

MAC-9101 RFID Portal Isolation and Absorption Curtains

Effectively reduces microwave signal leakage, reflection and crosstalk issues



RFID absorber

Exterior panels exposed

Based upon MWT Materials proprietary technology, our electrical absorbers utilize circuit analog technology to provide high absorption in a physically thin package. Our MAC-9101 RFID absorbing RFID portal isolation curtains utilize this process, allowing for broadband performance in packages under 0.25 inch (0.64 cm) thickness.

Our RFID Portal Isolation Curtains utilize two layers of panels. The exterior panels contain a RF reflective ground plane to reject outside EMF, while the interior ones add layers of electrical microwave absorbing material to maintain RF suppression inside the area being treated. This unique technology is far more effective in isolating the RFID read area from outside areas than any competitive product. An optional clear safety window section is available for larger curtains, allowing for line of sight and safe passage.

APPLICATIONS

- RFID Isolation on Conveyor belt readers
- Wideband EMI Reduction & Isolation
- For smaller RFID portals where signal crosstalk is an issue

FEATURES

- Minimum of -15 dB Absorption from 0.9 to 5 GHz
- Minimum of -80 dB Isolation from 100 MHz to 26 GHz
- Custom designed slits for package transport through curtains
- Interior panels allow for Low Band RF absorption
- Exterior panels contain high performance isolation material for signal isolation
- Durable Outer Surfaces
- High Wear resistance
- Tear Resistant
- High Tensile Strength
- POL (Petroleum, Oil, Lubricant) Resistant
- Custom cut and fit to RFID Conveyor size – top mount grommets

GENERAL SPECIFICATIONS

Construction

Interior panels

Single sided absorber composite flexible panel, consisting of resistive materials, separators and ground plane. Encapsulated in a durable waterproof outer cover of urethane coated nylon

Exterior panels

Dual sided isolation composite flexible panel, consisting of multiple ground plane and separators. Encapsulated in a durable waterproof outer cover of urethane coated nylon

Size:

Custom made to meet requirement.

Thickness:

Typically 0.25 inches (0.64 cm)

Weight:

Typically less than 0.5 lbs. per square foot (2.4 kg/m²)

Color:

Absorber - Black standard (others available: blue, green, red, gray, etc.)
Reflector – Gray standard (other available: blue, green, red, black, etc.)

Mechanical Properties

Effects of Liquids - Oil:

No adverse effects after 1000 hours (ASTM-B-117)

Effects of Liquids - Water:

Less than 6% increase in volume (ASTM-D-471)

Hydrostatic Resistance:

No water leaks after 20-min./15 psi (ASTM-D-751)

Electrical Performance

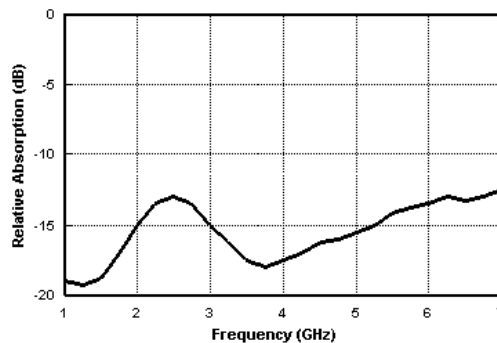
Isolation:

More than -90 dB when closed

Attenuation:

Greater than -15dB from 0.8 to 5GHz

Relative Absorption (dB) vs. Frequency (GHz)



Installation notes:

Our RFID Portal Isolation Curtains have two different overlapping sets of panels.
Product should be installed with the black (absorber) side facing the inside of the tunnel.

Our Portal Isolation Curtains are custom sewn to your specifications. Curtains should be measured carefully and just touch the belt without product on them. We suggest they overlap and be attached to both outer sides of the portal to allow for optimal RFID seal. We can include design details (notches in the side panels, varying panel length, etc.) to allow for adequate seal and maximum signal isolation.