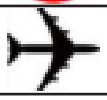
Kingon

User Manual

P2 Portable Oxygen Concentrator

Contents

Symbol	Meaning
WARNING	A warning indicates that the personal safety of the patient may be involved. Disregarding a warning could result in significant injury.
CAUTION	A caution indicates that a precaution or service procedure must be followed. Disregarding a caution could lead to minor injury or damage to the equipment.
	See user manual for instructions
	AC power
	DC power
	U.S. Federal Regulation Restricts this device to sale by order of physician. May also be applicable in other countries.
	No smoking
	Keep away from open flames
	Keep dry
	Do not use oil or grease
	Do not disassemble (contact your equipment provider for servicing by authorized personnel)
	Do not dispose of in unsorted municipal waste
	Type BF applied part
	Complies with applicable EU directives; included medical device directive
	Class II (double insulated)
	See instructions for use
	Manufacturer
	Authorised representative in the European community
	Protection against direct sprays of water up to 15° of vertical
	Date of manufacture
	Serial number

Symbol	Meaning
	This side up
	Fragile
	Storage humidity (non-condensing)
	Storage temperature
	Magnetic resonance unsafe
	The manufacturer of this POC has determined this device conforms to all applicable FAA requirements for POC carriage and use on board aircraft

I. Use Intention, Contraindications and General Precautions

Intended Use

The Kingon P2 Portable Oxygen Concentrator is prescribed for patients requiring supplemental oxygen. It supplies a high concentration of oxygen and is used with a nasal cannula to deliver oxygen from the concentrator to the patient. The Kingon P2 is a small and portable device that may be used at the home and can be taken with you while performing your daily activities.

WARNING
This device is not intended to be life-sustaining or life-supporting. This device is not intended for newborn and infant use.

WARNING
A backup oxygen source is recommended for power outages or mechanical problems. Be sure to have an available backup oxygen source that is recommended by your doctor or healthcare provider.

CAUTION
In most countries, this device must be purchased from a doctor or with a doctor's prescription.

CAUTION! MUST HAVE BACK UP OXYGEN SUPPLY WHEN TRAVELING.
It is the responsibility of the patient to make back-up arrangements for alternative oxygen supply when traveling. We assume no liability for persons that do not adhere to manufacturer recommendations.

Service Item	Expected Life
Kingon P2	5 Years
Molecular Sieve Beds	1 Year
Batteries	500 full charge/discharge cycles

CAUTION
The expected life is dependent on the use environment and regular maintenance. Poor conditions will shorten the lifetime of the concentrator.

WARNING
The operator should read and understand this entire manual before using the device.

Contraindications

CAUTION
This device is not intended to be life sustaining or life supporting.

CAUTION
Patients who are unable to hear or see an alert from the device, or who are unable to communicate discomfort while wearing the device, will require additional monitoring to avoid injury or harm. If the patient experiences any new symptoms seek medical attention immediately.

CAUTION
In certain circumstances, oxygen therapy can be hazardous. Please seek medical advice before using this device.

CAUTION
The Kingon P2 is not designed or specified to be used in conjunction with a humidifier, nebulizer or connected with any other equipment. Do not modify the Kingon P2 Portable Oxygen Concentrator. Any modifications performed on the equipment may impair performance or damage equipment and will void your warranty.

General Precautions

WARNING
Oxygen supports combustion. To avoid risk of fire, oxygen therapy should never be used while smoking, while in the same room as someone who is smoking or in the presence of an open flame.

WARNING
Do not submerge the Kingon P2 or any of the accessories in liquid.
Do not expose to water or precipitation.
Do not operate in exposed rain.
Exposure to moisture can lead to electrical shock and/or damage.

CAUTION
Do not use oil or grease on the concentrator or its components as these substances,
when combined with oxygen, can greatly increase the potential for a fire hazard and personal injury.

CAUTION
Never leave the Kingon P2 in high temperatures/high humidity such as in a car in high heat or a bathroom with high humidity. This can damage the device.

WARNING
Geriatric patients or any other patients unable to communicate discomfort, hear or see alarms while using this device, may require additional monitoring

WARNING
If you feel discomfort or are experiencing a medical emergency while undergoing oxygen therapy, seek medical assistance immediately to avoid harm.

