

TRUSCOPE® elite - A8

17" Modular Patient Monitor



Features

- 17" touchscreen color TFT LCD display
- Upto 7 lead ECG display (12 lead display optional)
- 9 different screen configurations
- ST & Arrhythmia analysis
- Drug dose & hemodynamic calculations
- OXY-CRG software
- External video (VGA) output
- Interfaces : DVI display
- 168 hours graphical and tabular trends
- Non - Volatile memory

Optional

- Central Monitoring System : Wired / Wi-Fi

Optional modular upgrades

- ETCO₂ (Mainstream / Sidestream / Microstream)
- Multigas monitoring
- Cardiac Output (ICG)
- 12 lead ECG
- Dual IBP
- Nellcor or Masimo SpO₂
- Wi-Fi module for wireless data transmission
- BIS
- EEG

CE 0123



SCHILLER
The Art of Diagnostics

EMS (Emergency Mobile Server)

Features

- 3.5" Color TFT-LCD display
- Compact design, convenient to carry, allowing patient to move freely
- 8 hours of graphical & tabular trends
- Battery back-up : 1 hour
- Providing fast and convenient monitoring during the patient's transfer with display, battery, alarm and storage capability
- Patient data gets transferred automatically when connected to base unit



EMS

PARAMETERS	EMS 1	EMS 2	EMS 3	EMS 4
3/5 Lead ECG	✓		✓	
12 Lead ECG		✓		✓
Digital SpO ₂	✓	✓	✓	✓
2-TEMP	✓	✓	✓	✓
RESP	✓	✓	✓	✓
NIBP	✓	✓	✓	✓
2-IBP	✓	✓		

* Standard Configuration : EMS 3

MPS (Multi Parameter Server)

Features

- 8 hours of graphical & tabular trends
- Battery back-up : 1 hour
- Patient data gets transferred automatically when connected to base unit

MPS

PARAMETERS	MPS 1	MPS 2	MPS 3	MPS 4
3/5 Lead ECG	✓		✓	
12 Lead ECG		✓		✓
Digital SpO ₂	✓	✓	✓	✓
2-TEMP	✓	✓	✓	✓
RESP	✓	✓	✓	✓
NIBP	✓	✓	✓	✓
2-IBP	✓	✓		

* Standard Configuration : MPS 3



MPS with Nellcor SpO₂

PARAMETERS	MPS 5	MPS 6	MPS 7	MPS 8
3/5 Lead ECG	✓		✓	
12 Lead ECG		✓		✓
Nellcor SpO ₂	✓	✓	✓	✓
2-TEMP	✓	✓	✓	✓
RESP	✓	✓	✓	✓
NIBP	✓	✓	✓	✓
2-IBP	✓	✓		

Advanced Modular Monitoring

Nellcor SpO₂



SpO₂ (Nellcor) Module

Measurement range : 0% to 100%
 Resolution : 1%
 Accuracy :
 - 70% to 100% : ±2% (Adult / Pediatric)
 - 70% to 100% : ±3% (Neonate)
 - 70% to 100% : ±2% (Low perfusion)
 - 0% to 69%, unspecified
Pulse Rate
 - Measurement range : 20bpm~300bpm
 - Resolution : 1 bpm
 - Accuracy : 20 to 250 bpm: ± 3 bpm
 251 to 300 bpm: unspecified

AG



Multigas (Sidestream) Module

Measurement method : Infrared spectrum
 Measurement mode : Sidestream
 Measurement parameters : CO₂, N₂O, O₂, agent
 (ISO, ENF, SEV, HAL, DES)

Resolution : 1%
 Unit : %, mmHg
 Measurement and alarm range of AG :

Gas	Range	Accuracy
CO ₂	0-10%	±(0.2% _{ABS} + 2% _{REL})
O ₂	10-100%	±(2% _{ABS} + 2% _{REL})
N ₂ O	0-100%	±(2% _{ABS} + 8% _{REL})
HAL, ISO, ENF	0-5%	±(0.15% _{ABS} + 10% _{REL})
SEV	0-8%	±(0.15% _{ABS} + 10% _{REL})
DES	0-18%	±(0.15% _{ABS} + 5% _{REL})

Respiration rate range : 0~150 rpm
 Sample flow rate: 50ml/min ± 10ml/min

ETCO₂



ETCO₂ (Mainstream) Module

Measurement method : Infrared spectrum
 Measurement range : 0 ~ 15%
 Resolution : 1%
 Unit : %, mmHg, kPa
 Accuracy : ± (0.3%_{ABS} + 4%_{REL})
 Warm up time : < 10 seconds
 Rise time : ≤ 90 ms
 awRR measurement range : 0 ~ 150 rpm
 awRR measurement accuracy : ± 1 rpm
 Total system response time : < 1 second

