

HAMILTON·G5

Technical Specifications

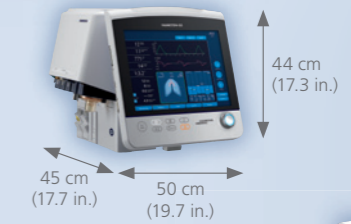
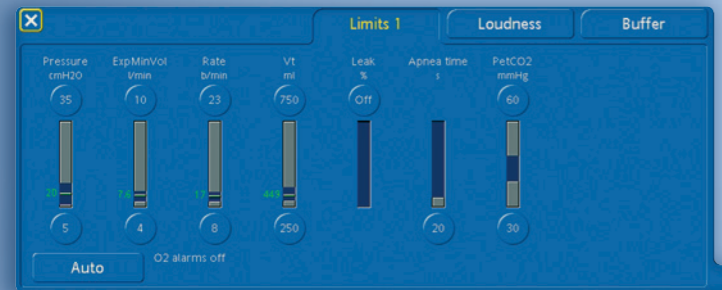
Ventilation Cockpit	
Dynamic Lung	Real-time visualization of the lungs with representations of tidal volume, lung compliance, resistance, and patient activity, including haemodynamic status and cuff pressure
Vent Status	Visual representation of ventilator dependence and weaning progress, grouped into oxygenation, CO ₂ elimination, and patient activity
ASV target graphics	Graphic display of target and actual parameters for tidal volume, frequency, pressure, and minute ventilation
Numeric monitoring	50 monitoring parameters can be displayed (see Monitoring parameters)
Real-time waveforms/loops	Simultaneous display of up to 8 waveforms or up to 4 loops based on: volume, flow, airway pressure, auxiliary pressure (esophageal pressure), transpulmonary pressure, SpO ₂ or CO ₂ reference loops
Trending	Simultaneous display of up to 17 parameter trends, selected from all 50 monitoring parameters, for 1, 3, 12, 24, or 96 hours
Others	Graphic curve freeze and cursor function, inspiratory and expiratory hold Layout can be configured with combinations of the graphic displays described above; user-configurable default graphics layout
Controls	
Ventilation modes	(S)CMV, SIMV, SPONT, ASV, P-CMV, P-SIMV, APVcmv, APVsimv, VS, DuoPAP, APRV, NIV, NIV-ST, nCPAP-PS (optional), INTELLiVENT-ASV (optional)
Special functions	Nebulizer, manual breath, O ₂ enrichment, standby, sigh, apnea backup ventilation, tube resistance compensation (TRC), optional Heliox application
Patient types	Adult, pediatric, infant/neonatal (optional)
Patient gender	Male, female
Patient height	Adult (130 to 250 cm), pediatric (30 to 150 cm)
(S)CMV and P-CMV rate	1 to 150 b/min
SIMV, P-SIMV, DuoPAP rate	1 to 80 b/min
Tidal volume/target tidal volume	2 to 2000 ml
PEEP/CPAP (P low)	0 to 50 cmH ₂ O (DuoPAP and APRV)
Oxygen	21% to 100%
I:E ratio	1:9 to 4:1
Inspiratory time (Ti)	0.1 to 10 s (10% to 80% of cycle time)
Pause time	0 to 8 s (0% to 70% of cycle time)
Peak flow	1 to 180 l/min
T low (APRV)	0.1 to 30 s
T high (DuoPAP and APRV)	0.1 to 30 s
Pressure trigger	0.1 to 10 cmH ₂ O below PEEP/CPAP
Flow trigger	0.1 to 15 l/min
Automatic base flow	2 to 30 l/min, depending on flow trigger setting
Pressure control	3 to 100 cmH ₂ O, added to PEEP/CPAP
Pressure support	0 to 100 cmH ₂ O, added to PEEP/CPAP
P high (DuoPAP and APRV)	0 to 50 cmH ₂ O
Pressure ramp	25 to 200 ms



