INSTRUCTIONS

SZX-SDO2
Side-by-side viewing attachment

This instruction manual is for the Olympus SZX-SDO2 side-by-side viewing attachment. To ensure the safety, obtain optimum performance and familiarize yourself fully with the use of this attachment, we recommend you study this manual thoroughly before operating the attachment.
Retain this instruction manual in an easily accessible place near the work desk for future reference.
For details of products other than SZX-SDO2, see "1 Nomenclature" (P3).
This product is applied with the requirements of standard IEC/EN61326-1 concerning electromagnetic compatibility.
- Immunity Applied to industrial and basic environment requirements.

In accordance with European Directive on Waste Electrical and Electronic Equipment, this symbol indicates that the product must not be disposed of as unsorted municipal waste, but should be collected separately.
Refer to your local Olympus distributor in EU for return and/or collection systems available in your country.

NOTE: This product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

For Korea only
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.
Correct assembly and adjustments are indispensable for the microscope to manifest its full performance. If you want to assemble the microscope by yourself, see “5 Assembly” (P12) first.
Important

The SZX-SDO2 is a side-by-side dual viewing attachment for use with SZX10/SZX7 microscope system. As it allows two observers to sit side by side, it is ideal for education and training purposes. Note that there are few restrictions on the installation location of this attachment. The orientation of the images observed by the primary observer and the secondary observer is the same in both the vertical and horizontal directions. This attachment should be used in combination with the SZX2-STL2 to secure safety.

1 Getting ready

1. This manual pertains only to the SZX-SDO2 attachment. Before using this attachment in conjunction with the SZX10/SZX7 microscope and associated options, make sure that you have carefully read and understood the corresponding manuals, and that you understand how the various components of the microscopic system are used together.

2. The SZX-SDO2 attachment is a precision instrument. Handle it with care and avoid subjecting it to sudden or severe impact.

3. Do not use the attachment anywhere where it may be exposed to direct sunlight, high temperature and humidity, dust, or vibrations. (For operating environment conditions, see “4 Specifications” (P.10).)

4. Make sure this attachment is installed in a room where there is as little vibration as possible and that the work surface on which this attachment is installed is sturdy and level (with inclination within 5°). If vibration is still noticeable, use the SZX2-DMP anti-vibration damper.

5. Before placing a specimen which is sensitive to static electricity (such as a packaged circuit board) on the stage of the large base, place a conductive mat or similar object on the stage.

6. Installable modules
   - Zoom microscope body/focusing assembly: SZX2-ZB10/SZX-ZB7, SZX2-FOFH and SZX2-FOA
     Note: The SZX2-FOFH focusing assembly for heavy load or the SZX2-FOA focusing assembly for motorized operation can be used.
   - Base: SZX2-STL2 large base (Other bases cannot be used because they cannot assure stability.)
   - Observation tube: Observation tube for the primary observer: Applicable trinocular/binocular observation tube for SZX10 or SZX7.
     Note: When using a tilting observation tube, the binocular section interferes with the pointer color selector lever when the tube is tilted at the lowest position and the interpupillary distance is minimized.
   - Observation tube for the secondary observer: Applicable binocular observation tube for SZX10 or SZX7.
   - Eyepiece: With built-in helicoid
   - Intermediate attachment:
     SZX2-ILLC10 (below the SZX-SDO2) ......................Note that there may be insufficient ambient light and decentration.
     Note: As this attachment lowers the height of the section from the microscope frame to the base, the lowering should be compensated for by attaching the SZX-R drop prevention ring (optionally available) on the pillar of the SZX2-STL2.
     SZX-AS (below the SZX-SDO2) ..............................SZX7 only.
   - Intermediate attachment:
     SZX-AS (below the SZX-SDO2) ..............................SZX7 only.

