

**OLYMPUS<sup>®</sup>**

---

Flash High Voltage Set

*DIGITAL*  
**SHV-1**

**EN** Instructions




---

Thank you for purchasing the OLYMPUS Flash High Voltage Set (SHV-1). This is an external flash power supply for exclusive use with OLYMPUS digital cameras.

To ensure your safety, please read this instruction manual before use, and keep it handy for future reference.

## SAFETY PRECAUTIONS (Be sure to read and observe the following.)

This instruction manual uses a variety of common symbols and icons to assist you in proper handling and usage of this product properly, and to warn you of potential hazards to yourself and others as well as to property. These symbols and their significance are described below.

|   |  |  |
|---|--|--|
|  <b style="font-size: 1.2em;">DANGER</b><br>Failure to observe the precautions indicated by this symbol may result in serious injury or death. |  <b style="font-size: 1.2em;">WARNING</b><br>Failure to observe the precautions indicated by this symbol may result in injury or death. |  <b style="font-size: 1.2em;">CAUTION</b><br>Failure to observe the precautions indicated by this symbol may result in injury or property damage. |
|---|--|--|

| IMPORTANT  |  |   |  |
|--|--|---|--|
|  Prohibited |  Disassembly prohibited |  Mandatory |  Unplug power cord from the power outlet. |

For customers in Europe



The "CE" mark indicates that this product complies with the European requirements for safety, health, environment and customer protection. CE-mark products are for sale in Europe.

For customers in USA

FCC Notice

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any unauthorized changes or modifications to this equipment would void the user's authority to operate.

For customers in CANADA

This Class B digital apparatus complies with Canadian ICES-003.

### **DANGER**

- Use this product only in combination with the equipment specified in this manual.
- This product can only be used with flash systems designed exclusively for OLYMPUS digital cameras. Do not use it with non-Olympus flash systems.
- This product has been designed for exclusive use with the OLYMPUS BN-1 Ni-MH Battery Pack. Do not use it with a dry cell battery or a non-designated rechargeable battery.
- Use only the designated flash connection cable.
- The AC-2 AC adapter provided with this product is the only AC adapter that can be used with this product. Do not use any other AC adapter with this product. Similarly, the provided power cord is the only power cord that can be used with this product.

---

- Do not use this product for any purpose other than as a flash power supply. For example do not use it as a general DC power supply.

---

- Do not use the provided AC adapter to supply power to other products.

---

- Never expose this product to water or moisture including rain, seawater and animal urine. Do not handle the product when it is wet or when your hands are wet. Do not operate this product in a damp environment (such as in a bathroom).

---

- Do not insert a metallic object (such as a wire) into the product or into a contact.

---

- Never solder this product or attempt to repair, deform, modify or disassemble it.

---

- Do not use this product if it is damaged, leaking, or wet.

---

- Do not use or store this product where it may be exposed to high temperatures. For example, do not leave it on the dashboard of a car under direct sunlight or place it near heating equipment.

---

- Do not use this product in areas where heat may accumulate, such as under a cushion.

---

- Do not use this product where it may be exposed to flammable gas. Doing so poses a risk of fire or explosion.



- Do not short-circuit the terminals with a metallic object.  
When transporting or storing this product, cover the terminals with the provided cap. It is dangerous to carry an uncapped battery in a bag, pocket, etc.
- Never throw this product into a fire or put it near a fire.
- When unplugging the AC adapter from a power outlet, hold it by the plug. Do not pull it out by the cord. Do not bend or pull the cord excessively or place a heavy object on it. Damage to the cord may result in fire ignition, overheating and/or electric shock.
- When unplugging the AC adapter from a power outlet, hold it by the plug. Do not pull it out by the cord. Damage to the cord may result in fire ignition, overheating, fluid leak and/or electric shock.
- When using this product to recharge the BN-1 battery pack, always power the AC adapter with the supply voltage specified in this instruction manual.
- Do not use this product near heat-generating equipment. This could damage the external finish or melt the coating and result in fire, overheating, explosion, fluid leak or electric shock.
- Always insert the plug of the AC adapter fully into the power outlet. Do not use it while the plug is inserted only halfway.



