



Electromedicine equipment

**NOX**tec



# NOXtec 1000

## Automatic or manual dosing and Nitric Oxide Monitor



01NXTC1000

**NOXtec 1000** is a medical device which both **dosifies and monitors the supply of nitric oxide (NO)**.

NO is a gaseous vasodilator used to treat pulmonary arterial hypertension. It is supplied to the patients mixed with medical oxygen. NOXtec 1000 supplies a **stable dosis** throughout the therapy, even triggering an **automatic exchange of the cylinders** (it can harbor two cylinders) if needed.

NOXtec **calculates automatically the necessary dosing flow**, thanks to a **breathing flow sensor** applied to the patient's circuit. Alternatively, the dosing flow can be set manually.

Thanks to the **continuous sampling of the NO-O<sub>2</sub> mixture flow** supplied, NOXtec is able to monitorize the NO concentration that the patient is receiving, and to check if this value is placed within predetermined thresholds.

NOXtec 1000 also **monitors trace quantities of nitrous oxide (NO<sub>2</sub>)** in the mixture, a highly toxic gas which can compromise the patient's safety during the treatment. NOXtec 1000 triggers and alarm when this trace surpasses a threshold value.

# NOXtec



### MAIN FEATURES

- **Dosing and monitoring modules and user interface independent from each other** to guarantee the patient's safety.
- **Automatic cylinder exchange** to increase the treatment autonomy and optimize the gas consumption.
- **Automatic venting procedure** to minimize the NO<sub>2</sub> supplied to the patient at the beginning of the treatment and during the cylinder exchange, and also to depressurize the system when the device is not in use.
- **Automatic calibration of the NO, NO<sub>2</sub> and O<sub>2</sub> sensors.**
- NOXtec includes a **manual dosing mode**, which can be used even when the device is off.
- **Negligible liberation of NO to the environment.** The device includes a purge outlet to gather and canalize the residual gas.
- **Hot wire and differential pressure technologies for the external breathing flow sensors.**
- Ethernet port for **remote technical assistance.**
- USB port to retrieve **therapy data files.**

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## Automatic or manual dosing and Nitric Oxide Monitor



01NXTC1000

### NOXtec 1000: Basic set

Reference	Description	Qty
01NXTC1000	NOXtec 1000: Nitric Oxide Monitor with Automatic Deliver System <ul style="list-style-type: none"><li>Main box with pneumatic, electronic and user interface.</li></ul>	1
01NTMNP0A	Manifold with calibration gas sensors: NO, NO <sub>2</sub> and O <sub>2</sub> , including PCB battery power	1
01NTDSEG1D	Flow sensor cable	1
01NTMGEGxx	Main cable "xx"	1
10BiT3xxxx0X	Stainless steel gas regulator for NO supply, with high pressure sensor incorporated.	2

### NOXtec 1000: Calibration Set

Reference	Description	Qty
11MMBU0x00_IX	Stainless steel gas regulator for NOXtec gas calibration.	1
01NTMNP019	NOXtec gas calibration cylinder 5L cylinder. 70ppm of NO and 10ppm of NO <sub>2</sub> in N <sub>2</sub>	1

### NOXtec 1000: Optional Set

Reference	Description	Qty
01NTCG0000	NOXtec Trolley for holding the device, space for 2x 20L cylinders , 1x 5L calibration cylinder and 1x5L backup oxygen cylinder ( <i>cylinders not included</i> )	1

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# NOXtec 1000

## Automatic or manual dosing and Nitric Oxide Monitor

01NXTC1000

### TECHNICAL SPECIFICATIONS

#### PHYSICAL SPECIFICATIONS

**Dimensions and weight:** - Main unit: 205 x 300 x 345 mm; 9.2 kg  
- Cart: 1250 x 670 x 640 mm; 47.5 kg

**Cart's capacity for cylinders:** 2 cylinders of 20L

**Materials:** AISI 304 and AISI 316 L stainless steel, PTFE and ABS

**Screen:** Touch colour 10.1" LCD screen

#### DOSING MODULE

**Dosing modes:**

- Real time
- Automatic
- Semiautomatic
- Manual

**Measuring range:** - **NO flow:** 0-4 L/min  
- **Flow positions:** 0 - 0.02 - 0.03 - 0.05 - 0.07 - 0.1 - 0.2 - 0.5 - 1 - 2 - 3 - 4 L/min

**NO dosing interval:** 0-100 ppm (upgradeable upon request)

**Dosing accuracy:** ± 5%

**Dosing resolution:** 0.1 ppm

**Ventilation flow rate:**

	Adult	Paediatric and neonatal
Differential pressure	2.0 - 120 L/min	0.5 - 60 L/min
Hot wire	0.5 - 100 L/min	0.2 - 60 L/min ( <i>not available yet</i> )