Cuff pressure	5 to 50 cmH ₂ O (optional)
% minute volume (ASV)	25% to 350%
Flow patterns	Sine, square, 100% decelerating, 50% decelerating
Expiratory trigger sensitivity (ETS)	5% to 70% of inspiratory peak flow
Additional Features	IntelliTrig – automatic leakage compensation Transpulmonary monitoring via esophageal catheter
Optional: Pulmonary function assessment	
P/V Tool Pro	Automatic maneuver for static compliance assessment and lung recruitment including transpulmonary pressure
Alarms	
Operator-adjustable	Low/high minute volume, low/high pressure, low/high tidal volume, low/high rate, apnea time, low/high PetCO ₂ , low/high SpO ₂ , %leak
Special alarms	Oxygen concentration, disconnection, loss of PEEP, exhalation obstruction, SpO ₂ , HLI, high PEEP alarm flow sensor alarms, ASV/APV, CO ₂ , power supply, gas supplies, cuff leakage
Loudness	Adjustable (1-10)
Event log	Storage and display of up to 1000 events with date and time stamp
Standards	IEC 60601-1, IEC 60601-1-2, IEC 60601-2-12, C22.2 No. 601.1, UL 60601-1
Options	INTELLiVENT-ASV, neonatal application, nCPAP-PS, P/V Tool, P/V Tool Pro, communications interface, capnography (mainstream or sidestream CO ₂ sensor), pulse oximetry (SpO ₂ sensor), integrated power strip, extended hot swappable battery, integrated Aeroneb nebulizer, Heliox application, IntelliCuff (cuff pressure controller)

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Configurations and dimensions



Ventilation modes					
Type	Mode	Description	Neonatal capability	Physical dimensions	Environment
Closed-loop control	ASV	Adaptive Support Ventilation. Guaranteed minute volume and respiratory rate		Size	Temperature 10°C to 40°C (operating), -10°C to 60°C (storage)
	INTELLIVENT-ASV	Fully closed loop ventilation and oxygenation based on etCO ₂ , RR and SpO ₂ (optional)		Weight	Humidity 30% to 75% noncondensing (operating), 5% to 85% noncondensing (storage)
Adaptive	APVcmv	Adaptive pressure ventilation + CMV	✓	Display (detachable)	Altitude Up to 3000 m (11,483 ft), automatically adjusted
	APVsimv	Adaptive pressure ventilation + SIMV	✓	Main patient outlet	Atmospheric pressure 70 kPa to 110 kPa
Pressure	P-CMV	Pressure-controlled mandatory ventilation	✓	Air and oxygen inlets	Interface connectors USB and CompactFlash for screenshots, DVI with VGA output, RJ45
	P-SIMV	Pressure-controlled synchronized intermittent mandatory ventilation	✓		
	SPONT	Pressure support ventilation with bidirectional backup	✓		
	DuoPAP	Dual positive airway pressure (biphasic positive airway pressure)	✓		
Volume	APRV	Airway pressure release ventilation	✓	Electrical and gas supplies	
	(S)CMV	(Synchronized) controlled mandatory ventilation		Input voltage	100 to 240 V ~ ±10%, 50/60 Hz
	SIMV	Synchronized intermittent mandatory ventilation		Power consumption	210 VA maximum
Noninvasive	VS	Volume support - Tidal volume guaranteed with bidirectional backup		Backup battery time	1 hour typical with internal battery. 1 hour each optional hot-swappable extended battery
	NIV	Noninvasive ventilation with bidirectional backup		Oxygen, Heliox and air supplies	200 to 600 kPa (29 to 86 psi)
	NIV-ST	Noninvasive ventilation with mandatory rate		Degree of protection	IP21
	nCPAP-PS	Synchronized nasal CPAP for infants/neonates (optional)	✓		