General Precautions - Continued

WARNING
The oxygen delivery settings of the oxygen concentrator should be periodically reassessed to ensure effectiveness of the oxygen therapy.

WARNING
Set the device at the prescribed level and do not increase or decrease your flow rate from the prescribed level without first consulting with your physician or healthcare professional.

WARNING
Only use this device as prescribed. The use of oxygen therapy can be hazardous in some circumstances. Always consult your healthcare practitioner before using the POC.

WARNING
To ensure that you receive the correct therapeutic amount of oxygen delivery according to your medical condition, the Kingon P2 must be used:

- Only after one or more settings have been individually determined or prescribed for you at your specific activity levels.
- Only use the parts and accessories that are provided by oxygen concentrator manufacturer.

WARNING
The settings of the Kingon P2 might not correspond with continuous flow oxygen.

WARNING
The settings of other models or brands of oxygen therapy equipment do not correspond with the settings of the Kingon P2.

WARNING
There is a risk of fire associated with oxygen equipment and therapy. Do not use the POC near sparks or open flames.

WARNING
Use only water-based lotions or solutions that are oxygen compatible during setup or using during oxygen therapy. To avoid the risk of fire and burns, never use petroleum or oil-based lotions or solutions.

WARNING
Smoking during oxygen therapy is dangerous and may result in fire which can cause serious injury or death of the patient and others.

WARNING
To ensure you are receiving the required therapeutic amount of oxygen delivery according to your medical condition, the Kingon P2:

- Must be used only after one or more settings have been individually determined or prescribed for you at your specific activity levels.
- Must only use the parts and accessories that were provided by the manufacturer and those that were used while your personalised settings were configured.

General Precautions - Continued

WARNING
Do not lubricate replaceable fittings, connections, tubing, or other accessories of the oxygen concentrator to avoid the risk of fire and burns

WARNING
Use only spare parts recommended by the manufacturer to ensure proper function and to avoid the risk of fire and burns.

WARNING
Wind or strong drafts can adversely affect accurate delivery of oxygen therapy.
- EXAMPLE 1: Using this equipment beside an open window or in front of a fan.
- EXAMPLE 2: Using this equipment in the back seat of an open convertible car.

WARNING
If you notice any of the following, STOP using immediately and contact your equipment provider:
- Unexplained changes in the performance of this device
- Unusual or harsh sounds
- Dropping or mishandling the device or the power supply
- Water spilled into the enclosure
- Broken or cracked enclosure

WARNING
Oxygen is a combustion supporting gas, a fire may start easily and spread quickly.
Do not leave the nasal cannula on bed coverings or chair cushions if the oxygen concentrator is turned on, but not in use. Always turn the oxygen concentrator off when not in use.

WARNING
To ensure proper function and to avoid the risk of fire and burns:
- Use only with Kingon P2 AC and DC power supply
- Use only with Kingon P2 batteries
- Use only approved Kingon P2 accessories

WARNING
Remove the battery from the device if Kingon P2 will not be used for an extended period of time

WARNING
Device operation exceeding the voltage, breath rate, temperature, humidity and/or altitude values specified may decrease oxygen concentration levels.

WARNING
Do not modify this system or equipment in any way. Modifications could result in hazards to the user.

WARNING
Change in altitude may affect the actual oxygen supplied by the device. Consult your physician before traveling to a place with altitude changes.

Note: additional warnings, cautions, and notes are located throughout the manual.

II. Description of the Kingon P2 Oxygen Concentrator

Parts Diagram

User Interface Buttons and Display Symbols

Display Panel

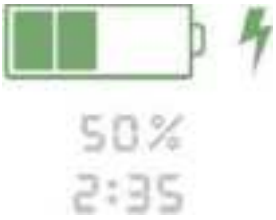
Symbol	Item	Description
	ON / OFF Button	Press once to turn ON. Press and hold for one second to turn OFF.
	Audio Alarm Button	Press once to toggle between audible and silent mode. The screen will display the appropriate icon to indicate which mode is enabled: Audible mode: Silent mode: When audible mode is enabled, a yellow light will turn on, and a message will be displayed on the screen. Press this button to mute or unmute alarms.
	Flow Setting Control Buttons	Increase or decrease the oxygen flow by pressing the - or + button. Flow settings range from 1 to 5.
	Device Information	Press to display information about the device. The information includes: battery temperature, battery status, molecular sieve temperature, molecular sieve runtime, device model, device temperature, device runtime, firmware version, and hardware version.

