GORE® Cooling Filters
for outdoor cabinets

MOST EFFICIENT COOLING AND RELIABLE ENVIRONMENTAL PROTECTION

Together, improving life

High reliable cooling technology

About direct air cooling (DAC) technology with GORE® Cooling Filters

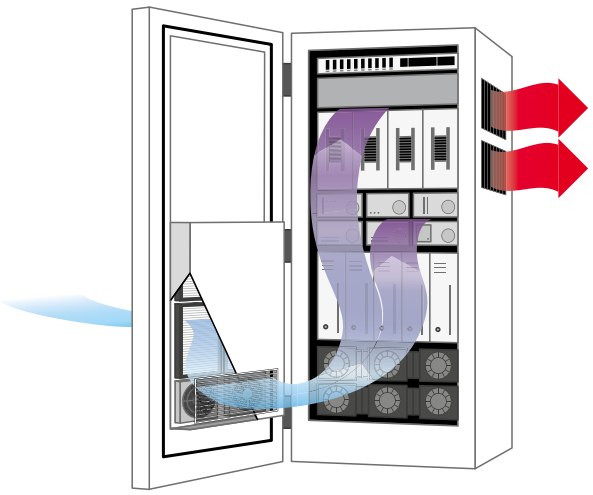
GORE® Cooling Filters offer the most efficient and reliable cooling technology available for outdoor electronic enclosures. Unlike closed loop systems like AC and HEX, GORE® Cooling Filters enable the use of DAC by providing critical environmental protection — allowing you to take full advantage of natural thermal efficiency of air.

Increase system reliability with GORE® Cooling Filters

Gore's standard product line of Cooling Filters offers unique sizes that incorporate the high performance Gore filtration media into a lightweight, durable ABS polymer frame. The product offering can be integrated into a variety of enclosure designs in order to reduce weight and cost.

Benefit from our application expertise and experience

With sales and market experience of more than 15 years and several hundred thousand GORE® Cooling Filters deployed globally, Gore has gathered unparalleled in-depth application knowledge. Based on global field testing under various climatic conditions we are in the position to provide our customers with realistic lifetime modeling projections that help to minimize maintenance uncertainties.



Our application engineers will help you select the right filter for your application.

Typical Applications

- Telecom Base Stations
- Outdoor Power Cabinets
- Digital Signage

Key Benefits

- Low Capital Costs
- Low Energy Consumption
- No Preventive Maintenance
- High System Reliability
- Fan Protection from Harsh Environments
- Lighter Weight

Construction Materials	
Frame	ABS Black
Membrane	Hydrophobic ePTFE
Pleated Filter Media	Fully Synthetic Composite
Potting	Polyurethane
Gasket	Polyurethane Foam/ Thermoplastic Elastomer

Product Performance	
Operating Temperature	–40 to +65 °C
Humidity Range	0 to 100% RH
Filtration Efficiency	> 99.5% (@ 0.1 µm, 1 cm/sec)
Filtration Class	EN1822 – E12
Flammability	UL 900
Typical Filter Lifetime	Up to 5 years (based on application)[1]

1 Installation location impacts PM10 air pollution assumptions used in life time projections

Selection criteria for GORE® Cooling Filter sizes

Selecting appropriate GORE® Cooling Filter size requires a basic understanding of the required airflow or heat dissipation as well as the available mounting area for the filter.

All installations have variations in the environmental specifications. The Filter Performance table is used to show relative performance at standard parameters. Specific calculations are required for individual installations and may differ from standard parameters.

Gore application engineers are available to help solve your heat dissipation needs, calculating the filter performance for your specific application and recommend an available filter size.

Part Number	Filter Attributes				Filter Performance		
	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Maximum Air Flow (m^3/hr)	Equivalent Heat Dissipation Capacity (W) [2]	New Filter Pressure Drop (ΔP) vs. Airflow (Q) Curves
CF541237	605	454.5	57.2	2.2	450	1452	ΔP (Pa) = 0.12 x Q (m^3/h)
CF541238	455	305	57.2	1.2	200	645	ΔP (Pa) = 0.28 x Q (m^3/h)
CF541242	605	455	80	3.3	625	2016	ΔP (Pa) = 0.09 x Q (m^3/h)
CF551279	440	440	80	2.4	450	1452	ΔP (Pa) = 0.12 x Q (m^3/h)

2 Assuming ΔT of 10 °C

Proven Performance

Ingress Protection Testing

Filter protection against ingress of particulates and water

METHOD:
- **IEC 60529**

Rating:
- **IP65** [3]

Wind Driving Rain Testing

METHOD:
- **GR 487-CORE**
  Comply with the 31 m/sec [70 mph] [3]

Flammability Testing

Resistance to open flame

METHOD:
- **UL 900**

Salt Fog Testing

Filter resistance to salty environments

METHODS:
- **GR 487-CORE**
  Passed the 30 day continuous salt fog test [3]
- **IEC 60068-2-52**
  Passed cyclic salt fog Test Method 3 [3]

