



Equibiomedic

Venta, alquiler y reparación de equipos biomédicos.

CATÁLOGO

Equipos Biomédicos

Medellín - Colombia



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Boaray 600D/C Anesthesia Machine Datasheet



Anesthesia Machine Datasheet



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Technical Specification

Physical Specifications		
Dimensions and weight		
Dimensions (HxWxD)	1385mm×850mm×633mm	
Weight	80 kg (Without vaporizer and cylinder)	
Top Shelf		
Weight limit	34 kg	
Width X Depth	535×382 mm	
Drawer (Internal Dimension)		
Dimensions (HxWxD)	150×338×308 mm	
Quantity	1	
Casters		
Diameter	100 mm	
Brakes	Two front casters with brakes	
Ventilation Specifications		
Modes of Ventilation		
Ventilation mode	Boaray 600D	Boaray 600C
	Manual//Standby Volume Control Ventilation (VCV) Pressure Control Ventilation (PCV) Synchronized Intermittent Mandatory Ventilation: SIMV(V)+PS、SIMV(P)+PS Optioanal Pressure Support Ventilation: (SPONT)	Manual//Standby Volume Control Ventilation (VCV) Pressure Control Ventilation (PCV) Synchronized Intermittent Mandatory Ventilation: SIMV(V)+PS
Compensation		
Circuit gas leakage compensation and automatic compliance compensation		
Ventilation Parameters Range		
Patient type	Adult, Pediatric, Infant	
Tidal volume in volume mode	Pediatric/Infant: 40 ~ 300ml Adult: 100 ~ 1500ml (increments of 5 mL)	
Pinsp	5 ~ 70 cmH ₂ O (increments of 1 cmH ₂ O)	
Plimit	(PEEP+5) ~ 70 cmH ₂ O (increments of 1 cmH ₂ O)	
f(Rate)	f in SIMV mode: 1 ~ 40 bpm Others mode: 4 ~ 60 bpm (increments of 1 bpm)	
I:E	3:1 ~ 1:6 (increments of 0.5)	
Tpause	OFF, 5% ~ 50% (increments of 5%)	

Ti	0.1 ~ 10 s (increments of 0.1s)	
Flow trigger	1 ~ 15 L/min (increments of 1 L/min)	
Psupp	5 ~ 60 cmH ₂ O (increments of 1 cmH ₂ O)	
Positive End Expiratory Pressure (PEEP)—Boaray 600D only		
Type	Integrated, electronic controlled	
PEEP	OFF, 4 ~ 20 cmH ₂ O (increments of 1 cmH ₂ O)	
Ventilator Performance		
Driving pressure	280 kPa to 600 kPa	
Peak gas flow	120 L/min + Fresh Gas Flow	
Monitoring Parameters		
Minute volume	0 ~ 60 L/min	
Tidal volume	0 ~ 2000 ml	
Inspired oxygen (FiO ₂)	21% ~ 100%	
Peak airway pressure	0 ~ 100 cmH ₂ O	
Mean pressure	0 ~ 100 cmH ₂ O	
Plateau pressure	0 ~ 100 cmH ₂ O	
I:E	3:1 ~ 1:6	
Rate	0 ~100 bpm	
PEEP	0 ~ 70 cmH ₂ O	
Resistance (R)	0 ~ 200 cmH ₂ O/(L/s)	
Compliance (C)	0 ~ 200 ml/ cmH ₂ O	
Control Accuracy		
Volume delivery	< 100 ml: ± 20 ml ≥100 ml: ± 20 ml or ± 15% of the set value, whichever is greater	
Pressure delivery	± 2.0 cmH ₂ O or ± 10% of the set value, whichever is greater	
PEEP delivery	± 2.0 cmH ₂ O or ±10% of the set value, whichever is greater	
Monitoring Accuracy		
Volume monitoring	< 100 ml: ± 20 ml ≥100 ml: ± 20 ml or ± 15% of the reading, whichever is greater	
Pressure monitoring	± 2.0 cmH ₂ O or ± 10% of the reading, whichever is greater	
PEEP monitoring	± 2.0 cmH ₂ O or ± 10% of the reading, whichever is greater	
Alarm Log Book		
500 events storage, first in first out		
Alarm settings		
Tidal volume	High	40 ~ 1500 mL, OFF
	Low	OFF, 40 ~ 1500 mL
Minute volume	High	1 ~ 40 L/min, OFF
	Low	OFF, 1 ~ 40 L/min
Airway pressure	High	1 ~ 100 cmH ₂ O
	Low	0 ~ 99 cmH ₂ O
RR	High	1 ~ 60BPM, OFF
	Low	0 ~ 60BPM