**Dosing flow:** 0-4.5 L/min

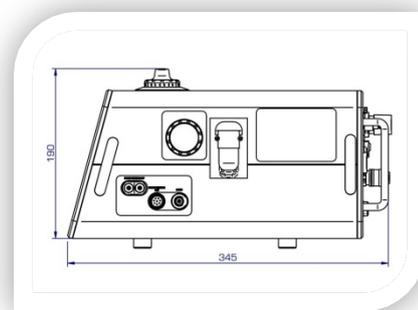
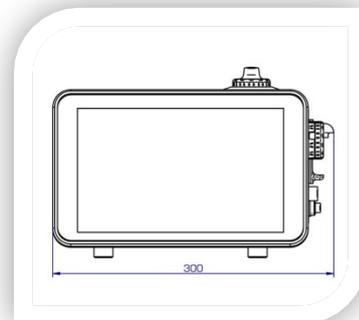
**Set-up time:** <2 min fs

#### MONITORIZATION MODULE

	Gas sensor type	Measuring range	Measuring accuracy	Resolution	Response time
NO	Electrochemical cell	0-160 ppm	±10% + 0.5 ppm	0.1 ppm	<10s
NO <sub>2</sub>	Electrochemical cell	0-20 ppm	±10% or ±0.2 ppm (whichever is higher)	0.1 ppm	<40s
O <sub>2</sub>	Electrochemical cell	0-100%	±3.5%	1%	<20s

**Sampling flow:** 90- 250 mL/min (configurable, 150 mL/min by default)

**Operational life of the sensors:** 12 months



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### OPERATING AND STORAGE CONDITIONS

- **Operating conditions:** 10-40°C; 15-90% humidity
- **Storage conditions:** -10-60°C; 15-90% humidity

### ELECTRICAL SPECIFICATIONS

**Power:** 100-240 VAC, 50-60 Hz

**Battery:**

- **Duration:** 4h
- **Charging time:** 2.5h approx.

**Normative:**

- EN 60601-2:2007 + CORR: 2010 / IEC 60601-1-2: 2007
- EN 60601-1: 2006 + CORR:2010 + A11: 2011 + A1: 2013 + AC: 2014 + A12: 2014 / IEC 60601-1: 2005 + CORR: 2006 + CORR2: 2008 + A1:2012

**Classification:** Class I, Type B

### ELECTROMAGNETIC AND RF SPECIFICATIONS

*Guidance and manufacturer's declaration – electromagnetic emissions*

NOXtec is intended to be used in the electromagnetic environment specified below. The client or the user of NOXtec should ensure that it is utilized in such environment.

Emission test	Accordance	Electromagnetic environment - Guidance
RF emissions CISPR 11	Group 1	NOXtec 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	Class B	NOXtec is suitable for use in all establishments, including domestic establishments and those directly connected to the low-voltage public network.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Meets	

# NOXtec 2000

## Manual dosing and Nitric Oxide Monitor

01NXTC2000

**NOXtec 2000** is a medical device which both **dosifies and monitors the supply of nitric oxide (NO)**.

NO is a gaseous vasodilator used to treat pulmonary arterial hypertension. It is supplied to the patients mixed with medical oxygen. NOXtec 2000 supplies a **stable dosis** throughout the therapy. The **dosing flow** is set **manually**.

Thanks to the **continuous sampling of the NO-O<sub>2</sub> mixture flow** supplied, NOXtec 2000 is able to monitorize the NO concentration that the patient is receiving, and to check if this value is placed within predetermined thresholds.

NOXtec 2000 also **monitors trace quantities of nitrous oxide (NO<sub>2</sub>)** in the mixture, a highly toxic gas which can compromise the patient's safety during the treatment. NOXtec 2000 triggers and alarm when this trace surpasses a threshold value.

# NOXtec



### MAIN FEATURES

- Dosing and monitoring modules and user interface independent from each other to guarantee the patient's safety.
- Automatic calibration of the NO, NO<sub>2</sub> and O<sub>2</sub> sensors.
- NOXtec 2000 includes a manual dosing mode, which can be used even when the device is off.
- Negligible liberation of NO to the environment. The device includes a purge outlet to gather and canalize the residual gas.
- Ethernet port for remote technical assistance.
- USB port to retrieve therapy data files.

