

LASER BASED - VEHICLE BASED GAS DETECTOR
ISA DATA SHEET



General	1	Manufacturer	Boreal Laser Inc.	
	2	Analyzer Model No.	GasFinder3-VB (Vehicle Based) Assembly (e.g. BL-GF3-VB-____-____)	
	3	Warranty Period	10 years on Laser (Light Source) and 3 years Full Warranty	
Detector Specifications	4	Detection/Operating Principle	Tunable Diode Laser Absorption Spectroscopy (TDLAS)	
	5	Sensor Type	One (1) Semiconductor Diode Laser which emits Laser Light in the Near Infrared (NIR)	
	6	Eye Safety	Class 1 AEL under IEC 60825-1	
	7	Function	Detects/monitors free gaseous molecules of one (1) specific target gas	
	8	Calibration	Factory calibrated with no requirement for periodic/inherent calibration	
	9	Field Calibration	None Required or Available	
	10	Automatic Validation	Internal Reference Cell (interrogated once a minute)	
	11	User Function Testing	External Response Cell to "bump", "test" or "challenge" (Optional Accessory)	
	12	Response Time	One sample per second	
	13	Recovery Time	Instantaneous (Each sample is independent of the last)	
	14	Accuracy	±2% of Reading	
	15	Internal Temperature Compensation	Dynamic (Piezo Resistive) or Manual Entry: -55°C to +150°C (-67°F to +302°F)	
	16	Internal Pressure Compensation	Dynamic (MEMS) or Manual Entry: 50 to 200 KPaa (7.25 to 29 PSIA)	
	17	Drift	±0.1% over operating temperature and pressure ratings	
	18	Warm-up / Start-up Time	2 Minutes	
	Enclosure Specifications	19	User Intervention on Start-up	None Required
		20	Active Measurement Path - Temperature	-55 to +300°C (-67 to 600°F)
21		Active Measurement Path - Humidity	0-100% RH (Non-Condensing)	
22		Active Measurement Path - Pressure	50 to 200 KPaa (7.25 to 29 PSIA)	
23		Fault Diagnostics	Fail Safe Operation with Status Codes visible via HMI Service Module, Interface and Logfiles	
24		Internal Data Logging	User has access to 20 years worth of storage capacity via USB Stick	
25		Obscuration / Beam Block	Operates down to 97% Obscuration (40x Turndown)	
26		Solar Blind	No False Positives from Solar Interference	
Power Requirements	27	Area Classification	General Purpose	
	28	Operating Temperature Range	-55 to +65°C (-67 to 149°F)	
	29	Storage Temperature	-55 to +65°C (-67 to 149°F)	
	30	Ingress Protection	Weather Tight	
	31	Enclosure Material	Potted Aluminium	
	32	Enclosure Dimensions (LxWxH)	260 x 200 x 160 mm (10.2 x 7.9 x 6.3 in)	
	33	Enclosure Weight	5.0 kg (11.0 lbs)	
	34	Cable Glands/Fittings	Military Connectors for Power and Communication	
Analog Output	35	Power/Communication Terminals	12 or 24 VDC Power Supplies with Military Connector for Power Connection	
	36	Input Voltage	24 VDC (24-30 VDC)	
	37	Power Consumption	20 Watts under Normal Operation	
	38	In-Rush Current	2.5A for 100ms	
	39	Recommended External Fuse	4A Fast Blow Fuse	
MODBUS	40	Number of Analog Loops	One (1) HART 7 over Analog Loop	
	41	Supply of Loop Power	Active/Source (Device Powered Loop)	
	42	Configurable Analog Output Options	Concentration (ppm-m, ppm, or mg/Nm3), Light Level (Rx), & R2 Confidence Factor (R2)	
	43	Analog Range Settings	User Programmable via HMI Touchscreen	
	44	Analog Load Impedance	1,000 ohms (4 Devices)	
	45	Analog Range	0-20 mA	
	46	Low Light Alarm (Beam Block)	2.7 mA	
	47	General System Fault	3.6 mA	
Interface	48	MODBUS	RS-485 - See Address Register Map for more information	
	49	Commonly Used Registers	Concentration (ppm-m) - 41001, Light Level (Rx) - 41101, & Confidence Factor (R2) - 41061	
Lo-Range Methane (CH4L)	50	HMI Touchscreen	Full Interface Capabilities: Configuration, Alignment, Access to Logfiles, and Upload Firmware	
	51	Minimum Detectable Limit (MDL)	0.66 ppm	
	52	Sensitivity	0.16 ppm	
	53	Full Scale	2,833 ppm	
	54	Lowest Actionable Concentration	1.32 ppm (2x MDL)	
Vehicle Based (VB) Measurement Cell	55	Maximum Recommended Cable Length	20 m (60 ft)	
	56	Optical Configuration	Transceiver and Retro-Reflector (Mono-Static) with Three (3) Multipass Configuration	
	57	Measurement Cell Dimensions	1,300 x 300 x 200 mm (51.2 x 11.8 x 9.1 in)	
	58	Measurement Cell Weight	14.8 kg (32.5 lbs)	
	59	Beam Divergence	16mm (5/8") @ 0.5m (1.6ft) = (32 milliradian x path length (m) = laser dot size (mm))	
	60	Window Material	Lexan, Mylar, or Teflon	
Alignment Mount	61	Truck Mount: Headache Rack	Headache Rack Mounting bracket	
	62	Generic Mounting Bracket	Tubular Mounting Bracket	
	63	No Mounts Required	No Mounts Included	
Recommended Accessories	64	Replacement Filter	BL-RCAB	
	65	Alignment Kit	BL-OAK-VB	
Latest Revision	66		1/07/22	