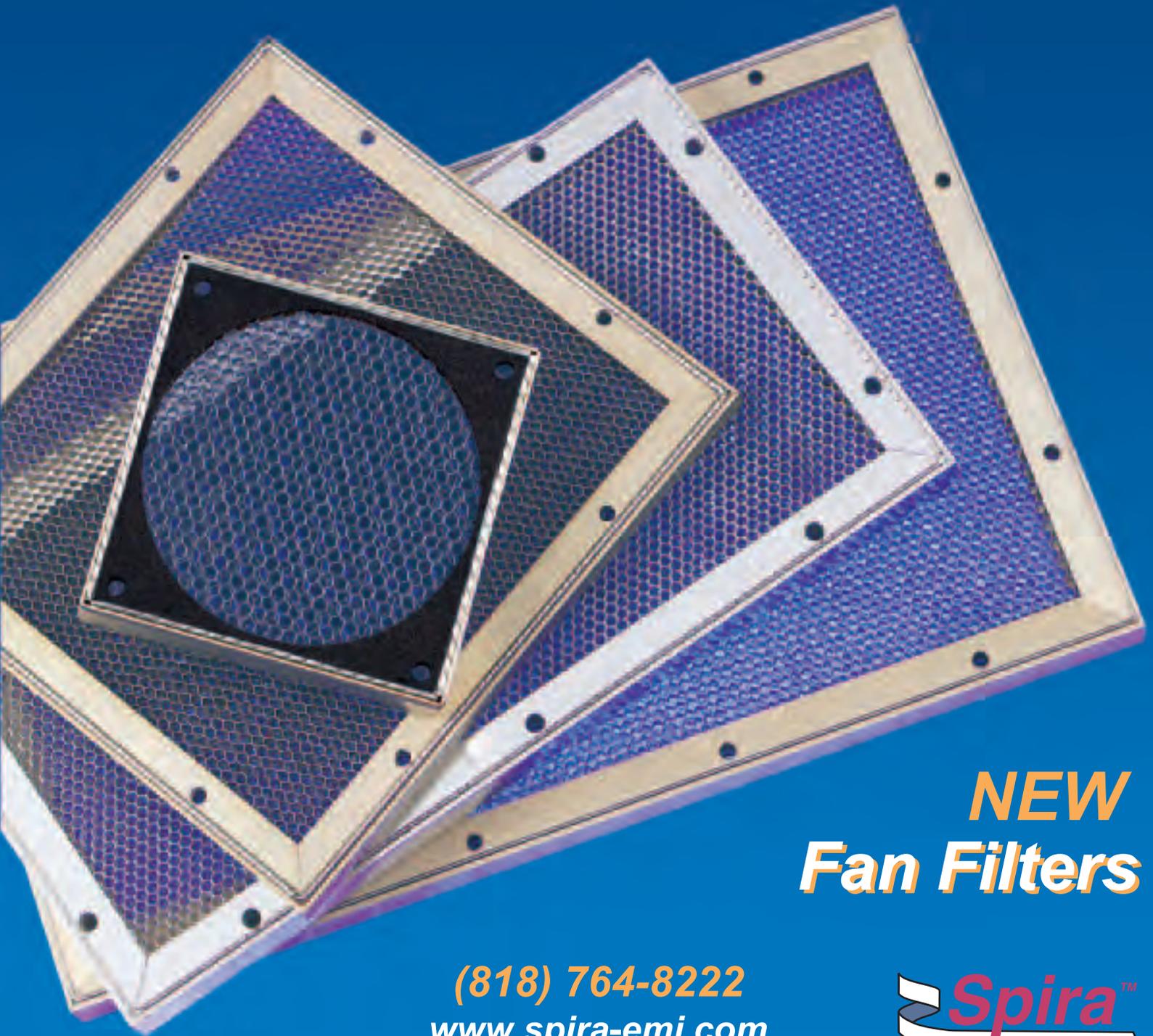


# Newest *Inspira*tion in *Shielded Honeycomb Filters!*

*Excellent Shielding  
at Competitive Prices!*



***NEW  
Fan Filters***

***(818) 764-8222***  
***[www.spira-emi.com](http://www.spira-emi.com)***

***Spira™***

# Shielded Air Vent History

Historically, aluminum honeycomb filters have offered inconsistent shielding due to the random contact inherent in the process of slicing blocks of honeycomb into thinner panels. Tests have shown "identical" filters can have shielding effectiveness that ranges from 70 dB to as little as 20dB! And it's impossible to look at a filter and know which one will perform well and which one won't. Tin plating is often used on the honeycomb panels to enhance

the shielding of the panel. However, the cleaning process used in the tin plating process (if not properly controlled) can cause a significant reduction in the shielding of the panel.

