

# Gas Endeavour III Light

## Pre-Installation & Delivery Check

Version 2.0 | June 2025

### Before getting started

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These steps should be taken before attending an **online installation session**, to ensure we can offer you the best training possible within the time frame. Upon receiving your package from BPC Instruments, please do the following:

#### Perform a delivery check

Unpack the box and perform a **delivery check**. A delivery check sheet for your instrument is provided in this document and in the user manual. We have also included photographs of our components for clarity.

We recommend that you do not throw away any packaging until you have checked all items have been delivered and accounted for. If you find that you are missing an item, please do not hesitate to contact our sales team: [sales@bpcinstruments.com](mailto:sales@bpcinstruments.com)

#### Place the instrument

Please place the instrument and its components where you intend to use it e.g. in your lab. Ensure you have enough space for all the components. The instrument, especially the detection unit, needs to be placed on a flat and level surface. If you intend to connect to the instrument remotely, the detection unit needs to be in proximity to an ethernet port.

#### Read the user manual

**Before attending the online installation session** or setting up the instrument, it is imperative you read the user manual in full. The manual should be sent *via e-mail* to you when your item has been delivered. Please contact sales if you have not received the user manual.

## Connecting to the instrument for the first time

Finally, please connect to the instrument directly for the first time. The detection unit needs to be plugged in and turned on to connect. Instructions on how to connect to the instrument can be found in our user manuals, handbooks and quick guides.

# Delivery Check

## Gas Endeavour III Light (2.0 L)

ART NO 29-0000-01



The GE III Light system is composed of:

### Incubation unit:

- 10 GL45 glass bottles 2.0 L (ART NO 102-0003-00)
- Thermostatic water bath III (ART NO 21-0104-01)
- Water bath lid and base tray (ART NO, 21-0107-01)
- Motor controller unit and its power adaptor, signal cable, and power splitter (ART NO 22-0105-01, 01-0311-01)
- 10 Brushless DC Motor cables (6x250 mm, 3x500 mm, 1x1500mm) (ART NO 94-0018-00, 01-0103-04, 01-0104-02)
- 9 Brushless DC Motors (ART NO 01-0102-02)
- 10 Axis couplings (ART NO 01-0112-01)
- 10 Stirrers for GL45, 2.0 L (ART NO 22-0103-02)

### CO2 Absorption Unit:

- 1 Bottle holders (9x250 mL) (ART NO 01-0204-03)
- 10 Glass bottles (250 mL) (ART NO 12-0101-01)
- 10 Bottle nuts GL45 (ART NO 01-0202-02)
- 10 Lids GL45 (ART NO 01-0203-01)

### BPC Core Unit:

- 1 BPC Core Light, its power adaptor and ethernet cable (ART NO 28-0301-01)
- 10 Flow cell units, 2 mL (ART NO 12-0302-01)
- 10 Flow cell units 9 mL (ART NO 01-0305-02)
- FCU volume sheet for calibration

### Additional Components:

- 1 Syringe
- 1 Festo tubing 50 m (ART NO 08-0610-01)
- 10 Tubing stoppers (ART NO 21-0406-02)
- 10 Push-in valves (ART NO 24-0401-01)
- 20 Check valves (ART NO 90-1009-01)
- 20 Push-in connectors 6 mm (ART NO 24-0402-02)
- 6 Soft binders 7/180 mm (ART NO 21-0106-02)
- 20 Multi-coloured marker clamps (ART NO 21-0405-02)
- Number marking stickers.
- Funnel (ART NO 21-0407-01)
- Bottle/tube opening tool (ART NO 24-0403-01)

# Components

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Images are examples of the products, exact specification may vary.

## Incubation Unit



**Thermostatic water bath III**

Design may vary depending on version.



**Water bath lid**

Pictured is an example, actual product will vary depending on configuration.



**Water bath base tray**



**GL45 glass bottles**

The GL 45 glass bottle can be used as a reactor vessel.

## Motor Control



**Motor controller unit (MCU)**

The motor controller is the hub of the agitation system. It interprets the speed signal sent from the gas volume measuring device, controls the direction of the motors and provides them with power.



**MCU power adaptor**

A power adaptor for the motor controller. It is used to power both the motor controller unit itself and all the connected motors.



### Motor controller signal cable

Used for communication between the motor controller (standard) and a main unit containing an embedded server kit.



### Motor power splitter

Splitter box for brushless DC motors connected in series. It allows the user to divide the electrical power to 3 separate chains of motors.



### Brushless DC motor cables

Used for connecting one brushless DC motor to another brushless DC motor or for connecting a brushless DC motor power splitter to one or several brushless DC motors. The cable carries both power and signals at the same time. Under no circumstances should it be disconnected while power is flowing through the setup as this might damage the connected devices.

## Motors and Stirrers



### Brushless DC motor

The brushless DC motor has a user-friendly design, a long operational life and is easy to use. It is designed to be used with GL 45 bottles of various sizes.



### Axis couplings for brushless DC motors

The axis coupling is used to affix a brushless DC motor to a stirrer. It comes with four metal screws (hexagonal sockets) for attaching to the axes.



### Stirrers GL45 Standard

A liquid and slurry stirrer, designed to fit GL 45 bottles, it has a length optimised for the reactor size. The shaft is made of stainless steel and housed within a plastic tube to provide an air-tight seal to the outside atmosphere.

## CO<sub>2</sub> Absorption Unit



### Glass bottle 250 mL

The GL 45 250 ml glass bottle can be used as CO<sub>2</sub> absorption unit



### Bottle holder 9 x 250 mL

Provides stabilisation for bottles so that they don't tip over when connected to tubes.



### Bottle nut

Designed to fit GL 45 bottles, the nut can be used to hold any of the following items in place while creating a gas-tight seal.



### GL45

For sealing GL 45 bottles while still allowing for gas to enter and exit through user attached tubing.

## Detection Unit



**BPC Core**

Detection unit for the instrument. Picture is BPC Core AMPTS with 18 flow cell units in place.



**Flow cell unit (FCU)**

A single flow cell unit (FCU) as used in the BPC Core. Pictured is the 9 mL resolution.



**Ethernet cable**

Network cable for connecting any Ethernet network enabled system either directly to a computer or to network equipment.



**Power supply**

Cable for power supply to the BPC Core detection unit.

## Tubing and Connections



**Push-in valve 6 mm**

Attach two pieces of tubing with an open/close valve function



**Tubing stopper**

For blocking open tubing



### Check valve

The check valve is used to prevent reverse flow of gas or liquid, allowing the target substance to flow in only one direction.



### Festo tubing

50 m spool of Festo tubing. May differ from the tubing pictured.



### Push-in connectors



### Multi-coloured clip markers

For labelling of tubing.



### Soft binders 7/180 mm

Soft binders to allow cables to be grouped together.

## Other



### Funnel



### Bottle opening tool

Custom tool to assist with removal of tubing or bottle lids – colour and style may vary



### Syringe

The general purpose syringe can be used for filling a flow cell unit.

## Items not included

The following items are **not** included in the package:

- Flushing gas to obtain anaerobic conditions inside the reactors.
- Chemicals such as 3 mol/L sodium hydroxide solution, pH indicator (thymolphthalein) and ethanol.
- Additional wall sock adapters (plus/contacts). The ones supplied are according to European, UK or US standards, depending on the country where the instrument will be operated.
- Gas sampling units and gas bags for off-line gas composition analysis.