

**TSE**

Smart technologies



## BABY COMFORT SI – 610

Intensive care incubator

## Baby Comfort SI – 610 Intensive care incubator

Baby Comfort SI – 610 is the best choice for intensive care. Intelligent design and a unique combination of incubator functions help to fulfill the highest demands for care of prematurely born infants. Baby Comfort SI – 610 provides a protected and comfortable environment and enables the staff to be always one step ahead of the needs of the small patients, thanks to the integrated monitoring of vital functions.



### Monitoring of vital functions

The precise and permanent monitoring of vital functions SpO<sub>2</sub> including pulse (Nellcor Oxymax System), NIBP, and RR guarantees perfect and anticipated medical care. The integrated monitoring system with adjustable alarm limits continuously records the measured values.

### Displaying trends

A microprocessor device protects the optimum microclimatic environment inside the incubators as well as the child's condition. A colour display with LED illumination displays, in addition to the adjusted and measured values of air and body temperatures, the relative humidity and oxygen concentration and a time record of their trends. The unique system enables comparison of more parameters over time.

### Monitoring weight increments

Integrated high precision scales measure and record weight increments of the child in a table and graph.

### Patient card

Intelligent software enables easy maintenance of the patient card direct in the incubator and immediate printing.

### Access and positioning

External electronic controls enable easy positioning of a patient to Trendelenburg and anti-Trendelenburg positions up to 12° from outside the internal space.

### Synergy and compatibility

A system of integrated electric sockets enables the connection of further devices at the workplace.



## We protect our future

Care of the youngest and most vulnerable patients is our priority in TSE. Protection and support of newborn babies has been our goal since 1992. Physicians and healthcare staff prefer our products for their reliability, technical advancement and user synergy. Thanks to thorough study of infants' needs and their care in everyday practice, we are able to meet our resolutions, minimize stress, provide absolute comfort to small patients and provide their attendants with a perfectly functional and safe work environment.

## Common properties of SI line incubators



### Easy care = 1

The practical sliding bed may be turned by 45° at the head side, which facilitates the application of numerous examination and treatment procedures. A holder of hoses for ventilation, exhaustion and food supply, located neatly inside the incubator on a 360° revolving head, makes patient care easier. Care is further facilitated by the oval portholes, which open simply and silently, and the tilting door.

### Environment stability and soundproofing = 2

Thermal and acoustic comfort is the basic feature of infant incubators, and the SI line incubators have brought it to perfection. They have a thicker Plexiglas cover that improves thermal insulation and eliminates undesirable stressful influences from the outside. Additional functions of the incubator, like a sliding x-ray panel, are designed to not inhibit the small patient. The inside space of the incubator does not have to be opened when an x-ray cassette is loaded. An air curtain is automatically activated when the incubator door is opened so the stability of the inside environment is ensured.

### Alarm announcements = 3

As we care about the safety of small patients we have developed a sophisticated alarm announcement system. Three-stage light signalling exactly reflects the patient's condition: Stage 1: caution, stage 2: warning, stage 3: crisis.

### Cleaning and disinfection = 4

The protective environment for newborn patients has to be kept absolutely clean. The unique system of SI line incubators enables the Plexiglas cabinet to be dismantled: the lid can be removed, the front and back doors tilt and the side walls slide out. The inside of the incubator is then perfectly accessible for comfortable cleaning and disinfection.

### Compact design

Numerous integrated functions often lead to an increase in the size of incubators. However SI line models have maintained their compact design compared to other products of the same category; their dimensions are also suitable for smaller neonatology workplaces. The incubators are designed to provide enough space for the newborn patients as well as easy handling for their operators.



## Control panels

Easy and smart operation improves handling in the SI line incubators. Intuitive “step by step” text navigation facilitates incubator operation with instructions for consequent steps. The high contrast display is easily legible even from a longer distance. The clearly arranged foil keyboard is easy to operate and clean.

