Technical Specifications of Ucchvasita (Oxygen Concentrator)

Specification	Purpose / Use
Generic Name	Oxygen Concentrator
Technology	Ultraswachh
Product	Ucchvasita
Item Code	Us-UC-[1-10] to Us-UC [6-250]
Risk Classification	Class C (GHTF Rule 11); FDA Class II (USA); Class IIA (EU and /Australia); Class II (Canada)
Certification Marking	CE Mark (EU)
Category	Single / Multi-Unit
Booster Pump	Yes / No
Minimum Flow Rate	0.5 LPM or less (it could be 0.125 LPM)
Highest Oxygen Level	10 LPM – 250 LPM (based on type of Model)
Sieve Modules	Replaceable
Zeolite Sieve	Ag Coated (anti-microbial) in selective model
Outlet Pressure (kPa) should be less than 55 kPa	Yes the device complies with it
	High Pressure Oxygen (300- 450 kPa); Continuous Positive Airway Pressure (CPAP), Anesthesia & Mechanical Ventilator Device needs

	to manage such pressure
Flow Rate Interval (scale)	0.5 LPM with adjustability
Blended Oxygen	Specific to Neonatal resuscitation (Paediatric Wards) and based on requirement
Medical Grade Oxygen	(> 92%)
Ozone led generation of medical grade air for further concentration	Yes it is present in this device
Cut Off (with Alarm)	~82%
Specific Type	Stationary
Pulse Oximetry	Built within / Supplied as Accessory
Flow Range	Low-to-High Flow
Intelligence	Intelligence is built within to supply oxygen based on day and night time cycles of biological clock
Auto Oxygen Delivery	Automatically delivers oxygen when breath is not detected
Humidifier	Essential for > 2LPM oxygen concentrator
	Time based alarm for change of water to prevent contamination
Monitoring	Continuously monitor oxygen levels
Continuous Flow Operations	24 hours
Flow Limiter (prevent overdrawing oxygen flow beyond rated maximum flow rate)	Yes, it is present in device and complies with it

Time Meter	Digital / analogue meter that displays cumulative hours of operation of device
Visual Interface	Easy to operate user interface, numbers and displays should be clearly visiblei.e. Oxygen Flow Rate with adjustability settings; Oxygen purity (%) level;
Flow can be divided upto two patients with accessories	Yes, optional (based on type of model)
Noise Level should be < 50 dBA [It should be steady and non obtrusive to patients (compliance with ISO 3744)].	Yes it complies with it
Oxygen Outlet	Kink free and Kink resistant with appropriate sized barb fittings or replaceable
Complete Enclosure (Nature of Material]	Hard, ease to wipe clean and safe to transport (ABS Shell-optional)
Mobility & Portability	Whole unit to be easily movable by a single person (< 27 Kg) with castor wheels
Power (W)	300-600 W
Power Efficiency (< 70 W/LPM)	Yes, complies with it.
Power Back up	UPS (30 minutes or more)
	Battery Back up (Rechargeable Battery)
	Solar Panel based Battery Backup
Power Input Options (VAC/ Hz)	220 V, 50 Hz

Voltage Corrector	Stabilized operation ± 20% of local rated voltage
Electrical Protection	Resettable Circuit Breakers or replaceable fuses, fitted with neutral and live wires
Level of use (if relevant)	Health centre, general hospital, district hospital, province hospital, regional and specialized hospital
Expected Moderate Use	5000 h – 8000 h annually
Clinical Department Ward	Surgical Operating Theatre and Other Wards
Redundancy Factor (optional)	Power back options (01 or more i.e. UPS, Rechargeable Battery or connection with Solar Cell Panel)
	Oxygen Cylinders (for provisioning of time for repairs / replacement time to ensure sustained supply)
	Sharing of oxygen between multiple devices to manage large number of patients
Transportation and Storage	Keep it away from oil, grease and petroleum- based and flammable products as well as smoking or open flames
Warranty	01 year from date of installation and beyond that CMC/ AMC applicable
Estimated Life Span	Seven Years (or based on type of model or brand)
Training	Day-to-day maintenance require training of Engineers at Hospitals [In case of multiple purchases for single location, contracts can be devised for recurring cost of maintenance]

Spare Parts availability post-warranty	< 04 weeks after end of warranty. 05 years of spare parts should be organized at the time of purchase and replace when used.
Maintenance Tasks	Test power failure alarms. Measure operating pressure with pressure test gauge. Measure oxygen concentration with a calibrated oxygen analyser. Repair internal components as needed. Maintain spare-parts inventory.
Environmental Requirement (ISO 8359)	Capable of being stored continuously in ambient temperature from 0 °C to 40 °C, RH from 15% to 95% and elevation from 0 to 2000 m. Thereby complies with ISO 8359.
Deployment (via donation at multiple places)	In case of donated Oxygen Concentrator deployed multiple places, maintenance is not applicable & not even warranty is possible, thus provisioning of training of Engineers is only applicable option
Regulatory Clearance(s)	Developed under license number 1135 issued by DRDO – Technology transferred for Ultraswachh technology
Documentation	User, technical and maintenance manuals to be supplied in English and local language. Procedures for cleaning and disinfection/sterilization. Contact details of manufacturer, supplier and local service agent. List of all spare or replacement parts, their lifetime and costs for five years of operation. Troubleshooting guide.

Oxygen Generation Systems: Comparison for Reference.

System	Central Oxygen (Pipeline System)	Oxygen Cylinders	Uchhvasita Oxygen Concentrator
Power Source Required	No	No	Yes, continuously (100-600 w, depending on model i.e. 1-10 to 6-250)
Transport Requirement	Those associated with cylinders	Regularly, heavy and costly to transport	Only at time of installation
Initial costs	Very High: Generator, Cylinders, Piping Systems, Installation, Commissioning and Training	Moderate: Cylinder, Oxygen Flowmeter and Regulator per Cylinder	Low-to-Moderate: Spares, Installation, Commissioning and Training
User Care	Minimal	Minimal: Regular Checking & Fire Hazard (No grease or flammable)	Moderate: Check for low oxygen output with analyzer
Maintenance	Moderate: Check for pressure leaks with manometer Maintenance of oxygen pipeline to prevent leaks and oxygen wastage. Significant: If supply facility is onsite	Moderate: Check for pressure leaks with gauge	Moderate: Check for low oxygen output with analyser
Cost per 1000 Liter of Oxygen	Data not available	600-1800 INR/ Kl varying with estimated oxygen requirement and power availability	120-500 /Kl (greater depending on cost of power source), varying with estimated oxygen requirement and power supply
Recommended Facilities	Tertiary or District Level Hospitals	All Hospitals, Healthcare Unit and Home Care	All Hospitals, Healthcare Unit and Home Care