

TV80

Respirator

Physical specifications

Dimensions and weight

Dimensions (L x H x W) 293 x 296 x 254 mm

Weight (Excluding the transport cart)
Approximately 6.5 kg
(Excluding the transport cart)

Screen

Screen 10.1" capacitive TFT touchscreen
Resolution (H x V) 1280 x 800 pixels
Glow Adjustable (manual, automatic)

Ink screen

Fan ON (activated) Outdoor mode
Fan OFF (off) Battery indicator

Mounting method: Mounting handle, fixing base, trolley

Communication interface

RS232, VGA connector, USB port, Ethernet, wireless network, 5G, Bluetooth

Ventilation specifications

Patient type Adults, children, neonatal
Ventilation mode

VA/C (Volume Assisted/Controlled)
PA/C (Pressure Assisted/Controlled)
V-SIMV (Synchronized Intermittent Mandatory Ventilation, Volume)
P-SIMV (Synchronized Intermittent Mandatory Ventilation, Pressure)
DuoLevel (Two-level ventilation)
CPAP (Continuous Positive Airway Pressure)

PSV (Pressure Support Ventilation)
VS (Volume Support Ventilation)
APRV (Airway Pressure Release Ventilation)
PRVC (Pressure Regulated Volume Control)

PRVC-SIMV (PRVC-Synchronized Intermittent Mandatory Ventilation)
AMV (Adaptive Minute Ventilation)
CPRV (Cerebropulmonary Resuscitation)
nCPAP (Nasal Continuous Positive Airway Pressure Ventilation)
NIV (Non-invasive ventilation)
Oxygen therapy

Controlled parameters

Flow (O₂ therapy) Adult/Pediatric: 2 to 80 L/min
Neonatal: 2 to 20 L/min
O₂ % 21 to 100 vol.%
TV (Tidal Volume) Adult: 100 to 4000 mL
Pediatric: 20 to 300 mL
Neonatal: 2 to 100 mL
MV % 25% to 350%
F Adult/Pediatric: 1 to 100/min
Neonatal: 1 to 150/min



fsimv (Ventilation frequency in SIMV mode)

1 to 60/min

I:E 1:10 to 4:1

T_{insp} 0.10 to 10.00 s

T_{pend} (Ramp Time)

0.00 to 2.00 s

T_{alto} 0.10 to 30.00 s

Work 0.20 to 30.00 s

T_{pause} Off (disabled), 5% to 60%

Flow pattern Square, 100% deceleration, 50% slowing down

ÿP_{insp} 1 to 80 cmH₂O

ÿP_{supp} 0 to 80 cmH₂O

Avocado 0 to 80 cmH₂O

Pbaja 0 to 50 cmH₂O

PEEP 0 to 50 cmH₂O

Flow trigger Adult/Pediatric: OFF (disabled), 0.5 to 20.0 L/min

Neonatal: 0.1 to 5.0 L/min

Pressure trigger Off, -20.0 to -0.5 cmH₂O

Exp% (Expiration end level)

Auto, 1% to 85%

Apnea ventilation

TV_{apnea} Adult: 100 to 4000 mL
Pediatric: 20 to 300 mL
Neonatal: 2 to 100 mL

ÿP_{apnea} 1 to 80 cmH₂O

f_{apnea} Adults/Children: 1 to 100/min

Neonatal: 1 to 150/min

Apnea T_{insp} (Apnea Inspiration Time)

0.10 to 10.00 s

Sigh

Sigh Button Interval ON, OFF

Sigh Cycles 20 sa 180 min

ÿ_{int}. PEEP From 1 to 20

Off, 1 to 40 cmH₂O

Automatic leak compensation

Maximum leak compensation flow

Adult: 65 L/min

Pediatric: 45 L/min

Neonatal: 15 L/min

IntelliCycle

Patient type Adult/Pediatric

Automatic parameter adjustment

Trigger, T_{pend}, Esp%

IntelliCycle button ON, OFF

Monitored parameters

Airway pressure range

Peak, Plateau, Middle Peak

(Range -20 to 120 cm/H₂O)

