

Cameras That the Flash Can Be Attached to

Some functions available are limited depending on models of cameras even manufactured by Olympus.

VT455001

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OLYMPUS OPTICAL CO., LTD.

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Phone customer support: Tel. 1-888-553-4448 (Toll-free)
Our phone customer support is available from 8 am to 10 pm (Monday to Friday) ET
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Olympus software updates can be obtained at:
http://olympus.com/digital/

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For customers in North and South America

For customers in USA

Declaration of Conformity
Model Number : FL-20
Trade Name : OLYMPUS
Responsible Party : Olympus America Inc.
Address : 2 Corporate Center Drive, Melville, New York 11747-3157 U.S.A.
Telephone Number : 1-631-844-5000

Tested To Comply With FCC Standards FOR HOME OR OFFICE USE

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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

For customers in Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

For customers in Europe

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

Safety Precautions

In order to obtain optimum performance and a longer service life from your new flash unit, please read these instructions carefully. Always keep this leaflet in a readily accessible place for later reference. To prevent potential hazards that could cause injury or damage to property, always pay close attention to the important remarks indicated with the symbols and terms below.

	Warning	Ignoring this warning and using the unit incorrectly could result in death or serious injury.		Pay attention.
				Prohibited.
				Do not touch.
	Caution	Ignoring this warning and using the unit incorrectly could result in serious injury.		Do not disassemble.

Battery Warnings

- ⚠ BATTERIES MAY LEAK, GENERATE HEAT, IGNITE, OR EXPLODE.
- ⊘ Do not use batteries not specified for this product.
- ⊘ Do not try to recharge non-rechargeable batteries.
- ⊘ Do not throw batteries into fire, expose them to excessive heat, or short-circuit them.
- ⊘ Do not mix new and old batteries or different brands of batteries.
- ⊘ Do not place the batteries with the ⊕ or ⊖ terminals facing the wrong direction.

CHILDREN MAY SWALLOW BATTERIES.

- ⊘ Keep batteries out of the reach of children. If a child swallows a battery, contact a doctor immediately.

General Warnings

- ⊘ Do not point the flash at a driver or rider of a vehicle (bicycle, automobile, train, etc.) and fire the flash. This may cause a traffic accident. Turn off the flash or make sure the flash does not fire before shooting this kind of subject.
- ⊘ Do not fire the flash close to the eyes of a human or animal. Eyesight may be temporarily impaired.

Flash Warnings

- ⚠ If an internal component is exposed because the unit was dropped or otherwise damaged:
 - ⊘ ① Never touch the exposed component.
 - ⊘ ② Immediately remove the batteries, being careful not to expose yourself to electric shock, burn yourself, or otherwise injure yourself.
 - ⊘ ③ Send the unit to your camera store or Olympus service center. The unit contains a high-voltage circuit that could cause electric shock, burn you, or otherwise injure you.
- ⚠ Do not try to disassemble, repair, or modify the unit. The unit contains a high-voltage circuit that may cause electric shock, burn you, or otherwise injure you.
- ⊘ Do not activate the flash when your skin or other object is in contact with the flash reflector. Do not touch the flash reflector after the flash has fired repeatedly. You may burn yourself.
- ⊘ Do not use the unit near flammable gas or substances (such as gasoline, benzene, or thinner). This can cause explosion or fire.
- ⚠ If the unit is dropped in water, or if water, metal particulate, a flammable foreign object gets into the unit:
 - ⊘ ① Remove the batteries immediately.
 - ⊘ ② Send the unit to your camera store or Olympus service center. Using the unit in this condition may cause fire or electric shock.
- ⊘ Do not wet the unit or touch the unit with wet hands. This could cause electric shock.

Specifications

Guide number
Standard — GN20 (ISO100 •m).
GN66 (ISO100 •ft).
With wide-angle converter — GN14 (ISO100 •m).
GN46 (ISO100 •ft).

