



élance[®]



The *élance* 5 / 5i / 5c / 7 / 7i / 7c are integrated vital signs monitors with widescreen resistive touchscreen display. The monitors raise a new standard of style, convenience, economy, ease of use and reliability in patient monitors. Weighing not more than 2.7 kg for the *élance* 5 series and not more than 3.0 kg for the *élance* 7 series, including an up to 5-hour lithium-ion battery, they are one of the lightest full-featured vital signs monitors. With its 7.5 cm depth, the *élance* vital signs monitors fit easily into even the most crowded bedside environments.

Features

Parameters Supported	<p>The Spacelabs <i>élance</i> Vital Signs Monitor is used to monitor the following parameters for adult and pediatric (1 year old and above) patients.</p> <p>Standard parameters include Electrocardiogram (ECG), Respiration, Non-Invasive Blood Pressure (NIBP), Pulse Oximetry (SpO₂), Dual Temperature. Additional parameters such as Dual Invasive Blood Pressure and Capnography are also available depending on the model configurations.</p>
User Interface	<p>All controls are onscreen touch keys, with the exception of ON/OFF key. A tethered stylus is also available for function navigation.</p>
Parameters and Waveforms	<p>The <i>élance</i> 5 will display up to four waveforms and up to six numerics at the display zones.</p> <p>All the other <i>élance</i> 5 model configurations (<i>élance</i> 5i and 5c) will display up to five waveforms and up to seven numerics at the display zones.</p> <p>All <i>élance</i> 7 model configurations will display up to six waveforms and up to seven numerics at the display zones.</p>
Trends	<p>Displays up to 120 hours of tabular trend data. Save at 1 minute trend record time period.</p> <p>Time interval of 1, 2, 3, 5, 10, 15, 30, 60, 120-minutes</p>
Sweep Speed	<p>A variety of speeds are available under parameter control.</p>
Languages Supported	<p>English, Spanish, Portuguese, Italian, French, Chinese (Simple), Chinese (Traditional), and Turkish</p>



Options

Ethernet (Option P)

Provides Central surveillance capability from any monitored patient on the network. 10/100 Base T connector (RJ45) provided

Recorder (Option U)

Dual channel recording capability via external Recorder

Printing Method	Thermal array print head
Print Resolution	8 dots per mm (vertical) and 16 dots per mm (horizontal) at 25 mm per second sweep speed
Prints	Manual and automatic alarm recordings for waveforms, vital signs data and trends
Paper Speed	25 mm per second
Alarm Record	Records any parameters in an alarm state when the alarm recording is active
Indicators	Paper Out
Record	Enables selection of up to two active monitor channels plus trends

ECG

Detects cardiac QRS complexes and ventricular fibrillation; evaluated using ANSI/AAMI EC57:1998/(R)2003 with AHA, CU, MIT, and NST databases.

Input	5-lead or 3-lead ECG cable
Input Dynamic Range	±5 mV AC, ±300mV DC
Voltage Range	+/-0.5 to +/-5 mV
Defibrillator Discharge Recovery	5 seconds
Sample Rate	250 samples per second (sps)
Heart Rate Range	15 to 300 bpm
Accuracy	±1% or ±2 bpm (whichever is greater)
Heart Rate Resolution	1 bpm
Signal Width	70 ms to 120 ms (Q to S)
Input Impedance	≥ 2.5 MΩ at 10 Hz
Display Sweep Speeds	6.25, 12.5, 25.0 mm/sec
Heart Rate Alarm Limits	High 20 to 300 bpm Low 15 to 295 bpm
Pacer Detection	Detects pacer pulses of ±2 mV to ±700 mV with pulse widths of 0.25 to 2 msec and rise times 10% of width not to exceed 100 microsec.
Pacer Rejection	Single and double pulse pacers with less than 4 msec tails.



Display Bandwidth	Extended: 0.05 to 100 Hz Monitor: 0.5 to 40 Hz
Heart Rate Update Rate	Every 1 second
Channel Crosstalk	<2.5 mm p-p per AAMI EC13
Common Mode Rejection Ratio	<1 mv, reference to input (rti) per AAMI EC13
Baseline Stability	≤ 0.5 mV
Calibration Signal	1 mV p-p ±10%

ST Segment Analysis (Option T)

Resolution	0.05 mm
Threshold	0.25-8 mm (1mV=10mm)
Alarms	Single Lead
Displays	5-lead numerics
Display Bandwidth	ST 0.05 to 40 Hz
Trends	Up to 120 hours of trend data.