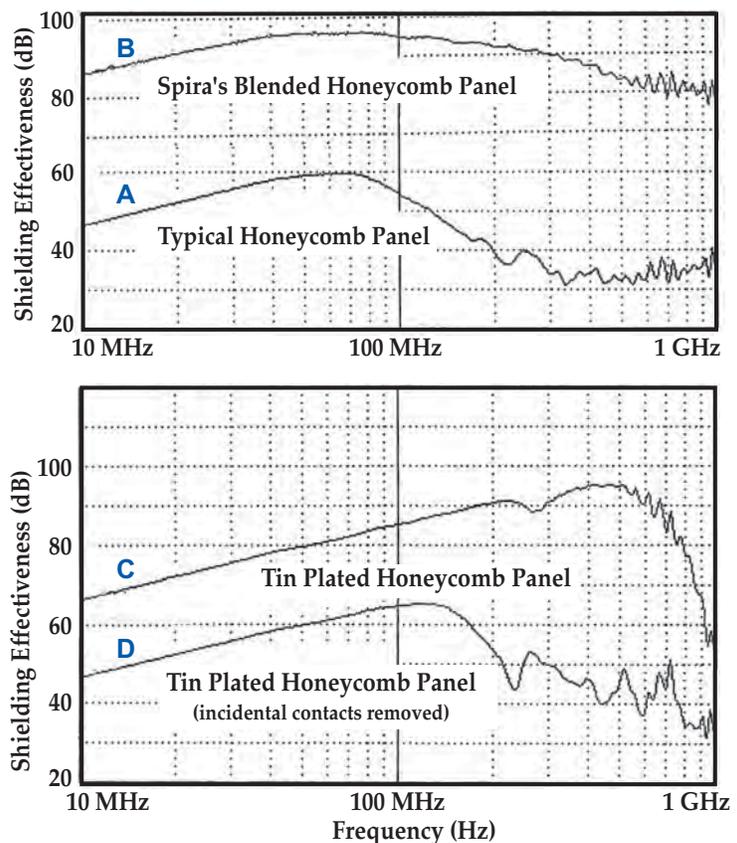
When high, reliable levels of shielding have been required, engineers had to turn to the much more costly honeycomb panels made from copper, brass or iron foil which was soldered, welded, or brazed together.

## The SPIRA Advantage

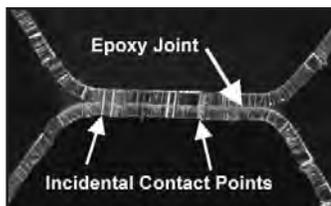
Spira created a revolutionary process that solves this problem and creates superior shielded filters. All Spira filters include our patented "blending" process of the aluminum honeycomb panel that provides high and reliable levels of shielding. Our filters also include the use of epoxy which mechanically bonds the honeycomb panel to the frame and the use of our patented spiral EMI gasket, which ensures an excellent, long-lasting EM bond between the panel and the frame.

The shielding effectiveness graphs illustrate the shielding of 1/8" cell by 1/4" thick honeycomb panels including: (A) the level of shielding obtained from a typical honeycomb panel; (B) the shielding from a panel which has been processed using our patented blending process; and (C,D) the shielding obtained from tin plated honeycomb panels, where most of the incidental contact points across the epoxy joint were removed from one of the panels during the pre-plating cleaning process (D).

Spira's family of exceptional honeycomb filters includes the Econo-Cell and Spira-Cell Air Vent Filters shown to the right, and our NEW Fan Filter described on the back of this brochure.



### Microscopic Photos of Honeycomb Panel Cells



**A** Typical Honeycomb Panel



**B** Spira's Blended Honeycomb Panel



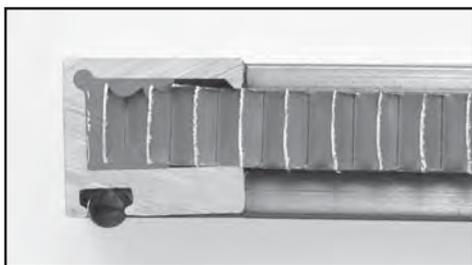
**C** Tin Plated Honeycomb Panel



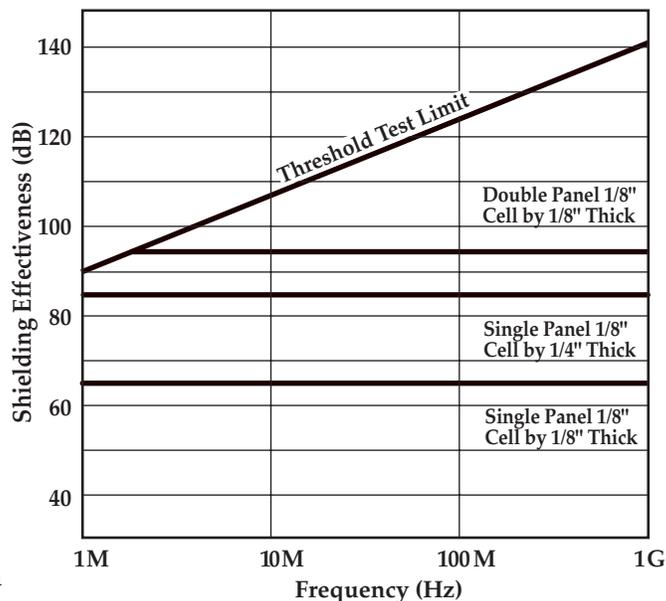
**D** Tin Plated Honeycomb Panel (incidental contacts removed)