## ⚠ WARNING

- Do not touch this product or the battery for too long when it is charging. This could result in low-temperature burns to your skin.
- Do not use the power supply, power cord or battery if it is damaged. To avoid electric shock or injury, do not touch any exposed internal parts. If the product is damaged, unplug the power cord and do not use it. For repair, contact Olympus.
- If you notice any abnormalities such as leakage, discoloration, deformation, overheating, or odor, immediately unplug the power cord and stop using the equipment. Continued use may result in fire hazard, fire ignition, overheating and/or explosion. For repair, contact Olympus.
- To avoid fire, overheating, explosion or leakage, do not subject the battery to excessive shock, throw it, or otherwise damage it.
- Never put the battery in a microwave oven or high-pressure container. This could cause a fire, leakage, overheating, or an explosion.
- Always keep the battery out of reach of children. Children should only be permitted to use the battery under strict adult supervision. If children are not supervised, there is a risk of electric shock, injury or swallowing.
- If the battery leaks or emits a burning odor, keep it away from heat sources. Leaked fluid may catch fire, causing the battery to smoke, burn, or explode.
- If the fluid from inside the battery sticks to your skin or clothes, it may cause injury. Wash it off immediately with clean water and see a doctor.
- If charging does not complete in the specified charge time, stop charging to prevent fire, overheating or explosion.
- When recycling or disposing of the battery, insulate all terminals by covering them with plastic tape. Otherwise, the batteries could be short-circuited and cause a fire, overheating or explosion.  
To recycle a battery, take it to the nearest dealer participating in the recycling activities. For disposal, follow the regulations set by your local government.



## ⚠ CAUTION

- If charging does not complete in the specified charge time, stop charging to prevent fire, overheating or explosion.
- Do not shake this product when a battery is attached. The battery could pop out and cause injury.
- Do not place a heavy object on this product or power cord.
- Do not place this product on an unstable surface such as a tilted or unsteady table. If the High-Voltage pack falls off, it may be damaged or cause injury.
- Do not store or use this product where it may be exposed to moisture, excessive dust or high temperatures. Remove dust from the power plug before inserting it into a power outlet.
- The battery will get hot after extended use in HV-1 High Voltage Pack. To prevent burns, do not remove the battery from the HV-1 immediately after use.
- Do not charge the battery in an extremely cold or hot environment. Charging the battery in temperatures between 10°C and 30°C (50°F and 86°F) is recommended. Using the battery in low temperatures may result in a decrease in battery performance.



- When unplugging the power plug, hold the plug. Do not pull it by the cord. Also do not bend or pull the cord excessively or place a heavy object on it. Damage to the cord may result in fire ignition, overheating and/or electric shock.
- Unplug the power plug from the power outlet except when recharging the battery.



## OPERATING PRECAUTIONS

### Battery Handling Precautions

#### At time of purchase:

- The battery discharges even when it is not used. After purchasing the battery, be sure to charge it before use. Also, whenever the battery has not been used for a long period, recharge it before use.
- New batteries or batteries that have not been used for a long time (more than one month) may not be fully charged. This is not a malfunction, but is a characteristic of the battery. **Charge them two or three times before using them for the first time or when they have not been used for a long period.**
- Check that the battery terminals are clean before use. If they are dirty, contact failure may cause problems with charging or shorten the battery's operation time after charging.

#### Care:

- Clean the battery by wiping it with a soft, dry cloth. Never use a wet cloth, alcohol, lacquer thinner, benzene or detergent.

#### Operating temperatures:

- Use this battery pack within a temperature range of  $-10^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  and  $140^{\circ}\text{F}$ ).
- Even within the specified operating temperature range, battery operation time decreases as the temperature drops. When the temperature is low, it is recommended to carry a spare charged battery and keep it warm in a pocket, bag, etc. When carrying a battery in your pocket, be sure to cap the battery to prevent short-circuiting. Do not put anything else in the pocket with the battery.

#### Precautions for transport and storage:

- Do not leave the battery in the HV-1 High Voltage Pack. Even when the power switch is set to off, a small amount of current continues to flow and may lead to a decrease in battery performance. When not using the battery, attach the provided cap and store it in a cool, dry place with a temperature between  $15^{\circ}\text{C}$  and  $25^{\circ}\text{C}$  ( $39^{\circ}\text{F}$  and  $77^{\circ}\text{F}$ ).
- When transporting or storing the battery, attach the provided cap to prevent short-circuiting of the  $+/-$  terminals. Do not put any metallic objects including personal ornaments in a bag or drawer with the battery. This could cause a fire, overheating, explosion or leakage.

#### Service life of rechargeable battery pack:

- The performance of the battery degrades gradually after repeated charge and discharge. When the operation time reduces considerably, this may be the sign of replacement timing. The battery capacity is usually halved after about 500 cycles of charging and discharging, though this value is variable depending on the operating conditions.