Arrhythmia Analysis (Option A)

Standard Leads	I, II, III, V, AVR, AVL, AVF
Input Channels	Simultaneous acquisition of all standard leads
Arrhythmia Analysis	Asystole, VTach, VFib, PVC, Couplets, Pacer non-capture, Pause, high/ low rate violation

Respiration

Input	5-lead or 3-lead ECG cable
Measurement Technique	Trans-thoracic Impedance
Respiration Rate Range	0 to 120 breaths per minute
Detection Sensitivity	0.5 Ω at 500 Ω input source impedance.
Respiration Resolution	1 breath per minute
Respiration Rate Alarm Limits	High: 6 to 120 breaths per minute Low: 5 to 119 breaths per minute
Accuracy	±3 breath per minute
Numeric Update Rate	Every 1 second or immediately at the onset of an alarm
Waveform Sweep Speeds	6.25 mm/sec



NIBP

Measurement Method	Oscillometric
Measurement Units	mmHg
Measurement Mode	Automatic or Manual
Automatic Measurement Intervals	Adjustable at intervals of 3, 4, 5, 10, 15, 30, 60, 90, 120, or 240 minutes
Blood Pressure Measurement Accuracy	Systolic: Mean error +1.7 mmHg and Standard Deviation 6.3 mmHg Diastolic: Mean error -3.2 mmHg and Standard Deviation 6.8 mmHg Satisfies ANSI/AAMI SP10: 2002
Resolution	1 mmHg
Measurement Ranges	Systolic Pressure Range 30 to 250 mmHg Diastolic Pressure Range 10 to 210 mmHg Mean Pressure Range 20 to 230 mmHg Pulse Rate Range 30 to 250 bpm
Measurement Time	30 seconds (typical); <135 seconds (maximum)
Automatic Cuff Deflation	Measurement time exceeding 135 sec in adult/pediatric or maximum pressure value exceeding 300 mmHg
Overpressure Protector	290 mmHg at normal condition 300 +/- 10 mmHg at single fault condition
Numeric Update Rate	Every 1 second

Temperature

Probe type	Thermistor probe YSI 400
Units	°C or °F
Measurement Range	5.0° C to 50.0° C (41.0° F to 122.0° F)
Display Parameters	T1, T2, and delta temperature (DT) (two probes attached)
Accuracy	The maximum permissible error of a complete thermometer is ±0.2° C (±0.4° F) in the temperature range from 5.0° C to 50.0° C (41.0° F to 122.0° F) Display Accuracy ±0.1° C plus probe accuracy Probe Accuracy ±0.1° C (±0.2° F)
Resolution	0.1° C
Numeric Update Rate	Every 1 second
Alarm Limits	High 32.1° to 42.0° C (89.7° to 107.6° F) Low 32.0° to 41.9° C (89.6° to 107.5° F)



SpO₂

Spacelabs SpO₂ (Option S)

Measurement Method	Functional saturation (oxygen saturation of functional hemoglobins)
Measurement Range	O ₂ Saturation 30% to 100% Pulse Rate 30 to 250 bpm
Display Sweep Speed	6.25, 12.5, 25.0 mm/sec
Sample Rate	50 sps
Saturation Resolution	1%
Measurement Accuracy	O ₂ Saturation: Without Motion 70 to 100% ±4%, 1 to 69% unspecified Pulse Rate: Without Motion: 30 to 250BPM ±3BPM
Pulse Rate Resolution	1 bpm
Saturation Alarm Limits	High 51% to 100% Low 50% to 99%
Numeric Update	Every 1 second
TruLink® Sensors	Operate at or near 660 nm and 940 nm; total radiated optical power from 500 to 1,000 nm does not exceed 60 mW

Note: élance is capable of displaying O₂ Saturation from 0% - 100%. Minimum O₂ Saturation at 30% is stated as the lowest range supported by test device simulator is 30%.

Invasive Blood Pressure

(élance 5i / 5c / 7i / 7c)

Transducer Type	Strain-gauge, standardized to 5 µV/mmHg/V (±1%)
Transducer Excitation Voltage	5.00 VDC ±1%
Dynamic Waveform Range	-50 to +300 mmHg
Sample Rate	50 sps
Measurement Units	mmHg
Measurement Range	-50 to +300 mmHg
Accuracy	±2 mmHg or ±2% (whichever is greater)
Alarm Limits	High -45 to +250 mmHg Low -50 to +245 mmHg
Waveform Sweep Speeds	6.25, 12.5, 25.0 mm/sec
Display Parameters	Systolic, diastolic, and mean pressures displayed for arterial, pulmonary artery, and generic pressure; mean pressures displayed for all others
Labels	Arterial (ART), Central Venous (CVP), Left Atrial (LAP), Pulmonary Artery (PA), Right Atrial (RAP), and Generic Pressure (PRS)
Numeric Update Rate	Every 1 second

