

Hi-G Battery Power Supply
LB-Li24/32-120

 **Hardware Manual**

Revision 2.01E

Photron

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- Product specifications and manual contents are subject to change without notice.
- PHOTRON LIMITED bears no responsibility for any results by using our products nor by applying this manual to any operations.



Introduction

Thank you for your purchase of Photron's Hi-G Battery Power Supply LB-Li24/32-120 (referred to below as the system).

This manual contains the operating instructions and warnings necessary for using the system. Before using the camera, please read the entire manual.

If any part of this manual is unclear, contact Photron using the contact information printed at the back of the manual.

Using the System Safely and Correctly

In order to prevent injury to yourself and others, and to prevent damage to property, carefully observe the following safety precautions.

Photron has given its full attention to the safety of this product. However, the extent of damage and injury potentially caused by ignoring the contents of the safety precautions and using the product incorrectly is explained next. Please pay careful attention to the content of the safety precautions when using the product.

Icon	Explanation
 Warning	This symbol indicates actions that carry the risk that a person could receive a serious injury.
 Caution	This symbol indicates actions that carry the risk that a person could receive a moderate injury, or that damage to physical property will occur.

The safety precautions to be observed are explained with the following symbols.

Icon	Explanation
	This symbol indicates actions that require caution.
	This symbol indicates actions that are prohibited and must be avoided.



European Union (and EEA) only



“CE” mark indicates that this product complies with the European requirements for safety, health, environment and customer protection. “CE” mark equipments are intended for sales in Europe.



These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC), the Battery Directive (2006/66/EC) and/or your national laws implementing those Directives.



This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit www.photron.com.

(EEA: Norway, Iceland and Liechtenstein)

This product is in conformity with the protection requirements of EU Council Directive 2014/30/EU (Class A) on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



Warning

Icon	Explanation
	<p>Do not charge or discharge in a location where the temperature might get unusually hot (e.g. beside a fire, in a car under the sunshine), or a location where might rise flammable gas.</p> <p>Doing so can cause heat, smoke, or fire.</p>
	<p>Stop charging when the charging does not finish after 5 hours from starting charging.</p> <p>Not doing so can cause heat, smoke, or fire.</p>
	<p>Do not disassemble or modify this product.</p> <p>There are high voltages inside the product that can cause electric shock.</p>
	<p>Keep away from water.</p> <p>Wetness can cause fire, electric shock or malfunction from short circuit.</p>
	<p>Use appendage or indicated cable.</p> <p>Using other cables can causes heat, fire and malfunction.</p>
	<p>Do not plug in or unplug the power cord with wet hands.</p> <p>Doing so can cause electric shock.</p>
	<p>Please note the followings when handling the cables.</p> <ul style="list-style-type: none"> • Do not scratch • Do not wrench • Do not bend forcibly • Do not put heavy object • Do not heat • Do not modify • Do not pull • Do not bind • Do not touch with wet hands <p>Doing so can cause cable break, and can causes fire or electric shock.</p> <p>When cable or connector had damaged, do not continue to use but exchange.</p>
	<p>Contact your dealer or nearest Photron office when disposing of the product.</p>



Caution

Icon	Explanation
	Do not store the product in a location with a lot of humidity or dust. Doing so causes malfunction.
	Do not stick and press strong to connector hole. Doing so can cause malfunction.
	Do not use beside gasoline, flammable spray, thinner, lacquer, and so on. Doing so can cause explosion.
	Do not disassemble or repair the product for yourself.





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1. Checking the products

The system consists of the following components.

Unpack the system from the box and check each component.

1. Battery System



1

2. AC adapter

1

3. DC extension cable for AC adapter

1

4. AC cable

1

5. Hi-G Battery Power Supply LB-Li24/32-120 hardware manual

1



For safety reason, the battery is discharged for shipping.

Recharge it until “CHARGE” lamp is turned to green before using it.