# Econo-Cell Air Vent Filter

The Econo-Cell Air Vent Filter is Spira's lowest-cost filter. The filter comes in single and double panel configurations. The single panel configuration uses a 1/8" cell by 1/8", 1/4" or 1/2" thick panel. The double panel configuration uses a 1/8" cell by 1/8" or 1/4" thick panel. The EM bond is obtained with knife edges as shown below, which results in the lowest possible cost. The use of 6061-T4 aluminum for the frame extrusion replaces the need to plate the frame to meet corrosion resistance requirements.



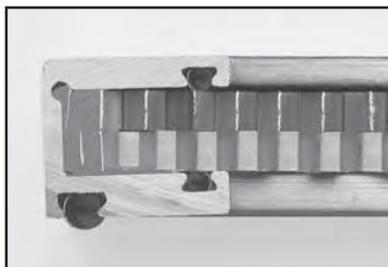
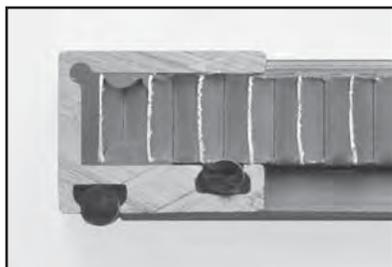
Econo-Cell  
Knife Edge Frame  
1 panel Configuration



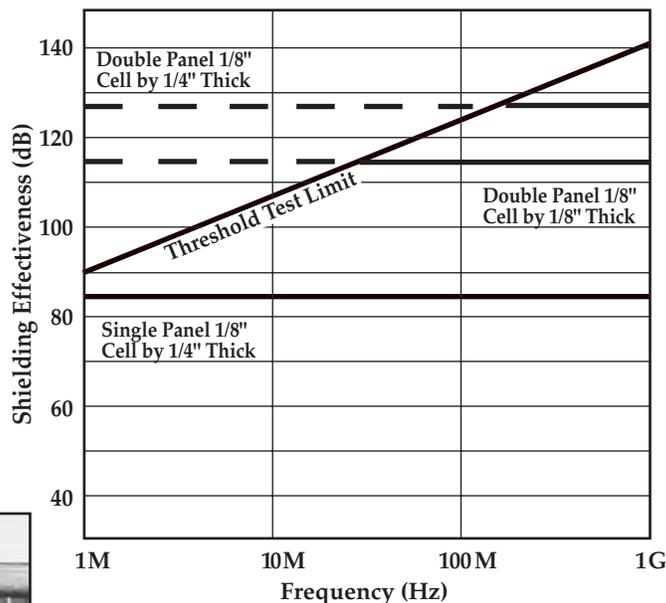
Typical Shielding Effectiveness Test Data of Econo-Cell Air Vent Filters

# Spira-Cell Air Vent Filter

The Spira-Cell Air Vent Filter is the most reliable and durable shielded air vent filter using aluminum honeycomb panels. The filter comes in single and double panel configurations. The single panel configuration uses a 1/8" cell by 1/4" or 1/2" thick panel. The double panel configuration uses a 1/8" cell by 1/8" or 1/4" thick panel. The EMI gaskets used in the manufacture of the filters are tin plated for an exceptional EM bond. The frame on the double panel configurations is also tin plated which is essential to obtain the high levels of shielding offered by the filters. Salt-Fog and Brass-Cell filters are also available.