## Storage spaces

Storage spaces are always useful. An upper shelf with a hook for infusion is suitable for storing accessories while the lower shelf is for healthcare material and all the other things. A Euro rail enables flexible attachment of accessories at the patient’s head or feet. An optional box with the noiseless touch closing system “tip on” offers safe and hygienic storage.

## Noiseless humidification

An integrated servo-controlled air humidifier offers silent operation. The water level control system announces when refilling is necessary in a timely manner, in extreme situations an alarm announces that the tank is empty. The humidifier is easily accessible for refilling, cleaning and disinfection.

## Advanced air circulation

Body and air temperature sensors reliably and permanently monitor the values, which are then precisely processed by an intelligent thermoregulation system according to the patient’s current needs.

## Access to a patient

Handling always presents stressful situations for a newborn patient. SI line incubators reduce this stress in a very comfortable way. The incubator concept enables access to the patient from all sides. Its positioning system controlled from the outside ensures considerate handling of the baby with no changes to the climate inside the patient space. The system enables Trendelenburg and anti-Trendelenburg positions up to 12°.



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<b>Power voltage</b> <b>Input power</b>	230 V ± 10 %, 50/60 Hz with fixed height: 420 VA with adjustable height: 470 VA
<b>Dimensions</b> Height Height (version with height adjustable carriage) Length Width	1410 mm 1310 – 1510 mm 950 mm 650 mm
<b>Weight</b> With height adjustable carriage	98 kg 108 kg
<b>Temperature mode</b> Air temperature mode  Air temperature setting above 37.0 °C Body temperature mode  Body temperature setting above 37.0 °C Incubator warming up time by 11.0 °C Alarms – air/body temperature increase or decrease beyond adjusted limit	20.0 – 37.0 °C, with increments of 0.1 °C 37.1 – 38.0 °C, with increments of 0.1 °C upon operator’s special intervention by pressing > 37 °C key 34.0 – 37.0 °C, with increments of 0.1 °C 37.1 – 38.0 °C, with increments of 0.1 °C upon operator’s special intervention by pressing > 37 °C key 25 min.
<b>O<sub>2</sub> mode</b> O <sub>2</sub> concentration adjustment Maximum possible O <sub>2</sub> concentration O <sub>2</sub> regulation accuracy Alarms – O <sub>2</sub> concentration increase or decrease beyond adjusted limit	21 – 80 %, with increments of 1 % 80 % ± 1.5 % from the preset value
<b>Relative Humidity (RH) mode</b> RH concentration adjustment Maximum possible RH in the incubator RH regulation accuracy Water tank Alarms – RH increase or decrease beyond adjusted limit, low level in the humidifier	41 – 90 %, with increments of 1 % 90 % ± 5 % from the preset value 1.5 l
<b>Electric bed positioning (Trendelenburg and anti-Trendelenburg 12°)</b>	
<b>Optional accessories</b>	
<b>Scales</b> Measurement range Measurement accuracy  Resolution Records	max. 7 kg ± 2 g (from 0 to 2 kg) ± 5 g (from 2 to 7 kg)  1 g weight trends
<b>Integrated vital function monitoring</b>	
<b>SPO<sub>2</sub> and pulse</b> Measurement range Measurement accuracy  Alarms – SPO <sub>2</sub> increase or decrease beyond adjusted limit	0 – 100% ± 3 % ± 1 digit within 40 – 70 % ± 2 % ± 1 digit within 70 – 100 %
<b>NIBP</b> Measurement range Measurement accuracy Alarms – NIBP increase or decrease beyond adjusted limit	10 – 200 mmHg ± 3 % ± 1 digit
<b>RR</b> Measurement range Measurement accuracy Alarms – RR increase or decrease beyond adjusted limit	0 – 150 breaths/min. ± 1 breath/min, ± 1 digit
<b>Height adjustable carriage with shelves · Storage drawers · Double walls · Rail with a shelf and infusion holder · Hose holder · Set of 230 V sockets for additional devices · Cotton blanket for covering the patient space</b>	

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## BABY CONCEPT SI – 600

Intermediate care incubator

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## Baby Concept SI – 600 Intermediate care incubator

The Baby Concept SI – 600 incubator is the right option for intermediate care, as it maintains the standards of the higher class intensive care incubators. Microprocessor controlled modes like air temperature regulation and measurement, body temperature monitoring by a probe, measurement of relative humidity and oxygen concentration by sensors guard the safety and well being of the child patient.