User Interface Buttons and Display Symbols

Home Screen

Symbol	Description
	Current flow setting Range is from 1 to 5
	Battery charge level • Battery percentage • Battery time remaining
	Device runtime since powered on hr : min
	Alerts are silenced
	Audible alerts are on

The screen will also display the following icons (see the next page):

Symbol	Description
	Powered by AC or DC only.
	1. Powered by battery only (not plugged in and not charging) 2. Battery level percentage and time remaining 3. Device is ON
	1. Battery is charging 2. Battery level percentage and estimated time to fully charge the battery 3. Device is ON
	1. Battery is charging 2. Battery level percentage and estimated time to fully charge the battery 3. Device is OFF
	The device has detected an active alarm while in silent mode.
	The device has detected an active alarm while in audible mode.
	Runtime of device since it was powered on. Example displays 2 hours 35 minutes.
	More than one alert has been detected. Display will scroll to display all alerts.

Alerts in Audible Mode:

The following shows the device has detected an active alarm while in audible mode.
Example below shows "Absence of Breath".

Alerts in Silent Mode:

The following shows the device has detected an active alarm while in silent mode.
Example below shows "Absence of Breath".

Alerts

Adapter plug / unplug:
An adapter icon displays when adapter is plugged in and disappears when unplugged.
An audible alarm (if enabled) will also sound.

Battery plug / unplug:
A battery icon displays when battery is connected and disappears when disconnected.
An audible alarm (if enabled) will also sound.

Alarm audio selection:
An alert will indicate when the device is turned ON or OFF.

Alarm audio pulse duration:
An audible alert (if enabled) will pulse between 150ms ON, 150ms OFF, repeat 2 times.

Alarm audio pulse group interval:
14.7s (until alarm returns to normal)

Alarm details:
Reference the table below for additional alarm details.

Alerts

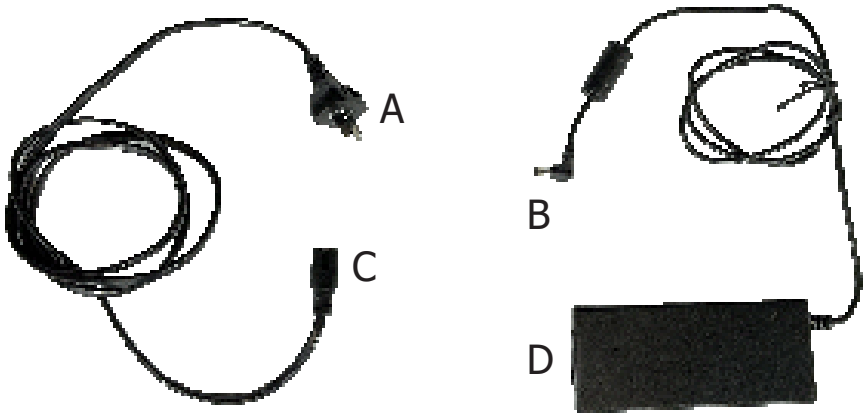
Alarm item	Alarm condition	System process	Display of screen
Battery Exhausted	Battery cycle >500 Or health <50%	Alarm only	Battery Exhausted
Replace Sieve Bed	Sieve bed expired or Sieve bed chip error	Alarm only	Replace Sieve Bed Contact Provider
Low Input Voltage	Adapter input <17.0v	Auto switch to battery until the adapter input >18v	Low Input Voltage Check Adapter
Absence Of Breath	No breath detected continuously for >15S	Alarm only	Absence of Breath Check Cannula
Oxygen Concentration 87%	Concentration <87% continuously for >300S	Alarm only	Low O2: <87% Contact Provider
Low Battery	5% ≤ RSOC ≤ 20% Without adapter	Alarm only	Low Battery Charge Now
Oxygen concentration 50%	Concentration <50% continuously for >300S	Shutdown after 30s	Low O2: <50% Contact Provider
Breath Sensor Fail	Breath sensor failed	Shutdown after 30s	Breath Sensor Fail Contact Provider
Oxygen Sensor Fail	Oxygen sensor failed	Shutdown after 30s	Oxygen Sensor Fail Contact Provider
Gas Delivery Fail	No delivery detected after injection	Shutdown after 30s	Gas Delivery Fail Contact Provider
Gas Obstruction	Pipe or nasal blocked	Shutdown after 30s	Gas Obstruction Contact Provider
Tank Pressure Fail	Tank pressure failed	Shutdown after 30s	Tank Pressure Fail Check Cannula
Sieve Bed Fail	Sieve bed failure or invalid	Shutdown after 10s	Sieve Bed Fail Contact Provider
Compressor Fail	Compressor failed	Shutdown after 10s	Compressor Fail Contact Provider
Valve Check Fail	Valve switch failed	Shutdown after 10s	Valve Check Fail Contact Provider
Cooling Fan Fail	Cooling fan failed	Shutdown after 10s	Cooling Fan Fail Contact Provider
Battery Depleted	RSOC ≤5% Without adapter	Shutdown after 10s	Battery Depleted Replace Battery or Connect to adapter
System Cold	System temperature <0°C	Shutdown after 10s	System Cold Shut down, move to warmer place
Battery Cold	Battery temperature <0°C	Shutdown after 10s	Battery Cold Shut down, move to warmer place
System Hot	System temperature >60°C	Shutdown after 10s	System Hot Shut down, move to cooler place
Battery Hot	Battery temperature >65°C	Shutdown after 10s	Battery Hot Shut down, only Use adapter
Gas Supply Fail	Flow or concentration below normal after injection	Shutdown after 10s	Gas Supply Fail Contact Provider
Sys Startup Fail	Concentration < 87% continuously >15s after system startup	Shutdown after 10s	Sys Startup Fail Contact Provider
Power Supply Fail	System voltage <10.5v	Shutdown after 10s	Power Supply Fail Contact Provider