#### Recycling the battery:

- Please recycle BN-1 batteries to help save our planet's resources. When you throw away dead batteries, be sure to cover their  $+$  and  $-$  terminals and always observe local laws and regulations.

### Battery Charging Precautions

#### Before use:

- Be sure to read the safety precautions thoroughly before use. Follow all instructions carefully.

#### Operating precautions:

- The optimum ambient temperature for charging is between  $10^{\circ}\text{C}$  and  $30^{\circ}\text{C}$  ( $50^{\circ}\text{F}$  and  $86^{\circ}\text{F}$ ).
- The battery may get hot, for example immediately after the flash is used. The battery may not fully recharge if it is hot, so wait until the battery cools down before recharging it.
- The battery charger and battery get hot during charging. This is not a malfunction.
- Interference with TV or radio reception may occur during charging. This is not a malfunction. To avoid this, move the charger further away from the device being interfered with.
- Even within the specified operating temperature range, battery operation time decreases as the temperature drops. When the temperature is low, it is recommended to carry a spare charged battery and keep it warm in a pocket, bag, etc. When carrying a battery in your pocket, be sure to cap the battery to prevent short-circuiting. Do not put anything else in the pocket with the battery.

#### Care:

- Clean the battery by wiping it with a soft, dry cloth. Never use a wet cloth, alcohol, lacquer thinner, benzene or detergent.

#### Overseas use:

- If you plan to use this product in another country, you may need to obtain a conversion plug matching the design of power outlets used in that country. Check with a travel agent to determine whether or not you will need a converter. Do not use an electronic transformer as this will cause a malfunction.

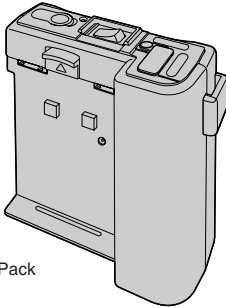
# Contents

- Checking the package contents ..... 15
- Nomenclature ..... 16
- Attaching/detaching the battery pack ..... 17
- Recharging the battery pack ..... 17
- Connection to the flash system ..... 18
- Turning the flash system on ..... 18
- Remaining battery capacity indication ..... 19
- Charge time and flashing count ..... 19
- Main specifications ..... 20

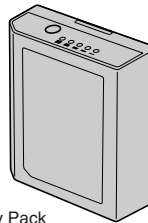
## Checking the package contents

Before using this product for the first time, check that all of the provided items are present in the package.

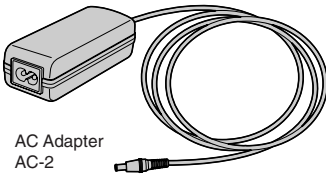
If any item is missing or damaged, please contact your dealer.