**EtCO₂**

(élanCe 5c / 7c)

Parameter Displayed	CO ₂ waveform, EtCO ₂ , FiCO ₂
CO ₂ Measurement Range	EtCO ₂ 0 mmHg to 99 mmHg, 0 kPa to 13.2 kPa
Units	mmHg, kPa
Display Sweep Speed	6.25 mm/sec
Warm Up	<10 seconds for full accuracy specification
Alarm Limit Ranges	EtCO ₂ : High 7 mmHg to 80 mmHg, 0.8 kPa to 10.6 kPa Low 5 mmHg to 60 mmHg, 0.6 kPa to 7.9 kPa FiCO ₂ : 0 mmHg to 24 mmHg, 0 kPa to 3.4 kPa
Respiration Rate Range	0 to 150 bpm
Sample Line Flow Rate	50 ml/min – 7.5 + 15 ml/min, flow measured by volume
EtCO ₂ Accuracy	0 to 38 mmHg, ± 2 mmHg 39 to 99 mmHg, ± (5% of reading + 0.08% for every 1 mmHg above 38 mmHg)
Total System Response Time	< 5 seconds
Numeric Update Rate	Every 1 second
Rise Time	190mSec max
Automatic Barometric Pressure Compensation	Yes

Product Specifications

Display	Widescreen, color thin film transitive (TFT) liquid crystal display (LCD) with resistive touchscreen in two sizes.
12.1 Inches Display	Resolution: 1280 x 800 pixels Size: (Horizontal) 262 mm (10.3 inches) (Vertical) 164 mm (6.5 inches)
10.2 Inches Display	Resolution: 800 x 480 pixels Size: (Horizontal) 222 mm (8.7 inches) (Vertical) 134 mm (5.3 inches)
Power	An internal power supply provides power to the monitor
Advanced Power Management	A built-in lithium-ion battery maximizes battery performance for up to 5 hours during transport.
Connectors	RJ45 (10/100 Base T Ethernet), USB (for software updates, keyboard/mouse interface) and RJ25 (for nurse alert)



Physical Dimensions

Monitor with 12.1 Inches Display

Height	227 mm (9.0 inches)
Depth	75 mm (3.0 inches)
Width	297 mm (11.7 inches)
Weight	3.0 kg (6.6 lbs)

Monitor with 10.2 Inches Display

Height	193 mm (7.6 inches)
Depth	75 mm (3.0 inches)
Width	252 mm (9.9 inches)
Weight	2.7 kg (6.0 lbs)

Electrical Specifications

Mains Power	AC Mains, 100 to 240 V, 50 to 60 Hz, 2-1A
Internal Power Supply	30W Medical Grade
Fuses	Quantity 2, T1.0A, 250 volts, IEC (5x20 mm)
Battery	A single Li-ion battery provides up to 5 hours
Isolation	EN 60601-1
Compliance	91/157/EEC Battery Declaration Directive

Environmental Requirements

Operating	
Temperature	0° C to +40° C (32° F to 104° F)
Humidity	15% to 95% (non-condensing)
Altitude	Up to 3,000 meters (Up to 9,842 feet)
Storage	
Temperature	-20° C to +60° C (-4° F to 140° F)
Humidity	15% to 95% (non-condensing)
Altitude	Up to 12,200 meters (Up to 40,000 feet)

Accessories

External élance Recorder	Two-channel, P/N 685-0254-00
Mounting Kits	A variety of mounting (wall mounts and table top mounts) and mobility solutions (roll stands and bedrail hook) are available from Spacelabs Healthcare.
Wall Mounts	P/N 061-0796-00 P/N 016-0796-01 P/N 016-0797-00 P/N 016-0797-01
10.2 inches Tabletop Mount, white	P/N 016-0794-00 P/N 016-0795-00
12.1 inches Tabletop Mount, white	P/N 016-0798-00 P/N 016-0799-00
Roll Stand	P/N 016-0791-00

Classifications

MDD EN 60601-1	Class IIb medical device
Class 1	Requires outlet with safety ground (Protective Earth) conductor rated for continuous operation
CISPR11, Group 1, Class A	Suitable for use in all establishments other than domestic that are connected to a low supply network

Documentation

élance Vital Signs Monitor Documentation CD-ROM (P/N 084-1963-00)
Spacelabs Healthcare Supplies and Accessories Catalog
(<http://sa.spacelabshealthcare.com>)

Regulatory Approvals



Meets EN 60601-1. CE marked in accordance with the Medical Device Directive 93/42/EEC.

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