Power Supply

Standard Lithium Ion Battery # BA-P200
The Kingon P2 is powered by standard lithium-ion battery. When fully charged, the battery can provide up to 4 hours of operation. Recharge the battery with the AC or DC adapter. Charging time should not take longer than 4 hours.

AC Power Supply # EM11012E
The AC power supply is used to power the Kingon P2 Oxygen Concentrator from an AC power source. When used with AC power sources, the power supply automatically adapts to input voltages from 100V to 240V (50-60HZ), permitting use with most power sources throughout the world.

Connect A plug to nearest AC power outlet → connect C plug to D port → connect B plug to Kingon P2



DC Power Supply
The DC power supply is designed to power the Kingon P2 Oxygen Concentrator from a DC power supply such as a car cigarette lighter or auxiliary DC power supply. The input DC power is 11-16V DC with a built-in 15A/125V fuse for over-current protection. The charger output is 19V at 6.3A.

WARNING
Do not use power supplies, adapters or accessories other than those specified above. The use of non-specified accessories may create a safety hazard or impair equipment performance.

Accessories

Nasal Cannula
The Kingon P2 must use a single lumen nasal cannula to provide oxygen to the patient.

WARNING
Nasal cannulas should not be used by more than one person. DO NOT use a cannula length exceeding 7.6m.

CAUTION
When using a long cannula, the flow setting may need to be increased.

CAUTION
Increasing the cannula length may reduce the perceived noise during oxygen bolus delivery.

CAUTION
The cannula is designed for disposable use.

CAUTION
Choose only the CE marked nasal cannula.

Carry Bag
The Kingon P2 carry bag allows you to go out for daily activities with the device.

Item	Quantity	Model Number
Nasal Cannula	1 pc	NOC-DAW0721
Carry Bag	1 pc	CB-P200
AC Power Supply	1 pc	EM11012E
DC Power Supply	1 pc	ED1010C
Battery	1 pc	BA-P200
Intake Filter	5 pc	FI-P201

III. Operating Instructions

General Operation

1. Find a well ventilated location to place the Kingon P2. Ensure the unit is turned off.
Ensure the intake and exhaust has clear access. The Kingon P2 should be operated in a place where alarms can be heard.

WARNING
Do not use the Kingon P2 in the presence of flammable anesthetics, detergents, or other chemical vapours.

CAUTION
Do not block the air intake or air exhaust when operating the equipment. Blocked air circulation or proximity to the heat source can cause internal heat build-up, shut down, or damage to the concentrator.