Baby Concept SI – 600 also differs from other incubators of its class by innovative rotation of the bed up to 45°, manual Trendelenburg and anti-Trendelenburg positioning up to 12°, all controlled from the outside. A practical sliding x-ray cassette and the possibility of cover dismantling for perfect cleaning and disinfection are further advantages. The intelligent three-stage light alarm programme (caution, warning, crisis) is friendly to vulnerable patients and does not stress them with negative impulses from the outside. Compact but spatial inside, the Baby Concept SI – 600 incubator is among the most practical ones on the market thanks to its dimensions.



<b>Power voltage</b> <b>Input power</b>	230 V ± 10 %, 50/60 Hz with fixed height: 350 VA with adjustable height: 400 VA
<b>Dimensions</b> Height Height (version with height adjustable carriage) Length Width	1410 mm 1310 – 1510 mm 950 mm 650 mm
<b>Weight</b> With height adjustable carriage	92 kg 102 kg
<b>Noise</b>	max. 48 dB
<b>Temperature mode</b> Air temperature mode  Air temperature setting above 37.0 °C Body temperature mode  Body temperature setting above 37.0 °C Incubator warming up time by 11.0 °C Alarms – air/body temperature increase or decrease beyond adjusted limit	20.0 – 37.0 °C, with increments of 0.1 °C 37.1 – 38.0 °C, with increments of 0.1 °C upon operator's special intervention by pressing > 37 °C key 34.0 – 37.0 °C, with increments of 0.1 °C 37.1 – 38.0 °C, with increments of 0.1 °C upon operator's special intervention by pressing > 37 °C key 25 min.
<b>O<sub>2</sub> Mode</b> O <sub>2</sub> concentration adjustment Maximum possible O <sub>2</sub> concentration O <sub>2</sub> regulation accuracy Alarms – O <sub>2</sub> concentration increase or decrease beyond adjusted limit	21 – 80 %, with increments of 1 % 80 % ± 1.5 % from the preset value
<b>Relative Humidity (RH) mode</b> RH concentration adjustment Maximum possible RH in the incubator RH regulation accuracy Water tank Alarms – RH increase or decrease beyond adjusted limit, low level in the humidifier	41 – 90 %, with increments of 1 % 90 % ± 5 % from the preset value 1.5 l
<b>Mechanical bed positioning (Trendelenburg and anti-Trendelenburg 12°)</b>	
<b>Optional accessories</b>	
<b>Integrated scales with own display</b> Measurement range Measurement accuracy  Resolution Records	max. 7 kg ± 2 g (from 0 to 2 kg) ± 5 g (from 2 to 7 kg) 1 g weight trends
<b>Height adjustable carriage with shelves</b> <b>Storage drawers</b> <b>Double walls</b> <b>Rail with a shelf and infusion holder</b> <b>Hose holder</b> <b>Set of 230 V sockets for additional devices</b> <b>Cotton blanket for covering the patient space</b>	



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## BABY ACTIVE TI – 401

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Transport incubator

## Baby Active TI – 401 Transport incubator

Transportation of such fragile and vulnerable patients as newborn infants always presents the risk of undesirable stress. Our task is to ensure a safe and stable environment for these small patients and to minimize the impacts of external influences. The solid structure of the Baby Active TI – 401 incubator is designed to resist the strains of transportation and to absorb impacts. Safety belts and a special anti-stress mattress guarantee the child's safety and comfort. The double transparent cover ensures thermal insulation properties and provides the health care staff with optimum visibility, for example during examination by integrated LED light.

