

## USER'S MANUAL [HARDWARE]

# FLUOVIEW FV10i-DOC

Confocal Laser Scanning Biological Microscope

### Note

- This instruction manual is for the Olympus Confocal Laser Scanning Biological Microscope Model FLUOVIEW FV10i-DOC.  
To ensure the safety, obtain optimum performance and familiarize yourself fully with the use of this microscope, we recommend that you study this manual thoroughly before operating the microscope. For safety, we also recommend that you read attached USER'S MANUAL [SAFETY] together with this manual.
- For the operating procedures for observation and acquisition, please also read separate volume [Simplified Operation Manual] and the Online Help of the software.
- Retain this instruction manual in an easily accessible place near the work desk for future reference.





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# IMPORTANT

 **For safety precautions, please refer to attached USER'S MANUAL [ SAFETY ].**

## 1 Getting Ready

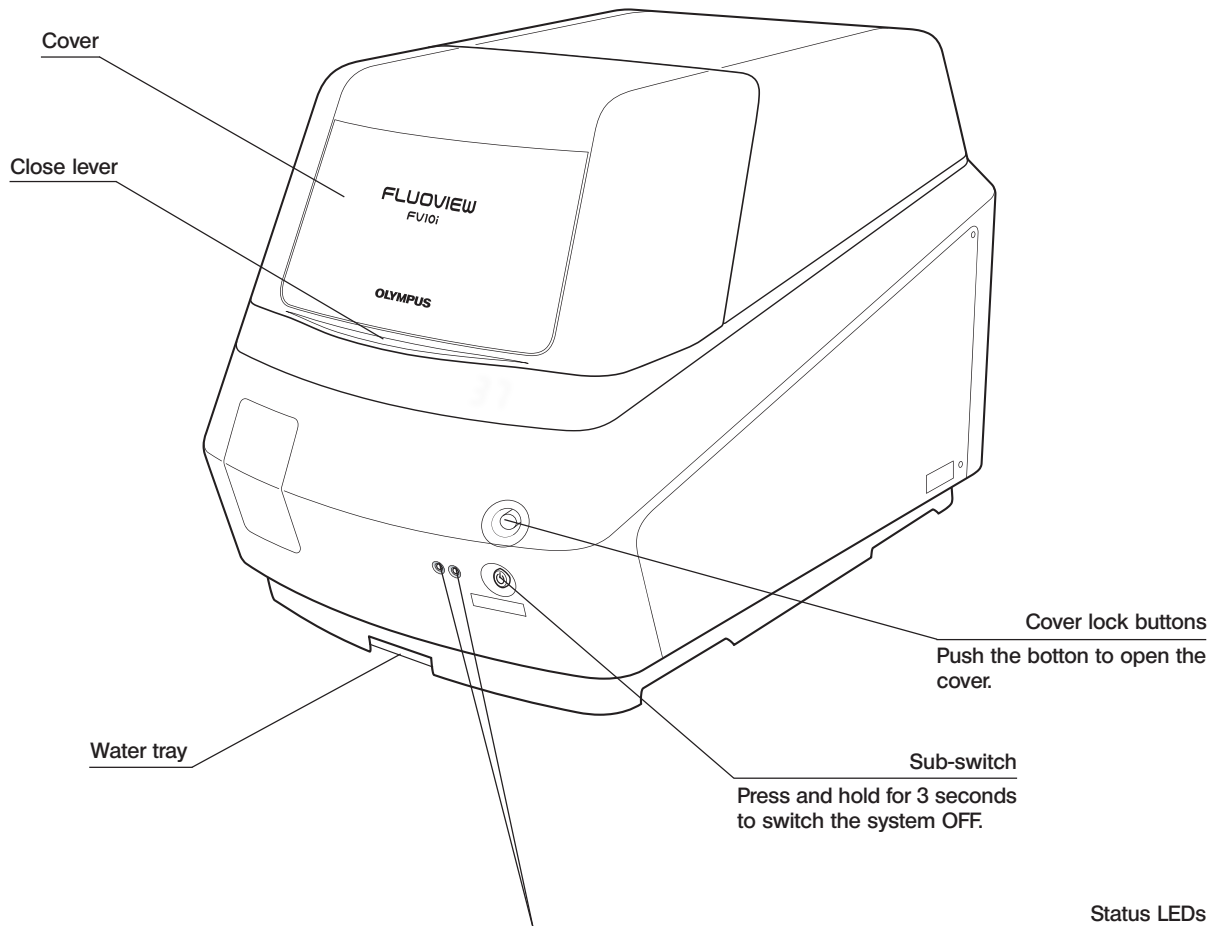
1. Three forms of specimen (containers) can be used including a  $\phi 35$  mm glass-bottom dish, slide glass (76 mm x 26 mm) and well slide (8 compartments). The standard thickness of the cover glass is 0.17 mm, but the range from 0.13 to 0.21 mm is acceptable.
2. The operating period warranted for the LD light source is the shorter period of 2000 hours or one (1) year after the delivery inspection.
3. When 4 hours have elapsed since the power was turned on or depending on the fluctuation of the temperature in the usage environment, a drift may occur in the X, Y or Z direction.
4. Do not apply strong impact to the equipment.
5. Reserve clearances of 15 cm or more in front of the air inlet and outlet.
6. If water drops are left on the inner side of the top cover of the  $\phi 35$  mm glass-bottom dish, the quality of the transmitted image may be degraded.
7. When a high-power objective is switched to a low-power objective, the image quality may be degraded due to immersion oil attached at the bottom side of the specimen.
8. The Z-stack image can be obtained only in the direction from the position distant to the specimen toward the position closer to it.  
Long-period oscillations (20 Hz or less) may affect the image quality.
9. To disinfect the main unit and specimen holder, wipe them with clean cloth moistened with disinfectant ethanol.
10. When disposing of the microscope, be sure to observe the regulations or rules of your local government.