Illumination angle
Standard — Covers the image angle of a 35 mm lens (assuming the use of 35 mm film).
With wide-angle converter — Covers the image angle of a 24 mm lens.

Color temperature
5500°K

Flash duration
Approx. 1/30000 to 1/1200 sec.: AUTO modes.
Approx. 1/1200 sec.: MANUAL mode.

Maximum number of flashes
Approx. 250 times (when using two AA alkaline batteries (LR6))

Required charge time
Approx. 0.5 to 5.0 sec. (when using two AA alkaline batteries (LR6))

Flash modes
①TTL AUTO. ②AUTO. ③MANUAL.

Power supply
AA alkaline batteries (LR6), lithium batteries (FR6), nickel-manganese batteries (ZR6D), NiMH batteries, NiCd batteries, x 2

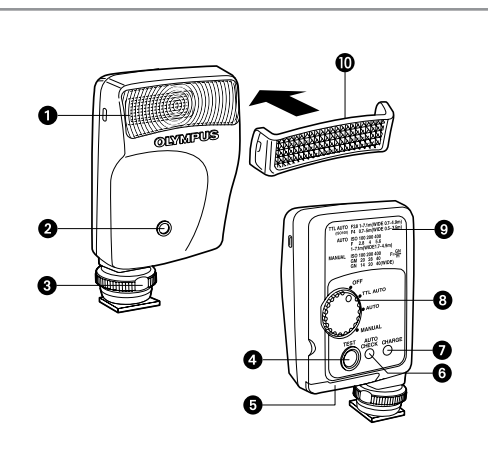
Dimensions & weight
W56 x H96 x D28 mm (2.2" x 1.1" x 3.8"), approx. 74 grams (2.6 oz) (excluding batteries)

Accessories
Wide panel, soft case

• The values above are typical at normal temperature (20°C / 68°F). (The maximum number of flashes and required charge time were measured at our in-house test conditions.) Actual values may vary depending on the batteries used and ambient temperatures.

Design and specifications are subject to change without any notice or obligation on the part of the manufacturer.

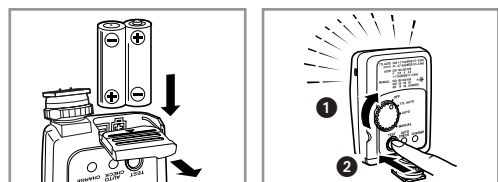
Names of Parts/Attaching the Wide Panel



- (Front)
- ① Flash tube
 - ② Photoelectric sensor window
 - ③ Shoe lock dial
- (Rear)
- ④ TEST button
 - ⑤ Battery compartment cover
 - ⑥ AUTO CHECK lamp: Blinks when flashing light intensity is optimum.
 - ⑦ CHARGE lamp
 - ⑧ Mode dial (Power/Mode switch)
 - ⑨ Exposure table
 - ⑩ Wide panel

The wide panel covers an angle equivalent to a 24 mm wide-angle lens assuming the use of a 35 mm film.

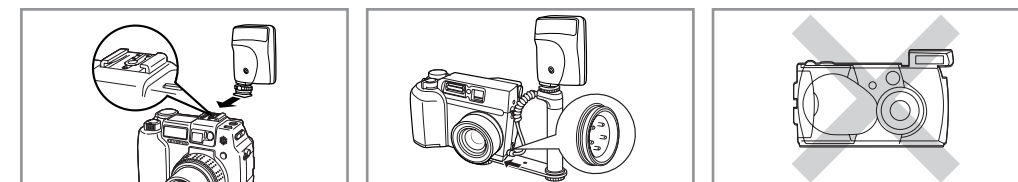
Loading Batteries/Test Flashing



Batteries
Insert two "AA"-size alkaline batteries, lithium batteries, nickel-manganese batteries, NiMH batteries or NiCd batteries as shown in the illustration.
Note that "AA"-size manganese (zinc-carbon) batteries cannot be used.

- ① Set the Mode dial to AUTO.
- ② When the CHARGE lamp lights up, press the TEST button and confirm flashing.

