

**Ea**

# **EMI MICROWAVE ABSORBERS**



**LEADER  
TECH**   
a HEICO company

*EMI/RFI Board, Enclosure, Cable Shielding and Thermal Solutions*





# MICROWAVE ABSORBER - EMI/RF ABSORBER - RAM - FLEXIBLE FERRITE

Leader Tech's absorbing products are utilized to attenuate microwave energy from 500 MHz to 80 GHz. The unwanted electromagnetic energy is converted into a miniscule amount of heat.

Absorbers are composed of either iron-infused silicone or carbon-coated polyurethane foam. Greatest performance is achieved when absorber thickness is comparable to a quarter of the wavelength of the offending frequency.

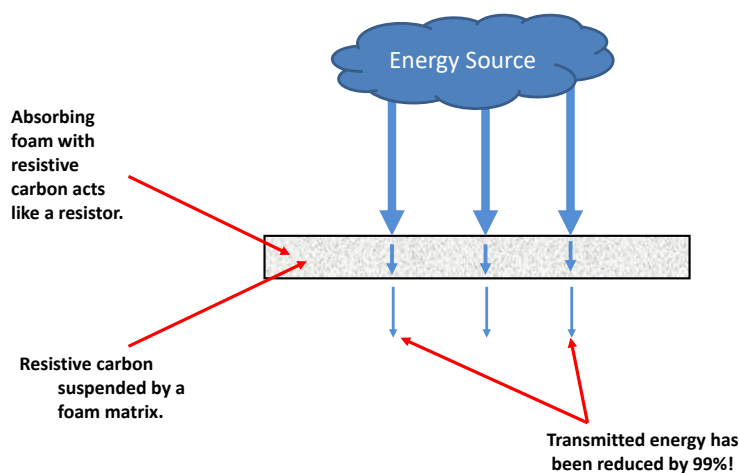
## ABSORBER COMPARISON CHART

Parameters	Tuned	Cavity Resonance	Low Profile	Lossy	Reticulated	Pyramidal
Binder	Silicone	Silicone	Silicone	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam
Filler	Iron	Iron	Iron	Carbon	Carbon	Carbon
Moisture Resistant	Yes	Yes	Yes	No	No	No
Attenuation Level	Excellent	Very Good	Fair	Good	Good	Good
Design Flexibility	Very Good	Very Good	Excellent	Good	Fair	Fair
Standard Format	Sheet	Sheet	Roll	Sheet	Sheet	Sheet
Die/Kiss Cut Option	Yes	Yes	Yes	Yes	Yes	No
Cost	\$\$	\$\$	\$\$	\$	\$	\$
Lead Time	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent

FORMAT OPTIONS: SHEET - DIE CUT - KISS CUT

## LOSSY FOAM RETICULATED PYRAMIDAL

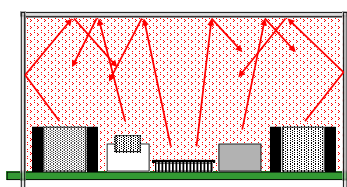
How do foam based absorbers work?



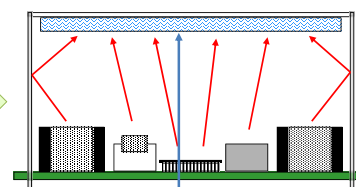
## Cavity Resonances

(Spurious Harmonics, Noise Spurs, Cavity Oscillations)

Before



After



Cavity Resonance Absorber

Totally enclosed by metallic conductors, have a physical size that can cause them to resonate at a discrete frequency or multiple frequencies.