## 2 Caution

If the equipment is used in a manner not specified by this manual, the safety of the user may be imperiled. In addition, the equipment may also be damaged. Always use the equipment as outlined in this instruction manual.

# 1 SYSTEM AND MAIN CONTROLS

Main Unit: FV10C-O3



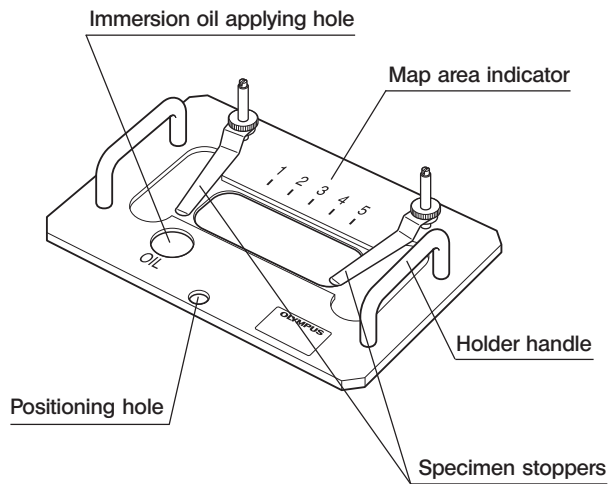
©Status LEDs when both the main and sub switches are ON.

LEDs		Laser	Software
Left	Right		
● Green blinking	● Orange lighting	Initializing	
● Green lighting	● Orange lighting	Standby	Not run
● Green lighting	● Orange blinking	Standby	Running

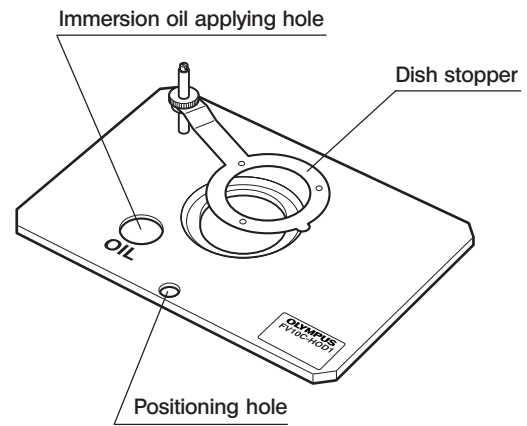
- The left LED lights in red when the main switch is set to "●" (ON).
- Both the left LED (green) and right LED (orange) blink when the cover is open.