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01NXTC2000

**NOXtec 2000: Basic set**

Reference	Description	Qty
01NXTC2000	NOXtec 2000: Nitric Oxide Monitor with Manual Deliver System ▪ Main box with pneumatic, electronic and user interface.	1
01NTMNP0A	Manifold with calibration gas sensors: NO, NO <sub>2</sub> and O <sub>2</sub> , including PCB battery power	1
01NTMGEGxx	Main cable "xx"	1
10BiT3xxxx0X	Stainless steel gas regulator for NO supply, with high pressure sensor incorporated.	1

**NOXtec 2000: Calibration Set**

Reference	Description	Qty
11MMBU0x00_IX	Stainless steel gas regulator for NOXtec gas calibration.	1
01NTMNP19	NOXtec gas calibration cylinder 5L cylinder. 70ppm of NO and 10ppm of NO <sub>2</sub> in N <sub>2</sub>	1

**NOXtec 2000: Optional Set**

Reference	Description	Qty
01NTCG0000	NOXtec Trolley for holding the device, space for 2x 20L cylinders , 1x 5L calibration cylinder and 1x5L backup oxygen cylinder (cylinders not included)	1

01NXTC2000

## TECHNICAL SPECIFICATIONS

### PHYSICAL SPECIFICATIONS

**Dimensions and weight:** - Main unit: 205 x 300 x 345 mm; 7.5 kg  
- Cart: 1250 x 670x630 mm; 47.5 kg

**Cart's capacity for cylinders:** 2 cylinders of 20L

**Materials:** AISI 304 and AISI 316 L stainless steel, PTFE and ABS

**Screen:** Touch colour 10.1" LCD screen

### DOSING MODULE

**Dosing modes:** Manual

**Flow positions:** 0 - 0.02 - 0.03 - 0.05 - 0.07 - 0.1 - 0.2 - 0.5 - 1 - 2 - 3 - 4 L/min

### MONITORIZATION MODULE

	Gas sensor type	Measuring range	Measuring accuracy	Resolution	Response time
NO	Electrochemical cell	0-160 ppm	±10% +5 ppm	0.1 ppm	<10s
NO <sub>2</sub>	Electrochemical cell	0-20 ppm	10% or ±0.2 ppm (whichever is higher)	0.1 ppm	<40s
O <sub>2</sub>	Electrochemical cell	0-100%	±3.5%	1%	<20s

**Sampling flow:** 90 - 250 mL/min (configurable, 150 mL/min by default)

**Operational life of the sensors:** 12 months

### OPERATING AND STORAGE CONDITIONS

- **Operating conditions:** 10-40°C; 15-90% humidity
- **Storage conditions:** -10-60°C; 15-90% humidity

### ELECTRICAL SPECIFICATIONS

**Power:** 100-240 VAC, 50-60 Hz

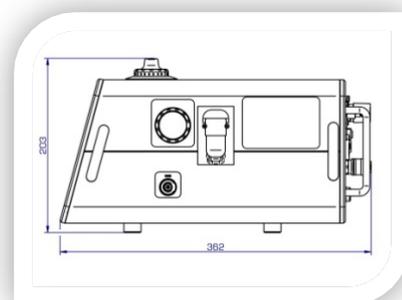
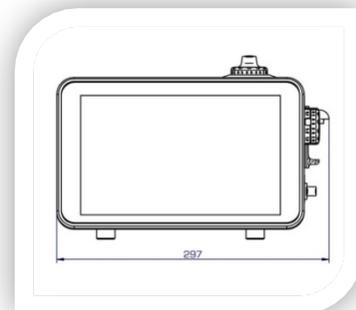
#### Battery:

- **Duration:** >4h
- **Charging time:** 2.5h approx.

#### Normative:

- EN 60601-2:2007 + CORR: 2010 / IEC 60601-1-2: 2007
- EN 60601-1: 2006 + CORR:2010 + A11: 2011 + A1: 2013 + AC: 2014 + A12: 2014 / IEC 60601-1: 2005 + CORR: 2006 +CORR2: 2008 + A1:2012

**Classification:** Class I, Type B



**ELECTROMAGNETIC AND RF SPECIFICATIONS**

*Guidance and manufacturer's declaration – electromagnetic emissions*

NOXtec is intended to be used in the electromagnetic environment specified below. The client or the user of NOXtec should ensure that it is utilized in such environment.

Emission test	Accordance	Electromagnetic environment - Guidance
RF emissions CISPR 11	Group 1	NOXtec 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.  NOXtec is suitable for use in all establishments, including domestic establishments and those directly connected to the low-voltage public network.
RF emission CISPR	Class B	
Harmonic emissions IEC 62000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Meets	

# NOXtec 3000

## Nitric Oxide Monitor

01NXTC3000

NOXtec 3000 is a medical device which **monitors the supply of nitric oxide (NO)**, a gaseous vasodilator used to treat pulmonary arterial hypertension. Thanks to the **continuous sampling of the flow** supplied to the patient, NOXtec 3000 is able to determine the NO concentration that the patient is receiving, and to check if this value is placed within predetermined thresholds.

