



Heated Perfusion Cube G

High Flow Rate

Model # ALA HPC-G

8.2023

Warranty

ALA Scientific Instruments, Inc. agrees to warranty this product against defects in material and/or workmanship for six months from date of shipment. Remedy shall be limited to replacement or repair of the item(s) at ALA Scientific's discretion. The usage of this product by the user will indicate the users understanding of the use of this product as set forth in this manual. Neither ALA Scientific Instruments, Inc., nor any of its affiliates will be held responsible for damage to laboratory equipment, including microscopes, resulting from the use or misuse of this product, including damage resulting from inputs exceeding specified limits that result in malfunction. This warranty does not cover corrosion or failure of this device due to oxidation of wetted materials resulting from use.

If device repairs are necessary, shipping charges to the factory are the customer's responsibility.

Contact your distributor or support@alascience.com for repairs and information on service.

This instrument is not for clinical use. It is strictly for basic research in a laboratory setting. It has no clinical application whatsoever and cannot be used on human subjects.

Introduction

The Heated Perfusion Cube G (HPC-G) is a high flow rate perfusion fluid heater. It is designed to heat a flow of liquid to a precise temperature before flowing into a cell bath. Flow rates of 10 ml/min can be accommodated with fluid heated from room temperature up to 40°C and above. Heating is accomplished with power resistors and all wetted surface areas are inert materials.



The HPC-G has a feedback temperature sensor that is mounted in the block that heats the fluid and is situated so that the tip of the sensor is in the fluid path. This allows for tight control of the fluid temperature as well as the block. This prevents over-heating of the device as well as fluids.

Usage

Usage of the HPC-G is very simple. It must be connected to a qualified temperature control device that meets the specifications in the manual. Any temperature controller from ALA Scientific Instruments or npi electronic will work. The HPC-G should be the last device that fluid flows through before being introduced to the cell bath.

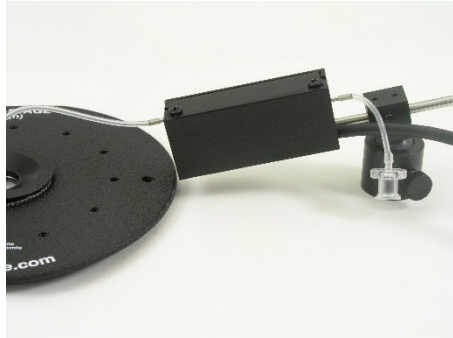


Fluid to be heated enters the back of the HPC-G (The back end is the same side as where the mounting rod attaches) through a Luer fitting. It exits through the front where another piece of silicone tubing guides the fluid to the cell bath. This length of tubing should be kept as short as possible to be

sure that the temperature of the exiting fluid does not have a chance to cool before it enters the cell bath.

The Heated Perfusion Cube is mounted to the stage assembly that holds the prep.

The HPC-G mounts easily to our **MMT-HPC** (optional) holder using the 1/8th inch (3.2mm) shaft. The MMT-HPC holder has a magnetic base and ball swivel for easy adjustment. The shaft can be held by a variety of manipulators and clamping devices.



For fluid connection, your HPC-G has a female Luer fitting attached to a short silicone tube.

Care and Maintenance

The Heated Perfusion Cube must be washed out after every usage.

Never leave salt solutions in the Cube for an extended period. For best performance and maximum life span the HPC-2G should be flushed out with distilled water after every use. At least 10ml should be flushed through for proper rinsing. It is best to blow out excess water and store it dry.

Never let the unit heat up above 60°C.

Never submerge the unit, it is not waterproof. If a leak is detected, shut down all power immediately and contact your distributor or the factory as soon as possible.

SPECIFICATIONS:

Flow rate at 1 meter fluid height	8ml/min
Typical flow/temperature characteristic	Maintain 40°C at 10ml flow starting at 21°C
Size	51mm x 22 x 14
Weight	40g
Flow path	15cm
Wetted materials	Silicone, aluminum oxide alloy, 316 stainless steel
Capacity	40W @ 14V
Resistance	5 ohms
Voltage range	5-14V
Thermistor	2252 ohm at 25°C
Mounting shaft	3mm x 90mm
Input/output tubes	1mm ID
Nominal Internal volume (adjustable)	250uL
Electrical connection	8 pin DIN
Temperature differential at 5ml/min	1°C from internal reading to external sensor 8cm downstream