




# **BNG Medical Instruments**

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*BNG Medical has been established as a professional medical equipment company in Shenzhen, south China. We are dedicated to provide high standard neonatal care devices including infant incubator, infant radiant warmer, phototherapy lamp etc.*

## ***Our Vision***

***A high-tech service oriented and international BNG***

# Products & Solution



*EcoLa series Infant Incubator*



*Ecosy series Infant Warmer*



# EcoLa3000 Infant Incubator



- 8 inch LCD screen (optional touch screen)
- Skin and air temperature servo Control
- Humidity servo control
- Oxygen servo control (Optional)
- Oxygen manual control (Optional)
- Integrated weight scale (Optional)
- Integrated SpO2 module (Optional)



# EcoLa3000 Infant Incubator

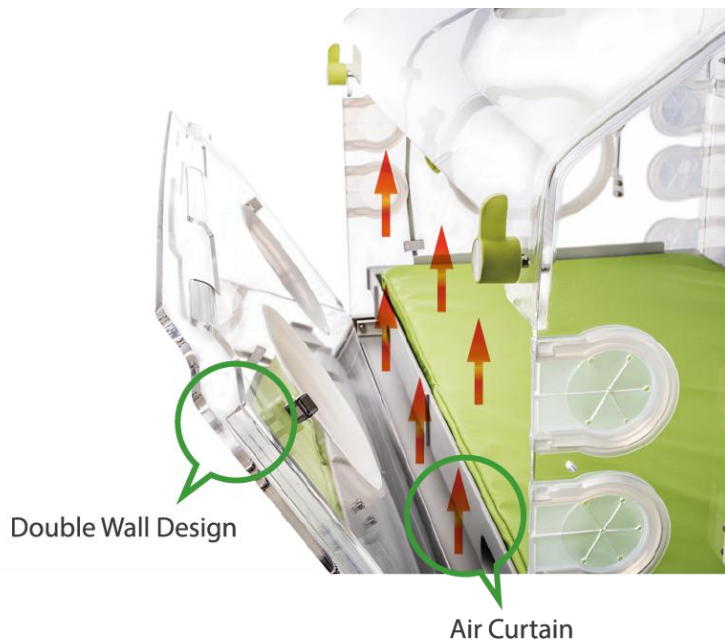
## *Humanized design of the acrylic hood*

- *Transparent acrylic hood produced by food grade acrylic*
- *Front and back access panel design*
- *6 access door and 10 tubing ports*
- *Double wall design acrylic hood*
- *Access panel can be opened both in the front and back side*
- *Large dimension design (848\*442\*510mm) which could even ensure a suitable space for twin*