Apnea alarm	10 ~ 40s
Inspired oxygen	Low: 21% ~ 100%, OFF High: OFF, 21% ~ 100%
Sustained airway pressure alarm	15s
Subatmospheric pressure alarm	Paw < -10 cmH ₂ O
Alarm silence countdown timer	120 to 0 seconds
System Languages	
Chinese, English, Spanish, Russian, Turkish.	
Ventilator Components	
Flow Sensor	
Type	Variable orifice flow sensor
Location	Inspiratory and expiratory port
Oxygen Sensor	
Type	Galvanic fuel cell
FiO ₂ displayed	21% to 100%
Accuracy	± (volume fraction of 2.5 % +2.5 % gas level)
Response Time	≤15 seconds
Ventilator Screen	
Display type	Color TFT screen, integrated
Display size	8.4 inch
Pixel format	800 x 600
Display parameters	All setting and alarm parameters (including Breath rate, I/E ratio, Tidal volume, Minute volume, PEEP, MEAN, PEAK, PLAT, and O ₂ concentration, EtCO ₂)
Display waveforms	P-T, F-T, V-T, CO ₂ -T
Spirometry loops	P-V, F-V, F-P
Timer	On screen timer
Communication Ports	
1 RS-232C connector	
Vaporizers	
Vaporizer	Prunus BR60 Anesthetic Vaporizer or Penlon Sigma Delta Anesthetic Vaporizer
Support agents	Halothane, Enflurane, Isoflurane, Sevoflurane
Position	Standard 1, optional 2(Boaray 600D)
Mounting mode	Selectatec®, with interlocking function
Fill method	Key fill, Pour fill, Quick fill
Modules	
MainStream CO₂ Module (Masimo IRMA) —Boaray 600D only	

Displayed numerics	EtCO ₂ , FiCO ₂
Measurement range	0 ~ 99 mmHg
Accuracy	± (0.3 vol%+ 4% of reading)
Waveforms / Loop	CO ₂ -time
EtCO ₂ High alarm limits	1 ~ 100cmH ₂ O
EtCO ₂ Low alarm limits	0 ~ 99cmH ₂ O
Multi-gas Module (Masimo IRMA) —Boaray 600D only	
Measurement mode	Main-stream
Monitor gases	Monitor gases CO ₂ , N ₂ O, Halothane, Enflurane, Isoflurane, Sevoflurane, Desflurane, MAC.
Warm-up time	<20 sec (concentrations are reported and the automatic agent identification is running within 20 seconds).
Accuracy	CO ₂ ±(0.3 vol%+ 4% of reading) N ₂ O ±(2 vol%+ 5% of reading) HAL, ENF, ISO, SEV, DES ±(0.2 vol%+ 10% of reading)
Electrical Specifications	
Power And Battery Backup	
Power input	110 ~ 240 Vac, 50/60 Hz
Auxiliary electrical outlets	Up to 3 outlets (1.5A for each)
Battery backup	60 min for backup battery (powered by new fully-charged batteries with 25°C ambient temperature)
Battery type	Build-in Li-ion battery, 11.1 VDC, 7800 mAh
Safety feature	In case of electricity and battery failure, manual ventilation, gas delivery and agent delivery are possible.
Pneumatic Specifications	
ACGO (Auxiliary Common Gas Outlet)	
Connector	ISO 22 mm OD and 15 mm ID
Pipeline Supply	
Gas type	Boaray 600D: O ₂ & N ₂ O & Air Boaray 600C: O ₂ & N ₂ O
Pipeline input range	280 to 600 kPa
Pipeline connections	NIST
Pipeline Supply Pressure Gauges	
Display type	Mechanical
Ranges	0 to 1MPa
Accuracy	± (4% of the full scale reading + 8% of the actual reading)