The system controls and maintains an ideal microclimate, temperature and oxygen concentration in the air. Optical and acoustic signalling of key alarms report possible deviations of parameters. Two oxygen cylinders are included in the basic equipment.

The incubator's internal energy source keeps the unit in active mode for at least 4 hours. It may be powered from a car battery or from standard mains.

**Optional accessories:** compact carriage enabling easy handling in hospital facilities, easily controllable, suitable for transporting from the delivery room to the ward; standard carriage for transporting in an ambulance; additional devices.



<b>Power voltage</b>	230 V ± 10 %, 50/60 Hz
<b>Batteries</b>	Batteries 2 x 12 V / 28 Ah
<b>Input power – mains</b>	380 W
<b>External source</b>	195 W
<b>Temperature adjustment range</b>	28.0 – 38.0 °C continuously
<b>O<sub>2</sub> concentration adjustment range</b>	21 – 50 %
<b>Inside noise maximum level</b>	max. 60 dB
<b>Dimensions</b>	
Height	640 mm
Length	890 mm
Width	540 mm
<b>The following conditions are signaled by alarms</b>	<ul style="list-style-type: none"> <li>- power failure</li> <li>- high/low air temperature</li> <li>- ventilator failure</li> <li>- probe failure</li> <li>- overheating</li> <li>- heater disconnection</li> <li>- power drop</li> </ul>
<b>Operation time with fully charged batteries</b>	min. 4 hrs
<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>Neotic Extero type carriage for ambulances</li> <li>PNT – 401 type carriage for transport within hospitals</li> <li>Rail with a shelf and infusion holder</li> <li>LED examination light</li> <li>Fixing belts</li> <li>Cotton blanket for covering the patient space</li> </ul>