# EcoLa3000 Infant Incubator

## *Double wall design acrylic hood*

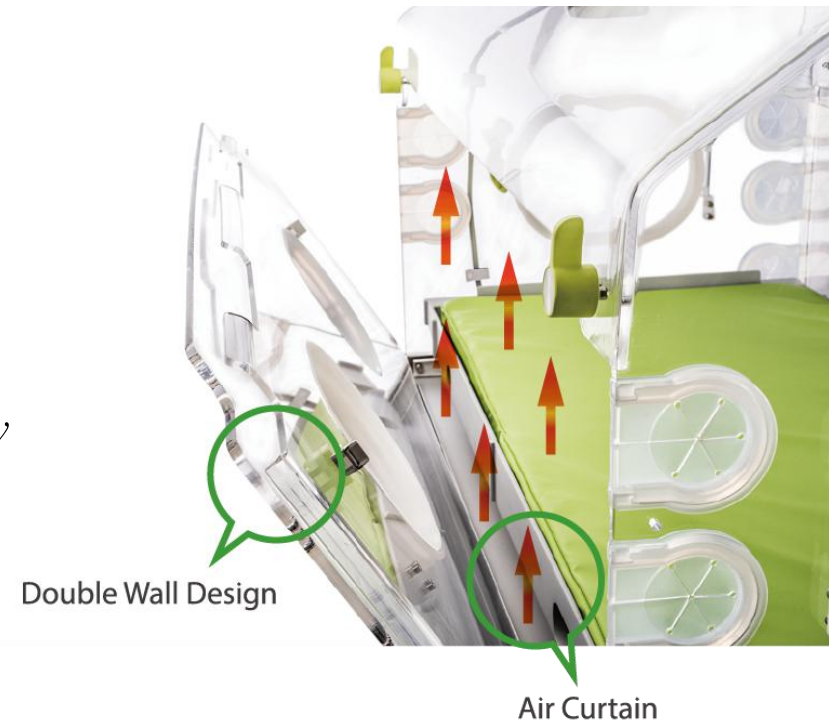


- *Reduce the heat exchange between incubator and the external environment, improve the temperature variability (less than 0.2 °C) and temperature control accuracy.*
- *Reduce the noise level inside the incubator, create a more comfortable environment for baby.*

# EcoLa3000 Infant Incubator

## *Air curtain design*

*When the sensor detects the access panel open, the motor (for air circulation) speed will be increased to generate a air curtain to avoid the incubator temperature dramatically lost to the outside environment.*



### *ElectroCraft DC brushless motor*

*Low noise and motor speed can be adjusted by the incubator software.*

# EcoLa3000 Infant Incubator

## *Supper Quiet Design*

*It is approved that in addition to the direct auditory effects of noise, noise also influences the cardiovascular system, the respiratory system, sleep patterns, and stress levels of neonates.*

*EcoLa provides newborn a supper quiet environment, hood noise level is reduced to 45dB.*



- *Latest aerodynamic design*
- *Brushless DC motor*
- *Patent drive technology*
- *Specially designed hood to reduce external noise influence*
- *Noise reduction fan*



# EcoLa3000 Infant Incubator

## *Advance air circulation design*

*The hot air comes up from left and right sides (inside the double wall), meet on the top and then down to the baby.*

*With such advanced air circulation design, we can dramatically improve the incubator temperature uniformity.*

*Temperature uniformity less than 0.5 °C.*



# EcoLa3000 Infant Incubator

## *Reliable sensor module design*

- *Temperature and humidity sensor located inside the sensor module. (For some incubators on the markets, the sensors not designed inside the sensor module). It can monitoring the incubator's real time temperature and humidity more accuracy.*
- *Temperature and humidity sensors from Holleywell, UK which with high monitoring accuracy and stable quality.*
- *The incubator design two temperature sensors inside the sensor module, two sensors monitoring the temperature in the incubator and compare the value in the real time. If the difference of two sensors more than  $0.5^{\circ}\text{C}$ , the alarm will be triggered.*
- *Standard with two temperature probes, the EcoLa3000 can monitoring baby's core temperature and peripheral temperature at the same time.*



# EcoLa3000 Infant Incubator



## *Tilting baby tray design*

- *Tilting angle up to 12° .*
- *Support to be operated both from right and left sides.*