ETCO₂ (Sidestream) Module

Measurement range : 0 ~ 15%
 Resolution : 0.1%
 Unit : %, mmHg, kPa
 Accuracy : ± (0.3 kPa + 4% of reading)
 Warm up time : < 10 seconds
 Rise time : ≤ 200 ms
 awRR measurement range : 0 ~ 150 rpm
 awRR measurement accuracy : ± 1 rpm
 Sample flow rate : 50 ml/min ± 10 ml/min
 Total system response time : < 3 secs

ETCO₂ (Microstream) Module

Measurement method : Infrared spectrum
 Measurement range : 0-19.7% (0-150 mmHg)
 Resolution : 0.1% or 1 mmHg
 Unit : %, mmHg, kPa
 Accuracy : 0 - 40 mmHg, ± 2 mmHg
 41 - 70 mmHg, ± 5% of reading
 71 - 100 mmHg, ± 8% of reading
 101 - 150 mmHg, ±10% of reading
 (760 mmHg, temperature is 25° C)
 (when RR > 80 rpm, all the range is ± 12% of reading)
 Warm up time : Less than 20 secs to 2 mins
 Rise time : < 3 secs
 awRR measurement range : 2 ~ 150 rpm
 awRR measurement accuracy : ± 1 rpm
 Sample flow rate : 50 ml/min ± 10 ml/min
 Total system response time : < 3 secs

Masimo SpO₂



SpO₂ (Masimo) Module

Measurement range : 0~100%
 Resolution : 1%
 Accuracy :
 - At 70~100%, ±2%
 (adult, pediatric, non-motion conditions)
 - At 70~100%, ±3%
 (neonate, non-motion conditions)
 - At 70~100%, ±2% (motion conditions)
 - At 0~69%, unspecified
Pulse Rate
 - Measurement range : 25~240 bpm
 - Accuracy : ±3 bpm (non-motion conditions)
 ±5 bpm (motion conditions)
 - Resolution : 1 bpm

ICG



Non-Invasive Cardiac Output Module

Method: Measurement of thoracic electrical bio impedance

Measurement range:
 - HR : 40~250 bpm
 - SV : 5 ~ 250 mL
 - SI : 5 mL / m² to 125 mL / m²
 - C.O : 1.4 ~ 15 L / min
 - TFC : 15~143 / kΩ

Accuracy:
 - HR : ±2 bpm
 - SV : unspecified
 - C.O : unspecified

Alarm range:
 - C.I : 0.0 L/min/m² to 15.0 L/min/m²
 continuously adjustable
 - TFC : 10 /kΩ to 150/kΩ continuously adjustable

Dual IBP



IBP Module

Measurement range : -50~350 mmHg
 Resolution : 1 mmHg
 Unit : mmHg, kPa, cmH₂O
 Accuracy : Static : ±1 mmHg or ±2%,
 whichever is greater
 (exclusive of transducer)
 ±4 mmHg or ±4%,
 whichever is greater
 (inclusive of transducer)
 Dynamic : ±4 mmHg or 4%,
 whichever is greater
 Sensitivity of transducer : 5 uV/V/mmHg, ±2%
 Impedance of transducer : 300~3000 Ω
 Kinds of measurements :
 - Arterial Pressure (ART)
 - Pulmonary Artery Pressure (PA)
 - Left Atrium Pressure (LAP)
 - Right Atrium Pressure (RAP)
 - Central Venous Pressure (CVP)
 - Intracranial Pressure (ICP)
 - P1/P2
 Alarm range :
 - ART : 0~+350 mmHg
 - PA : -10~+120 mmHg
 - CVP/RAP/LAP/ICP : -10~+40 mmHg
 - P1/P2 : -50 mmHg to +360 mmHg

Technical Specification of TRUSCOPE® elite-A8

General

Main Unit

- Size : 434 mm (W) X 206 mm (D) X 389 mm (H)
- Weight : ≤ 11 kg
- Standard module slot : 1
- Additional module rack slot : 4

Power supply

- Power voltage : AC 100-240V 50/60 Hz
- Power input : ≤ 150 VA
- Input current : 1.7 to 0.8 A
- Safety class : Category I

Display

- 17" Color TFT-LCD
- Resolution : 1280 X 1024 pixels

Battery

- Type : Rechargeable lithium-ion battery
- Operating time under the normal use and full charge : ≥ 60 minutes
- Charge time : 6 hours to 100 % (standby)

Recorder (Optional)

- Method : Thermal dot array
- Paper width : 50 mm (1.97 in)
- Paper speed : 12.5 / 25 / 50 (mm/sec)
- Traces : Maximum 3 tracks

