

Technical Brief

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Durable low-cost portable oxygen concentrator designed for rural areas

Technology Summary

An electrically operated oxygen concentrator that is designed to provide over 90% concentrated oxygen. The time to achieve and reach the specified performance is less than 5 min at 7 LPM.

Technology Description

The device works on Pressure Swing Adsorption by trapping and removing nitrogen from ambient air, thereby allowing enriched oxygen to be available at the output. Lithium based zeolites have been used as the molecular sieve for adsorption. To enable use in high humidity conditions, it incorporates a moisture removal stage with a built-in auto drain valve. Real time data monitoring of oxygen level, flow rate, temperature, pressure and relative humidity is achieved through indicators and sensors having temperature range up to 10°C -45°C, humidity of 15%-95% and elevation up to 2000 meters. Visual and auditory alarms are also installed for safe and smooth functioning of the device.

Value Proposition

- Designed to provide over 90% concentrated oxygen.
- The time to achieve and reach the specified performance is less than 5 min at 7 LPM.
- Low maintenance, remote monitoring, high range of operation
- Two levels for Oxygen purity Indicator Alarm: Low oxygen: 80%, Very low oxygen: 70%
- The machine is built on a rigid, aluminium extrusion frame with suitable covering as well as is wheel mounted which enables rigidity to the device as well as robustness to work in different areas and health care settings
- Real time data monitoring for Oxygen purity level, flow rate, temperature, Humidity.
- Visual and auditory alarms

Technical Specifications

- Durability and robustness: Temperature 10- 45, humidity 15%-95%, elevation up to 2000 meters
- Flow meter: 0 to 7 LPM flowmeter, minimal incremental 0.5 LPM
- Alarms: Visual and auditory alarms
- Indicators: - Clearly labeled or marked with pictures and language. Audible alerts and diagnostic indicator where possible
- Mobility: Whole unit movable with wheels on at least 2 feet
- Oxygen Monitor: visual and audible status, preferably with color coding for early warning.
- Noise Level: ≤60 decibels
- Weight: 45 Kg
- Dimensions (LxWxHmm): 565 x 510 x 1015 mm
- Usage Meter: Non resettable digital meter displaying cumulative hours of operation.
- Outlet Pressure: 5.5 PSI Oxygen Purity Indicator alarm levels: Low oxygen-80%, Very low oxygen -70%

Seeking Licensor: Prototype Ready

