

TCM TOSCA

Specifications

Hardware

Computer specifications

CPU: AMD ETX LX800, 500 MHz (Pentium Class)
Software platform: Windows CE 5.0

Operating conditions

Operating environment: 10-40 °C
Built-in barometer:
Range: 375-825 mmHg or 50-110 kPa
Accuracy: ±5 mmHg or 0.67 kPa
Power: 100-240 V, 50-60 Hz
Built-in battery:
Rechargeable Pb battery
Typical operating time: 1 hour per charge

Software

Measuring range

Transcutaneous carbon dioxide tension/ $t_{cp}CO_2$:
5-200 mmHg or 0.7-26.7 kPa
Oxygen saturation/ SpO_2 : 0-100% (70-100% with ±3 digits)
Pulse rate: 25-240 bpm
Sensor heating power: 0-1000mW ± 20%

Calibration

Automatic calibration
Calibration gas: 7.5% CO_2 and 20.9% O_2 , balanced N_2
Integrated calibration chamber

Patient data storage

Up to 48 hours of measuring data in 2-sec data intervals
Reviewing trends on screen
Download of stored patient data to PC, printer or memory stick

Dimensions

TCM monitor

Width	30.8 cm	12.1 in
Depth	23 cm	8.7 in
Height	16 cm	6.3 in
Weight	4 kg	8.8 lbs

Display

Screen: 6.5 color touch TFT, full VGA (640 x 480)
Display options: normal view (numeric), trend table, trend curve
Display update period:
SpO₂ plethysmograph: 25 mm/sec
Numerical values and pCO₂ graph: 2 sec

Interface connections

Serial output: EIA232 (RS232)
Analog output: 0-1000 mV
Printer output: USB 2.0 (compliant with USB 1.1)
Printer protocol: HP PCL3
Print reports: trend table, trend curve
Data protocol: VueLink and Monlink

Site timer

Indication of remaining measuring time
Measuring time elapsed: clock triggers an alarm and sensor temperature is off

Alarm level

Alarm sound: high 83 dBA
low 65 dBA
Alert tone: high 73 dBA
low 58 dBA

Languages

Chinese, Danish, Dutch, English, French, German, Greek, Italian, Japanese, Polish, Portuguese, Russian, Spanish and Swedish

TOSCA module

Width	14.5 cm	5.7 in
Depth	14.8 cm	5.8 in
Height	10.7 cm	4.2 in
Weight	0.575 kg	1.3 lbs

TOSCA – tc Sensor 92 (tcpCO₂, SpO₂)

Sensor specifications

Measuring principle

Stow-Severinghaus-type pCO₂ sensor combined with Masimo SET® SpO₂ pulse oximetry

Sensor temperature

Recommended sensor temperature: 42 °C
Selectable between 37.0-44.0 °C in steps of 0.5 °C
Reliable safe control by two independent circuits
Accuracy: ±0.2 °C
Automatic temperature off when site time is elapsed

Sensor performance (in vitro)

Conditions: sensor temperature of 42.0 °C, calibration interval: 12 h

tcpCO₂:

Response time (10-90%): ≤ 60sec

Drift: ≤ 0.5%/h

Linearity: at 1 and 10% CO₂: better than 1 mmHg or 0.13 kPa
at 33% CO₂: better than 3 mmHg or 0.4 kPa

Interference by anesthetic gases (in vitro)

tcpCO₂:

75% N₂O, 2% Halothane, 2% Enflurane
and 2% Isoflurane: negligible

Accessories

5601100 TOSCA preparation supplies
5601300 TOSCA sensor attachment clip
5601500 TOSCA fixation rings 32
962-187 Calibration gas 1 (962-188 for US and Canada)

Sensor remembraning requirements

Every 14 days
Built-in alert when sensor needs remembraning
Protected membrane

Sensor memory

Sensor has a built-in memory for calibration values,
remembraning date and other sensor data
Application time: up to 12 hours at 42 °C sensor temperature

SpO₂:

Accuracy: (70-100%): ± 3 digits

Pulse rate:

Accuracy: (25-240 bpm) ± 3 bpm

SpO₂ and pulse rate: signal averaging 2, 4, 8, 10, 12 and 16 sec

Sensor dimensions

Diameter: 15 mm or 0.6 in

Height: 8 mm or 0.3 in

Weight: 3 g or 0.1 oz

Sensor cable length: 3 m or 9.8 ft, shielded, flexible,
polyurethane coated

Biocompatibility

Not made with natural rubber latex

Compliance

Patient safety The instrument complies with IEC 60601-1
and IEC 60601-2-23.
The following test house has approved the
instrument:



Medical equipment With respect to electrical shock, fire and
mechanical hazards only in accordance with
CAN/CSA-C22.2 No. 601.1-M90/S194/1B-98,
UL 60601-1, IEC 60601-1 ed. 2
UL file E480193

EMC This product complies with the requirements of the
standards IEC 60601-1-2 ed. 3, IEC 60601-2-23 ed. 2

Performance This product complies with the IEC 60601-2-23 ed. 2

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