PEEP (range 0 to 120 cmH₂O)

Tidal Volume Range TV_i, TV_e, TV_e spn (range 0 to 6000 mL)

Frequency Range f_{total}, f_{mand}, f_{spn}, (Range from 0 to 200/min)

Volume range/minute VM, VM_{spn}, VM_{leak}

(Adult/Pediatric Range: 0 to 100 L/min,

Neonatal: 0 to 30 L/min)

Leakage% (% leakage)	0 ~ 100%
Resistance R _{insp} , R _{exp} (Range from 0 to 600 cmH ₂ O/L/s)	
Compliance C _{stat} , C _{dyn} (Range 0 to 300 mL/cmH ₂ O)	
Fraction of Inspired Oxygen (FiO ₂)	15 to 100 vol.%
RSBI (Shallow Respiration Index)	0 to 9999 1/(min*L)
WOB (breathwork)	From 0 to 100 J/min
P0.1	-20 to 0 cmH ₂ O
total PEEP	0 ~ 120 cmH ₂ O
PEEPi	0 to 80 cmH ₂ O
RC _{esp}	0 to 10 s
I:E	100:1 to 1:150
T _{insp}	0.00 to 60.00 s
P _{drive}	0 ~ 120 cmH ₂ O
Pressure-time waveforms in the airways, Flow-time, Volume-time, CO ₂ -time, SpO ₂ -time	
Loops	Medium pressure volume, flow volume, medium pressure flow, CO ₂ volume
Control screen, waveform display, large numeric display values display, spirometry display	
Alarm settings	
Tidal Volume	Neonatal High: Off (disabled), 3 to 200 mL Ped.: Off (disabled), 25 to 600 mL Adu: Off (disabled), 110 to 4000 mL Neonatal Low: Off (disabled), 1 to 195 mL Ped.: Off (disabled), 10 to 595 mL Adu: Off (disabled), 50 to 5995 mL
High Neonatal Minute Volume:	0.02 to 30 L/min Ped: 0.2 to 60.0 L/min Adu: 0.2 to 100.0 L/min (can be deactivated in nCPAP)
Low Neonatal:	0.01 to 15 L/min Ped.: 0.1 to 30.0 L/min Adu: 0.1 to 50.0 L/min (can be disabled in NIV)
High airway pressure	10 to 85 cmH ₂ O
High Frequency Off	(disabled), 2 to 160/min
Fraction of inspired oxygen (FiO ₂)	Auto Stop, internal alarm limit: min. (max. adjusted FiO ₂ value (7 vol.% or adjusted FiO ₂ value x 10%), 100 vol.%). Low Auto, internal alarm limit: max. (FiO ₂ setpoint-max (7 vol.% or setpoint x 10%), 18%).
Apnea alarm time	Low 5 to 60 s

Tendencies

Guy	Tabular, graphical
Duration	120 hours
Content	Monitor parameters, configuration parameters

Record

Guy	Alarm, operation
Maximum number	10000

Screenshot

50 images

Monitor module

Monitor parameters	ECG, SpO ₂ , CO ₂ , Temp, TANI, IBP, CQI
Display method	Top of the fan grille
ECG	3/5/6/12 leads
SpO ₂	Mindray SpO ₂
CO ₂	Sidestream CO ₂
Temperature	0 °C to 50 °C
PANI	Manual, automatic

PAI	-50 mmHg to 360 mmHg
CQI	From 0 to 100

O₂ sensor

Guy	O ₂ sensor with no power consumption
Response time	< 18 s

CO₂ sidestream module

Numbers displayed	EtCO ₂
Measurement range	0 to 152 mmHg
Resolution	1 mmHg
Waveforms	CO ₂ time
Sampling frequency	Adult/Pediatric: 120 mL/min Neonatal: 90 mL/min
System response time	Adult/Pediatric: < 5.5 sa 120 mL/min Neonatal: < 4.5 weeks 90 mL/min Adult/Pediatric: < 300 ms at 120 mL/min Neonatal: < 330 ms at 90 mL/min
Up time	
Water trap cleaning time	Adult/Pediatric: \dot{y} 26 h 120 mL/min Neonatal: \dot{y} 35 h 90 mL/min

