



**LowFlow Sidestream ETCO2 Module Specs Matrix
Respironics LoFlo CO2 Sensor vs National Medical ETCO2 Module C300**

Item	LoFlo CO2 Sensor by Respironics	Model C300 by National Medical
Sampling Type	Sidestream	Sidestream
Sampling Rate	50 mL/min ±10 mL/min	50 mL/min. ±10 mL/min
operating principle	Non-dispersive infrared (NDIR) single beam optics, dual wavelength, no moving parts	Non-dispersive infrared (NDIR) single beam optics, dual wavelength, no moving parts
Initialization Time	Capnogram displayed in less than 20 seconds, at an ambient temperature of 25°C, full specifications within 2 minutes	Capnogram displayed in less than 10 seconds, at an ambient temperature of 25°C, full specifications within 1 minute
CO2 measurement range	0–150mm Hg, 0–19.7%, 0–20 kPa (at 760 mmHg)	0–150mm Hg, 0–19.7%, 0–20 kPa (at 760 mmHg)
barometric pressure Measurement	No, provided by the hosting device	Yes, automatic barometric pressure compensation
CO2 Resolution	0.1 mm Hg 0 to 69 mm Hg 0.25 mm Hg 70 to 150 mm Hg	0.1 mm Hg 0 to 49 mm Hg 0.2 mm Hg 49 to 150 mm Hg
CO2 Accuracy	0–40mmHg, ±2 mm Hg 41–70mmHg, ±5% of Reading 71–100mmHg, ±8% of Reading 101–150mmHg, ±10% of Reading Above 80 BPM, ±12% of Reading	0–40mmHg, ±2 mm Hg 41–70mmHg, ±5% of Reading 71–100mmHg, ±8% of Reading 101–150mmHg, ±10% of Reading Above 80 BPM, ±12% of Reading
CO2 Stability	Short Drift: 4Hours≤0.8mm Hg Long Drift: Accuracy can be maintained for over 120hours	Any Time within Operating Hours Drift ≤0.5mm Hg
CO2 Noise	RMS Noise ≤0.25 mm Hg at 5%CO2	RMS Noise ≤0.2 mm Hg at 5%CO2
Respiratory Rate Range	2–150BPM	2–180BPM
Respiratory Rate Accuracy	±1BPM	±1BPM
compensations	Host device will provide 400 – 800mmHg barometric pressure for compensation	No need from the host device, the module will automatically measure and compensate
O2/N2O Compensation	User enter the compensation parameters through host device	No need for compensation since the Module was designed to exclude the interference of O2/N2O
Calibration	No routine user calibration is required	No routine user calibration is required, but the user calibration function is available
Sample line	Single patient use sample line and inline	Single patient use sample line and inline



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	drier line which eliminates water vapor of gas	drier line which eliminates water vapor of gas
Method of moisture separation	No moisture separation	Provides gas drier line
Sampling Method	Nasal Sampling Kits for Non-intubated Patients, sampling line with T-fitting; For Intubated Patients, can also be used on Adult, pediatrics and infants.	Nasal Sampling Kits for Non-intubated Patients, sampling line with T-fitting; For Intubated Patients, can also be used on Adult, pediatrics and infants.
Sampling Line Check	Will start the sampling pump while plugging in the sampling line and turn off the pump when plugging out.	No
Gas flow control	To detect the gas flow by the ΔP (Delta P) generated by the capillary	To detect the gas flow by the ΔP (Delta P) generated by the gas resistance
Exhaust Port	Yes	Yes
Voltage Requirement	5.0 VDC $\pm 5\%$	5.0 VDC $\pm 5\%$
Power Consumption	Rated input: Less than 1.3 Watts typical. Steady State Less than 2.0 Watts maximum on Power On	Rated input: Less than 0.5 Watts typical. Steady State Less than 1.1 Watts maximum on Offset Calibration or sampling line occluded.
Interconnection	Standard Lemo 8pin plug, pins defined as below: 1: VA 5.0V 2: Shield Shield 3: DGND Digital return 4: light power source VA 5.0V 5: TxD Serial data from LoFlo 6: RxD Serial data from Host 7: AGND Analog return 8: waveform sync	Standard – Lemo Redel 8-pin, pins defined as below: 1 VA 5.0V 2 Shield Shield 3 DGND Digital return 4 VA 5.0V 5 TxD Serial data from LoFlo 6 RxD Serial data from Host 7 AGND Analog return 8 N/A
Temperature and Humidity	Operating: 0° to 40°C, 10 to 90% RH, non-condensing Storage: -40° to 70°C, <90% RH, non-condensing	Operating: 0° to 50°C, 10 to 90% RH, non-condensing Storage: -40° to 60°C, <90% RH, non-condensing
Water Resistance	IPX4 – Splash-proof (When sample line is inserted in gas-in connector)	IPX4 – Splash-proof (When sample line is inserted in gas-in connector)
Shock Impact	IEC TR 60721-4-7 Class 7M3 (designed to withstand environments subject to significant vibrations or high shock levels) EN60068-2-27 Shock EN60068-2-64 Random vibration	IEC TR 60721-4-7 Class 7M3 (designed to withstand environments subject to significant vibrations or high shock levels) EN60068-2-27 Shock EN60068-2-64 Random vibration
Data Interface	RS232, bi-directional, 19200 baud. Standard N-8-1.	RS232, bi-directional, 19200 baud. Standard N-8-1.
Data Output	CO ₂ gas concentration (mm Hg), End-tidal CO ₂ , Inspired CO ₂ , Respiratory Rate Gas and barometric	CO ₂ gas concentration (mm Hg), End-tidal CO ₂ , Inspired CO ₂ , Respiratory Rate Gas and barometric pressure.

GoldWEI Corporation 2595 James Madison Circle, Herndon VA 20171 USA

Tel: +1-703-713-0198 Fax: +1-320-514-0198 Email: sales@goldwei.com Web: www.goldwei.com



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	<p>pressure. Compensation value provided by the host device, Optional O2 compensation (0 – 100 %), Optional N2O compensation (on or off)</p>	
Regulatory	<p>IEC 60601-1-2, EN55011 – CISPIR 11 Class B (Radiated and Conductive Emissions) , IEC 61000-4-2 Electrostatic Discharge Immunity, IEC 61000-4-3 Radiated Immunity , Designed to comply with 93/42/EEC (MDD CE Marking), FDA Standards, Minimum Performance and Safety Requirements for Capnometers and ISO21647 , Medical Electrical Equipment performance requirements for the basic safety and essential performance of respiratory gas monitors</p>	<p>IEC 60601-1-2, EN55011 – CISPIR 11 Class B (Radiated and Conductive Emissions), IEC 61000-4-2 Electrostatic Discharge Immunity , IEC 61000-4-3 Radiated Immunity, Designed to comply with 93/42/EEC (MDD CE Marking), FDA Standards, Minimum Performance and Safety Requirements for Capnometers and ISO21647 , Medical Electrical Equipment performance requirements for the basic safety and essential performance of respiratory gas monitors</p>

Note: Items with different specifications are printed in blue color