## Specimen holder

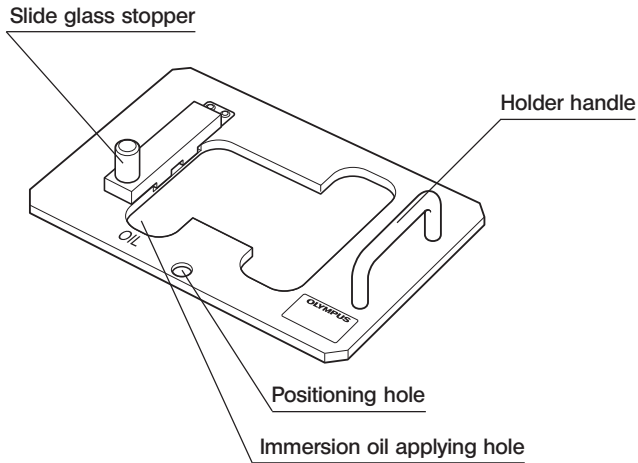
1. Specimen holder for slide glass: FV10C-HOS-2



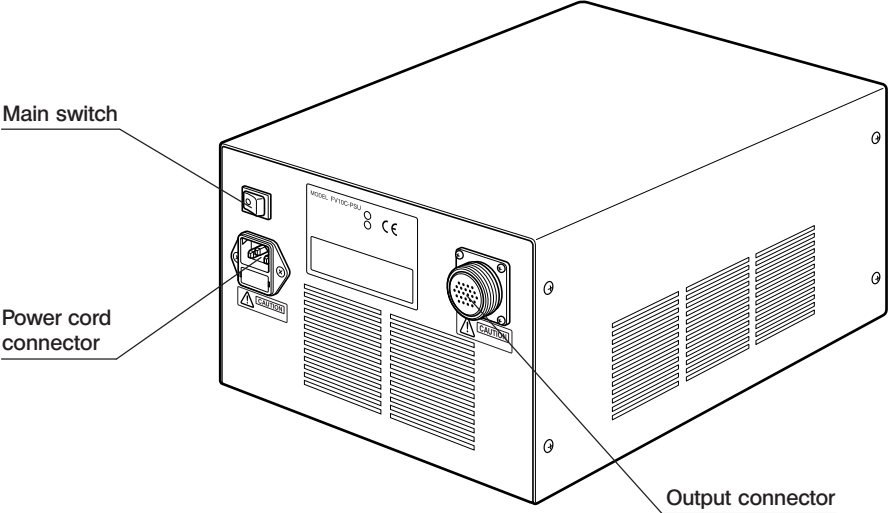
2. Specimen holder for  $\phi$ 35 mm dish: FV10C-HOD1



3. Specimen holder for well slide: FV10C-HOW

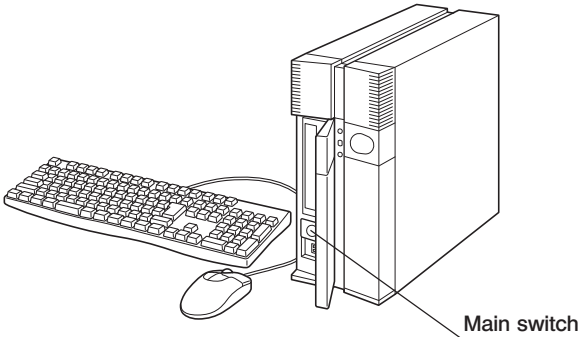


Power Supply Unit: FV10C-PSU



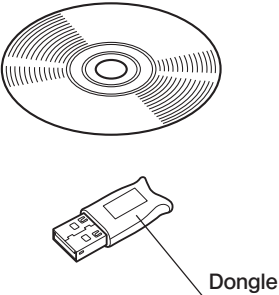
Controller: FV10C-CU

©The software is pre-installed.