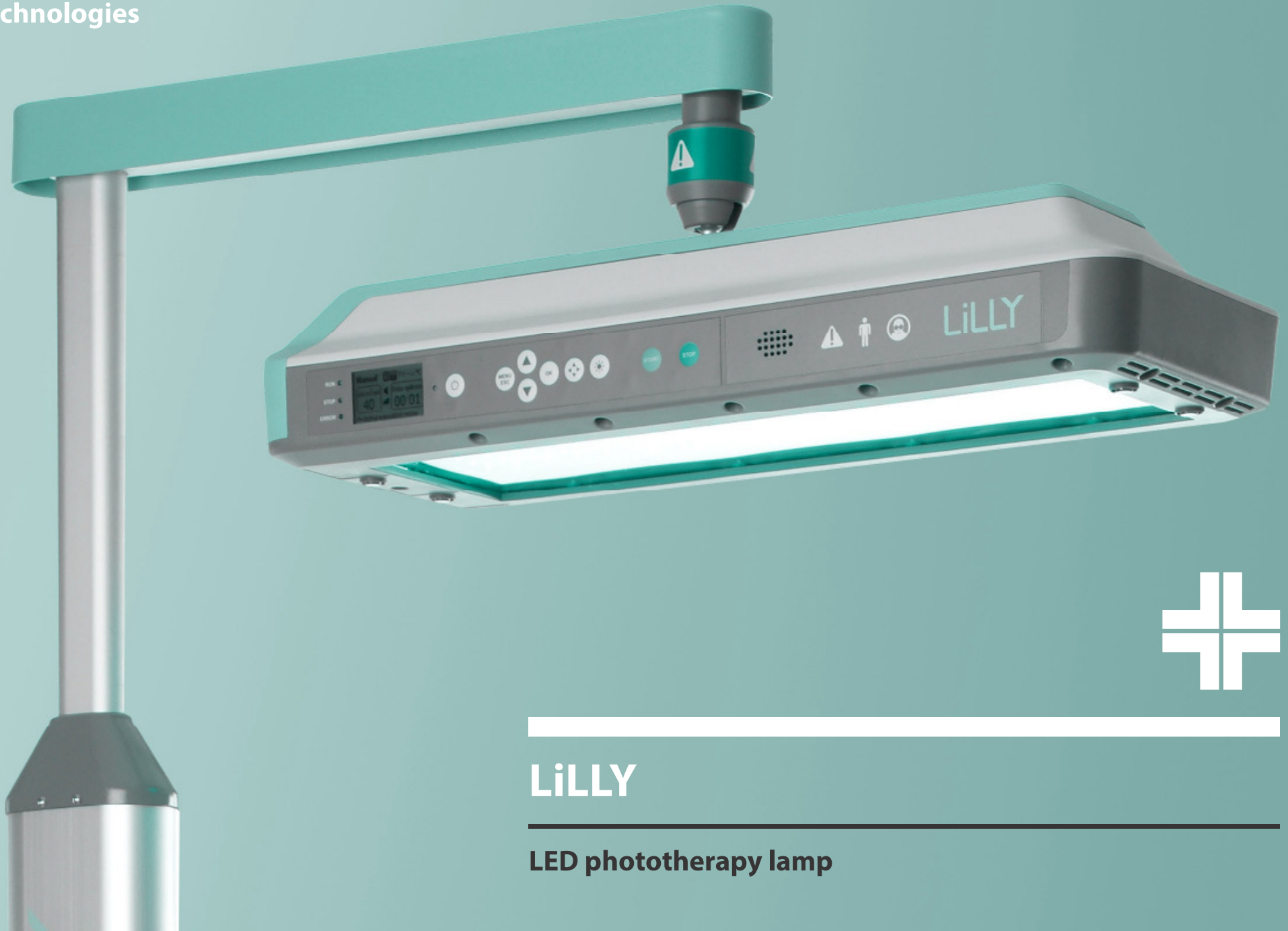
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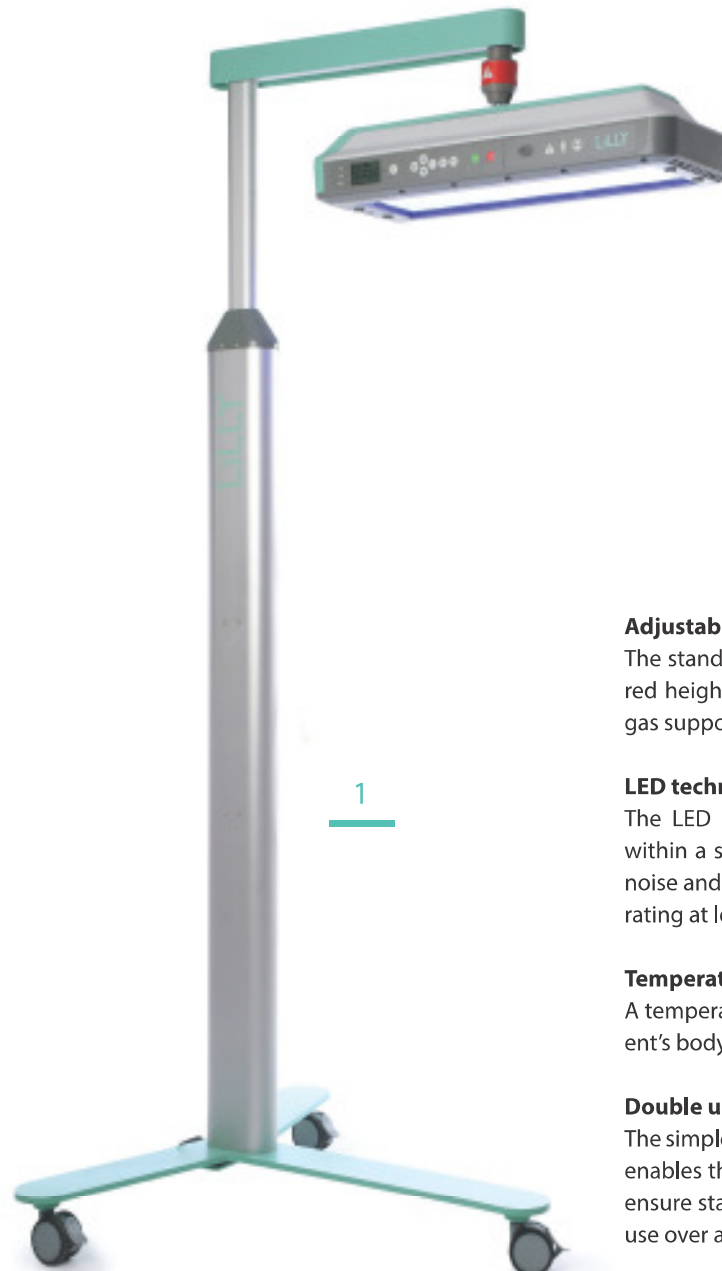
**LILLY**