Use the dedicated AC adapter included in the box. (P/N: AT S300T-P240)

2. Features of products and special notes

- **Features**

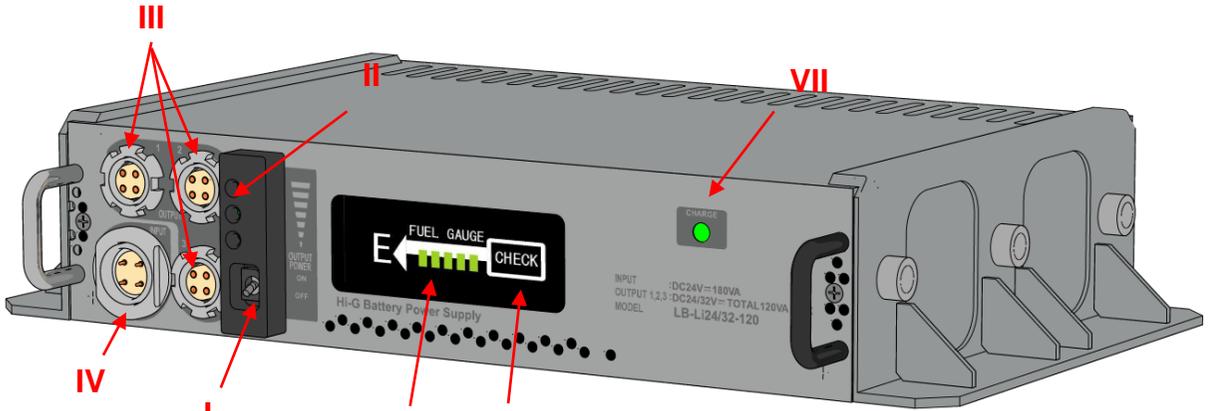
- Compact, light and high capacity battery power supply.

- **Special notes**

- Read through warnings and cautions once again before using the system, thoroughly follow them.
- Use the battery system as fully charged as possible.
- In case of exchanging the internal battery, contact your dealer or the nearest Photron office.
- If heat, fire, noise, or some other abnormalities are noticed, stop using the system and disconnect the AC adapter.
- Do not use outdoor.
- This battery system is specially designed for Photron's high speed cameras. Do not use with other manufacturer's products.
- In case of transportation by air freight, discharge electricity until lower the remaining battery amount to below 30%.

3. How to use

- Part names and functions



	Part Names	Functions	Notes
I	OUTPUT POWER (ON/OFF)	Power switch	Power is supplied to the connected camera devices when turned on.
II		Indicator	Battery condition at the time of power supply is shown.
III	OUTPUT (A, B, C)	Output power connector	Connect camera devices.
IV	INPUT	Power supply connector	Connect the AC adapter. Ensure that the dedicated AC adapter is used.
V	CHECK	Remaining power check	Remaining power is shown when this button is pressed.
VI	FUEL GAUGE	Remaining power indicator	Remaining power is indicated by LED.
VII	CHARGE	Charging indicator	Internal lithium-ion battery condition is shown.

- Up to 3 camera devices can be connected. The internal lithium-ion battery supplies the power to each connected device via DC/DC converter. The total output is up to 120VA, and the power can be supplied from one connector.
- By using the dedicated AC adapter, each device is powered by the AC power supply, and the internal battery is charged. The AC adapter connector is also used as the internal lithium-ion battery charger input, therefore the battery is charged even when OUTPUT POWER is off.

The temperature control unit is embedded in the battery charger circuit.

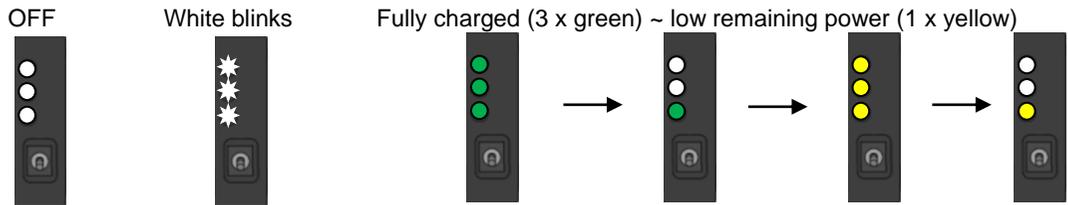
The battery will not be charged if the surrounding temperature is more than 40degC.



Due to a temperature rise in the system immediately after power on, the battery may not be charged even if the AC adapter is connected. In this case, restart to charge the battery when the temperature drops.

[INDICATORS]

OUTPUT POWER ON → Check the remaining power → Indicate the actual remaining power



No remaining power → red blinks



Internal temperature rise → red blinks (stops after 5 minutes)



Red blinks quickly (stops after 1 minute)



AC adapter connected → blue turns on.



[FUEL GAUGE]

Remaining battery condition is shown when "CHECK" is pressed.