©The display is not provided. Please prepare a WUXGA (1920 x 1200 pixels) display.

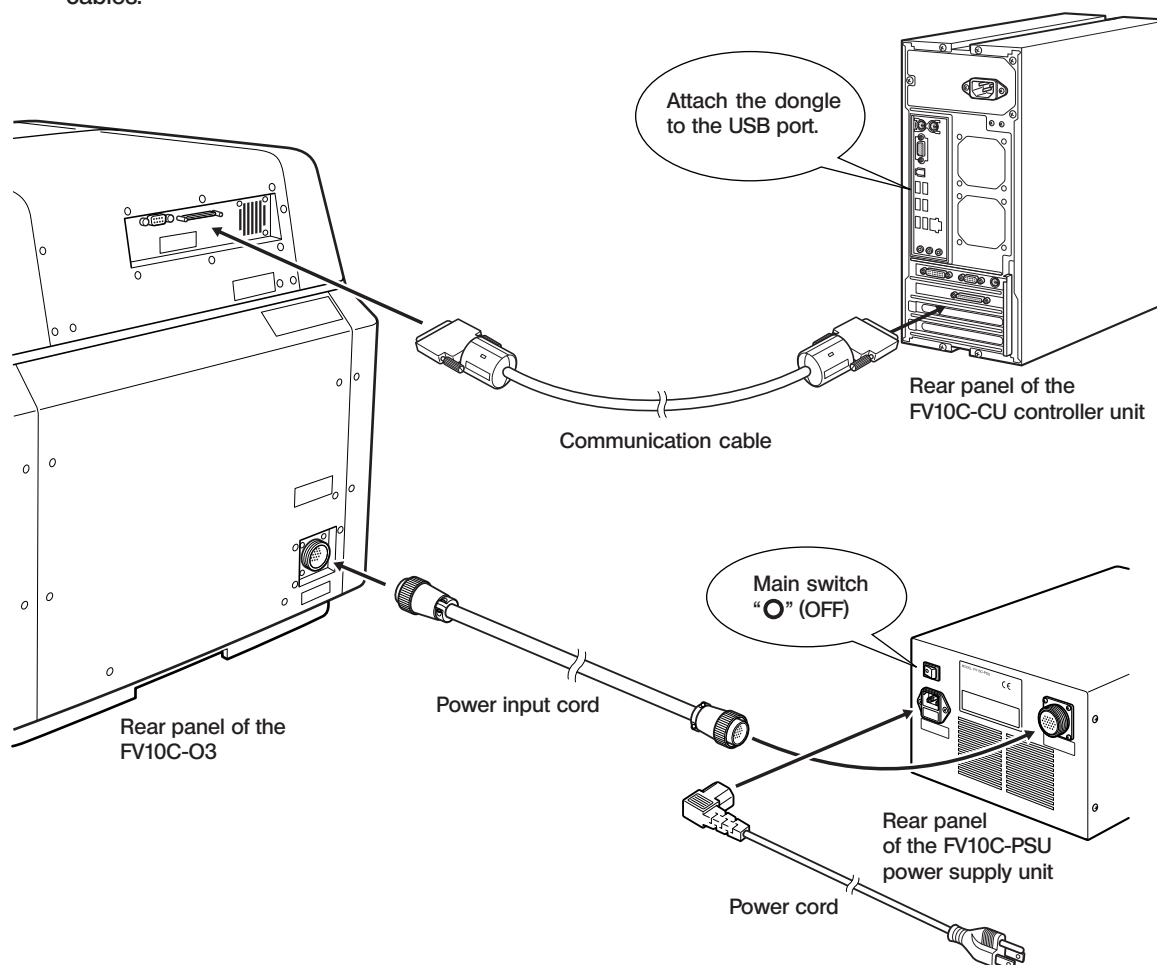
Software: FV10i-SW



# 2 ASSEMBLY

## 1 Connecting the Cables

**CAUTION** Be sure to set the main switches of the power supply unit and controller to “O” (OFF) before connecting the cables.



