX-2.5	3.2 (.125”)	12.2	(2.5)
FLX-3.0	2.8 (.110”)	11.2	(2.3)
FLX-3.5	2.4 (.094”)	10.7	(2.2)
FLX-4.0	2.4 (.094”)	10.2	(2.1)
FLX-4.5	2.4 (.094”)	9.3	(1.9)
FLX-5.0	2.0 (.078”)	8.3	(1.7)
FLX-5.5	2.0 (.078”)	8.3	(1.7)
FLX-6.0	2.0 (.078”)	7.8	(1.6)
FLX-6.5	2.0 (.078”)	7.8	(1.6)
FLX-7.0	1.6 (.062”)	7.3	(1.5)
FLX-7.5	1.6 (.062”)	6.8	(1.4)
FLX-8.0	1.6 (.062”)	6.4	(1.3)
FLX-8.5	1.6 (.062”)	6.4	(1.3)
FLX-9.0	1.6 (.062”)	6.4	(1.3)
FLX-9.5	1.6 (.062”)	5.9	(1.2)
FLX-10	1.6 (.062”)	5.4	(1.1)
FLX-10.5	1.6 (.062”)	5.4	(1.1)
FLX-11	1.6 (.062”)	4.9	(1.0)
FLX-12	1.6 (.062”)	4.4	(0.9)
FLX-13	1.6 (.062”)	3.9	(0.8)
FLX-14	1.6 (.062”)	3.9	(0.8)
FLX-15	1.6 (.062”)	3.4	(0.7)
FLX-16	1.2 (.047”)	3.4	(0.7)
FLX-17	1.2 (.047”)	2.9	(0.6)
FLX-18	1.2 (.047”)	2.9	(0.6)
FLX-24	1.1 (.042”)	2.4	(0.5)
FLX-35	0.6 (.025”)	1.5	(0.3)

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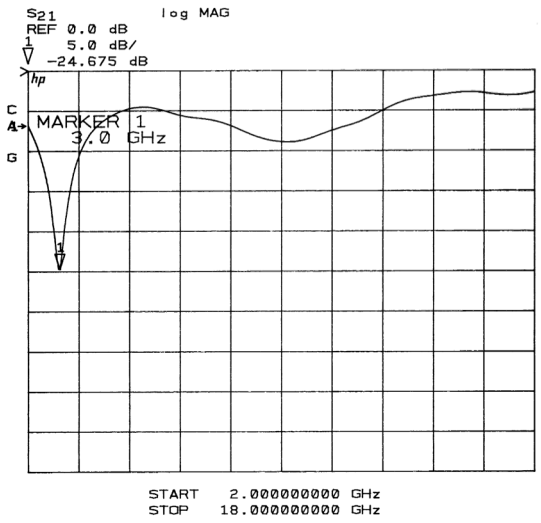
Typical reflectivity

The graphs below show typical reflectivity performance of a few of the grades of C-RAM™ FLX, expressed as a dB down from metal plate reflection, as a function of frequency. These are measured on NRL near-field type arches.

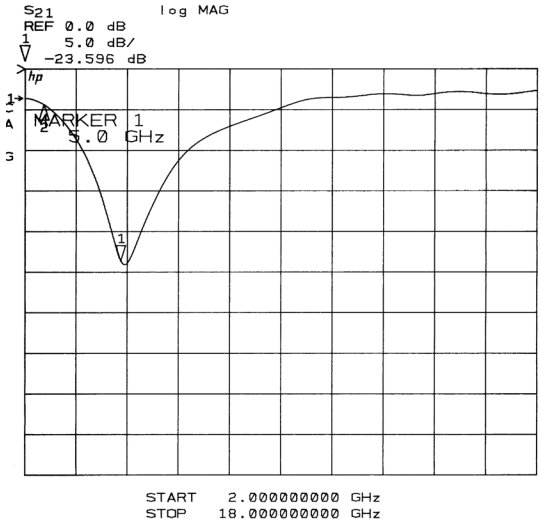
Typical reflectivity curves of C-RAM™ FLX Grades at 3, 5, 10, and 15 GHz.

(all graphs show performance 2-18 GHz; scale is 5 dB/division, with reference at top)

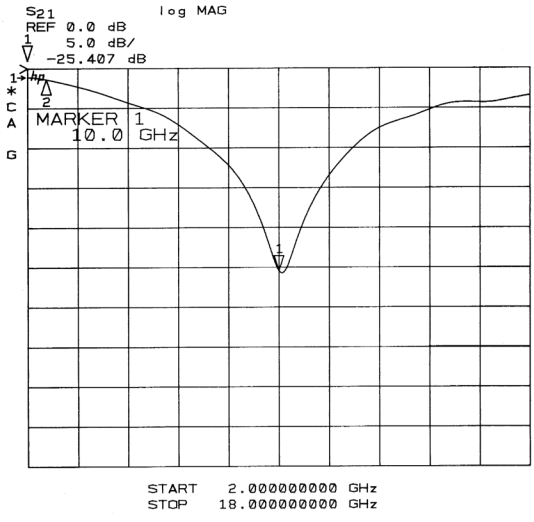
FLX-3.0



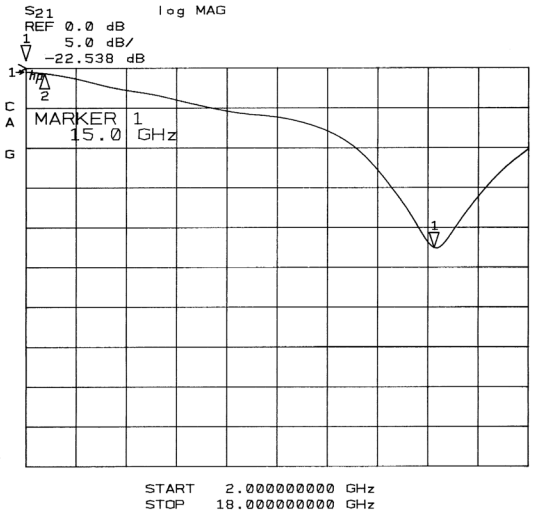
FLX-5.0



FLX-10



FLX-15



Cuming Microwave Corporation
Engineered Materials
264 Bodwell Street
Avon, MA 02322
Telephone +1 (508) 521-6700
Fax +1 (508) 584-2309
www.cumingmicrowave.com
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