The indicator looks like this when the remaining power is below 50%. →



[CHARGE]

Charging, in use



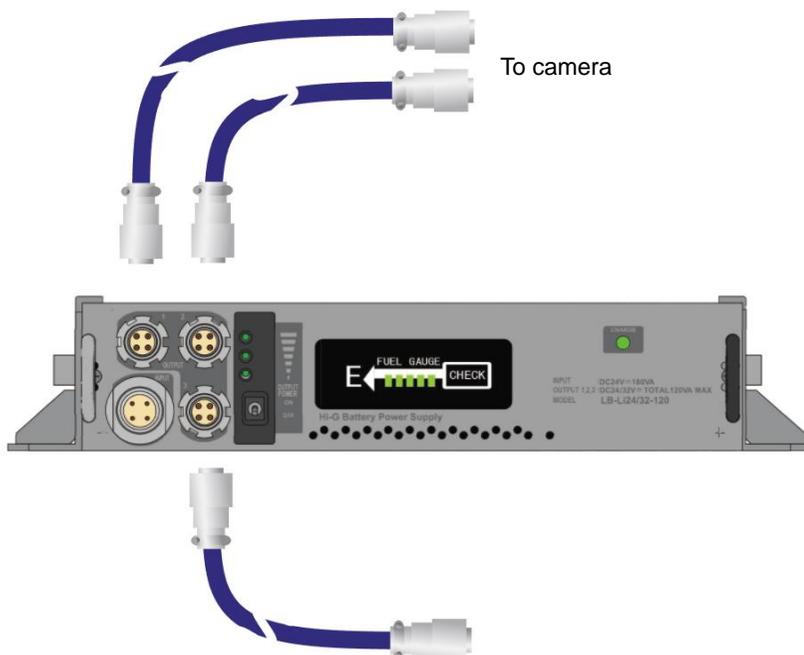
Charge completed, fully charged



- **How to use**

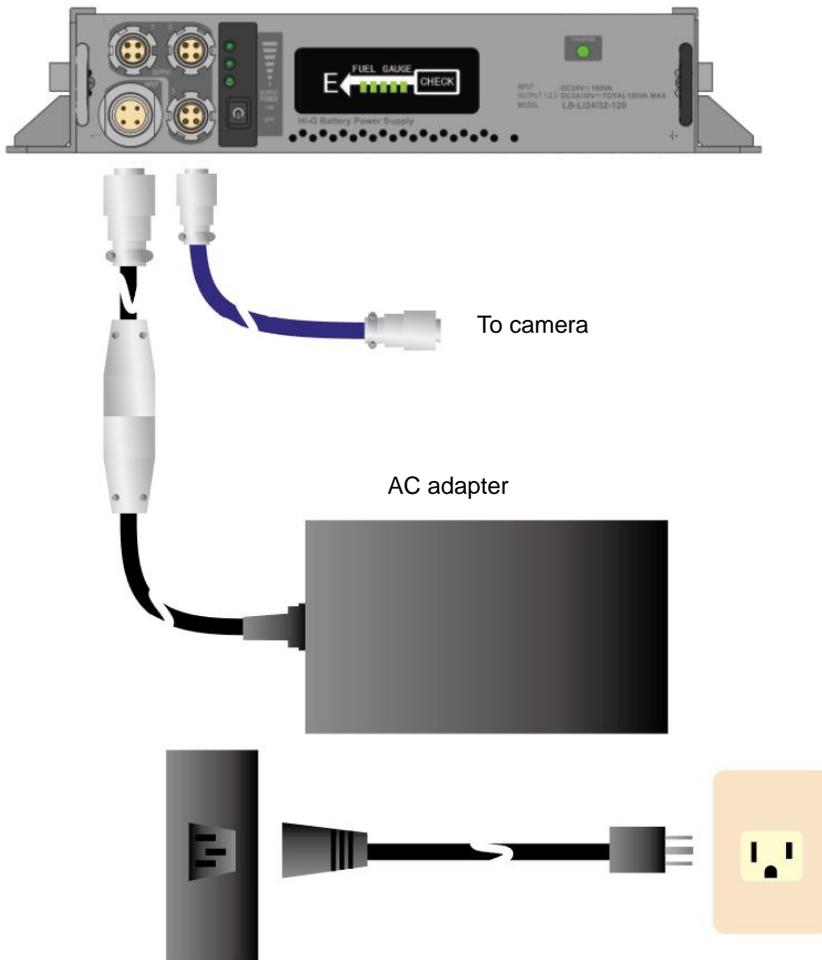
1. To power the connected cameras by the internal lithium-ion battery

- Connect each camera as the pictures shown below.