Alarm

- Level : Low, medium and high
- Indication : Auditory and visual
- Patient physiological alarm light color : Yellow & Red
- Equipment technical alarm light color : Blue
- Supports pitch tone and multi-level volume
- Supports custom arrhythmia tone

Input device

- Touchscreen option
- Knob: Standard configuration
- Mouse input: Support
- Keyboard input: Support

System output & Extensible Interfaces

- Ethernet network : 1 Standard RJ45 socket
- Defibrillation output : 1 RJ11 socket
- Nurse call : 1 BNC socket
- Video output : 1 DVI port, 1 VGA port
- USB1.1 port : 6
- 12 V DC input : 1 socket
- SD memory card : 2GB
- Analog output (ECG or IBP) : (Option)
- Defibrillator & Cautery protected

Trend and Reviewing

- Trend data : 168 hours
- NIBP measurement reviewing : 1000 groups
- ARR event : 128 groups of ARR events & associate waveforms
- Alarm event : 128 groups of parameter alarm events & the associated parameter

Environment

- Operating temperature: 5°~40° C
- Storage temperature : -20° to + 55° C
- Storage humidity : 10% to 93% (non condensing)
- Operating atmospheric pressure : 700 hPa to 1060 hPa
- Storage atmospheric pressure : 500 hPa to 1060 hPa

Safety

- IEC60601-1 Approved, CE marking according to MDD93/42/EEC

ECG

Lead mode : 3, 5, 10 leads ECG input
Lead selection : I, II, III

I, II, III, aVR, aVL, aVF, V
I, II, III, aVR, aVL, aVF, V1~V6 (Option)

Gain : 2.5 mm/mV, 5 mm/mV, 10 mm/mV, 20 mm/mV,
40 mm/mV, Auto

CMRR : Monitor mode ≥ 105 dB

Surgery mode ≥ 105 dB

Diagnostic mode ≥ 90 dB

Frequency response (-3dB) : Monitor mode : 0.5~40 Hz

Surgery mode : 1~25 Hz
Diagnostic mode : 0.05~150 Hz

Input impedance : ≥ 5.0 MΩ

ECG signal range : ±10.0 mV

Leakage current : <10 uA

Standardizing signal : 1mV ±5%

Baseline recovery: <5 sec after defibrillation
(Mon or Surg mode)

Indication of electrode separation : Every electrode
(exclusive of RL)

Protection : Breakdown Voltage 4000 VAC 50/60 Hz;
defibrillator proof

Sweep speed : 12.5 mm/s, 25 mm/s, 50 mm/s

Heart Rate

Range : Adult 10~300 bpm,

Pediatric & Neonate : 10~350 bpm

Resolution : 1 bpm

Accuracy : ±1% or ±1 bpm

ST segment

Measurement range : -2.0 mV~2.0 mV

Accuracy : -0.8 mV~0.8 mV : ±0.02 mV or ±10%

Over ± 0.8 mV : unspecified

Resolution : 0.01 mV

Respiration

Method :Thoracic impedance

Lead selected from: I (RA-LA) or II (RA-LL); Default: II

Gain : x0.25, x1, x2, x4

Bandwidth : 0.25 Hz to 2.0 Hz (-3db)

Sweep speed : 6.25 mm/s, 12.5 mm/s, 25 mm/s

Measuring impedance range : 0.2~3 Ω

Measurement range : 0~150 rpm

Resolution : 1 rpm

Accuracy : ±2 rpm or 2%

Delay apnea alarm : 10s, 15s, 20s, 25s, 30s, 35s, 40s, 45s, 50s, 55s, 60s

NIBP

Measurement method : Automatic Oscillometry

Range of measurement :

Adult : SYS 30~270 mmHg

DIA 10~220 mmHg

MAP 20~235 mmHg

Child : SYS 30~235 mmHg

DIA 10~220 mmHg

MAP 20~225 mmHg

Neonate : SYS 30~135 mmHg

DIA 10~100 mmHg

MAP 20~125 mmHg

Cuff pressure range : 0~300 mmHg

Resolution : 1 mmHg

Pressure accuracy:Static: ±2% or ±3 mmHg

Clinical : ±5 mmHg (average error)

Standard deviation: ≤ 8 mmHg

Unit : mmHg, kPa

Measurement mode: Manual, Auto, STAT

Intervals for AUTO measurement time :

