



ADVANCED SOLUTIONS FOR ADVANCED LIGHTING APPLICATIONS

GORE® Vents provide life-of-vehicle protection to maintain the reliability of lighting systems that support vehicle differentiation and functionalities — for example, in EVs where thinner modular lamps can illuminate brand signatures and integrate new sensing/communication devices.

For Headlamps

- **CMD:*** The only solution that actively removes condensation from headlamps for the life of the vehicle.
- **AVS 120:** The next-generation AVS 9. Same size, but with our highest diffusive performance, for faster clearing times.
- **AVS 9:** Industry-standard footprint with proven life-of-vehicle condensation reduction, ingress protection and pressure equalization.
- **AVS 113:** The next-generation AVS 100. Faster clearing with our highest diffusive performance, plus strong surface-bond to housing.
- **AVS 100:** Easy installation (target frame optional): spray resistance plus condensation reduction, ingress protection and pressure equalization.

For Rear Lamps

- **AVS 600/601/602:** Highest moisture diffusion per footprint minimizes lens clearing times and enables more design options.
- **AVS 2/5:** Small-footprint solution rapidly sheds contaminants and won't saturate, for extra protection from water, dust and dirt.

Varied solutions for your most challenging applications

- **When headlamp lens clarity matters,** get solutions to meet all your performance and protection needs, from innovative adhesive vents, to the unique technology of CMD*.
- **When you need rear lamp options** for future-focused styling and packaging, trust Gore's performance-wise solutions for both clear and colored lenses.
- **When space-limited accessory and brand-emblem lighting** create packaging challenges, choose Gore reliability in a smaller footprint.

For Accessory Lamps

- **AVS 2/5:** More design flexibility: these low-profile vents equalize pressures while quickly shedding water and blocking entry of contaminants.
- **AVS 118/119:** Our smallest-footprint vents deliver robust protection and reliable pressure equalization even after water contact.

*The AML Condensation Management Device (CMD), enabled by GORE Condensation Management Products

Headlamps

Product name (order number for samples)	AVS 120	AVS 9	AVS 113	AVS 100
Order Numbers (Multi-up configuration)	VE2122	VE0020GMC	VE2113	VE2084
Order Numbers (One-up configuration)	VE2123	VE2068	VE2114	VE2086



Product Performance Characteristics

Main vent functionality	<ul style="list-style-type: none"> • Condensation reduction • Pressure equalization • Dust/dirt/debris protection • Water intrusion protection 			
Minimum airflow (per part) at 70 mbar (1 psi)	> 31.2 l/h	> 22.2 l/h	> 33 l/h	>19.9 l/h
Typical airflow (per part) at 70 mbar (1 psi)	75 l/h	45.4 l/h	82 l/h	40.8 l/hr
Water Entry Pressure (assembly)	> 345 mbar (> 5.0 psi) for 60 sec			
Moisture Vapor Transmission Rate ¹	700 mg moisture / day	610 mg moisture / day	699 mg moisture / day	525 mg moisture / day
Operating temperatures	-40 °C to 150 °C			
Membrane type	100% ePTFE (AM2XX)			
Membrane characteristic	Hydrophobic and Oleophobic			
Pressure-sensitive adhesive	AD103 Silicone			
IP Protection ² : (a) Dust (b) Water immersion (c) Spray resistance	(a) IP6KX (b) IPX7 (c) with target frame: IPX6K ³	(a) IP6KX (b) IPX7 (c) with target frame: IPX6K ³	(a) IP6KX (b) IPX7 (c) with target frame: IPX6K ³ without: IPX4 ⁴ / IPX9K ⁵	(a) IP6KX (b) IPX7 (c) without target frame: IPX4 ⁴ / IPX9K ⁵

Design and Dimensions (mm)

Outer dimensions (OD) Inner dimensions (ID)	AVS 120	AVS 9	AVS 113	AVS 100

1. Based on ASTM E96 Water method. MVTR is represented by average value.

2. According to ISO20653:2013.

3. IPX6K: Test performed on AVS 9 and AVS 113 with protective target frame and spray angle of 2.5 degrees from vent mounting surfaces.