Mounting the Flash on the Camera

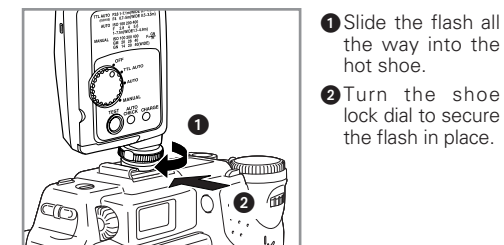


If the camera is equipped with a hot shoe, mount the flash directly on the hot shoe.

If the camera is equipped with an external flash terminal, mount the flash using the flash bracket and bracket cable.

You cannot use the FL-20 flash if the camera is not equipped with a hot shoe or external flash terminal.

Mounting the Flash on a Hot Shoe



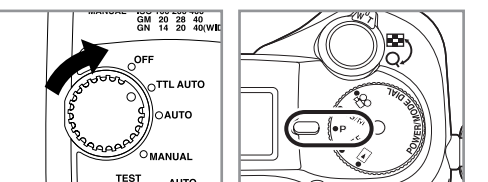
- ① Slide the flash all the way into the hot shoe.
- ② Turn the shoe lock dial to secure the flash in place.

Indicator Lamps The following lamps indicate the flash status.

AUTO CHECK lamp	CHARGE lamp	OFF	ON	Regular blinking
	OFF	Under charge	Charge completed	Communication error
Blinking	Optimum light intensity	—	Low battery warning	

Communication errors
When the FL-20 mode is; TTL AUTO: Error communicating with the camera. (The camera is OFF, set to the wrong mode, etc.)
The CHARGE lamp blinks when the camera's LCD monitor is turned off on the following models (as of January, 2003): C-4000ZOOM, C-4040ZOOM, C-3000ZOOM, C-3040ZOOM, C-2040ZOOM.

TTL AUTO Operation <Flash must be connected to the camera through a hot shoe or 5-pin external flash terminal>



Set the FL-20's Mode dial to TTL AUTO and set the camera's MODE DIAL to P or AUTO. In the TTL AUTO mode, the flash adjusts the light intensity automatically according to changes in the camera's aperture. (TTL AUTO mode operation requires that the camera's mode is set as shown in the above illustration.)
If the camera is not set correctly, the CHARGE lamp blinks.

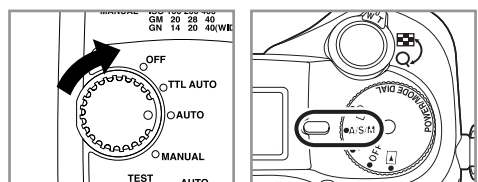
The AUTO CHECK lamp will blink when the flash illumination reaches optimum intensity. If the AUTO CHECK lamp does not blink, move closer to the subject or reduce the camera's aperture. The AUTO CHECK lamp does not blink on the following models (as of January, 2003): C-4000ZOOM, C-4040ZOOM, C-3000ZOOM, C-3040ZOOM, C-2040ZOOM

Camera aperture numbers and applicable shooting ranges

ISO speed	f-stop	Aperture							
		1.4	2	2.8	4	5.6	8	11	16
100	m	2.0-14	1.4-10	1.0-7.1	1.0-5.0	1.0-3.5	1.0-2.5	1.0-1.8	1.0-1.3
	ft	6.6-45.9	4.6-32.8	3.3-23.3	3.3-16.4	3.3-11.5	3.3-8.2	3.3-5.9	3.3-4.3
200	m	2.8-20	2.0-14	1.4-10	1.0-7.0	1.0-4.9	1.0-3.5	1.0-2.5	1.0-1.8
	ft	9.2-65.6	6.6-45.9	4.6-32.8	3.3-23.0	3.3-16.1	3.3-11.5	3.3-8.2	3.3-5.9
400	m	4.0-28	2.8-20	2.0-14	1.4-10	1.0-7.1	1.0-5.0	1.0-3.5	1.0-2.5
	ft	13.1-91.8	9.2-65.6	6.6-45.9	4.6-32.8	3.3-23.3	3.3-16.4	3.3-11.5	3.3-8.2
800	m	5.6-40	4.0-29	2.8-20	2.0-14	1.4-10	1.0-7.1	1.0-5.0	1.0-3.6
	ft	18.4-131.1	13.1-95.1	9.2-65.6	6.6-45.9	4.6-32.8	3.3-23.3	3.3-16.4	3.3-11.8

