

GMRV

Sample Conditioning System

Over the decades of providing PEMS, iPEMS, and mini-PEMS from GlobalMRV, continued observation has helped us realize there's a need for a simple device to properly prepare and deliver a sample that reduces operator need for interaction, and reduces measurement losses. GlobalMRV has introduced a line of accessories that allow for proper sample preparation. Here, GlobalMRV (GMRV) introduces the Sample Conditioning System (SCS) to better meet those needs.

The GMRV SCS provides smooth sample delivery in areas traditionally difficult to obtain a consistent sample volume delivery. With simple compression technology, a smooth sample can be extracted without the signal interference of pumps. The GMRV SCS delivers the ability to measure particles, collect water samples, and extract a clean gas sample from and to any device. Test subject/studies(s) can be in the field in real-driving environments (RDE) or in a controlled laboratory, allowing businesses to analyze vehicle performance and their emissions in their natural state. What will I be breathing in as I walk down the sidewalk in heavy traffic? The GMRV SCS can also perform there.

Dimensions: 12"H x 7"D x 7"W (305mm x 178mm x 178mm)

Weight: 11 lbs. (5 kg)

Power: 12 to 14 VDC

Amperage: 2-3 amperes

Sample Flow (Volume):

- 16 liters per minute (IN)
- 1-4 liters per minute (OUT)
- Options:
 - Relative Humidity IN
 - Relative Humidity OUT
 - For water/condensation/humidity correction
 - PM – Measurement
 - PN – Measurement
 - Exhaust Water Sample Collection (Testing)

Optimal Instrument Conditions:

- 5°C to 35°C (40°F to 95°F)
- 0-99% relative humidity (RH), non-condensing

Applicable Operational Engines: The GMRV SCS has been successfully utilized in the operation of lawn equipment, motorcycles, ATVs, passenger vehicles, trucks, construction equipment, marine vessels, semi-trucks, and locomotives operating in real-world driving conditions.

Online, phone, and email support are included in the warranty with the purchase of every SCS.



GlobalMRV Airborne Particle Measurement Solutions

PM and PN			
	PM and PN	PM	PM
Operating Principle	Laser Scattering	Laser Scattering	Laser Scattering
Measurement Range	0~30,000µg/m³ (0~30mg/m³)	0~50,000µg/m³ 0~50mg/m³ Maximum display 1000mg/m³	0 - 250,000µg/m³ (0-2,500mg/m³)
Output Channels	PM1.0, PM2.5, PM4.25(optional), PM10 and TSP	PM2.5, PM10 and TSP	PM2.5, PM10 and TSP
Resolution	1 µg/m³ (0.001 mg/m³)	1 µg/m³ (0.001 mg/m³)	1 µg/m³ (0.001 mg/m³)
Working Condition	-30°C ~ 70°C,0-95%RH (non-condensing)	-30°C ~ 70°C,0-95%RH (non-condensing)	0-55°C (32°-131°F)
Particle Measurement Results			
PM1.0 [ug/m3]	Yes	No	Optional
PM2.5 [ug/m3]	Yes	Yes	Optional
PM10.0 [ug/m3]	Yes	Yes	Yes
TPS [ug/m3]	Yes	Yes	Optional
0.3um [ct/L]	Yes	No	No
0.5um [ct/L]	Yes	No	No
1.0um [ct/L]	Yes	No	No
2.5um [ct/L]	Yes	No	No
5.0um [ct/L]	Yes	No	No
10.0um [ct/L]	Yes	No	No

More about the “collected water samples”

	Tap	Brita	Poland Springs	Purified (Tops)	Spring (Tops)	Distilled (Tops)	SM Sample (2023-06-12)	LG Sample (2023-06-12)
Total Hardness (mg/L)	100	50	15	0	250-425	0	25	25
Free Chlorine (mg/L)	1	0.5	0	0	0	0	0	0
Iron (mg/L)	0	0	0	0	0	0	0	0
Copper (mg/L)	0	0	0	0	0	0	5	5
Lead (mg/L)	0	0	0	0	0	0	0	0
Nitrate (mg/L)	0	0	0	0	10	0	0	0
Nitrite (mg/L)	0	0	0	0	0	0	0	0
MPS (mg/L)	0	0	0	0	0	0	0	0
Total Chlorine (mg/L)	0	0	0	0	0	0	0	0
Fluoride (mg/L)	0	0	0	0	0	0	0	0
Cyanuric Acid (mg/L)	0	0	0	0	0	0	40	40
Bromine (mg/L)	0	0	0	0	0	0	0	0
QUAT/QAC (mg/L)	0	0	0	0	0	0	0	0
Total Alkalinity (mg/L)	20	10	20	0	40	40	240	240
Carbonate (mg/L)	80	40	20	20	180	20	240	240
pH	7.2	6.8	6.4	6.4	8.2	6.4	8.2	8.2

Many other tests — from particle counting to other chemical analyses — can be conducted as desired.

More about “delivering a clean gas sample to any device”

Measuring ranges for Additions to AxionRS, Rack systems or SCS															
	100%	50%	30%	20%	10%	5%	1%	5000 PPM	2000PPM	1000 PPM	500 PPM	300 PPM	100PPM	50 PPM	
CO2	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CO	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
N2O	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
CnHm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
CH4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
CF4	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
SF6	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
H2O	No	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No
O3	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
CL2	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No	No
H2S	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
SO2	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NO2	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NO	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No
Typically +/- 2% Full Scale															