4. IPX4 test performed with vent in recommended lamp mounting position.

5. Gore QATM912, WEP after IPX9K modified.

Please note: Housings made of high-water-absorption plastics (above 0.15% ASTM D570 – 24 hrs. at 23 °C) must be evaluated.

Rear Lamps

Product name (order number for samples)	AVS 2	AVS 5	AVS 600/610	AVS 601/611	AVS 602/612
Order Numbers (Multi-up configuration)	VE0001VAP	VE2004	VE2100	VE2101	VE2102
Order Numbers (One-up configuration)	VE2051	VE2016	VE2110	VE2111	VE2112



Product Performance Characteristics

Main vent functionality	<ul style="list-style-type: none"> • Condensation reduction • Pressure equalization • Dust / dirt / debris protection • Water intrusion protection 				
Minimum airflow (per part) at 70 mbar (1 psi)	> 3.0 l/h	> 4.8 l/h	> 123.5 l/h	> 49.8 l/h	> 14.2 l/h
Typical airflow (per part) at 70 mbar (1 psi)	6.3 l/h	9.7 l/h	153.7 l/h	62.0 l/h	17.6 l/h
Water Entry Pressure (assembly)	> 345 mbar (> 5.0 psi) for 60 sec		> 206 mbar (> 3.0 psi) for 60 sec		
Moisture Vapor Transmission Rate ¹	69 mg moisture/day	132 mg moisture/day	710 mg moisture/day	338 mg moisture/day	107 mg moisture/day
Operating temperatures	-40 °C to 150 °C				
Membrane type	100% ePTFE (AM2XX)		100% ePTFE (AM6XL)		
Membrane characteristic	Hydrophobic and Oleophobic				
Pressure-sensitive adhesive	AD103 Silicone				
IP Protection ² : (a) Dust (b) Water immersion (c) Spray resistance	(a) IP6KX (b) IPX7 (c) with target frame: IPX6K ³		(a) IP6KX (b) IPX7 (c) Protective target frame required for spray resistance ⁶		

Design and Dimensions (mm)

Outer dimensions (OD) Inner dimensions (ID)	OD = 12.70 ID = 7.11	OD = 19.05 ID = 8.89	OD = 42.50 ID = 18.00	OD = 19.00 ID = 15.00	OD = 12.00 ID = 8.00

Storage and Handling Recommendations

W. L. Gore & Associates recommends that adhesive parts be stored in cool dry conditions (22 °C / 50% RH) and out of direct sunlight. Adhesive vents are most easily removed from the product carrier within one year of packaging date.

Accessory Lamps

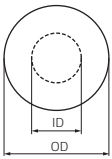
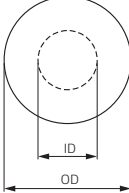
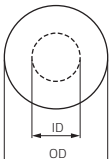
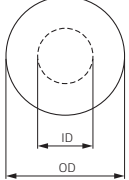
Product name (order number for samples)	AVS 2	AVS 5	AVS 118	AVS 119
Order Numbers (Multi-up configuration)	VE0001VAP	VE2004	VE2117	VE2119
Order Numbers (One-up configuration)	VE2051	VE2016	VE2118	VE2120



Product Performance Characteristics

Main vent functionality	<ul style="list-style-type: none"> • Condensation reduction • Pressure equalization • Dust / dirt / debris protection • Water intrusion protection 		<ul style="list-style-type: none"> • Pressure equalization • Dust / dirt / debris protection • Water intrusion protection 	
Minimum airflow (per part) at 70 mbar (1 psi)	> 3.0 l/h	> 4.8 l/h	0.5 l/h	1.8 l/h
Typical airflow (per part) at 70 mbar (1 psi)	6.3 l/h	9.7 l/h	0.8 l/h	2.8 l/h
Water Entry Pressure (assembly)	> 345 mbar (> 5.0 psi) for 60 sec		345 mbar (> 5 psi) for 60 sec	
Moisture Vapor Transmission Rate ¹	69 mg moisture/day	132 mg moisture/day	18 mg moisture/day	40 mg moisture/day
Operating temperatures	-40 °C to 150 °C			
Membrane type	100% ePTFE (AM2XX)			
Membrane characteristic	Hydrophobic and Oleophobic			
Pressure-sensitive adhesive	AD103 Silicone			
IP Protection ² : (a) Dust (b) Water immersion (c) Spray resistance	(a) IP6KX (b) IPX7 (c) with target frame: IPX6K ³			

Design and Dimensions (mm)

Outer dimensions (OD) Inner dimensions (ID)	OD = 12.70 ID = 7.11	OD = 19.05 ID = 8.89	OD = 7.00 ID = 3.00	OD = 10.00 ID = 5.50
				

Please contact your local GORE® Automotive Vents representative to request our updated installation guide for exterior lighting applications.

