

## ANNEX 1

### NEONATAL VENTILATOR WITH HIGHFLOW OXYGEN THERAPY AND NIPPV MODES.

#### **A) General requirements:**

- Should be able to ventilate patients with body weight from 400 grams to 5 Kg.
- Should have battery back-up for the ventilator with integrated re-chargeable battery for a minimum of 30 minutes operation.
- Should have an integrated high-resolution screen with color display of at least 14 inches screen Size.
- Should have an integrated electronic blender for blending Air and Oxygen.
- Should have an integrated compressor.
- Should have US-FDA and / or CE certification for neonatal use.
- Should have device checking mechanism where it can determine and display the compliance and resistance of the system, determine leakage in the patient hose system, and checking of valves, gas supply system, flow sensors, etc.
- Should have an automatic leak compensation facility that provides sensitive triggering even with changing ET-tube leaks.

#### **B) Ventilation modes required:**

- Invasive ventilation:
  - Pressure limited: **SIMV, Assist Control/SIPPV, Pressure Support (PSV)**
  - Should have volume targeting or volume assured or volume guarantee function in all pressure limited modes to ensure a preset tidal volume delivery by automatically varying the peak pressure or inspiratory time
- Non-invasive ventilation: **nCPAP and NIPPV.**
- **High flow oxygen therapy mode.**
- Should have apnea back-up facility with back up settings configured for neonates

#### **C) Waveforms and loops:**

- Should be displayed on the integrated high-resolution screen with color display of at least 10 inches screen size
- Scalar graphics — for pressure, volume and flow; scales should be user selectable and adjustable for neonatal settings
- Loop graphics — for pressure-volume, flow-volume, pressure-flow combinations; scales should be user selectable and adjustable for neonatal settings
- Should have freezing and measuring facility for Loops and curves
- Facility of movable cursor to read numeric values at any of point on the loop where the cursor is Kept.
- Should have adjustable inspiratory flow patterns from square wave, sinusoidal, and decelerating Wave.

#### **D) Power Requirements:** Power input should be 220-240 V AC, 50Hz fitted with UK plug.