When the wide panel is used, use the approx. 0.7X distances shown above as reference. The above distances may become shorter with some models.

AUTO Operation



Set the FL-20's Mode dial to AUTO, set the camera's MODE DIAL to M and adjust the camera's aperture. The aperture setting varies depending on the ISO speed set to the camera (see table). In the AUTO mode, the flash adjusts the light intensity automatically regardless of the distance to the subject. The AUTO CHECK lamp will blink when the flash illumination reaches optimum intensity. If the AUTO CHECK lamp does not blink, move closer to the subject.

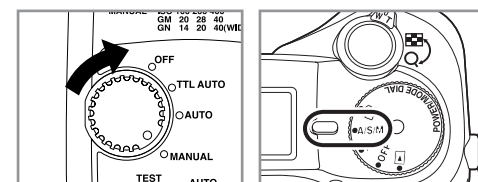
Camera's ISO speeds and apertures

ISO speed	Aperture
100	2.8
200	4
400	5.6
800	8

Effective flash distance:
1 to 7.1 m / 3.3 to 23.3 ft
(0.7 to 4.9 meters / 2.3 to 16.4 ft when the wide panel is used)

The above distances may become shorter with some models.

MANUAL Operation



Set the FL-20's Mode dial to MANUAL, set the camera's MODE DIAL to M and adjust the camera's ISO speed, aperture and shutter speed.

Aperture calculation formula (ISO 100)

Aperture (F) = Guide Number (GN)/Range (in meters)

The flash emits light at the maximum intensity. The AUTO CHECK lamp does not blink in this mode.

Optimum shooting ranges

ISO speed	f-stop	GN	Aperture							
			1.4	2	2.8	4	5.6	8	11	16
100	m	20	14	10	7.1	5.0	3.5	2.5	1.8	1.3
	ft	45.9	32.8	23.3	16.4	11.5	8.2	5.9	4.3	
200	m	28	20	14	10	7.0	4.9	3.5	2.5	1.8
	ft	65.6	46.0	32.8	23.0	16.1	11.5	8.2	5.9	
400	m	40	28	20	14	10	7.1	5.0	3.5	2.5
	ft	91.8	65.6	45.9	32.8	23.3	16.4	11.5	8.2	
800	m	57	40	29	20	14	10	7.1	5.0	3.6
	ft	131.1	95.1	65.6	45.9	32.8	23.3	16.4	11.8	

When the wide panel is used, use the approx. 0.7X distances shown above as reference. The above distances may become shorter with some models.

OLYMPUS®

LIMITED WARRANTY

This limited warranty must be presented at an Olympus Service Center before any repair can be made under conditions of the warranty

USA	Serial No	Model: FL-20 (U)	Date of Purchase:
	Customer Name: Address:	Dealer Name and address:	