CAUTION
The Kingon P2 concentrator is designed for continuous use. It is useful to operate the device frequently for optimal sieve bed life.

CAUTION
The Kingon P2 is shipped from factory with battery removed.

CAUTION
Choose CE marked nasal cannulas (e.g. Runmai NOC-DAW0721)

2. Ensure the particle filters are in place.

CAUTION
Do not operate the Kingon P2 without the intake filter and pre-filter cover in place. Operation without these in place can damage the device.

3. Install the battery.
Slide the battery into place until the latch returns to the upper position along with an audible sound.

4. Connect the AC or DC power to the Kingon P2.
The green LED on the power adapter will be on and the concentrator will beep.

CAUTION
Do not place anything in the power supply port other than the supplied wall cord. Avoid the use of electrical extension cords with the Kingon P2.

CAUTION
Power supply is not waterproof. Do not disassemble the power supply.

CAUTION
When the power is disconnected from the AC outlet, disconnect it from the concentrator to avoid unnecessary battery discharge.

5. Join the nasal cannula to the nozzle fitting.

Nozzle fitting is located on the top side of the Kingon P2 near the pre-filter.
Connect a nasal cannula to the nozzle fitting.

CAUTION
Ensure that the cannula is routed to prevent it from being pinched or kinked to avoid a disruption of oxygen flow.

CAUTION
Disposable usage for the cannula.

6. Switch on Kingon P2 by pressing the ON/OFF Button.
A beep will sound and the indicator light will flash.

"Welcome" will appear on the display when the concentrator starts up. The display will indicate the selected flow setting and power condition. A two minute warm-up will initiate. During this period the oxygen concentration may not have reached the specified value. Under special conditions, a longer warm up time may be necessary, such as extremely cold temperatures where the Kingon P2 was stored or is being operated.

CAUTION
Oxygen concentration may not reach specification during the two-minute warm up time.

CAUTION
Kingon P2 will enter auto-pulse mode after 30 seconds of starting up. Allow 30 seconds after turn on before beginning to inhale.

7. Set the setting to the flow rate prescribed by your provider.
Press the + or – setting buttons to adjust the Kingon P2 to the desired flow rate. The current setting can be viewed on the display from 1 to 5.

CAUTION
Make sure the power supply is in a well-ventilated place. During operation, the power supply may get hot. Make sure the power supply is cool before handling.

8. Wear the nasal cannula on your face and breathe through your nose.

The Kingon P2 will sense if you are breathing from it. If you are not yet breathing through the cannula, the Kingon P2 will begin to pulse automatically about every 3 seconds.

As soon as you begin breathing through the cannula, the device will begin delivering pulses based on your breathing. As your breathing rate changes, the Kingon P2 will sense these changes and adjust the amount of oxygen at next inhale.

WARNING
If you feel uncomfortable using the device, consult your immediately.

CAUTION
If the oxygen level drops below <87%, an alert will notify you. If the alarm persists, contact your device provider.

CAUTION
The display backlight will dim if there is no operation of the device for 30 seconds. You can press any button to reactivate the display backlight.

CAUTION
The Kingon P2 will alert with audible and visual signals such as "Absence Of Breath". When this alert is enabled and no breath has been detected for 15 seconds, the device will enter auto pulse mode. Once breath is detected, the device will exit auto pulse mode and resume normal delivery of oxygen.

General
To remove power, disconnect the input cord from AC power source (like AC wall outlet) and disconnect it from the Kingon P2.

IV. Troubleshooting

The table below lists some common problems and solutions. If you can't resolve a problem, please contact your equipment provider.

Problem	Possible Cause	Recommended Solution
Device won't turn on	Battery is not installed correctly	Remove the battery and re-install it correctly.
	Battery is depleted	Use the AC or DC power adapter to operate the device (with battery inserted) to recharge the battery. If this does not resolve the problem, contact your equipment provider.
	The AC supply is not connected properly	Check AC power supply connection and verify the green light on the adapter.
	The DC supply is not connected properly	Check DC power supply connection and at the auxiliary or cigarette lighter power source.
No oxygen	The device is not turned on	Turn on the concentrator.
	Cannula is kinked or obstructed	Check cannula and its connection to the oxygen outlet port.
	Equipment failure	Contact your equipment provider.
Oxygen not at full concentration	The device is warming up	Wait 2 minutes for the device. If the problem is not solved, please contact your equipment provider.
	The sieve beds may require servicing	Contact your equipment provider to change the sieve beds.
Alarm occurs	A problem has been detected by the device	Refer to previous section - Alerts.

