



## 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 <sub>2</sub> , minimum CO <sub>2</sub> , and respiration rate
N <sub>2</sub> O and O <sub>2</sub> Compensation	Compensates for the presence of increased levels of nitrous oxide (N <sub>2</sub> O) and oxygen (O <sub>2</sub> ) 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)



<b>Carbon Dioxide</b>	<p>Sidestream — <math>\text{FiO}_2</math> and <math>\text{ETCO}_2</math> are displayed after one breath and have a continuously updated breath average. ET will typically decrease below nominal value (<math>\text{ET}_{\text{nom}}</math>) when respiration rate (RR) exceeds the RR threshold (<math>\text{RR}_{\text{th}}</math>) 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 — <math>\text{ETCO}_2</math> 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% ( $\text{O}_2$ , $\text{N}_2\text{O}$ , anesthetic agents)
<b>Respiratory Rate</b>	<p>Measurement based on <math>\text{CO}_2</math> waveform; breath detection is based on a 1% change in <math>\text{CO}_2</math> 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	$\pm 1 \text{ BPM}$
<b>Apnea</b>	
Range	20 to 45 seconds
Resolution	5 seconds
Accuracy	$\pm 1 \text{ second}$
<b>Warm Up</b>	<30 seconds following power on or a change in the operating mode between sidestream and mainstream for concentration reporting and full accuracy specification
<b>Sample Line Flow Rates</b>	50 ml/min $\pm 10$ ml/min
<b>Total System Response Time</b>	Sidestream: <3 seconds Mainstream: <1 second
<b><math>\text{CO}_2</math> Waveform Scales</b>	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%
<b>Waveform Speeds</b>	Selectable at 25, 12.5, 6.25, 3.12, or 1.56 mm/second
<b>Measurement Units</b>	%, mmHg, kPa for $\text{CO}_2$ ; BPM for respiration rate
<b>Alarms</b>	User-selectable; respiration rate (high and low limits), $\text{EtCO}_2$ (high and low limits), $\text{MINCO}_2$ (high limits), and apnea
<b>Gas Calibration</b>	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 <sub>2</sub> 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 <sub>2</sub> Sensor (mainstream)	P/N 010-1980-00

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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

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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)
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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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