AML Condensation Management Device (CMD) Enabled by GORE Condensation Management Products

CMD is for OEMs, Tiers and end-users that value preserving headlamp clarity for the life of the vehicle, not just for the warranty period. Designed and assembled with AML Systems, CMD is the industry's "breakthrough" solution. It actively removes — not just reduces — condensation from headlamp enclosures, helping drivers to enjoy the benefits of visually-clear lenses over the life of the vehicle.

CMD includes Gore technologies that support condensation removal while also providing responsive pressure equalization and effective protection against ingress of fine dust, dirt and water.

With CMD, manufacturers can have confidence their internal combustion engine and electric vehicle headlamps will meet consumer expectations, and uphold their brand's quality reputation over time.



For more CMD product information, to request samples or to discuss your newest application, ask your Gore representative to connect you with AML.

GORE® Automotive Vents For Exterior Lighting

Our all-membrane adhesive vents enable OEMs and Tiers to advance the reliability and longevity of their lighting components by providing enhanced condensation reduction, pressure equalization and protection against entry of water, fine dust and dirt. These adhesive vents bond firmly and perform reliably under the most challenging environmental conditions.

Billions of adhesive GORE® Vents have been installed in automotive platforms worldwide. Decades ago, Gore developed the industry's first headlamp vents that offered the benefit of condensation reduction.

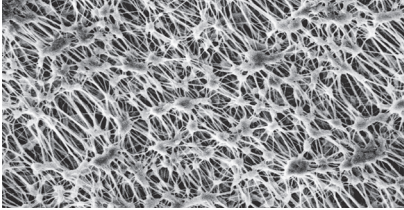
Since then, we've continued to advance and enhance our offering, with performance options designed around a wide range of applications, specifications and sizes.



For further details on our venting solutions, to request samples or to discuss your newest application, contact your local Gore representative or connect with us via email or phone, as shown on the back cover.

Why the GORE Membrane matters

Only GORE® Automotive Vents incorporate the performance benefits of the GORE Membrane. Made of expanded polytetrafluoroethylene (ePTFE), it's engineered with billions of pores. These pores are 700X larger than an air molecule, to ensure reliable airflow and pressure equalization. Yet at 20,000X smaller than a drop of water, these pores effectively block entry of liquids, dirt and debris.



The GORE Membrane
magnified 40,000 times

The GORE Membrane is:

- chemically inert
- non-shedding
- UV-resistant
- temperature-resistant
- hydrophobic and oleophobic

What GORE® Automotive Vents can offer you

GORE® Automotive Vents deliver innovative technology, backed by decades of research and testing. Our product portfolio has proven itself in the harshest environments: literally billions of our vents have been installed in automotive applications worldwide. Today, virtually every global OEM trusts GORE® Automotive Vents to extend the reliability and longevity of their exterior lighting, electronics and powertrain products and assemblies.

With worldwide technical support and testing centers based in the US, Germany, Japan and China, our application engineers are easily accessible — and ready to work in close partnership with your design team, from product concept through manufacturing integration.

Contact Us

To discuss options and solutions for your newest application, call your local Gore representative or send your inquiry from our website:
gore.com/autovents

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INTERNATIONAL CONTACTS

Australia +61 2 9473 6800

China +86 21 5172 8299

EMEA +49 89 4612 2211

India +91 22 6768 7000

Japan +81 3 6746 2570

Korea +82 2 393 3411

Mexico +52 81 8288 1281

Singapore +65 6733 2882

South America +55 11 5502 7800

Taiwan +886 2 2173 7799

USA +1 410 506 7812

W. L. Gore & Associates, Inc.

401 Airport Road, Elkton, MD 21922

T +1 800 523 4673 F +1 410 506 8749 E automotive.us@wlgore.com

gore.com/autovents