## *Auxiliary power output*

*Power support the other devices which use together with the incubator.*

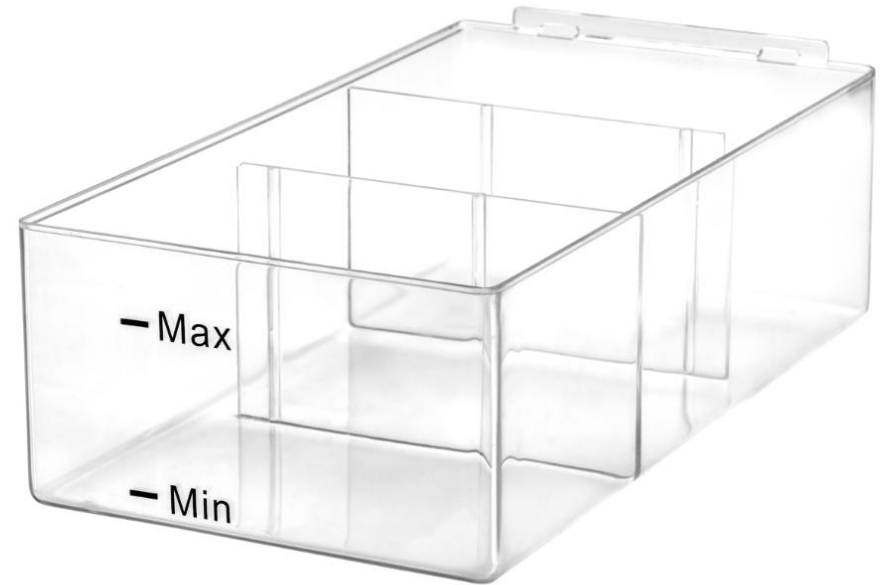
## *Power cable hood*

*To fix the power cable and avoid unnecessary potential risks caused by the power cable.*

# EcoLa3000 Infant Incubator

## *Water Reservoir*

- *Large capacity 1500ml water reservoir with scale line, enables EcoLa3000 incubator to keep running for 24 hours without refilling.*
- *Water reservoir and evaporator is separated, users have no chance to contact with steam directly and avoid the scald by hot steam. In addition, the EcoLa3000 incubator support add water anytime.*
- *Optional autoclavable water reservoir and CPC connector. Can be disinfected by steam with high temperature.*





# EcoLa3000 Infant Incubator



## *IV pole and shelf*

*Provide the platform for the devices which will be used together with the EcoLa3000 incubator.*

## *Storage drawers*

*Standard with 2 small drawer and 1 big drawer.*

*Customers can also choose 4 small drawers or 2 big drawer.*

# EcoLa3000 Infant Incubator



## *Castors*

- *Medical grade castors, mute and anti-static design when moving the device.*
- *Each castors with a brake, the device can be fixed more stable on the ground.*

# EcoLa3000 Infant Incubator

## *Air temperature servo control mode*



- *Air mode control temperature range: 20 ° C-37 ° C*
- *Air mode control override temperature range: 37 ° C-39 ° C*
- *Air mode control accuracy:  $\leq \pm 1.0$  ° C*

# EcoLa3000 Infant Incubator

## *Skin temperature servo control mode*



- *Skin mode control temperature range: 34° C-37° C*
- *Skin mode control override temperature range: 37° C-38° C*
- *Skin temperature accuracy:  $\pm 0.3^{\circ}$  C*
- *Dual-skin temperature monitoring*



# EcoLa3000 Infant Incubator

## *Advanced temperature control technology*

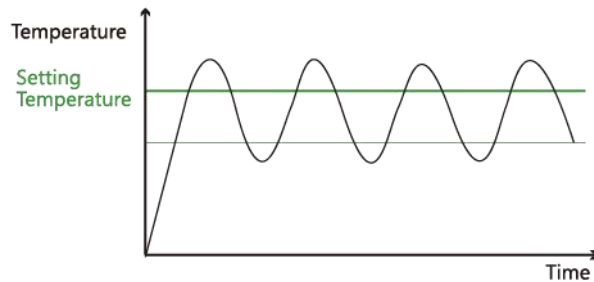


### ***PID Fuzzy Algorithm***

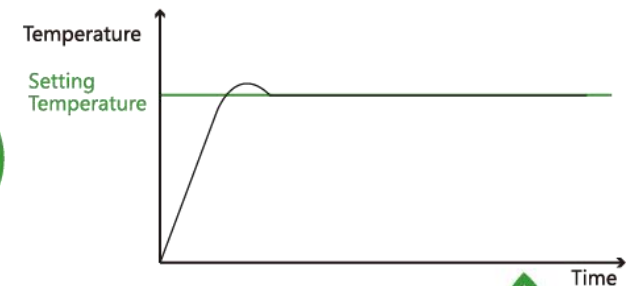
*With the help of PID algorithm EcoLa incubator continuously calculates an error value as the difference between setting temperature and real time temperature and applies a correction based on proportion, integral and derivative terms.*