Absorber will change the Q of the cavity disrupting the energy and dampening the resonance

## NARROWBAND WIDEBAND CAVITY RESONANCE

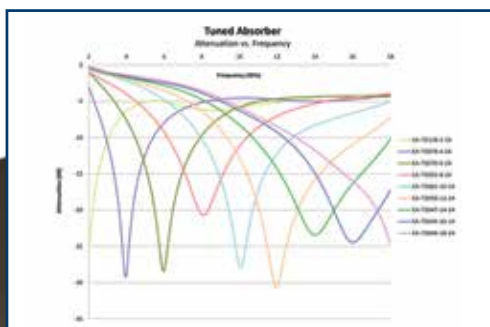




## NARROWBAND

### Tuned

**Tuned** – In addition to our off the shelf Tuned absorber series (1-18 GHz), Leader Tech can customize absorbers for discrete frequencies (1.3 GHz, 6.5 GHz, 10.9 GHz, etc.) by modifying the thickness and formulation at no additional cost. Tuned absorbers offer the highest amount of performance, providing an average of 20-30 dB of attenuation.



EA-TD165-1-XX

Part Number	PSA	Base	Thickness (in.)	Frequency
EA-TD175-0.9-XX	Yes	Silicone	0.175	0.9 GHz
EA-TD165-1-XX	Yes	Silicone	0.165	1 GHz
EA-TD128-2-XX	Yes	Silicone	0.128	2 GHz
EA-TD095-3-XX	Yes	Silicone	0.095	3 GHz
EA-TD078-4-XX	Yes	Silicone	0.078	4 GHz
EA-TD081-5-XX	Yes	Silicone	0.081	5 GHz
EA-TD070-6-XX	Yes	Silicone	0.070	6 GHz
EA-TD062-7-XX	Yes	Silicone	0.062	7 GHz
EA-TD053-8-XX	Yes	Silicone	0.053	8 GHz
EA-TD072-9-XX	Yes	Silicone	0.072	9 GHz
EA-TD065-10-XX	Yes	Silicone	0.065	10 GHz
EA-TD060-11-XX	Yes	Silicone	0.060	11 GHz
EA-TD056-12-XX	Yes	Silicone	0.056	12 GHz
EA-TD051-13-XX	Yes	Silicone	0.051	13 GHz
EA-TD047-14-XX	Yes	Silicone	0.047	14 GHz
EA-TD045-15-XX	Yes	Silicone	0.045	15 GHz
EA-TD043-16-XX	Yes	Silicone	0.043	16 GHz
EA-TD041-17-XX	Yes	Silicone	0.041	17 GHz
EA-TD046-18-XX	Yes	Silicone	0.046	18 GHz

Note: XX = sheet size, available in 12" x 12" and 24" x 24" XX = 12 for 12" x 12" XX= 24 for 24" x 24"

### CAVITY RESONANCE

**Cavity Resonance** – Off the shelf absorber that targets specific frequency increments when exact frequency is unknown. Cavity resonance absorbers typically provide 15-25 dB of attenuation.

#### Features & Properties

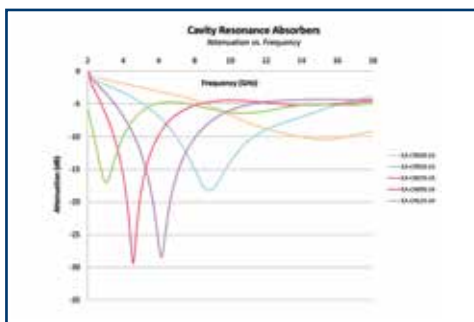
- Magnetically loaded silicone
- High Reflection Loss when mounted to a conductive surface
- Operating Temp:  
-60 F to 375 F (-51 C to 191 C)
- Flammability Rating : UL94 V-0
- Hardness: Shore A 60-80
- Halogen Free

#### Common Applications:

- Antenna Cross Talk Reduction
- Radar Cross Section Reduction
- Instrument Housings
- Aircraft Seals/Ducts
- Cavity Resonance
- Inside EMI Shields
- Traveling, Creeping, Surface Wave Reduction