- Connect the battery system and cameras with the dedicated cables (max. 3 cameras can be connected)
- Switch OUTPUT POWER to “ON”.

2. To power the connected cameras by the AC adapter
 - Connect each camera as the pictures shown below.



- Connect the AC adapter to the battery system.
- Connect the battery system and each camera with the dedicated cables. (maximum 3 cameras can be connected)
- Switch OUTPUT POWER to "ON".



Cameras cannot be used during battery charge.

- **Use of battery**

In order to fully utilize the battery performance, the operating temperature between 10 to 30degC is recommended.

- **Storage**

In case of long term storage (more than 3 months), store the system half charged (around 50%).

- **Indicator**

Indication of remaining battery amount (FUEL GAUGE)

- The remaining battery amount can be checked by the following LED indicators in 5 stages.
- Press "CHECK" button, then the LED lamp will turn on for 3 seconds.

FUEL GAUGE indication

Indicator	LED indicator
100%	5
75%	4
50%	3
25%	2
10%	1
OFF	0

- When checking the remaining battery amount, do not place any loads on the system.

- **Protection circuit**

For safety reason, the protection circuit with a fuse is integrated in the system.

If a short circuit occurs, or instantly a large amount of electric current is flown, or more than the rated load is applied, the system will need to be repaired.



If the battery system is below 0degC, the fully charged condition may not be correctly detected even if the designated charging time is passed. In this case, wait until the system is warmed and start charging.

If the system needs to be repaired, contact your dealer or nearest Photron office listed in page 13. You are not allowed to change a fuse on their own. We will check the safety and functions of the system and change the fuse.

- **Protection against temperature**

If the battery temperature exceeds 70degC, the system will stop working after 5 minutes in any cases.

(The red indicator starts to blink if the temperature exceeds 70degC, and the system stops after 5 minutes.)



One minute before the battery stops, the red indicator starts to blink quickly.

The system needs to be restarted for recovery. However, it will stop working after 5 minutes again if the temperature still exceeds 70degC at the time of restart. Wait until the internal temperature drops for restart.

*If the above symptom appears, turn off “OUTPUT POWER” switch and disconnect cables from “INPUT” connector and “OUTPUT (A, B, C)” connectors.

4. Main features and specifications

Battery type	Lithium-ion battery	Operating temperature	0 ~ 40degC (10 ~ 30degC recommended)
Rated output	TYPE 24V DC24V / 120VA (3 ports in total) TYPE 32V DC32V / 120VA (3 ports in total)	Operating humidity	85% or less (no condensation)
Rated input	DC24V/180VA	Storage temperature	-25~60degC (0 ~ 20degC recommended)
Maximum operating latitude	2,000m or lower	Storage humidity	95% or less (no condensation)
Shock Resistance performance	100G/10ms/6axis x 1000 times in total	Outline dimension	(W) 245 x (H) 160 x (D) 55mm * excluding protrusions
Pollution degree	Degree 2 according to IEC60664-1	Weight	3.75kg
Battery capacity	130Wh	Charging time	Approximately 5 hours (In case of charging from 0 → 100%)
Overvoltage category	Battery system OVC I When using the AC adapter OVC II		

● Connected camera devices and operating time

- This battery system can be connected with maximum 3 camera devices, but the maximum power consumption is 120VA. Do not use the system with over 120VA.

If the total output of 3 camera devices is 120VA, the operating time is approximately 45 minutes (in case of the battery full charged).

If only one camera device is used and the output is 40VA, the operating time is approximately 135 minutes (in case of the battery fully charged).

The operating time varies depending on the total amount of the power consumed by the connected camera devices. Refer to the hardware manual of each camera device for the amount of its power consumption.