*PID controller keeps to minimize the error over time by adjustment of heating power and eventually minimizes temperature variability and reduce temperature overshoot to give infant the safest micro-environment.*

On-off

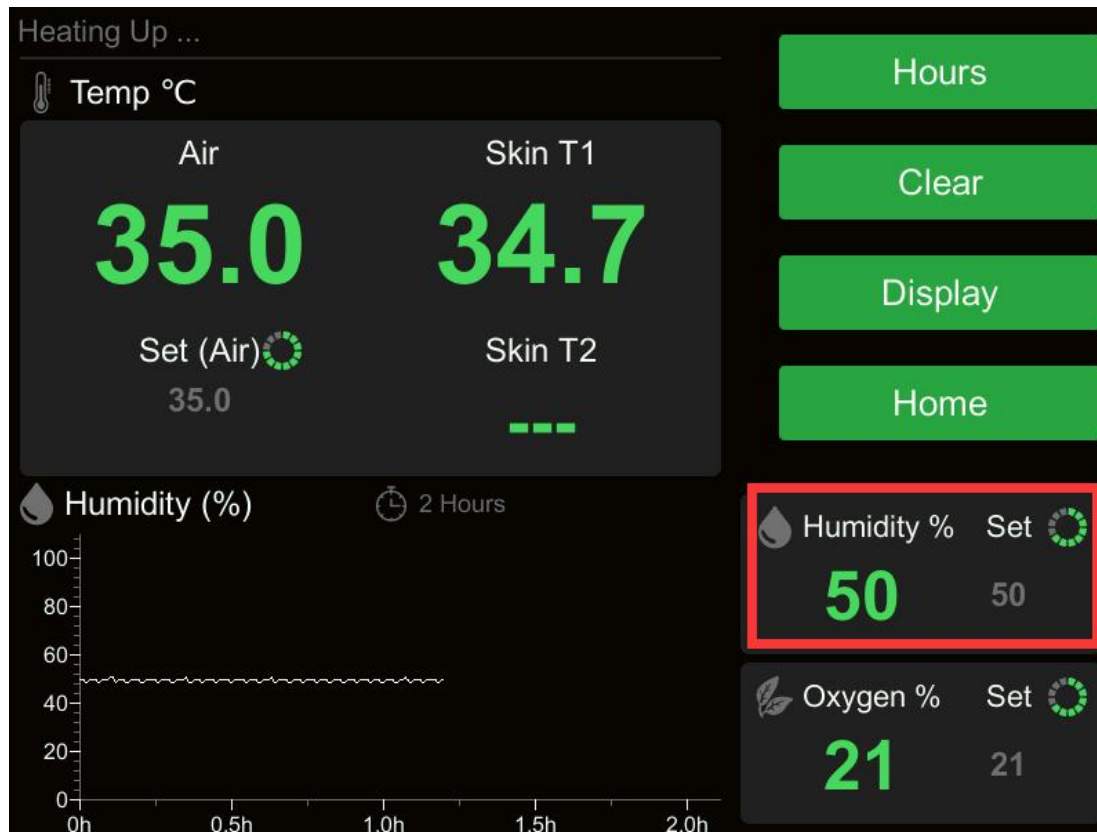


PID



# EcoLa3000 Infant Incubator

## *Humidity servo control*



- *Boiling the water which will kill most of the bacteria. Reduce the risk of bacterial infections to newborns*
- *Humidity control range: 30%-95% RH*
- *Humidity control operating time without refilling 24 hours, support add water anytime*
- *Humidity control reservoir capacity: 1500ml*
- *Humidity display and control accuracy:  $\pm 5\%RH$*