Part Number	PSA	Base	Thickness (in.)	Frequency
EA-CR020-XX	Yes	Silicone	0.020	14-18 GHz
EA-CR030-XX	Yes	Silicone	0.030	13-17 GHz
EA-CR040-XX	Yes	Silicone	0.040	9-12 GHz
EA-CR050-XX	Yes	Silicone	0.050	6-11 GHz
EA-CR060-XX	Yes	Silicone	0.060	5-9 GHz
EA-CR070-XX	Yes	Silicone	0.070	4-7 GHz
EA-CR080-XX	Yes	Silicone	0.080	3-7 GHz
EA-CR090-XX	Yes	Silicone	0.090	2-5 GHz
EA-CR100-XX	Yes	Silicone	0.100	2-5 GHz
EA-CR125-XX	Yes	Silicone	0.125	1-3 GHz

Note: XX = sheet size, available in 12" x 12" and 24" x 24" XX = 12 for 12" x 12" XX= 24 for 24" x 24"



EA-CR020





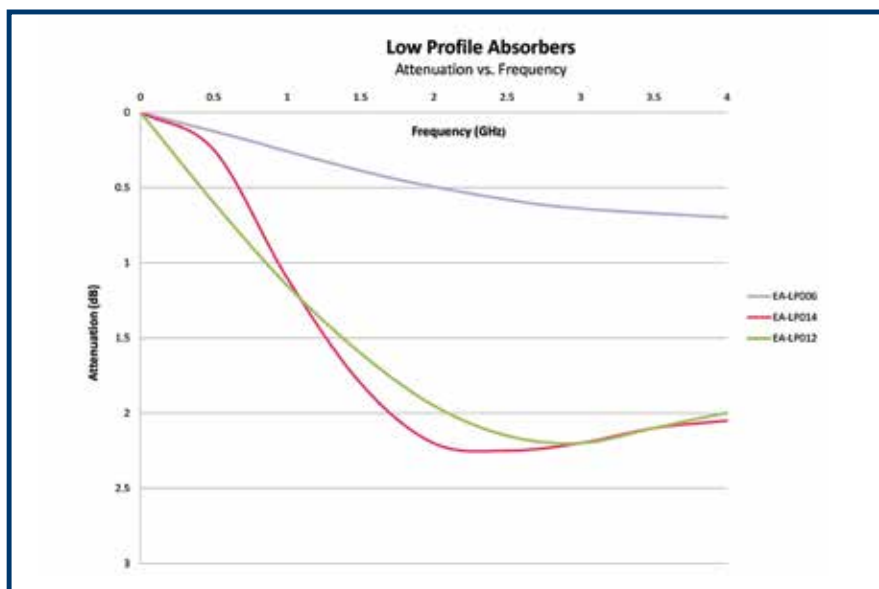
## WIDEBAND

### LOW PROFILE

**Low Profile** – Slender, flexible absorber that can easily be added to an array of applications with little or no design modification.

Part Number	PSA	Base	Thickness (in.)	Frequency
EA-LP014	Yes	Silicone	0.014	500 MHz – 10 GHz
EA-LP012	Yes	Silicone	0.012	500 MHz – 10 GHz
EA-LP006	Yes	Silicone	0.006	800 MHz – 4 GHz

\*Low Profile Material comes on rolls, available by the foot



EA-LP014

#### Features & Properties

- Magnetically loaded silicone
- High Power Loss when mounted to a conductive surface
- Operating Temp: -13 F to 194 F (-25 C to 90 C)
- Hardness: Shore A 75-85