5. Dimensions

[Drawing] Unit: (mm)

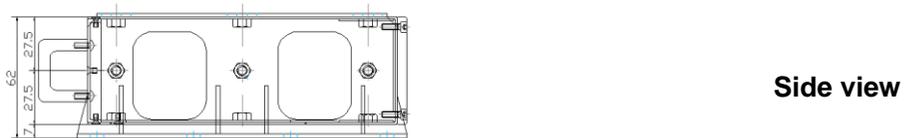
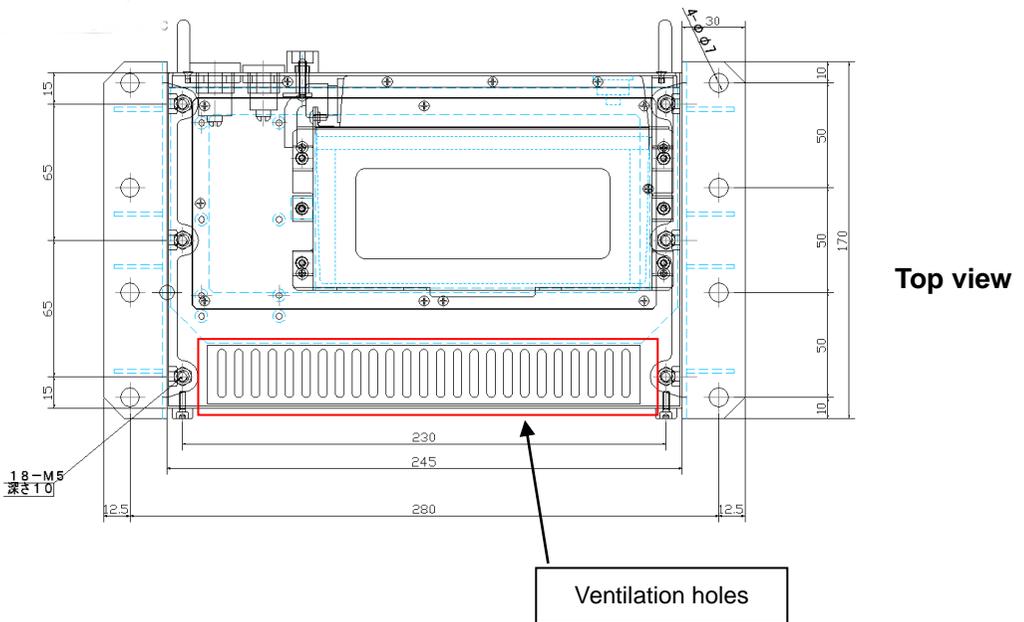
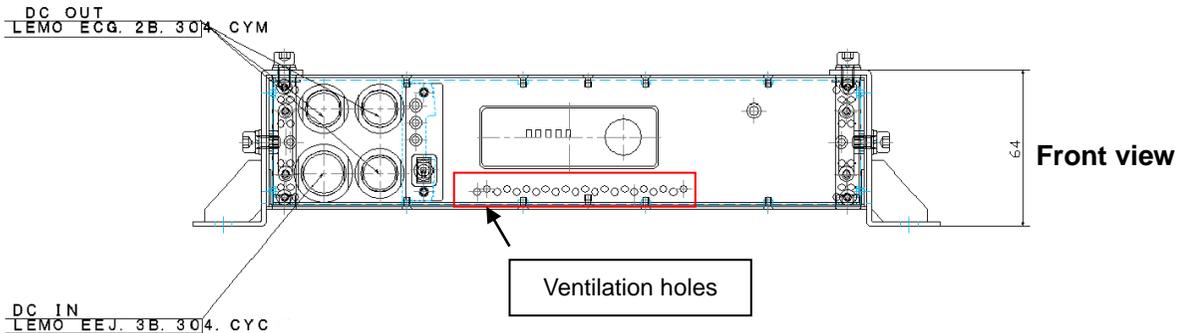
- **Cautions for system installation**

Make at least 30 mm gap from the wall and avoid closing the ventilation holes.

If two or more systems are installed, also make at least 30 mm gap between each system.