# EcoLa3000 Infant Incubator



- *IP54 protect level*
- *Maximum load 3000 N*
- *Noise level around 48dB*
- *Anodised aluminum surface, rust resistance*
- *2 level lifting module, maximum lifting height 20cm*

## *Electric height adjustment*

- *Can be operate both in front and back side.*
- *Height adjust range: 128cm~148cm*

# EcoLa3000 Infant Incubator

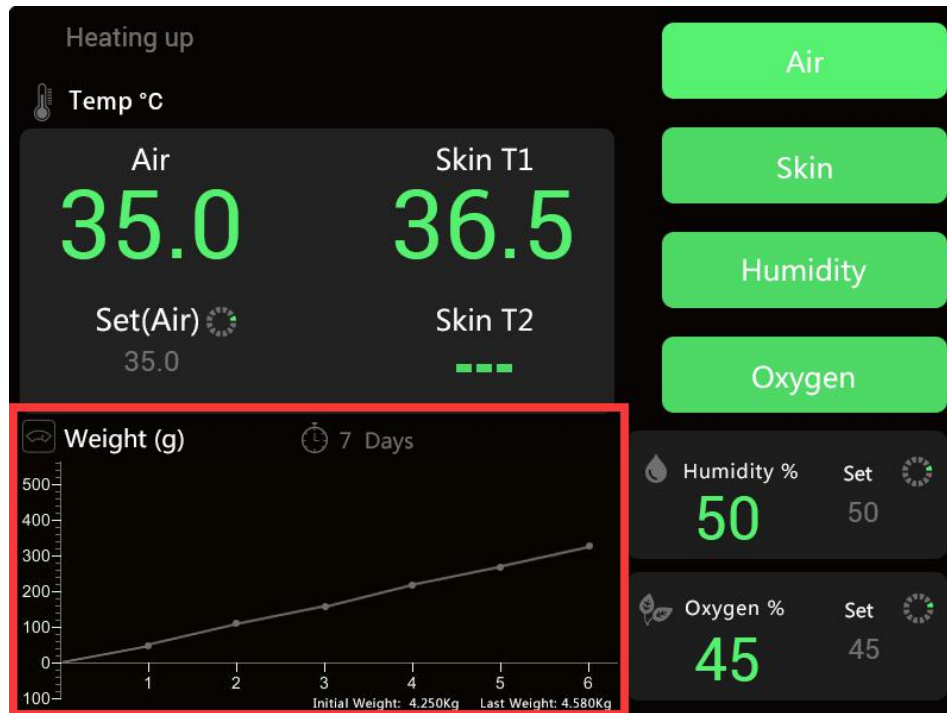


## *Built-in X-Ray cassette*

*Put the X-ray film into the cassette and take X-ray without moving the baby*



# EcoLa3000 Infant Incubator

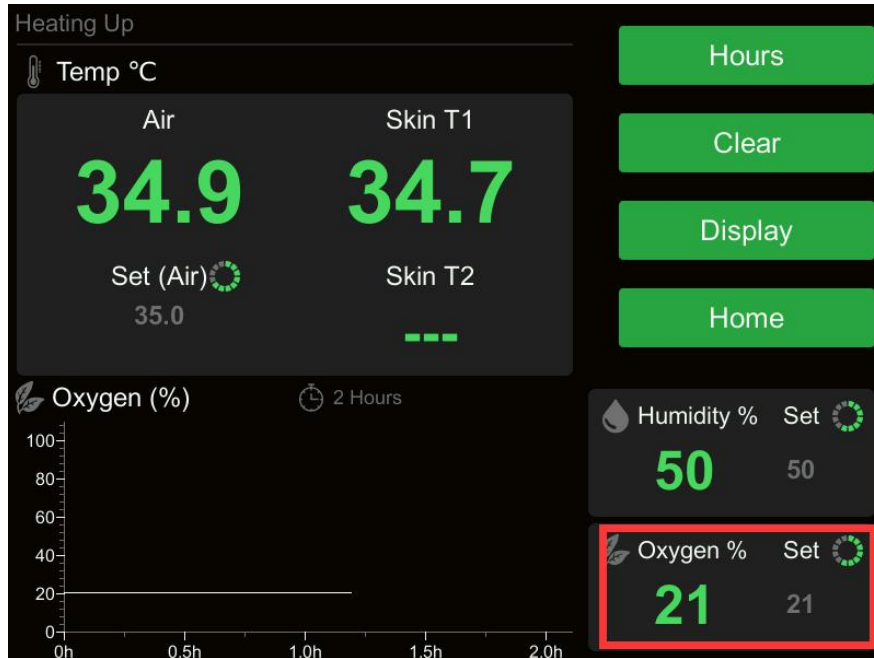


## *Integrated weight scale(optional)*

- *Weighing without moving the baby*
- *Weight range: 300 g to 8 kg*
- *Weight display resolution: 1 g*
- *Weight accuracy:  $\pm 10$  g*

# EcoLa3000 Infant Incubator

## *Oxygen servo control and monitoring (optional)*



*Proportional valve from Italy*

***Cooperation with NORGREN, CAMOZZI and CITY***

*Advance technology, we are able to build a stable, accurate and safe oxygen cycle system.*



- *Oxygen control range: 21 % to 65%*
- *Oxygen display accuracy of full scale:  $\pm 2\%$*
- *Oxygen control accuracy (100% calibration):  $\pm$*
- *Oxygen control accuracy (21% calibration):  $\pm$*

# EcoLa3000 Infant Incubator



*Integrated SpO2 module (optional)*

- Display range: 1 ~ 100% SpO<sub>2</sub>
- Display accuracy:  $\pm 2\%$  (70 ~ 99%)
- Pulse rate display range: 30 ~ 240bpm
- Pulse rate display accuracy: 1% + 1bpm





# EcoLa3000 Infant Incubator

*EcoLa incubator monitor and control temperature on various points on heating system to ensure accuracy and safety. The alarms will be activated if any abnormal phenomenon is monitored.*



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**1** *Air Probe Failed*

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**2** *Heater Failed*