7. To prevent stray light:
   Make sure to cover the eyepieces which are not attended by the assistant observers with stray light prevention covers. (Page.9)

8. Always use the power cord and AC adapter provided by Olympus. If no power cord is provided, please select the proper power cord by referring to the section “PROPER SELECTION OF THE POWER SUPPLY CORD” at the end of this instruction manual. If the proper power cord is not used, product safety and performance cannot be guaranteed.

9. To ensure safety, disconnect the power plug of the AC adapter from the power outlet after operation.

10. Fix the AC adapter cord at positions where it does not come in the way of microscope operation. Take care not to bring the power cord in contact with the lamp housing etc.

11. Be careful not to have your foot caught by a cable connected to this system. Otherwise, the system may turn over or the specimen drop from the base, causing damage or scattering of the specimen.

12. Before moving this system, be sure to remove the SZX-SDO2 attachment from the SZX2-STL2 base. Otherwise, the system becomes unstable and may turn over. Also do not move the system by holding the bottom of the SZX2-STL2 base to prevent your finger from being crushed.

13. When clamping the focusing assembly on the top of the pillar of the SZX2-STL2 base, be sure to insert the SZX-R drop prevention ring (optionally available) immediately below the focusing assembly without leaving any clearance. If the SZXR is not inserted, the focusing assembly and the SZX-SDO2 attachment would drop when the clamping knob on the focusing assembly is loosened, causing an accident such as crushing of your finger or damage to the specimen.
## Warning

A Diagram.

### Safety symbols

The following symbols are found on the microscope. Study the meaning of the symbols and always use the equipment in the safest possible manner.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Before use, carefully read the instruction manual. Improper use could result in personal injury and/or damage to the equipment.</td>
</tr>
<tr>
<td>☇</td>
<td>Supply DC current (from the provided AC adapter).</td>
</tr>
<tr>
<td>⌀</td>
<td>Indicates an input jack.</td>
</tr>
<tr>
<td>⚫</td>
<td>Indicates a pointer.</td>
</tr>
</tbody>
</table>

## Maintenance and storage

1. To clean the lenses and other glass components, simply blow dirty away using a commercially available blower and wipe gently using a piece of cleaning paper (or clean gauze).
   If a lens is stained with fingerprints or oil smudges, wipe it gauze slightly moistened with commercially available absolute alcohol.

   **NOTE** Since the absolute alcohol is highly flammable, it must be handled carefully.
   Be sure to keep it away from open flames or potential sources of electrical sparks -- for example, electrical equipment that is being switched on or off. Also remember to always use it only in a well-ventilated room.

2. The equipment uses plastic resins extensively in its external finish. Do not attempt to use organic solvents to clean the non-optical components of the microscope. To clean these components, use a lint-free, soft cloth lightly moistened with a diluted neutral detergent.

3. Never disassemble any part of the microscope as this could result in malfunctions or reduced performance.

4. When the attachment is not used, make sure to put the dust cover on it.

5. This equipment should be disposed of by following the rules and regulations of your national or local government.

## Caution

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

The following symbols are used to set off text in this instruction manual.

- **CAUTION**: Indicates that failure to follow the instructions in the warning could result in bodily harm to the user and/or damage to equipment (including objects in the vicinity of the equipment).
- **NOTE**: Indicates that failure to follow the instructions could result in damage to equipment.
- **TIP**: Indicates commentary (for ease of operation and maintenance).
If you have not yet completed the assembly of the microscope yet, see "5 Assembly" (P12) first.
2 Controls

Side-by-side viewing attachment
SZX-SDO2

Primary observer observation tube mount

AC adapter input connector

Secondary observer observation tube mount

Pointer brightness control (P8)
OFF/continuous light control

Focusing assembly mount

Pointer color switching lever (P8)
Top position: Red,
Middle position: Light shielded,
Bottom position: Green

Focusing assembly
SZX2-FOFH

Pointer control lever (P8)

Coarse focus adjustment knob
Full stroke: 80 mm
Single rotary stroke: 36.8 mm

Rotation tension adjustment ring
Adjust by inserting the Allen wrench in the hole of the ring.
Right rotation: Heavier
Left rotation: Lighter

Fine focus adjustment knob
Full stroke: 80 mm
Single rotary stroke: 0.77 mm
AC adapter

Output plug

Input connector

Large base
SZX2-STL2

Pillar support mount
mounting screw holes*

Pillar

SZH-P400

Stage adapter mounting screw holes**
The SZX-STAD1, SZH-STAD1, etc. can be mounted.