© For the connection of the display, refer to the instruction manual for your display.

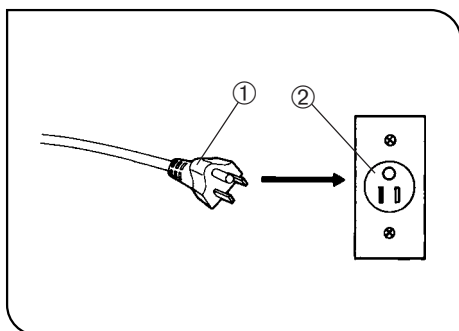


Fig. 1

- CAUTION**
- Cables and cords are vulnerable to bend or twist. Do not apply excessive force to them.
  - Always use the power cord provided by Olympus. If no power cord is provided, please select the power cord by referring to the section “PROPER SELECTION OF THE POWER SUPPLY CORD” at the end of this manual. If the proper power cord is not used, Olympus can no longer warrant the electrical safety performance of the equipment.

1. Insert the connector of the power cord to the connector on the power supply unit.

- CAUTION**
- Always ensure that the grounding terminal is safety grounded/earthed. If the equipment is not grounded/earthed, Olympus can no longer warrant the electrical safety performance of the equipment.

2. Insert the power cord plug ① into the wall power outlet ②.

## 2 Placing the Specimen

(Figs. 2 to 4)

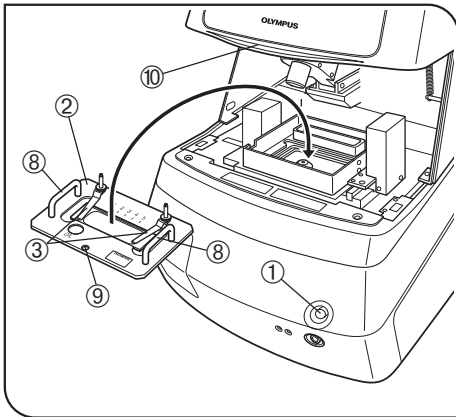


Fig. 2

1. Push and hold the cover button ①, and lift the cover.
2. Place the specimen.

- CAUTION**
- Be sure to take out the specimen holder from the main unit before placing the specimen on it so that the specimen will not drop inside the main unit.
  - If the sample falls within the device, pick up the sample with the tweezers made of bamboo or plastic, or the stick wrapped by the adhesive tape.

### φ35 mm dish/slide glass specimen

- Place the specimen in the specified specimen holder ② and fix the specimen with the specimen stopper ③ (Fig. 2).  
A slide glass specimen should be placed with the cover glass facing downward.

### Well slide specimen (Fig. 3)

Remove media chamber from the slide and cover with cover glass on top surface. Shield it with proper method.  
Place the slide with cover glass facing downward for imaging.

- Loosen the knob ④ of the slide glass stopper and lift it.
- Place the well slide ⑤ along the left edge, lower the slide glass stopper and tighten the knob ④.