V. Maintenance and Cleaning of Kingon P2

Cleaning the Case

The outside case should be cleaned using a cloth dampened with a solution of mild detergent and water.

CAUTION
Do not allow liquids into any of the controls, the interior of the case, or the oxygen tubing connector. If this occurs, contact your equipment provider for assistance.

WARNING
Do not use alcohol, isopropyl alcohol, ethylene chloride or petroleum based cleaners on the cases or on the particle filters.

Cannula Replacement

The nasal cannula is designed for disposable usage. You can buy replacements from the physician and/or equipment provider. Follow the cannula manufacturer's instructions.

CAUTION
Nasal cannula should be rated for 5 litres per minute to ensure proper patient usage and oxygen delivery.

Filter Cleaning and Replacement

Filters are designed to adequate air flow through the device at the front of the Kingon P2.

Pre-Filter
This particle screen must be cleaned on a weekly basis to ensure adequate air flow through the device. Clean with a mild liquid detergent and water. Ensure that the filter is completely dry before use.

CAUTION
It may be necessary to clean the particle filters more often in dusty or bad environments/conditions.

Intake Filter
The intake filter is designed to ensure the clean air enters the compressor.
1. Unscrew the screw on the bottom of pre-filter with a phillips screwdriver.
2. Lift the particle screen up by the bottom end then remove it.
3. Remove the cotton intake filter from the intake chamber.
4. Replace a new intake filter into the chamber.
5. Install pre-filter cover.

Pre-filter and cotton intake filters can be purchased from your equipment provider.

It is suggested to replace the cotton intake filters once a month. Depending on use, you may not need to replace as often if it is not dirty.

Battery Care and Maintenance

The Kingon P2 Lithium Ion Battery requires special care to ensure proper performance and long life. Only use Kingon P2 batteries #BA-P200 with your concentrator.

> **CAUTION**
> Keep liquids away from batteries. If batteries become wet, stop use immediately and dispose of battery properly.

Battery Replacement
1. Press down on the latch, and slide the battery off.

2. Insert the Kingon P2 battery by sliding battery into place until the latch returns to the upper position.

Effect of Temperature on Battery Performance
To extend the run-time of your battery, the device should be used in temperatures between 5°C and 35°C. The number of cycles that the battery will last is highly dependent upon the temperature at which the battery is charged.

CAUTION
Kingon suggests that the room temperature should not exceed 24°C when batteries are being charged.

Battery Time Remaining Clock
The Kingon P2 continuously displays battery time remaining. This displayed time is only an estimate and the actual time remaining may vary from this value.

CAUTION
Store battery in a cool, dry place. Store with a charge of 40-50%. Batteries should not be left dormant for more than 90 days at a time.

CAUTION
If the device is not used for an extended period of time, please remove the battery.

Disposal of Equipment and Accessories

Follow your local governing ordinances for disposal and recycling of the Kingon P2 accessories. The battery contains lithium ion cells which should be recycled and must not be incinerated.

Maintenance Item List

Follow your local governing ordinances for disposal and recycling of the Kingon P2 accessories. The battery contains lithium ion cells which should be recycled and must not be incinerated.

Item	Model Number
Kingon P2 Standard Battery	BA-P200
Pre-Filter	FI-P200
Cotton Intake Filter	FI-P201

If you need assistance, please contact your equipment provider.