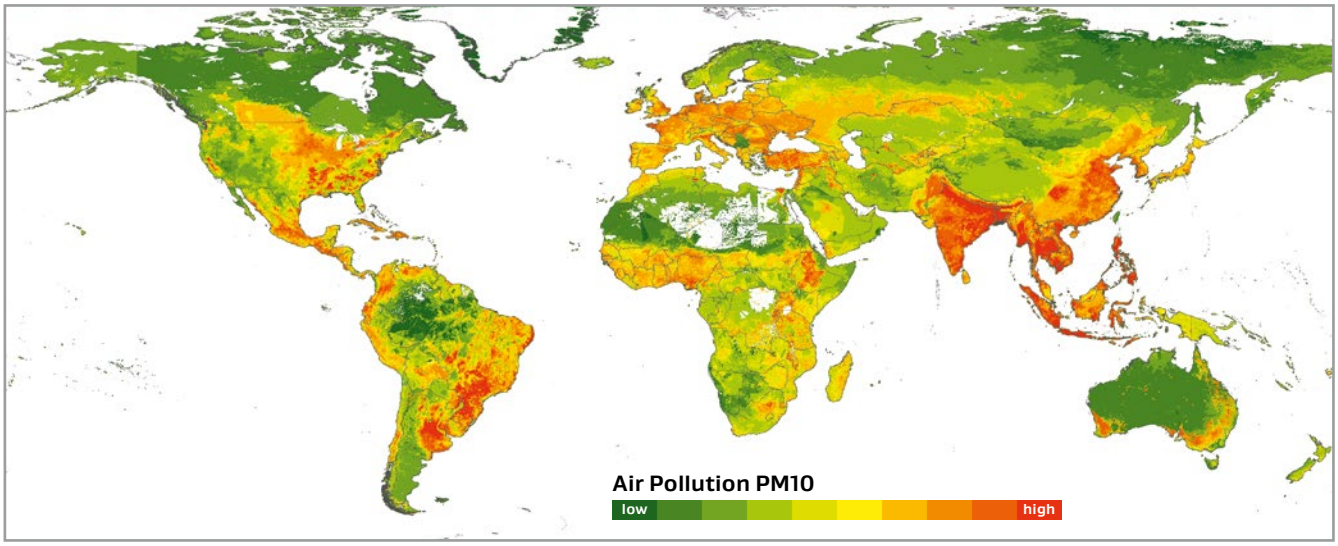
Chemical Resistance

METHOD:
- **GR-487-CORE**
  (3% H_2SO_4, 0.2N NaOH, NH_3, 90% IPA, Kerosene, 10% Igepal CO 630, WD40, Cable Filling Compound, Splice Encapsulating Compound, Wasp and Hornet Spray)

3 Enclosure test; filter supports this performance when installed in sealed enclosure with louver protecting filter

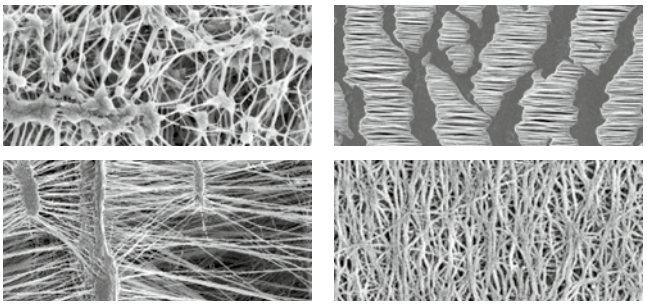
Environmental challenges: PM10 particles in the air

PM10 concentration has the largest effect on filter life. GORE application engineers use available databases to estimate filter life for each unique application.



The science behind the solution

Gore's Proprietary ePTFE Membrane Technology
Gore's proprietary expanded polytetrafluoroethylene (ePTFE) membrane technology is used in a wide variety of applications such as high performance fabrics, medical implants and high performance filter media. This microporous membrane allows clean ambient air to flow into the cabinet while repelling water and filtering out harmful contaminants such as corrosive salts, dust and dirt.



Our knowledge of fluoropolymers and our advanced engineering capabilities are at the heart of a wide range of remarkable materials.

Product Stewardship

W. L. Gore & Associates declares that the products listed in this document do not have any restricted substances above the maximum concentration values listed in RoHS Directive 2011/65/EU and China "Management Methods for Controlling Pollution Caused by Electronic Information Products" (China RoHS). This part numbers has met EU RoHS requirements since inception with no exemptions used.

In addition, the part numbers listed in this document meet the substance restrictions of Article 4 of RoHS Recast including Commission Delegated Directive 2015/863. In addition, we confirm that our products meet the 25ppb threshold limit for articles specified in the EU REACH restriction for PFOA and related chemistries, which goes into effect in July of 2020.

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