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**LED phototherapy lamp**

## LED phototherapy lamp LiLLY

The Phototherapy lamp Lilly represents the top of the class. The state-of-the-art LED technology is used for neonatal hyperbilirubinemia treatment. A unique apparatus combines safe therapy, ultra long life of radiators, treatment effectiveness and economical operation. It emits intensive light radiation within the spectrum of 440 – 470 nm to reduce bilirubin concentration in the neonatal body.



### Adjustable stand ▪ 1

The stand enables the exact adjustment of the lamp at the required height. Simple and stepless control is enabled by an internal gas support controlled by pressing the positioning pedal.

### LED technology

The LED technology enables higher effectiveness of treatment within a shorter period of time, economical operation, minimum noise and very long life of the radiators, which are capable of operating at least 60 thousand hours.

### Temperature sensor

A temperature sensor, with adjusted alarm limits attached to patient's body, prevents the patient from being overheated.

### Double use

The simple and safe attachment of the radiator with a fastening nut enables the lamp to be used on an incubator cover. Anti slip pads ensure stable positioning. It can also be suspended on a stand for use over an infant bed or a warming bed.

### Examination light - 2

A white examination light set to daylight allows correct identification of the infant's skin colour. It enables a quick visual classification of the patient's condition without requiring the taking of blood or other measurements.

### Flexible positioning - 3

Joint suspension enables flexible positioning of the phototherapy radiator in all directions. Direction points make it easy to find the best position for optimum coverage of patient's body with therapeutic light.

### Intuitive control - 4

Intuitive controls including a navigation line make the operation easy. It enables the operators to choose from two treatment modes.

### Manual mode

The manual mode enables adjustments to the required light intensity. A time counter on the main screen displays the total treatment time. The counter always automatically stops when treatment is interrupted and continues after it is resumed.

### Therapeutic mode

The therapeutic mode enables the selection of therapeutic programmes that may be freely changed and stored. Each therapeutic programme consists of three treatment sequences. Each sequence has an adjusted treatment intensity and time; as soon as one sequence ends the unit starts the next one automatically until it reaches the end of the programme.

### Automatic regulation of radiation intensity

When switched on, in each mode the unit sets the exact intensity according to the distance between the radiator and the patient. This ensures maximum treatment effectiveness and simplifies the operation.

### Function monitoring and lifetime measurement

The continuous monitoring of correct functions guarantees patient safety and treatment efficiency. An integrated system measures the lifetime of the LEDs. The unit watches itself and any deviations (e.g. failures, power failure, change in radiation intensity or necessity of servicing) are announced by an alarm.

