

CUMING MICROWAVE

Technical Bulletin 390-9

RoHS
Compliant

C-RAM EVA PYRAMIDAL ABSORBER FOR MEDIUM POWER AND VENTILATION DUCTS

C-RAM EVA is a series of very high performance pyramidal absorbers capable of handling relatively high power densities. It is a very open cell, porous material, and is used in anechoic chambers to cover air ducts, thereby reducing RF reflections, without substantially reducing air flow.

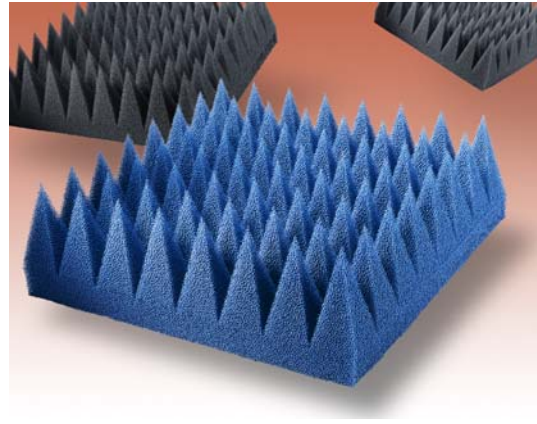
C-RAM EVA is made from light, open cell foam with large cell size of 15 pores/inch. The large open cells permit forced air circulation through the material increasing the power handling capabilities to approximately 4 W/in² of RF power. Without forced air cooling, the material can typically handle 2 W/in².

C-RAM EVA is dimensionally equivalent to the corresponding grades of C-RAM SFC. The reflectivity characteristics are identical to those of C-RAM SFC.

C-RAM EVA is a very resilient foam. It stands up well to mechanical abuse and tolerates repeated deformation without tearing.

METHOD OF APPLICATION

C-RAM EVA is readily installed using a contact adhesive such as CAMBOND 934, just as C-RAM SFC would be. For installation over ducts, or where forced cooling air will be blown through the material, the piece should be cut at least one inch larger than the duct on all sides. The piece is bonded along this edge strip; larger grades may require small patches of Velcro at the center to mate with a Velcro piece attached to the grid work of the duct or it may be strapped to the duct using a cable tie running through the valleys. A nylon fish line fastened to the wall or ceiling and running through the valleys of the pyramids is also very helpful in securing the vent absorber especially on ceiling installation.



AVAILABILITY

C-RAM EVA is available in versions 4, 6, 8, 12, 18, 24, 36, 40 and 48 inches tall, corresponding in performance and geometry to the equivalent grade of C-RAM SFC.

C-RAM EVA is available in standard base dimensions of 24 in x 24 in (610 x 610 mm). However, custom sizes can be made to accommodate existing air ducts.

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TABLE 1
PHYSICAL CHARACTERISTICS AND
TYPICAL REFLECTIVITY AT NORMAL INCIDENCE

GRADE	HEIGHT In. (mm)	TIPS PER PIECE	REFLECTIVITY AT FREQUENCY (GHz)											
			0.080	0.10	0.3	0.5	1.0	3.0	6.0	10	18	36*	50*	
EVA-4	4.3 (109)	144							30	35	42	50	50	50
EVA-6	6 (152)	100							32	40	45	50	50	50
EVA-8	8 (203)	64						30	37	45	50	50	50	50
EVA-12	12 (305)	36						35	40	45	50	50	50	50
EVA-18	18 (457)	16					30	37	40	45	50	50	50	>45
EVA-24	24 (610)	9	-7			30	34	40	45	50	50	50	50	45
EVA-36	36 (914)	4	-9	15		33	37	42	50	50	50	50	50	>45
EVA-40	40 (1016)	4	11	16		34	38	43	50	50	50	50	50	50
EVA-48	48 (1219)	4	14	21		35	39	45	50	50	50	50	50	>45

Notes: * EVA has been characterized at 36 and 50 GHz, but is not routinely measured at these frequencies.

** EVA larger than 48 in. can be supplied as custom parts

TABLE 2
TYPICAL REFLECTIVITY (BISTATIC) AT OFF-NORMAL INCIDENCE
(Multiply numbers in chart by dB values in Table 1)

Absorber height in wavelengths	Off-normal angle (0° = normal, 90° = grazing)							
	45°	50°	55°	60°	65°	70°	75°	80°
4.0	1.00	0.95	0.86	0.75	0.70	0.60	0.51	0.43
2.0	0.90	0.82	0.74	0.66	0.58	0.49	0.42	0.34
1.0	0.72	0.65	0.58	0.50	0.44	0.37	0.31	0.25
0.5	0.48	0.43	0.37	0.31	0.25	0.20	--	--

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