Spira-Cell with EM bond in 1 and 2 panel Configurations

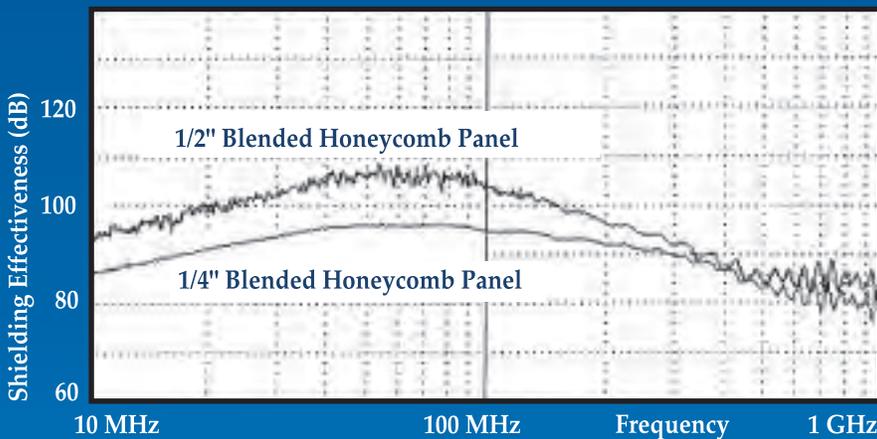
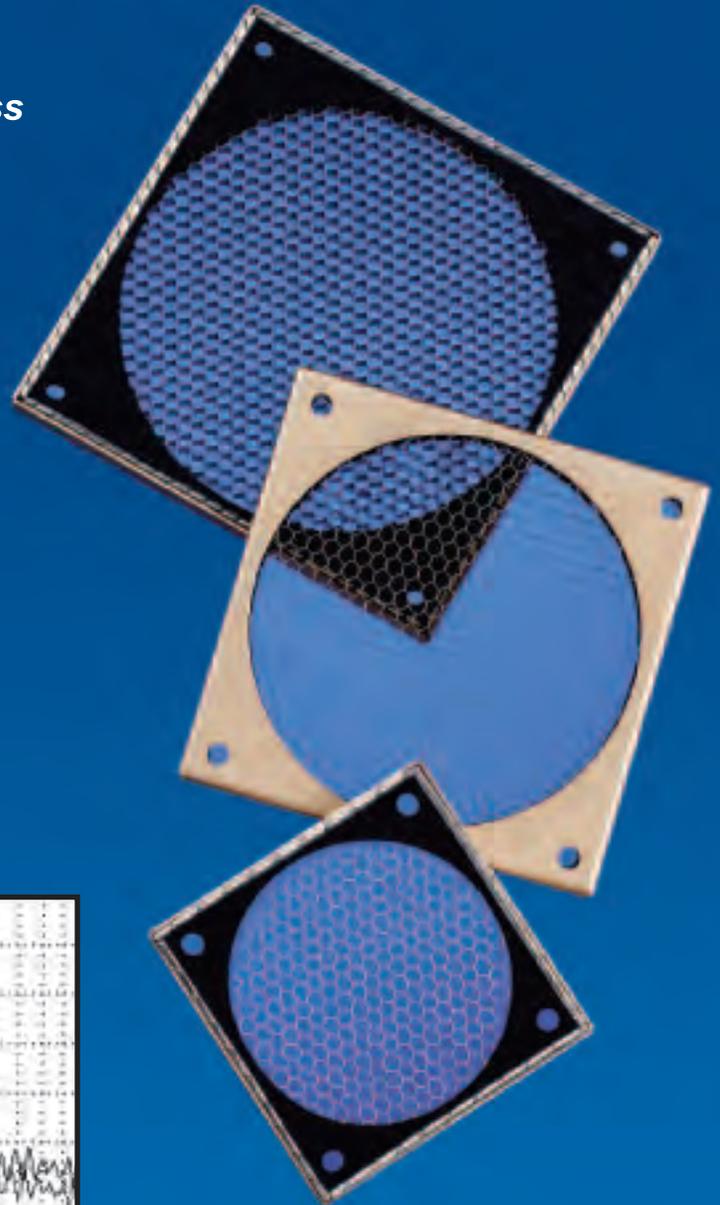


Typical Shielding Effectiveness Test Data of Spira-Cell Air Vent Filters

# NEW Shielded Fan Filters

- ✓ **New Innovative Design!**
- ✓ **Patented Honeycomb "Blending" Process**
- ✓ **Greater than 80dB of Shielding at 1GHz**
- ✓ **Includes Spira's Patented EMI Gasket**
- ✓ **Compatible with 60, 80, 92 and 120mm fans or custom sizes**

The newest addition to Spira's family of exceptional shielded honeycomb filters is our Shielded Fan Filter. Spira's Shielded Fan Filters provide a high and reliable level of shielding at competitive prices. All filters include the "Spira Advantage" as described inside, using our patented blending process and patented spiral EMI gasket to provide an exceptional EM bond. The Shielded Fan Filters are compatible with 60, 80, 92 and 120mm fans or can be made in custom sizes with no additional design fees. Available in 1/8" cell by 1/4" or 1/2" thick honeycomb panels.



Typical Shielding Effectiveness Test Data of Spira Honeycomb Fan Filters

**All Spira Filters & EMI Gaskets are Available in RoHS Compliant Versions**

**Contact Us or Visit our Website for Product and Design Information**

**(818) 764-8222**

**[www.spira-emi.com](http://www.spira-emi.com)**

**[sales@spira-emi.com](mailto:sales@spira-emi.com)**