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**3** *Heater thermocouple open or short*

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**4** *Humidity heater currency low*

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**5** *Humidity heater thermocouple open or short*

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A photograph of three surgeons in an operating room, wearing blue scrubs, masks, and hairnets. One surgeon in the center is wearing surgical loupes. The background shows the sterile environment of an OR with overhead lights.

# *Sensors Monitoring Alarm*

*Sensor disconnect*

*Air flow probe fail*

*Sensor out of position*

*Oxygen cell difference*

*EcoLa series incubator monitors the condition of air, humidity, oxygen sensors, air flow probes and sensor box to ensure all the data collected are true and accurate.*



# EcoLa3000 Infant Incubator

## *Working Condition Monitoring Alarm*



*In order to keep proper running and provide the best user experience, EcoLa series infant incubator monitors the working condition of each aspect.*

- *Motor failed*
- *Add water*
- *Power failed*
- *Stuck key*
- *Sensor box fan failed*
- *Low air flow*
- *Water reservoir not engaged*

*Total alarms and remind messages up to 35 kinds. Ensure a more safety nursing platform.*

# EcoLa3000 Infant Incubator



## SERVICES

*The BNG professional service team will response the customers within 24 hours.*

[more](#)

**ACCESSIBLE TO HUMANITY**

# EcoLa3000 Infant Incubator



## DISTRIBUTION

*Products manufactured by BNG are sold through a combination of a direct sales force and worldwide distribution partners. Among the many benefits provided to our customers is the great combination of Sale, Service and Support.*

[more](#)

**ACCESSIBLE TO HUMANITY**

**Thank you!**