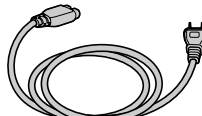
High Voltage Pack  
HV-1



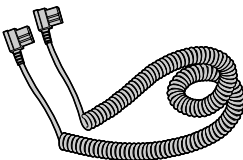
Ni-Mh Battery Pack  
BN-1



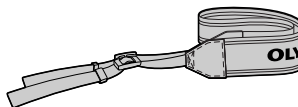
AC Adapter  
AC-2



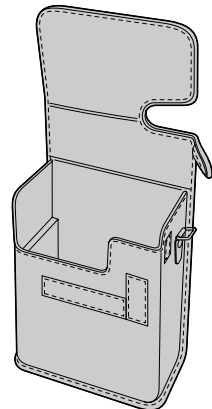
AC power cord



Connection cable

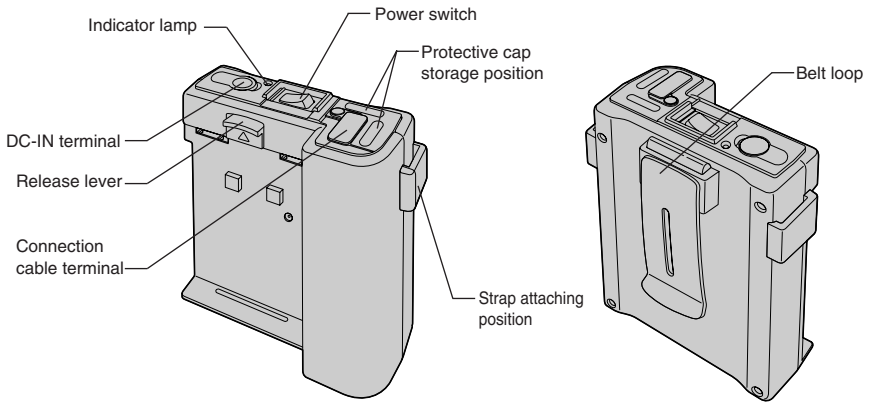


Strap

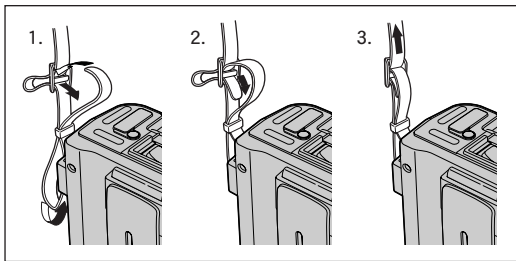


Hard case

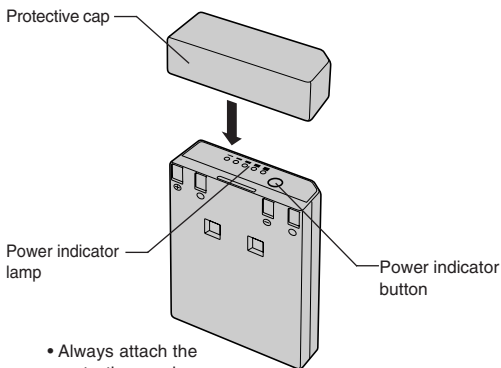
• High Voltage Pack HV-1



How to attach the strap

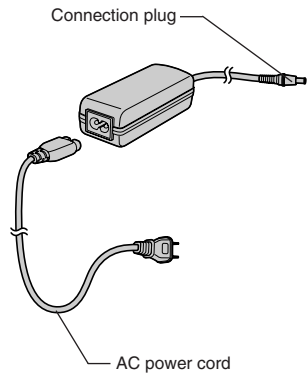


• Ni-Mh Battery Pack BN-1



- Always attach the protective cap before storage.

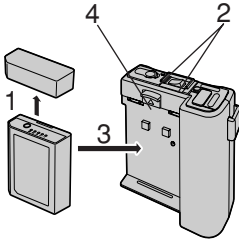
• AC Adapter AC-2



- Plug the AC cord in firmly.

## Attaching/detaching the battery pack

1. Remove the protective cap from the BN-1 Ni-Mh Battery Pack.
2. Set the HV-1 power switch to OFF.

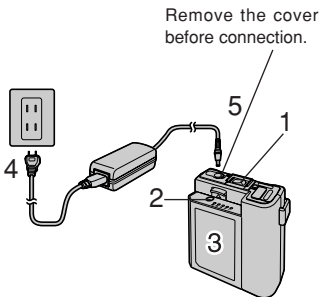


**NOTE:** If the battery pack is attached while the power switch is ON, the indicator lamp blinks in red and the HV-1 does not function.

3. Attach the BN-1 Ni-Mh Battery Pack to the HV-1 as described below.  
Align the groove at the bottom of the BN-1 Ni-Mh Battery Pack with the claw on the lower part of the HV-1 and fit the upper part of the BN-1 Ni-Mh Battery Pack into the release lever on the HV-1 so that it clicks. Make sure the battery pack is attached firmly.
4. When detaching the BN-1 Ni-Mh Battery Pack, be sure to set the power switch to OFF and then lift the release lever.

## Recharging the battery pack

1. Set the HV-1 power switch to OFF/CHARGE.  
(Charging is impossible if the power switch is set to ON.)



2. Push the BN-1 Ni-Mh Battery Pack power indicator button and check the remaining battery capacity.
3. Attach the BN-1 Ni-Mh Battery Pack to the HV-1.
4. Connect the AC power cord to the input side of the AC-2 AC Adapter, and connect the other end of the AC power cord to a power outlet.
5. Connect the connection plug of the AC-2 AC Adapter to the DC-IN terminal of the HV-1. (Remove the terminal cover before connection.)
6. Charging is complete when the indicator lamp on the HV-1 lights in green.