Printed in Japan 1102 50MJ

VT184704

LIMITED WARRANTY DIGITAL IMAGING PRODUCTS

Olympus America Inc.- Consumer Products Group ("Olympus") warrants that the enclosed Olympus® digital imaging product(s) and related Olympus® accessories (individually a "Product" and collectively the "Products") will be free from defects in materials and workmanship under normal use and service for a period of one (1) year from the date of purchase. If any Product proves to be defective within the one-year warranty period, the customer must return the defective Product to an Olympus Service Center listed below (See **"WHERE TO SEND PRODUCT FOR SERVICE"**), following the procedure set forth below (See **"WHAT TO DO WHEN SERVICE IS NEEDED"**). However, it is recommended that the customer first call Olympus's Consumer Support Department at 1-888-55-DIGITAL (1-888-553-4448), to attempt to determine the nature of the problem. Olympus, at its sole discretion, will repair, replace, or adjust the defective Product, provided that Olympus investigation and factory inspection disclose that (a) such defect developed under normal and proper use and (b) the Product is covered under this limited warranty. Repair, replacement, or adjustment of defective Products shall be Olympus's sole obligation and the customer's sole remedy hereunder. The customer is liable and shall pay for shipment of the Products to the Olympus Service Center. Olympus shall not be obligated to perform preventive maintenance, installation, deinstallation, or maintenance. Olympus reserves the right to (i) use reconditioned, refurbished, and/or serviceable used parts (that meet Olympus's quality assurance standards) for warranty or any other repairs and (ii) make any internal or external design and/or feature changes on or to its products without any liability to incorporate such changes on or to the Products.

WHAT IS NOT COVERED BY THIS LIMITED WARRANTY

Excluded from this limited warranty and not warranted by Olympus in any fashion, either express, implied, or by statute, are:

- (a) products and accessories not manufactured by Olympus and/or not bearing the "OLYMPUS" brand label (the warranty coverage for products and accessories of other manufacturers, which may be distributed by Olympus, is the responsibility of the manufacturers of such products and accessories in accordance with the terms and duration of such manufacturers' warranties);
- (b) any Product which has been disassembled, repaired, tampered with, altered, changed, or modified by persons other than Olympus's own authorized service personnel unless repair by others is made with the written consent of Olympus;
- (c) defects or damage to the Products resulting from wear, tear, misuse, abuse, negligence, sand, liquids, impact, improper storage, non-performance of scheduled operator and maintenance items, battery leakage, or use of non-"OLYMPUS" brand accessories, consumables, or supplies;
- (d) software programs;
- (e) supplies and consumables (including but not limited to lamps, ink, paper, cables and batteries); and/or
- (f) Products which do not contain a validly placed and recorded Olympus serial number.

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This limited warranty is the complete and exclusive statement of warranty which Olympus agrees to provide with respect to the Products and it shall supersede all prior and contemporaneous oral or written agreements, understandings, proposals, and communications pertaining to the subject matter hereof.

This limited warranty is exclusively for the benefit of the original customer and cannot be transferred or assigned.

WHAT TO DO WHEN SERVICE IS NEEDED

Package the Product carefully using ample padding material to prevent damage in transit and either deliver it to the Authorized Olympus Dealer that sold you the Product or ship it postage prepaid and insured to the Olympus Service Center listed below (See "**WHERE TO SEND THE PRODUCT FOR SERVICE**").

When returning Products for service, your package should include the following:

1. Sales receipt showing date and place of purchase.
2. Copy of this limited warranty bearing the Product serial number corresponding to the serial number on the Product.
3. A detailed description of the problem.
4. Sample digital prints (or files on disk) if available and related to the problem.

When service is completed, the Product will be returned to you postage prepaid.

WHERE TO SEND PRODUCT FOR SERVICE

OLYMPUS SERVICE CENTERS

Olympus America Inc.
Consumer Products Group
400 Rabro Drive
Hauppauge, NY 11788-4258
1-800-622-6372

Olympus America Inc.
Consumer Products Group
10805 Holder Street
Suite 170
Cypress, CA 90630-5145
1-800-622-6372

Out-of-warranty service may also be obtained at the Olympus Service Centers listed above.

INTERNATIONAL WARRANTY SERVICE

International warranty service is NOT available under this warranty.

IF YOU HAVE QUESTIONS OR NEED HELP

If you have questions about the use or performance of your Products or if you have any questions or comments regarding service performed in the United States which have not been resolved to your satisfaction, write directly to:

Olympus America Inc.
Consumer Products Group
Two Corporate Center Drive
Melville, New York 11747-3157 U.S.A.
Attn: Service Manager