Type	Parameter	Unit	Description	Numeric		Vent Status	Dynamic Lung (visual)	
				monitoring/ Trending	Waveform/ Loops			
Pressure	Paw	cmH ₂ O or mbar	Real-time airway pressure		✓			
	Pes (Paux)	cmH ₂ O or mbar	Real-time auxiliary pressure		✓			
	Ppeak	cmH ₂ O or mbar	Peak airway pressure	✓				
	Pmean	cmH ₂ O or mbar	Mean airway pressure	✓				
	Pminimum	cmH ₂ O or mbar	Minimum airway pressure	✓				
	Pplateau	cmH ₂ O or mbar	Plateau airway pressure	✓				
	PEEP/CPAP	cmH ₂ O or mbar	Positive-end expiratory pressure / cont. positive airway pressure	✓		✓		
	Pinsp	cmH ₂ O or mbar	Inspiratory pressure			✓		
	Pcuff	cmH ₂ O or mbar	Cuff pressure	✓			✓	
	Ptrans I	cmH ₂ O or mbar	Transpulmonary pressure at the end of inspiration	✓				
Ptrans E	cmH ₂ O or mbar	Transpulmonary pressure at the end of expiration	✓					
Ptransplm	cmH ₂ O or mbar	Real time transpulmonary pressure		✓				
Flow	Flow	l/min	Real-time inspiratory/expiratory flow		✓			
	Insp Flow	l/min	Peak inspiratory flow	✓				
	Exp Flow	l/min	Peak expiratory flow	✓				
Volume	Volume	ml	Real-time tidal volume		✓		✓	
	VTE/VTEspont/VTI	ml	Expiratory tidal volume / Spont VTE / Inspiratory tidal volume	✓				
	ExpMinVol/MVspont	ml	Expiratory minute volume / Spont minute volume	✓		✓		
	VLeak	ml/%	Leakage volume at the airway	✓				
VT/IBW	ml/kg	Ratio of tidal volume and ideal body weight to avoid excessive VT	✓					
Time	I:E		Inspiratory / expiratory ratio	✓			✓	
	fTotal	b/min	Total breathing frequency	✓			✓	
	fSpont	b/min	Spontaneous breathing frequency	✓				
	TI	s	Inspiratory time	✓			✓	
	TE	s	Expiratory time	✓			✓	
	VarIndex	%	Index of spontaneous respiratory rate variability			✓		
	%fSpont	%	Percentage of spontaneous breathing rate			✓		
	Cstat	ml/cmH ₂ O	Static compliance	✓			✓	
Lung mechanics	P0.1	cmH ₂ O or mbar	Airway occlusion pressure	✓		✓		
	AutoPEEP	cmH ₂ O or mbar	AutoPEEP or intrinsic PEEP	✓				
	PTP	cmH ₂ O*s	Pressure-time product	✓				
	RCexp	s	Expiratory time constant	✓				
	RCinsp	s	Inspiratory time constant	✓				
	Rexp	cmH ₂ O / l/s	Expiratory flow resistance	✓				
	Rinsp	cmH ₂ O / l/s	Inspiratory flow resistance	✓			✓	
	RSB	1/l*min	Rapid shallow breathing index	✓		✓		
	WOBimp	J/l	Imposed work of breathing	✓				
	Oxygen	Oxygen	%	Airway oxygen concentration (FIO ₂)	✓		✓	
CO ₂ (option)	CO ₂	mmHg/Torr/kPa/%	Real-time CO ₂ measurement		✓			
	FetCO ₂	%	Fractional end-tidal CO ₂ concentration	✓				
	PetCO ₂	mmHg/Torr/kPa	End-tidal CO ₂ partial pressure	✓			✓	
	SlopeCO ₂	%CO ₂ /l	V/Q status of the lung	✓				
	Vtalv	ml	Alveolar tidal ventilation	✓				
	V'alv	l/min	Alveolar minute ventilation	✓				
	V'CO ₂	ml/min	CO ₂ elimination	✓				
	VDaw	ml	Airway dead space	✓				
	VDaw/VTE	%	Dead space fraction measured at the airway opening	✓				
	VeCO ₂	ml	Exhaled volume of CO ₂	✓				
	ViCO ₂	ml	Inspired volume of CO ₂	✓				
	SpO ₂ (option)	Plethysmogram		Real-time plethysmogram		✓		
		SpO ₂	%	Saturation (pulse oximetry)	✓			✓
SpO ₂ /FIO ₂		%	SpO ₂ /FIO ₂ ratio as approximation to PaO ₂ /FIO ₂ ratio	✓				
HLI		%	Heart Lung Interaction Index (Not available in all markets)	✓			✓	
Pulse		1/min	Pulse rate	✓				
SpCO		%	Carbon monoxide concentration	✓			✓	
SpMet		%	Methaemoglobin concentration	✓				
SpOC		ml/dL	total oxygen concentration	✓				
SpHb	g/dL \ mmol/L	Total haemoglobin	✓					

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