VI. System Specifications

Concentrator Specification

<table>
<tr><td>Dimensions</td><td colspan="6">22.1L x 16H x 8.5W cm</td></tr>
<tr><td>Weight</td><td colspan="6">1.98kg with battery installed</td></tr>
<tr><td>Sound Level</td><td colspan="6">42 dB (A) at setting 2</td></tr>
<tr><td>User Interface</td><td colspan="6">2.8 inch LCD colour display screen</td></tr>
<tr><td>Warm-Up Time</td><td colspan="6">2 minutes</td></tr>
<tr><td>Oxygen Concentration</td><td colspan="6">90% -3% / +6% at all settings</td></tr>
<tr><td rowspan="11">Flow Control Settings and Pulse Volumes</td><td colspan="6">Settings</td></tr>
<tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>Breath Rate</td><td colspan="5">Pulse Volumes (ml)</td></tr>
<tr><td>10</td><td>21</td><td>42</td><td>63</td><td>84</td><td>100</td></tr>
<tr><td>15</td><td>14</td><td>28</td><td>42</td><td>56</td><td>66.7</td></tr>
<tr><td>20</td><td>10.5</td><td>21</td><td>31.5</td><td>42</td><td>50</td></tr>
<tr><td>25</td><td>8.4</td><td>16.8</td><td>25.2</td><td>33.6</td><td>40</td></tr>
<tr><td>30</td><td>7</td><td>14</td><td>21</td><td>28</td><td>33.3</td></tr>
<tr><td>35</td><td>6</td><td>12</td><td>18</td><td>24</td><td>28.6</td></tr>
<tr><td>40</td><td>5.3</td><td>10.5</td><td>15.8</td><td>21</td><td>25</td></tr>
<tr><td colspan="6">±15% at STPD*
±25% over the rated environmental range
*STPD is 101.3kPa at an operating temperature of 20°C, dry</td></tr>
<tr><td>Breathing Frequency</td><td colspan="6">10 to 40 BPM</td></tr>
<tr><td>Inspiratory Trigger Sensitivity</td><td colspan="6">≤0.12cm H20</td></tr>
<tr><td>Maximum Outlet Pressure</td><td colspan="6">25 PSI</td></tr>
</table>

Concentrator Specification - Continued

Power: **AC Power Supply** **DC Power Supply**	AC input: 100 to 240V | 50 to 60 Hz DC input: 11-16V | DC output: 19V 6.3A Voltage: 14.4V
Battery Duration	Setting 1: 5h Setting 2: 3h 50min Setting 3: 3h Setting 4: 2h Setting 5: 1h 40min
Battery Charging Time	Not more than 4 hours
Environmental Ranges Intended Operation	Temperature: 5˚C to 40˚C Humidity: 10% to 90%, non-condensing Altitude: 0 to 10,000 ft. (0 to 3048 meters, 70kPa to 106 kPa)
Environmental Ranges Intended for Shipping and Storage	Temperature: -20˚C to 70˚C Humidity: 5% to 90%, non-condensing Altitude: 0 to 10,000 ft (0 to 3048 meters, 70kPa to 106 kPa) Store in a dry environment
Transportation	Keep dry, handle with care

Classifications

Mode of Operation	**Continuous Duty**
Type of Protection Against Electrical Shock	Class II
Degree of Protection to Concentrator Components Against Electrical Shock	Type BF Not intended for cardiac application
Degree of Protection to Concentrator Components Against Ingress of Water	IP22 - Protects against solid objects over 12mm and direct sprays of water up to 15° of vertical (IEC 60529)

Standards Compliance

The device is designed to conform to the following standards:

- IEC 60601-1-2, 2014, Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests

- IEC 60601 - 1: Medical Electrical Equipment - part 1: General Requirements for Basic safety & Essential Performance

- AAMI ES60601-1: Medical Electrical Equipment - Part 1: General Requirements for Basic safety and Essential Performance

- IEC 60601-1-8 Medical electrical equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General requirements, tests, and guidance for alarm systems in medical electrical equipment and medical electrical systems

- IEC 60601-1-11 Medical electrical equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment

- ISO 80601-2-67, Medical electrical equipment, Part 2-67: Particular requirements for basic safety and essential performance of oxygen conserving equipment

- ISO 80601-2-69, Medical electrical equipment, Part 2-69: Particular requirements for basic safety and essential performance of oxygen concentrator equipment

- ISO18562-1: 2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications -- Part 1: Evaluation and testing within a risk management process

- ISO18562-2: 2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications -- Part 2: Tests for emissions of particulate matter

- ISO18562-3: 2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications -- Part 3: Tests for emissions of volatile organic compounds (VOCs)

- ISO 10993-1 Biological evaluation of medical devices -- Part 1: Evaluation and testing within a risk management process

- AAMI/ANSI/ISO 10993-10:2010, Biological Evaluation of Medical Devices - Part 10: Tests for Skin Irritation

- AAMI/ANSI/ISO 10993-5:2009, biological Evaluation of Medical Devices - Part 5: Tests for in vitro Cytotoxicity

EMC Information

The device has been designed to meet EMC standards throughout its service life.