#### Common Applications:

- Inside EMI Shields
- Mobile & Digital Devices

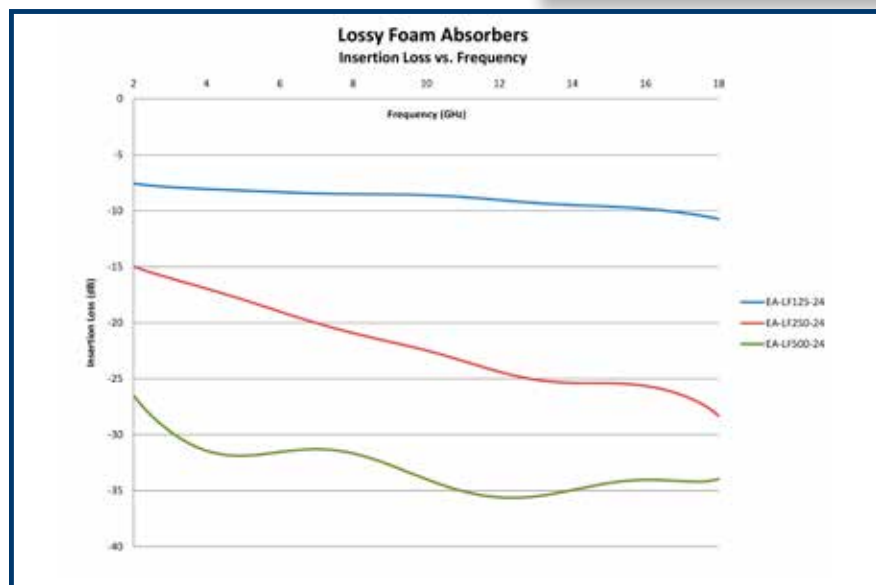
### LOSSY FOAM

**Lossy Foam** – Lowest cost solution for attenuating a wide range of frequencies.

Note: XX = sheet size, available in 12" x 12" and 24" x 24"  
XX = 12 for 12" x 12" XX = 24 for 24" x 24"

\*Thicker material available by request.

Part Number	PSA	Base	Thickness (in.)	Frequency
EA-LF125-XX	Yes	Polyurethane Foam	0.125	1-18 GHz
EA-LF250-XX	Yes	Polyurethane Foam	0.250	1-18 GHz
EA-LF500-XX	Yes	Polyurethane Foam	0.500	1-18 GHz



EA-LF125

#### Features & Properties

- Dielectrically loaded polyurethane foam
- High insertion loss when mounted to a nonconductive surface
- Operating Temp: -60 F to 250 F (-51 C to 121 C)
- Flammability Rating: UL94-HF1 available
- Halogen Free

#### Common Applications:

- Antenna Isolation
- Sidelobe/Backlobe Reduction
- EMI Reduction
- Radar Cross Section Reduction
- Test Boxes





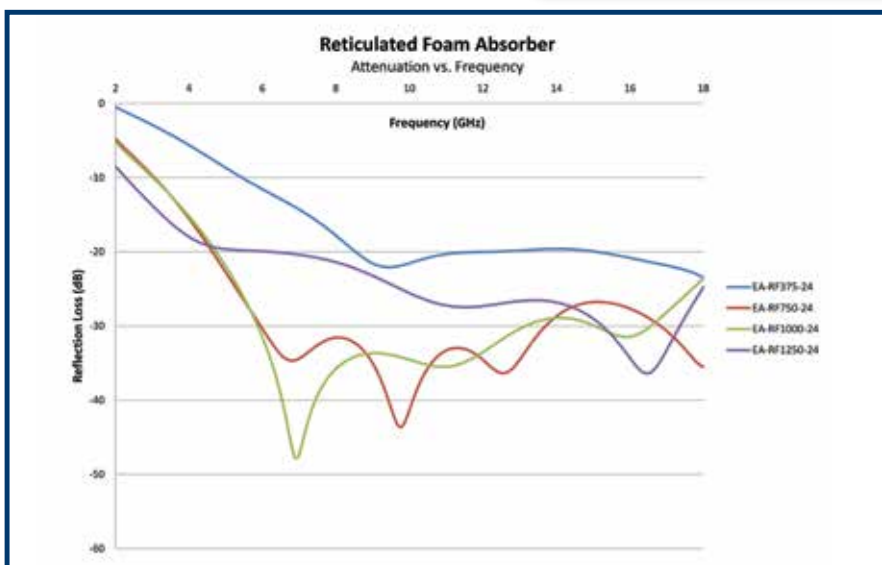
## WIDEBAND

### RETICULATED

**Reticulated Foam** – Open-cell, light weight, low cost solution which can be used as an air filter as well as an EMI absorber.