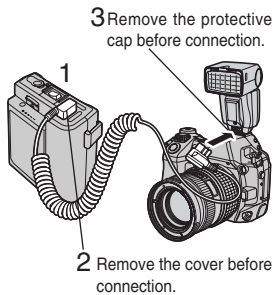
| Lamp Status    | Charging Status                              |
|----------------|--|
| Extinguished   | Battery not connected.                       |
| Red lighting   | Battery being charged.                       |
| Green lighting | Battery charging completed.                  |
| Red blinking   | Charge error (Time-out or temperature error) |

### Notes

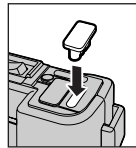
- New batteries or batteries that have not been used for a long time (more than one month) may not be fully charged. This is not a malfunction, but is a characteristic of the battery. Charge them two or three times before using them for the first time or when they have not been used for a long period.
- Once battery charging starts, it is recommended to continue charging until the battery has been fully charged, without stopping charging in the middle. (The remaining battery capacity cannot be indicated correctly unless the battery is charged fully.)
- Whenever possible, use the battery until it has been fully discharged.  
(Repeatedly recharging the battery before it has been fully used up may reduce the battery's service life.)
- In the following cases, immediately unplug the power cord from the wall outlet and contact Olympus;
  - if recharging does not complete in 10 hours;
  - if the indicator lamp blinks in red while the battery pack is attached correctly as described in this manual.

## Connection to the flash system

This product has been designed exclusively for use with the OLYMPUS digital camera electronic flash system.



1. Set the HV-1 power switch to OFF.
2. Connect the connection cable to the connection cable terminal of the HV-1 as shown.
3. Connect the other end of the connection cable to the external power supply connector of the electronic flash.

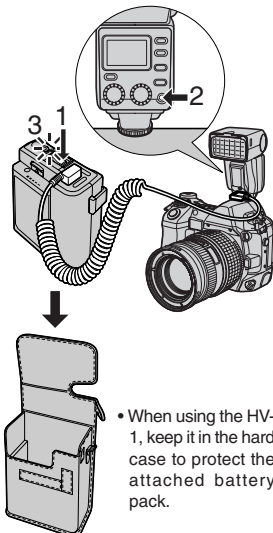


**Memo:** After removing the protective cap from the electronic flash, store the cap in the protective cap storage position of the HV-1 as shown.

### ■ Note

- When plugging or unplugging the connection cable, always hold the plug. Do not pull it by the cord.

## Turning the flash system on



1. Set the HV-1 power switch to ON.
2. Set the electronic flash power switch to ON.
3. Check the status of the indicator lamp on the HV-1.

| Lamp Status     | Operating Status          |
|-----------------|---------------------------|
| Extinguished    | Power OFF                 |
| Green lighting  | Normal operation          |
| Orange blinking | Charge request            |
| Red blinking    | Error (Temperature error) |

**Memo:** Always turn the HV-1 on before turning the electronic flash on. Since the HV-1 supplies control power to the electronic flash, the electronic flash can be used without the battery pack. In this case, however, note that battery charge time increases and the flashing count decreases.

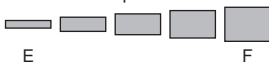



### ■ Note

- If the indicator lamp blinks in red while the battery pack is attached correctly as described in this manual, unplug the power cord from the wall outlet and contact Olympus.



## Remaining battery capacity indication

The power remaining in the BN-1 Ni-MH Battery Pack can be confirmed by pressing its power indicator button.

| Lamp Status  | Battery Condition                                     |
|--|---|
|           |   |
|           | Fully charged   |
|           | Remaining power is low. Charge the battery pack soon. |
|  Blinking | 0%: Charge being requested                            |

### Note

- The remaining battery capacity indication shows merely a reference. The lamp status is subject to change due to various conditions.

## Charge time and flashing count

The following table shows the battery charge time and the number of flash operations available when different batteries are used on the FL-50 Electronic Flash.

| Battery used in FL-50                      | Flash interval   | Flash count       |
|--|------------------|-------------------|
| None                                       | Approx. 1.2 sec. | Approx. 280 times |
| AA/R6 alkaline battery (LR6)               | Approx. 1 sec.   | Approx. 400 times |
| AA/R6 lithium battery (LR6)                |                  | Approx. 400 times |
| AA/R6 Ni-Mn battery (ZR6)                  |                  | Approx. 400 times |
| CR-V3 (Olympus LB-01) lithium battery pack |                  | Approx. 400 times |
| AA/R6 Ni-Cd battery (1000 mAh)             |                  | Approx. 370 times |
| AA/R6 Ni-Mh battery (1900 mAh)             |                  | Approx. 450 times |

### Notes

- Up to 10 successive full flashes are permitted. After 10 flashes, the flash should not be used for more than 10 minutes to allow the light-emitting surface to be left cooled.
- Charging times and flash count data were obtained from Olympus in-house testing.

