



Summary

The Capnography Module (92517) supports mainstream and sidestream monitoring modes. It is designed to measure the concentration of carbon dioxide in a gas mixture and to aid in determining the patient's ventilatory, circulatory, and metabolic status.

Features

Measurement of Respiration Rate and Carbon Dioxide	Continuously measures end-tidal CO ₂ , minimum CO ₂ , and respiration rate
N ₂ O and O ₂ Compensation	Compensates for the presence of increased levels of nitrous oxide (N ₂ O) and oxygen (O ₂) assuring measurement accuracy
Pressure Compensation	Automatically compensates for ambient barometric pressure assuring measurement accuracy

Product Specifications

Physical Dimensions	
Height	11.3 cm (4.5 in)
Width	5.6 cm (2.2 in)
Depth	17.8 cm (7 in)
Weight	0.8 kg (1.7 lb)



Carbon Dioxide	<p>Sidestream — FiO_2 and ETCO_2 are displayed after one breath and have a continuously updated breath average. ET will typically decrease below nominal value (ET_{nom}) when respiration rate (RR) exceeds the RR threshold (RR_{th}) according to the following formula:</p> $\text{CO}_2: \text{ET} = \text{ET}_{\text{nom}} \times 125^{\text{RR} - \text{RR}_{\text{th}}}$ <p>Mainstream — ETCO_2 will be within specification for all respiration rates up to 150 bpm</p> <p>Measured at I/E ratio 1:1 using breath simulator according to EN ISO 80601-2-55 fig. 201.101</p>
Range	0 to 120 mmHg (0 to 16 kPa), 15%
Resolution	1 mmHg (0.1 kPa), 0.1%
Measurement Rise Time	<200 msec typically
Accuracy	$\pm(0.2 \text{ vol}\% + 2\% \text{ reading})$
Values	Inspired/expired
Gas Cross Effects	<0.2% (O_2 , N_2O , anesthetic agents)
Respiratory Rate	<p>Measurement based on CO_2 waveform; breath detection is based on a 1% change in CO_2 level</p> <p>Measured at I/E ratio 1:1 using breath simulator according to EN ISO 80601-2-55 fig. 201.101</p>
Range	1 to 150 BPM
Accuracy	$\pm 1 \text{ BPM}$
Apnea	
Range	20 to 45 seconds
Resolution	5 seconds
Accuracy	$\pm 1 \text{ second}$
Warm Up	<30 seconds following power on or a change in the operating mode between sidestream and mainstream for concentration reporting and full accuracy specification
Sample Line Flow Rates	50 ml/min ± 10 ml/min
Total System Response Time	Sidestream: <3 seconds Mainstream: <1 second
CO_2 Waveform Scales	Selectable at 0 to 120 mmHg, 0 to 100 mmHg, 0 to 80 mmHg, 0 to 60 mmHg, 0 to 40 mmHg, 0 to 15 kPa, 0 to 12.5 kPa, 0 to 10 kPa, 0 to 7.5 kPa, 0 to 5 kPa, 0 to 15%, 0 to 12.5%, 0 to 10%, 0 to 7.5%, 0 to 5%
Waveform Speeds	Selectable at 25, 12.5, 6.25, 3.12, or 1.56 mm/second
Measurement Units	%, mmHg, kPa for CO_2 ; BPM for respiration rate
Alarms	User-selectable; respiration rate (high and low limits), EtCO_2 (high and low limits), MINCO_2 (high limits), and apnea
Gas Calibration	Calibration from external gas mixture



Occlusion	Automatically detects sample line occlusions
Suspend Sampling	In suspend mode, sensors continue to operate but pumps stop and waveform and numeric zones are cleared

Classification

MDD	Class IIb
EN 60601-1	Class I Type BF defibrillator proof; device is not affected by patient defibrillation.
CISPR11	Group 1, Class B Suitable for use in domestic establishments connected to a low-voltage supply network.

Electrical Specifications

Power supplied by monitor.

Environmental Requirements

Operating	
Temperature	0° to 50° C (32° to 122° F)
Ambient Humidity	<4 kPa H ₂ O (non-condensing), 95% RH at 30° C
Atmospheric Pressure	394 to 900 mmHg (52.5 to 120 kPa)
Storage	
Temperature	-40° to 70° C (-40° to 158° F)
Ambient Humidity	5 to 100% RH (condensing), 100% RH at 40° C* *After condensation, store the unit for more than 24 hours in an environment with relative moisture content below 95% RH (non-condensing)
Atmospheric Pressure	0 to 11,760 meters (0 to 38,000 feet) (0 to 150 mmHg)

Accessories

Refer to the Spacelabs Healthcare Supplies and Accessories Catalog for availability of the specially designed Nomoline sample lines and accessories.

Nomoline (single patient use)	P/N 015-0683-00
Nomoline Sampling Adapter (reusable)	P/N 103-0234-00
Nomoline Line Extension (single patient use)	P/N 166-7085-00
CO ₂ Sensor (mainstream)	P/N 010-1980-00

Airway Adapter Adult/ Pediatric (mainstream)	P/N 704-0173-00
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Airway Adapter Infant (mainstream)	P/N 704-0174-00
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Documentation

CD-ROM Part Numbers	Bedside, Central, and Telemetry Systems Operations Documents CD-ROM (P/N 084-1101-xx)
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Spacelabs Healthcare Service Documents CD-ROM
(P/N 084-0700-xx)

Supplies and Accessories	Spacelabs Healthcare Supplies and Accessories Catalog (sa.spacelabshealthcare.com)
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Regulatory Approvals



CSA certified. Meets IEC 60601-1, CAN/CSA C22.2 No. 60601-1, and ANSI/AAMI ES60601-1 for electrical safety, and ISO 80601-2-55 for respiratory gas monitors.



CE marked in accordance with the Medical Device Directive 93/42/EEC.



Does not contain hazardous substances - Europe



Does not contain hazardous substances - China

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