Note: XX = sheet size, available in 12" x 12" and 24" x 24"  
XX = 12 for 12" x 12" XX= 24 for 24" x 24"

Part Number	PSA	Base	Thickness (in.)	Frequency
EA-RF375-XX	Yes	Polyurethane Foam	0.375	1-18 GHz
EA-RF500-XX	Yes	Polyurethane Foam	0.500	1-18 GHz
EA-RF750-XX	Yes	Polyurethane Foam	0.750	1-18 GHz
EA-RF1000-XX	Yes	Polyurethane Foam	1.000	1-18 GHz
EA-RF1250-XX	Yes	Polyurethane Foam	1.250	1-18 GHz



EA-RF375

#### Features & Properties

- Dielectrically loaded polyurethane foam
- High reflection loss when mounted to a conductive surface
- Operating Temp:  
-60 F to 250 F (-51 C to 121 C)
- Flammability Rating: UL94-HF1 available
- Halogen Free

#### Common Applications:

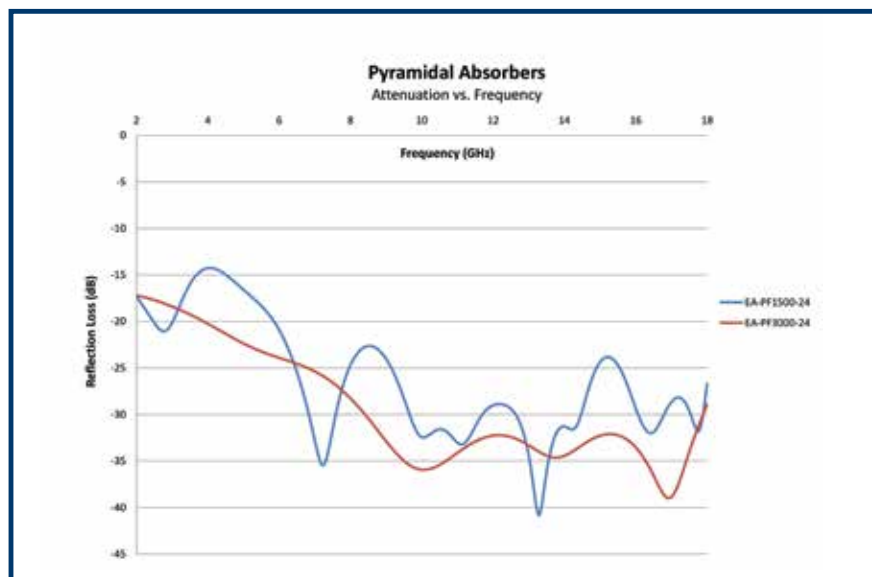
- Antenna Isolation
- Sidelobe/Backlobe Reduction
- EMI Reduction
- Radar Cross Section Reduction
- Test Boxes

### PYRAMIDAL

**Pyramidal Foam** - Gradual transition of impedance through the cones provides excellent reflection loss, specifically when applied to the walls of anechoic chambers.

Note: XX = sheet size, available in 12" x 12" and 24" x 24" XX = 12 for 12" x 12" XX= 24 for 24" x 24"

Part Number	PSA	Base	Thickness (in.)	Frequency
EA-PF1500-XX	Yes	Polyurethane Foam	1.500	1-18 GHz
EA-PF3000-XX	Yes	Polyurethane Foam	3.000	1-18 GHz



EA-PF1500

#### Features & Properties

- Dielectrically loaded polyurethane foam
- High reflection loss when mounted to a conductive surface
- Operating Temp:  
-60 F to 250 F (-51 C to 121 C)
- Flammability Rating: UL94-HF1 available
- Halogen Free

#### Common Applications:

- Antenna Isolation
- Sidelobe/Backlobe Reduction
- EMI Reduction
- Radar Cross Section Reduction
- Test Boxes





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