## Main specifications

### 〈HV-1〉

|                      |   |
|----------------------|---|
| Model No.            | : FS-HV1  |
| Power source         | : Ni-Mh Battery Pack BN-1   |
| Output               | : 6 V, 330 V  |
| Charge time          | : Approx. 10 hours (with the BN-1)  |
| Ambient temperatures | : 0°C to 40°C (operation), -20°C to +60°C (storage)   |
| Dimensions           | : 110 (W) x 149.5 (H) x 53.5 (D) mm (4.3 x 5.9 x 2.1 in)<br>(excluding the strap, belt loop and connection cable) |
| Weight               | : Approx. 320 g (11.3 oz) (excluding the connection cord)   |

### 〈BN-1〉

|                        |   |
|------------------------|---|
| Model No.              | : FS-BN1  |
| Nominal voltage        | : 7.2 V DC  |
| Nominal capacity       | : 2600 mAh  |
| Ambient temperatures   | : 0°C to 40°C (charging), -10°C to +60°C (operation),<br>-20°C to +30°C (storage) |
| Charge/discharge count | : Approx. 500 cycles (variable depending on operating conditions)                 |
| Dimensions             | : Approx. 71 (W) x 117 (H) x 25 (D) mm (2.8 x 4.6 x 1.0 in)                       |
| Weight                 | : Approx. 410 g (14.5 oz) (excluding the protective cap)                          |

### 〈AC-2〉

|                      |  |
|----------------------|--|
| Model No.            | : FS-AC2   |
| Rated input          | : 100 to 240 V AC (50/60 Hz), 27 VA (100 V) to 36 VA (240 V) |
| Rated output         | : 12 V DC, 1.0 A   |
| Ambient temperatures | : 0°C to 40°C (operation), -20°C to +70°C (storage)          |
| Dimensions           | : 40 (W) x 30 (H) x 105 (D) mm (1.6 x 1.2 x 4.1 in)          |
| Weight               | : Approx. 140 g (4.9 oz) (excluding the power cord)          |

Specifications are subject to change without any notice or obligation on the part of the manufacturer.

- Technical Support (USA)

24/7 online automated help: <http://www.olympusamerica.com/E1>

Phone customer support: Tel. 1-800-260-1625 (Toll-free)

Our phone customer support is available from 8 am to 10 pm (Monday to Friday)  
ET

E-mail: [e-slrpro@olympusamerica.com](mailto:e-slrpro@olympusamerica.com)

- European Technical Customer Support

Please visit our homepage <http://www.olympus-europa.com>

or call NUMBER: 00800-67 10 83 00 (Toll-free)

+49 (0)1805-67 10 83 or +49 (0)40-23 77 38 99 (Charged)

# OLYMPUS

<http://www.olympus.com/>

## OLYMPUS CORPORATION

Shinjuku Monolith, 3-1, Nishi Shinjuku 2-chome, Shinjuku-ku, Tokyo, Japan  
Customer support (Japanese language only): Tel. 0426-42-7499 Tokyo

## OLYMPUS AMERICA INC.

Two Corporate Center Drive, Melville, NY 11747-3157, U.S.A. Tel. 631-844-5000

### Technical Support (USA)

24/7 online automated help: <http://www.olympusamerica.com/E1>

Phone customer support: Tel. 1-800-260-1625 (Toll-free)

Our phone customer support is available from 8 am to 10 pm  
(Monday to Friday) ET

E-Mail: [e-slrpro@olympusamerica.com](mailto:e-slrpro@olympusamerica.com)

Olympus software updates can be obtained at: <http://www.olympusamerica.com/E1>

## Olympus Europa GmbH

Premises/Goods delivery: Wendenstrasse 14-18, 20097 Hamburg, Germany

Tel: +49 40-23 77 3-0 / Fax: +49 40-23 07 61

Letters: Postfach 10 49 08, 20034 Hamburg, Germany

### European Technical Customer Support:

Please visit our homepage <http://www.olympus-europa.com>

or call our TOLL FREE NUMBER\* : **00800 - 67 10 83 00**

for Austria, Belgium, Denmark, Finland, France, Germany, Italy, Luxemburg,  
Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom

\* Please note some (mobile) phone services/provider do not permit access or  
request an additional prefix to +800 numbers.

For all not listed European Countries and in case that you can't get connected  
to the above mentioned number please make use of the following

CHARGED NUMBERS: **+49 180 5 - 67 10 83** or **+49 40 - 237 73 899**

Our Technical Customer Support is available from 9 am to 6 pm MET (Monday to Friday)