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Cylinder Supply		
Cylinder Supply	E Cylinder (American style or UK style)	
O ₂ Input Range	400 to 450 MPa	
N ₂ O Input Range	400 to 450 MPa	
Cylinder Connections	Pin-Index Safety System (PISS)	
Yoke Configuration	O ₂ , N ₂ O	
Cylinder Supply Pressure Gauges		
Display type	Mechanical	
O ₂ Range	0 to 25 MPa	
N ₂ O Range	0 to 25 MPa	
Accuracy	± (4% of the full scale reading + 8% of the actual reading)	
O ₂ Controls		
Method	N ₂ O shut off with loss of O ₂ pressure	
O ₂ Flush	25 ~ 75 L/min	
O ₂ -N ₂ O Link system		
Type	Mechanical	
Range	O ₂ concentration not lower than 21%	
Auxiliary O ₂ Flowmeter—Boaray 600D only		
Range	0 ~ 15 L/min	
Indicator	Flow tube	
Mechanical Control Flow Meters		
O ₂ flow range	Two flow tubes with the ranges of 0 ~ 1 L/Min and 1 ~ 10 L/min	
Air flow range (Only available for Boaray 600D)	One flow tube with the ranges of 1 ~ 10 L/min	
N ₂ O flow range	Two flow tubes with the ranges of 0 ~ 1 L/Min and 1 ~ 10 L/min	
Accuracy	±10% of the indicated value (For flow between 10% and 100% of full scale) ±200mL/min(For the flow under 10% of the full scale)	
Environmental specifications		
Environmental specifications		
Temperature	Operation	10 ~ 40°C
	Storage and transport	-20 ~ 55°C
Relative humidity (non-condensing)	Operation	15% ~ 95% R.H.
	Storage and transport	10% ~ 93% R.H.
Atmospheric pressure	Operation	70 ~ 106 kPa
	Storage and transport	50 ~ 106 kPa
Electromagnetic Compatibility		
Immunity	Complies with all requirements of IEC 60601-1-2	
Emissions	Complies with all requirements of IEC 60601-1-2	
Breathing System Specification		
Carbon dioxide absorbent canister		

Absorbent capacity	1500 mL
Breathing Circuit Parameters	
Compliance	0.87 mL/100Pa (bag mode) Automatically compensates for compression losses within the breathing circuit in mechanical mode
Expiration resistance	< 0.6 kPa @30 L/min
Inspiration resistance	< 0.6 kPa @30 L/min
System Pressure Gauge	
Range	-20 ~ 100 cmH ₂ O
Accuracy	± (2% of the full scale reading + 5% of the actual reading)
Ports And Connectors	
Exhalation,Inhalation, Manual bag port	22 mm OD /15 mm ID conical
Integrated Adjustable Pressure Limiting (APL) Valve	
Range	2 ~ 70 cmH ₂ O
Tactile knob indication at above 30 cmH ₂ O	
Accuracy	± 10 cmH ₂ O or ± 15% of the setting value, which is greater
Anesthetic Gas Scavenging System (AGSS)	
Size (H x W x D)	480 x 134 x 95 mm
Type of disposal system	Low Flow Active AGSS
Applicable standard	ISO 80601-2-13
Pump rate	40 ~ 50 L/min
Connector of the disposal system	ISO 9170-2



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