Upper limit of the EtCO₂ 2 alarm at 152 mmHg
Lower limit of the EtCO₂ alarm: 0 to 150 mmHg

mainstream CO₂ module

Numerical data displayed	EtCO ₂ , VeCO ₂ , ViCO ₂ , VMCO ₂ , V _t alv, V _M alv, V _D aw, V _D aw/TV _e , pendCO ₂ , V _D alv, V _D phy, V _D phy/TV _e , OI, P/F, VCO ₂
Measurement range	0 to 150 mmHg
Resolution	1 mmHg
Waveforms/Loop	CO ₂ - time, Volume - CO ₂
System response time < 2.0 s	
Upper limit of the EtCO ₂ alarm 2 at 150 mmHg	
Lower limit of the EtCO ₂ alarm: 0 to 148 mmHg	

SpO₂ module

Numerical data displayed	SpO ₂ , FP, IP
SpO ₂ measurement range	0 to 100%
FP measurement range	20 to 300 rpm
IP measurement range	0.05 to 20%
Vibe	Plethysmography
SpO ₂ 2 alarm upper limit at 100%	
Lower limit of SpO ₂ alarm 0 to 98%	
SpO ₂ desaturation alarm limit	0 to 98%
FP alarm upper limit.	17 to 300 rpm
Lower limit of the FP alarm.	15 to 298 rpm

Safety specifications

Classification	Class IIb
Water protection	IP34
Main standards used	IEC 60601-1-12, ISO 80601-2-12, ISO 80601-2-55, ISO 80601-2-61, IEC60601-1-2:2020 EN1789, EN13718-1, RTCA DO-160G, ISO 80601-2-84 (EN 794-3), MIL-STD-461G, MIL-STD-810G

Environmental specifications

Temperature	-20 to 50 °C (operating); -20 to 60 °C (storage)
Relative humidity	5 to 95% (in operation); 10 to 95% (storage)
Barometric pressure	37.6 to 110 kPa (operating); 60 to 110 kPa (storage)
Altitude compensation	Automatic compensation

Oxygen supply

high pressure O ₂	0.28 – 0.65 MPa
Pipe connector	NIST, DISS
low pressure O ₂	~ 0.1 MPa
Low pressure O ₂ flow	~ 15 L/min

Air supply (blower)

Maximum flow rate	~ 280 L/min
Maximum pressure	~ 80 cmH ₂ O

External AC power supply

Input supply voltage	100 to 240 V
Input power supply frequency	50/60 Hz
Input power supply current	2.2 to 1.0 A
Fuse	T3,15 A/250 V

External DC power supply

Input supply voltage	12 to 28 V
Input power supply current	15 to 6.5 A

Internal battery

Number of batteries	One or two
Battery Type	Built-in lithium-ion battery, 14.4 VAC, 6600 mAh
Battery operating time	330 min (Operation with a new, fully charged battery according to the standard ISO 80601-2-12) 660 min (Operation with two new, fully charged batteries according to ISO 80601-2-12)
Charging time	~ 3 h (One battery, 0 to 90%) ~ 6 h (Two batteries, 0 to 90%)

Special functions and procedures

- Sigh
- O₂
- Suction
- Manual breathing
- Inspirational pause
- Exhalation pause
- PulmoSight
- Static photovoltaic loop
- Spontaneous Breathing Test Tool (SBT)
- Lung recruitment (re-expansion) tool (SI)
- Screen Lock
- Calculation of oxygen consumption
- Storage mode

Specifications are subject to change without notice.
Some features are optional. Not all functions/
Products are available in all markets. For the most up-to-date information, please
contact your local Mindray sales representative.

www.mindray.com

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