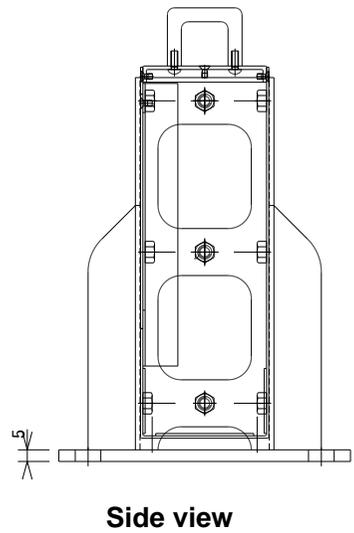
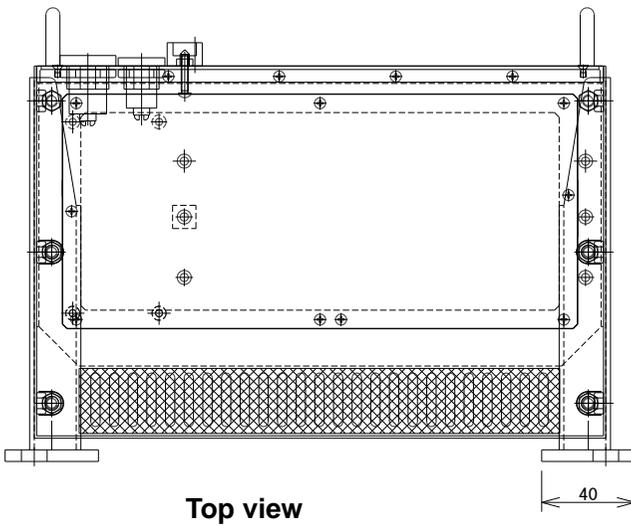
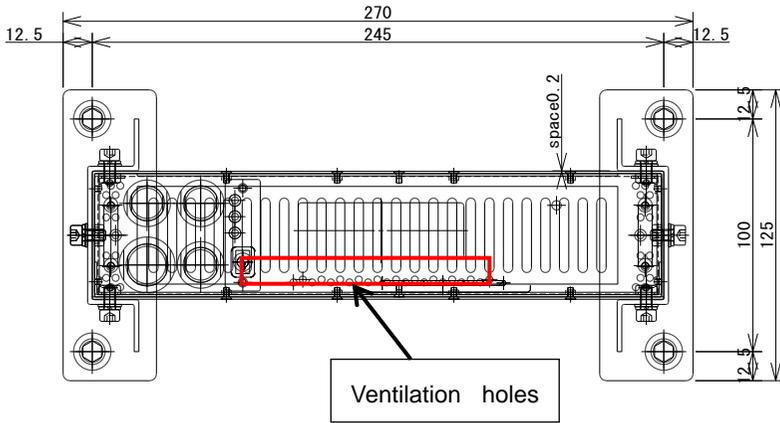
If the ventilation holes are filled with dusts, remove them with a clean cloth without using chemicals.

- **Body (horizontal mounting bracket)**



- **Body (vertical mounting bracket)**

[Drawing] Unit: (mm)



6. About the Warranty

In the unlikely event that it malfunctions due to a manufacturing defect, it will be repaired, at no charge, within the warranty period.

- **Warranty Exceptions**

The following exceptions will result in fee-based repair, even within the warranty period.

1. Damage or malfunction as a result of fire, earthquake, water damage, lightning, other natural disasters, pollution, or the effects of abnormal voltage.
2. Damage or malfunction as a result of dropping or mishandling during shipment or moving after purchase or misuse.
3. When repair, adjustment, or alternation done by an entity other than Photron service has been performed on the system, or damage or malfunction that is determined to be a result of the responsibility of using the product.
4. Damage or malfunction as a result of taking an impact surpassing the anti-G performance of this product.

For inquires related to malfunction, contact the dealer where the product was purchased, or the nearest Photron office.

7. Contacting Photron

For technical inquires related to the system, or for inquires related to the user's manual, telephone, FAX, or e-mail using the contact information listed below.

In addition, the following items will be verified when inquiring, so note them in advance.

1. Contact Information: Company name, school name, customer name, phone number
2. Product Name: Hi-G Battery Power Supply LB-Li24/32-120
3. Serial Number: Check on the nameplate seal.
4. Reason for Inquiry: Condition of the system and what is known about it.

● Contact Information

In Americas and Antipodes:

PHOTRON USA, INC.

9520 Padgett Street, Suite 110
San Diego, CA 92126-4446, USA
Phone: 858-684-3555
Fax: 858-684-3558
E-mail: image@photron.com
www.photron.com

In Europe, Africa and India:

PHOTRON EUROPE LIMITED

The Barn, Bottom Road
West Wycombe
HP14 4BS, Bucks
United Kingdom
Phone: +44(0) 1494 481011
Fax: +44(0) 1494 487011
E-mail: image@photron.com
www.photron.com

In other areas:

PHOTRON LIMITED

21F, Jinbocho Mitsui Bldg.,
1-105 Kanda jimbocho, Chiyoda-Ku, Tokyo 101-0051
Phone: +81 3 3518 6271
Fax: +81 3 3518 6279
E-mail: image@photron.co.jp
www.photron.co.jp

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