Guidance and Manufacturer's Declaration – Electromagnetic Immunity:
The concentrator is intended for use in the electromagnetic environment specified below. The user of the concentrator should make sure it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	±8 kV Contact ±15 kV Air	±8 kV Contact ±15 kV Air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical Fast Transient/Burst IEC 61000-4-4	±2 kV for Power Supply Lines ±1 kV for Input/output Lines	±2 kV for Power Supply Lines ±1 kV for Input/output Lines	Mains power quality should be that of a typical home or hospital environment.
Surge IEC 61000-4-5	±1 kV Line to Line ±2 kV Line to ground	±1 kV Line to Line ±2 kV Line to Ground	Mains power quality should be that of a typical home or hospital environment.
Voltage Dips, Short Interruptions and Voltage Variations on Power Supply Input Lines IEC 61000-4-11	<5% U_T (>95% Dip in U_T) for 0.5 Cycle at 45 degree increments 70% U_T (30% Dip in UT) for 0.5 seconds <5% U_T (>95% Dip in U_T) for 5 seconds	<5% U_T (>95% Dip in U_T) for 0.5 Cycle at 45 degree increments 70% U_T (30% Dip in U_T) for 0.5 seconds <5% U_T (>95% Dip in U_T) for 5 Seconds	Mains power quality should be that of a typical home or hospital environment. If the user of the device required continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or battery.
Power Frequency (50/60Hz) Magnetic Field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical home or hospital environment.
Note: U_T is the A.C. mains voltage prior to application of the test level			

EMC Information - Continued

Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 6 Vrms Amateur Radio & ISM Bands between 150 kHz and 80 MHz 10 V/m 80 MHz to 2.7 GHz	3 Vrms 150 kHz to 80 MHz 6 Vrms Amateur Radio & ISM Bands between 150 kHz and 80 MHz 10 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended 30 cm separation distance. Interference may occur in the vicinity of equipment marked with the following symbol: 

Guidance and Manufacturer's Declaration – Electromagnetic Emissions:
The concentrator is intended for use in the electromagnetic environment specified below. The user of the concentrator should make sure it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment - Guidance
RF Emissions CISPR 11	Group 1	The Device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class B	The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/Flicker Emissions IEC 61000-3-3	Complies	

VII. Warranty

Under our warranty conditions we assume the warranty for our Kingon P2 O2 Concentrator for perfect condition and function. The warranty term is 36 months and begins on the day of shipment. Please contact us by telephone or email to return defective equipment under warranty and to resolve problems. Our trained staff will handle any questions and problems with your portable oxygen concentrator. Please make sure that your returned equipment is safe for transportation, and if possible, in its original packaging in order to avoid transport damages.

Excluded from the warranty are damages caused by improper usage. Battery replacements, disposable parts and consumables are also excluded from warranty. Sieve bed, filters, batteries in the equipment are expressly excluded from the 36 months warranty, except as provided below:

Description	**Period**
Kingon P2 Oxygen Concentrator	3 Years
Other accessories (battery, carry bag, external battery charger, power supplies, and power cord)	1 Year
Sieve Bed	1 Year
Disposables (nasal cannulas, filters)	No Warranty

Further damage compensation claims of any kind, particularly owing to breach of obligations and unpermitted handling, as well as claims on repayment of expenses paid in vain, are not included in the warranty; the same shall apply to claims on repayments of consequential harm caused by a defect.

Any further claims are excluded in this warranty. The aforementioned limitations do not apply to claims on damages from harm to life, body or health or attributable to intent or gross negligence, or the product liability law.

This warranty does not cover damage or injury whether to Kingon P2 or to personal property or persons caused by accident, misuse, abuse, negligence, failure to install in accordance with Kingon's installation instructions, failure to operate under conditions of normal use and in accordance with the terms of the operating manual and instructions, failure to maintain in accordance with the applicable service manuals, or alteration or any defects not related to materials or workmanship of Kingon P2. This warranty does not cover damage which may occur in shipment. This warranty does not apply to any product or individual part of a product that may have been repaired or altered by anyone other than an authorized medical service center. This warranty does not apply to any product which is not purchased new.

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