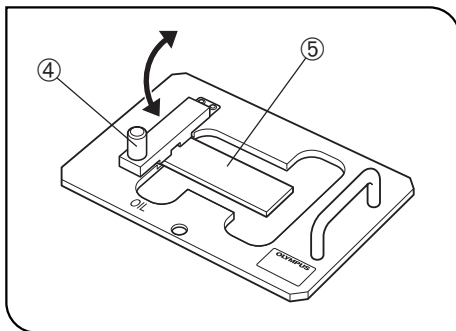


Fig. 3

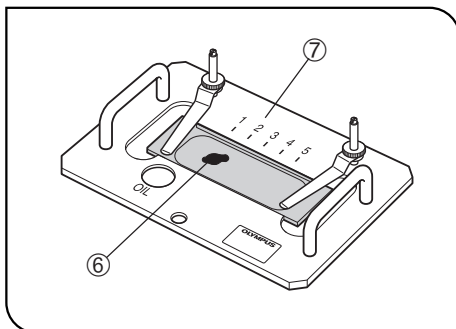


Fig. 4

Ⓞ When using the specimen holder for slide glass, memorize the map area indicator number ⑦ aligned with the position of the observation target ⑥ and use the same position in later observation/acquisition. (Fig. 4)

3. Hold the specimen holder ② by the holder handle ⑧ (or the pillars of the dish stoppers in the case of the specimen holder for φ35 mm dish) and place it on the specimen holder mount so that the positioning hole ⑨ of the specimen holder comes on the front (Fig. 2).
4. Push down the close lever ⑩ and confirm that a click sound is generated (Fig. 2).

- CAUTION**
- Observation is impossible unless the cover is closed completely. Be sure to push down the cover until a click sound is generated. Also, the laser beam is not output unless the cover is closed completely.

# 3 USING THE IMMERSION OIL

Ⓞ When an oil-immersion objective is engaged in the light path, the display shows a message that requests you to attach immersion oil (which should be the oil designated by Olympus). (Displayed message: "Please replenish objective lens with oil.")

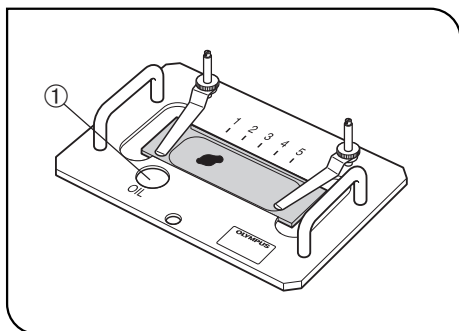


Fig. 5

## 1 Attaching Immersion Oil (Fig. 5)

1. When the request message mentioned above is displayed, open the cover.
2. The front of the oil immersion objective should automatically come above the immersion oil applying hole ① on the specimen holder.
3. Apply a small amount of immersion oil on the objective front cautiously so that the oil will not overflow or bubbles are not produced.
4. Click on the **[OK]** button on the display screen to return the objective in the observation light path.

Ⓞ If bubbles are present in the immersion oil, the observed image is degraded. To prevent this, wipe the oil and apply it again.

## 2 Removing Immersion Oil

After use, remove the specimen holder from the main unit and remove the oil attached to the objective front by wiping it gauze moistened with a very small amount of absolute alcohol (commercially available). (Repeat this operation for 2 or 3 times.)

### CAUTION

#### Precautions on use of immersion oil

If immersion oil enters your eye or attached to your skin, immediately take the following measure.

Eye: Rinse with clean water (for more than 15 minutes).

Skin: Wash with water and soap.

If the appearance changes or pain persists, immediately see your doctor.

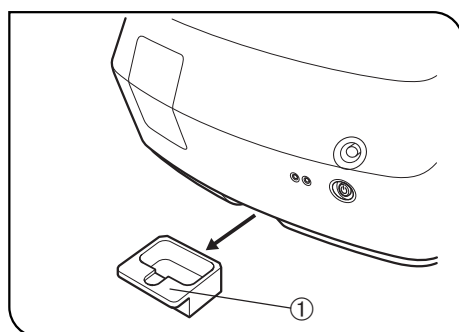


Fig. 6

## 3 Draining Water from the Water Tray (Fig. 6)

- The water tray ① pools immersion oil or culture solution spilt in the main unit. Slide out the tray periodically and drain water from it.

## ■ PROPER SELECTION OF THE POWER SUPPLY CORD

If no power supply cord is provided, please select the proper power supply cord for the equipment by referring to “Specifications” and “Certified Cord” below:
















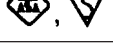



**CAUTION:** In case you use a non-approved power supply cord for Olympus products, Olympus can no longer warrant the electrical safety of the equipment.