2



3



4





<b>Power voltage</b> <b>Max. Input power of the unit</b>	110 – 230 V $\pm$ 10 %, 50/60 Hz 100 VA
<b>Dimensions without stand</b>	Height 119 mm Length 588 mm Width 244 mm
<b>Weight without stand</b>	5 kg
<b>Dominant wave length</b> <b>LED life</b> <b>Radiated area (Effective surface)</b>	440 – 470 nm min. 60 000 hrs of operation 600x300 mm (at the distance of 360 mm)
<b>Modes</b> Manual mode  Therapeutic mode	Regular mode 25 $\mu$ W/cm <sup>2</sup> .nm Intensive mode >35 $\mu$ W/cm <sup>2</sup> .nm Application time measurement Intensity adjustment range 8 – 40 $\mu$ W/cm <sup>2</sup> .nm with increments of 5 $\mu$ W/cm <sup>2</sup> .nm Application time adjustment range from 1 min. to 99 hrs The mode may be adjusted in 3 programmable sequences
<b>Body temperature measurement</b> Measurement range Measurement accuracy Alarms	20 – 45 °C $\pm$ 0.3 °C Low/high temperature (adjustable limits) Patient overheating protection
<b>Optional accessories</b> Stand Dimensions	Weight 16 kg Adjustable height 1200 – 1550 mm Width 750 mm Length 707 mm Continuous radiator position in all axes up to 35°



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**Safety – Treatment effectiveness – Time saving**

## LiLLYMETER

### Radiometric device

Provides precise measurement of blue spectre light intensity to ensure the optimum phototherapeutic treatment.

**“Concentrate on quality care and have costs under control”**

LiLLY Radiometer is only designed for light intensity measurement of LiLLY Phototherapeutic Lamp.



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### Simple handling & Easily legible display

- Easily legible in any environment thanks to display illumination
- The final measurement value remains on the display until the next measurement or until automatic switch-off when not used for one minute
- One-button control

### Perfect optical system & Measurement accuracy

- Measured values displayed in standard units – microwatts per square centimetre per nanometre ( $\mu\text{W}/\text{cm}^2/\text{nm}$ )
- Special sensor design minimises sensitivity to irradiance angle of incidence
- Microprocessor electronics improves effectiveness and suitability for the purpose

### Safety & Calibration

- LiLLY can be calibrated individually according to a standard corresponding to the National Institute of Standards & Technology (NIST) conditions
- A Calibration Certificate is attached for reference in a hospital

### Easy cleaning

- Smooth surface enables the unit to be wiped with disinfectants and prevents deposition of dirt

### Long battery life

- Automatic switching off when not being used extends the operation time without battery replacement

<b>Power voltage</b>	9V ss
<b>Number of measurements with fully loaded battery</b>	720 measurements
<b>Dimensions without sensor:</b> height length width	27 mm 110,5 mm 66,2 mm
<b>Measured light wavelength</b> <b>Measurement accuracy</b> <b>Measurement range</b>	400 – 550 nm $\pm 10\% \pm 2\text{digit}$ . Peak value (PEAK): 10 – 115 $\mu\text{W}/\text{cm}^2/\text{nm}$ Mean value (MEAN): 3 – 46 $\mu\text{W}/\text{cm}^2/\text{nm}$
<b>Calibration validity</b>	1 year

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**BABY BLUE LIGHT FTL – 600**

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**Phototherapy lamp**

## Baby Blue Light FTL – 600 Phototherapy lamp

The phototherapy lamp Baby Blue Light FTL – 600 represents the most common method of adequate treatment of neonatal hyperbilirubinemia. It brings an economical solution of adequate treatment along with a perfect price/performance ratio.

The simple suspension of the lamp on a height-adjustable stand enables both tilting up to 90° in one direction, and effective irradiation of the patient's entire body on an infant bed or a warming bed. Anti slip pads on the lamp surface ensure safe location on an incubator cover after removing the lamp from the stand.

A counter with a digital display records the number of operation hours and thus ensures safe and efficient operation.

<b>Power voltage</b>	230 V ± 10 %, 50 Hz
<b>Max. input power of the unit</b>	170 VA
<b>Input power of light sources</b>	2 x 20 W
<b>Light source</b>	discharge tube PHILIPS (blue)
<b>Wave length</b>	400 – 550 nm
<b>Light source life</b>	approx. 2 000 hours

<b>Dimensions</b>	
Height	115 mm
Length	820 mm
Width	210 mm

<b>Weight</b>	4.5 kg
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<b>Optional accessories</b>	
Stand FTL – 600	adjustable height 1025 – 1475 mm



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