

605 Constant Current Power Supply

User Notes



Overview

The Bentham 605 is a constant current power supply designed for use with stabilised light sources and calibration standard sources.

Max output current= 12A dc
 Max output power = 250W
 Max compliance voltage= 35V dc



A key switch provides three calibrated current settings and one variable setting. A socket for lamp fan operation is situated on the lower right of the front panel.

Specifications

Temperature stability	30 ppm/°C
Indications	Green LED= Power on Red LED = Lamp failure
Front panel meter	Output voltage indicator (accuracy ±0.1V- not precision meter)
Fan output	110V ac (typical 200mA)
Mains input voltage:-	Back panel switch- select 110V or 220/240-CV AC
Mains frequency	50 or 60 Hz
Mains input fuse	220/240V – 2.5A anti surge 110V -5A anti surge

Setting up Mains Voltage

Whilst the mains voltage is set up at Bentham according to where the device is sent, it is of good practice to verify before powering up the 605.

A toggle selector should be found underneath the mains connector to the rear of the 605. Please ensure that the voltage of the country in which the 605 is to be used is displayed.



At Bentham, the appropriate fuse (plus a supplement) is fitted. Should the voltage setting be wrong, please ensure that the correct fuse is installed.

Lamp Operation

- Use the key of 605 to turn etched arrow on the current selector to that current required
- Should the required current not appear as a preset value, use the adjustable dial on the right hand side and select that channel. (dial shows two significant figures and two decimal points, 2A is therefore 2000 on the dial)
- The operating conditions of the various lamps supplied by Bentham are detailed overleaf
- To prolong lamp life, ensure lamp polarity respected. and that those housings requiring a fan have the fan connected into the 605 lower right socket.
- Depress the on/off switch to illuminate/ extinguish lamp.

Calibration Sources:-

Source	Current (A)	Nominal Voltage (V)	Fan
CL2	8.500	12	N
CL2-250	10.400	24	N
CL2-Nernst	8.500	4	N
CL6	6.300	24	Y
SRS8	4.000	12	N
SRS12	8.500	12	N
TSRF/TLF 20W	3.200	6	N
TSRF/TLF1000	8.500	12	N
TSRF/TLF1800	10.400	24	N

General Illuminators:-

Source	Current (A)	Nominal Voltage (V)	Fan
IL1	8.500	12	Y
IL10	8.500	12	Y
IL6	8.500	12	Y
IL6 250	10.400	24	Y
IL6 Nernst	8.500	4	Y
IL7 Xe	8.500	-	Y
IL75 Xe	5.400	-	N

Operation Notes

For correct lamp operation (and in the case of calibrated sources, to preserve the validity of calibration), please respect the following:-

All sources:-

- Ensure the correct polarity is respected at all times, connecting red to red and black to black from lamp to 605.
- Do not touch bulb with bare fingers.
- Do not run the lamp at a current lower than that at which it is specified
- The lamp should be operated in configuration in which calibrated ie. pins up/ pins down. Operation in any other sense may invalidate calibration and curtail lamp life.
- In general bare lamps require around a 5minute warm up time, housed lamp up to 15 minutes for optimal stability
- It is of use to note the voltage displayed on the 605 LCD. This is for indication only, but can be used to determine lamp condition¹. These lamps are operated at slightly under their nominal rating, and as such the voltage readings may be lower than nominal voltage

Calibrated sources:-

- Do not remove bulb from holder.
- Bentham recommend that the device should be re-calibrated every 100hrs use or 1-year, whichever comes first.

WEEE statement:

Bentham are fully WEEE compliant, registration number is WEE/CB0003ZR. Should you need to dispose of our equipment please telephone 0113 385 4352 or 4356, quoting account number 135419.



¹One of the failure mechanisms of such lamps is "bridging" or short-circuit of part of the filament, leading to a correspondingly lower voltage and reduced light output.