NOXtec 3000 also **monitors trace quantities of nitrous oxide (NO<sub>2</sub>)**, a highly toxic gas which can compromise the patient's safety during the treatment. NOXtec 3000 triggers and alarm when this trace surpasses a threshold value.

# NOXtec



### MAIN FEATURES

- Monitoring module and user interface independent from each other to guarantee the patient's safety.
- Automatic calibration of the NO, NO<sub>2</sub> and O<sub>2</sub> sensors.
- Ethernet port for remote technical assistance.
- USB port to retrieve therapy data files.

### NOXtec 3000: Basic set

Reference	Description	Qty
01NXTC3000	NOXtec 3000: Nitric Oxide Monitor <ul style="list-style-type: none"><li>▪ Main box with pneumatic, electronic and user interface.</li></ul>	1
01NTMNP0A	Manifold with calibration gas sensors: NO, NO <sub>2</sub> and O <sub>2</sub> , including PCB battery power	1
01NTMGEGxx	Main cable "xx"	1

### NOXtec 3000: Calibration Set

Reference	Description	Qty
11MMBU0x00_IX	Stainless steel gas regulator for NOXtec gas calibration.	1
01NTMNP019	NOXtec gas calibration cylinder 5L cylinder. 70ppm of NO and 10ppm of NO <sub>2</sub> in N <sub>2</sub>	1

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**TECHNICAL SPECIFICATIONS**

**PHYSICAL SPECIFICATONS**

**Dimensions:** 205 x 300 x 280 mm

**Weight:** 6.2 kg

**Materials:** AISI 304 and AISI 316 L stainless steel, PTFE and ABS

**Screen:** Touch colour 10.1" LCD screen

**MONITORIZATION MODULE**

	Gas sensor type	Measuring range	Measuring accuracy	Resolution	Response time
NO	Electrochemical cell	0-160 ppm	±10% + 5 ppm	0.1 ppm	<10s
NO <sub>2</sub>	Electrochemical cell	0-20 ppm	±10% or ±0.2 ppm (whichever is higher)	0.1 ppm	<40s
O <sub>2</sub>	Electrochemical cell	0-100%	±3.5%	1%	<20s

**Sampling flow:** 90 - 250 mL/min (configurable, 150 mL/min by default)

**Operational life of the sensors:** 12 months

**OPERATING AND STORAGE CONDITIONS**

- **Operating conditions:** 10-40°C; 15-90% humidity
- **Storage conditions:** -10-60°C; 15-90% humidity

**ELECTRICAL SPECIFICATIONS**

**Power:** 100-240 VAC, 50-60 Hz

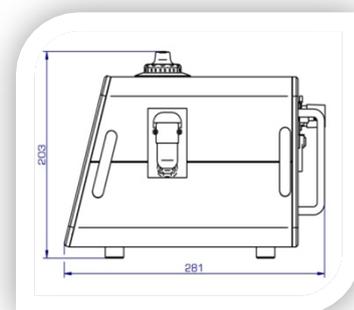
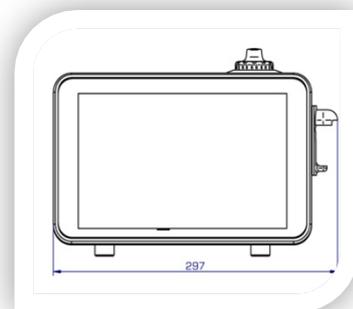
**Battery:**

- **Duration:** 6h
- **Charging time:** 2.5h approx.

**Normative:**

- EN 60601-2:2007 + CORR: 2010 / IEC 60601-1-2: 2007
- EN 60601-1: 2006 + CORR:2010 + A11: 2011 + A1: 2013 + AC: 2014 + A12: 2014 / IEC 60601-1: 2005 + CORR: 2006 + CORR2: 2008 + A1:2012

**Classification:** Class I, Type B



**ELECTROMAGNETIC AND RF SPECIFICATIONS**

*Guidance and manufacturer's declaration – electromagnetic emissions*

NOXtec is intended to be used in the electromagnetic environment specified below. The client or the user of NOXtec should ensure that it is utilized in such environment.

Emission test	Accordance	Electromagnetic environment - Guidance
RF emissions CISPR 11	Group 1	NOXtec 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	Class B	NOXtec is suitable for use in all establishments, including domestic establishments and those directly connected to the low-voltage public network.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Meets	