### Specifications

Voltage Rating	125V AC (for 100-120V AC area) or, 250V AC (for 220-240V AC area)
Current Rating	6A minimum
Temperature Rating	60°C minimum
Length	3.05 m maximum
Fittings Configuration	Grounding type attachment plug cap. Opposite terminates in molded-on IEC configuration appliance coupling.

**Table 1 Certified Cord**

A power supply cord should be certified by one of the agencies listed in Table 1, or comprised of cordage marked with an agency marking per Table 1 or marked per Table 2. The fittings are to be marked with at least one of agencies listed in Table 1. In case you are unable to buy locally in your country the power supply cord which is approved by one of the agencies mentioned in Table 1, please use replacements approved by any other equivalent and authorized agencies in your country.

Country	Agency	Certification Mark	Country	Agency	Certification Mark
Argentina	IRAM		Italy	IMQ	
Australia	SAA		Japan	JET, JQA, TÜV, UL: APEX / MITI	
Austria	ÖVE		Netherlands	KEMA	
Belgium	CEBEC		Norway	NEMKO	
Canada	CSA		Spain	AEE	
Denmark	DEMKO		Sweden	SEMKO	
Finland	FEI		Switzerland	SEV	
France	UTE		United Kingdom	ASTA BSI	
Germany	VDE		U.S.A.	UL	
Ireland	NSAI				

**Table 2 HAR Flexible Cord**

APPROVAL ORGANIZATIONS AND CORDAGE HARMONIZATION MARKING METHODS

Approval Organization	Printed or Embossed Harmonization Marking (May be located on jacket or insulation of internal wiring)		Alternative Marking Utilizing Black-Red-Yellow Thread (Length of color section in mm)		
			Black	Red	Yellow
Comite Electrotechnique Belge (CEBEC)	CEBEC	⟨HAR⟩	10	30	10
Verband Deutscher Elektrotechniker (VDE) e.V. Prüfstelle	⟨VDE⟩	⟨HAR⟩	30	10	10
Union Technique de l'Electricite' (UTE)	USE	⟨HAR⟩	30	10	30
Instituto Italiano del Marchio di Qualita' (IMQ)	IEMMEQU	⟨HAR⟩	10	30	50
British Approvals Service for Electric Cables (BASEC)	BASEC	⟨HAR⟩	10	10	30
N.V. KEMA	KEMA-KEUR	⟨HAR⟩	10	30	30
SEMKO AB Svenska Elektriska Materielkontrollanstalter	SEMKO	⟨HAR⟩	10	10	50
Österreichischer Verband für Elektrotechnik (ÖVE)	⟨ÖVE⟩	⟨HAR⟩	30	10	50
Danmarks Elektriske Materialkontroll (DEMKO)	⟨DEMKO⟩	⟨HAR⟩	30	10	30
National Standards Authority of Ireland (NSAI)	⟨NSAI⟩	⟨HAR⟩	30	30	50
Norges Elektriske Materielkontroll (NEMKO)	NEMKO	⟨HAR⟩	10	10	70
Asociacion Electrotecnica Y Electronica Espanola (AEE)	⟨UNED⟩	⟨HAR⟩	30	10	70
Hellenic Organization for Standardization (ELOT)	ELOT	⟨HAR⟩	30	30	70
Instituto Portages da Qualidade (IPQ)	np	⟨HAR⟩	10	10	90
Schweizerischer Elektro Technischer Verein (SEV)	SEV	⟨HAR⟩	10	30	90
Elektriska Inspektoratet	SETI	⟨HAR⟩	10	30	90

Underwriters Laboratories Inc. (UL)  
Canadian Standards Association (CSA)

SV, SVT, SJ or SJT, 3 X 18AWG  
SV, SVT, SJ or SJT, 3 X 18AWG

# *MEMO*

# *MEMO*



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