1, 2, 3, 4, 5, 10, 15, 30, 60, 90 minutes; 2, 4, 8, 12 hours

STAT mode cycle time: 5 minutes, at 5 seconds interval

Overpressure protection : Yes

Pulse rate range : 40~240 bpm

Digital SpO₂

Measurement range : 0~100%

Resolution : 1%

Accuracy : At 70~100%, ±2

At 0~69%, unspecified

Pulse Rate

- Measurement range : 25~255 bpm

- Resolution : 1 bpm

- Accuracy : ±1% or ±1 bpm

Temperature

Measurement range : 0.0°C~50.0°C (32°F~122°F)

Accuracy : ±0.1°C or ±0.1°F

Resolution : 0.1°C or 0.1°F

Unit : Celsius (°C), Fahrenheit (°F)

BIS & EEG (CSM module)

EEG sensitivity : ± 400 μV

Noise : < 2 μVp-p, < 0.4 μV RMS, 1-250 Hz

CMRR : >140 dB

Input impedance: > 50 Mohm

EMG : 0-100 logarithmic, Filter 75-85 Hz,

1 second update

BIS % : 0-100 %. Filter 2-42 Hz, 1 second update

Alarms : High / low with user selectable limit

EEG : 1 Channel

Optional modular upgrades

ETCO₂ (mainstream / sidestream / microstream)

Multigas monitoring

Cardiac output (ICG)

12 lead ECG

IBP

Nellcor or Masimo SpO₂

Wi-fi module for wireless data transmission

BIS

EEG

Certification



Standard accessories for basic 5 para unit with EMS3/ MPSP3 module

- Power cord - 1 no.
- ECG cable (5 lead) - 1 no.
- Disposable ECG electrodes - 10 nos.
- Reusable SpO₂ sensor (adult) with extension cable - 1 no. each
- Skin temperature probe - 1 no.
- Rectal temperature probe - 1 no.
- NIBP cuff (Adult, Pediatric & Neonate) - 1 no. each
- NIBP extension cable - 1 no.
- SD memory card (2 GB) - 1 no.
- Earth cable - 1 no.
- User manual - 1 no.
- Warranty card - 1 no.

Asia

SCHILLER Asia-Pacific
52200 Kuala Lumpur, Malaysia
Phone +603 6272 3033
sales@schiller.com.my
www.schiller-asia.com

Austria

SCHILLER Handelsgesellschaft mbH
A-4040 Linz
Phone +43 732 70 99-0
sales@schiller.at
www.schiller-austria.com

China

SCHILLER International Trading Co. Ltd.
200335 Shanghai, China
Phone +8621 6209 9627
sales@schiller.com.my
www.schiller.cn

France

SCHILLER Médical S.A.S.
F-67162 Wissembourg/Cedex
Phone +33 3 88 63 36 00
info@schiller.fr
www.schiller-france.com

France (bureau Paris)

SCHILLER France S.A.S.
F-77608 Bussy-Saint-Georges
Phone +33 1 64 66 50 00
info@schillerfrance.fr
www.schiller-france.com

Germany

SCHILLER Medizintechnik GmbH
D-85521 Ottobrunn
Phone +49 89 62 99 81-0
info@schillermed.de
www.schiller-germany.com

Hungary

SCHILLER Diamed Ltd.
H-1141 Budapest
Phone +36 (1)460 05 92
sales@t-online.hu
www.schiller-hungary.hu

India

SCHILLER Healthcare India Pvt. Ltd.
Mumbai - 400 059, India
Phone +91 22 6152 33 33
sales@schillerindia.com
www.schillerindia.com

Japan

SCHILLER Japan, Ltd.
Hiroshima 734-8551
Phone +81 82 250 2055
koji.maekawa@schiller.jp
www.schiller.jp

Poland

SCHILLER Poland Sp. z o.o.
PL-02-729 Warszawa
Phone +48 22 843 2089
schiller@schiller.pl
www.schiller.pl

Russia & C.I.S.

SCHILLER AG
125124 Moscow, Russia
Phone +7 (495) 970 11 33
mail@schiller-ag.com
www.schiller-cis.com

Spain

SCHILLER ESPAÑA, S.A.
E-28230 Las Rozas/Madrid
Phone +34 91 713 01 76
schiller@schiller.es
www.schiller-spain.com

Switzerland

SCHILLER-Reomed AG
CH-8953 Dietikon
Phone +41 44 744 30 00
sales@schiller-reomed.ch
www.schiller-reomed.com

Turkey

SCHILLER TÜRKİYE
Okmeydanı - Sisli - Istanbul
Phone +90 212 210 8681 (pbx)
sales@schiller-turkiye.com
www.schiller-turkiye.com

USA

SCHILLER America Inc.
Doral, Florida 33122
Phone +1 786 845 0620
sales@schilleramerica.com
www.schilleramerica.com



SCHILLER

The Art of Diagnostics