Allen wrench

* If the pillar support is installed on the left side (using the large Allen wrench), the secondary observer can be positioned on the left side of the microscope. In this case, however, the pointer control lever is located on the rear side, interfering with operability. In addition, the pointer cannot be imaged on the photomicrograph or TV screen of the trinocular observation tube for the main observer.

** The SZX-STAD1 or SZH-STAD1 stage adapter, the SZX-STAD2 stage adapter (together with the SZH-P600 auxiliary pillar) can also be installed.
For transmitted light observation, the SZX2 LED transmitted light illumination base (SZX2-ILLTQ/ILLTS) can be placed on the top of the SZX2-STL2 as shown below. In this case, the height of the base surface is raised for the same amount as the height of the transmitted light illuminator. This makes it necessary to attach the SZX-R drop prevention ring (optionally available) to the pillar of the SZX2-STL2. For reflected light illumination, refer to the related instruction manuals.
3 Operation

3-1 Focus adjustment

1 Focusing at the primary observer position

1 Turn the pointer brightness control [a] of the discussion attachment clockwise to turn on the pointer.

   Set the pointer color switching lever [b] to other position than the middle position. If the pointer cannot be seen in the field of view, move the pointer at the center of field using the pointer control lever [c].

2 Turn the right eyepiece diopter adjustment ring [d] until the pointer is in focus.

3 Looking into the right eyepiece, turn the coarse and fine adjustment knobs of the focusing assembly to focus on the specimen.

4 Looking into the left eyepiece, turn the helicoids [e] to focus on the specimen.

5 Turn the coarse and fine focus adjustment knobs of the microscope to focus on the specimen.

   The pointer and the coarse and fine focus adjustment knobs can be operated only from the primary observer's side. They cannot be controlled by the secondary observer.

2 Focusing at the secondary observer position

Turn the left and right eyepiece helicoid until the specimen is in focus.
(When the specimen is in focus, the pointer is also brought in focus.)
3-2 Using the pointer

1 Adjusting the pointer brightness

Light intensity alignment range of the pointer has been set to comply with a dark specimen, such as the case of fluorescence observation. For this reason, in case of brightfield observation with high light illumination, you may feel it difficult to identify the pointer even by rotating the pointer brightness control dial which is not defect of this product.

1 While looking into the eyepiece, turn the pointer brightness control clockwise to vary the brightness continuously.

2 Turning the control to the fully counterclockwise position switches it off.

2 Selecting the pointer color

Using the pointer color switching lever select a color which is clearly distinguishable from the specimen color.
- Top position: Red
- Middle position: Light shielded.
- Bottom position: Green

3 Moving the pointer

The main observer can move the pointer to the desired location in the field of view by operating the pointer control lever on the front of the side-by-side viewing attachment.

When the pointer is not used, move it away from the field of view or set the pointer color switching lever to the middle position.
3-3 Other

1. Using the reverse incidence prevention cap

When either the primary or secondary observation tube is not being used, be sure to put the provided reverse incidence prevention cap on the eyepiece to prevent penetration of reverse incident light during observation.

3-4 Photomicrography cautions

In general, the procedure for taking photographs (including digital camera photographs) is the same as usual. This section describes special considerations that apply when taking photographs with the SZX-SDO2 attachment installed.

1. Provided that the primary observer’s position is on the left side, you can take photographs that include the pointer using a trinocular observation tube.

   **TIP** When you use a genuine Olympus trinocular observation tube, photo eyepiece and photomicrography system, the pointer is always focused.

2. Pointer brightness is set higher than specimen brightness to ensure adequate contrast. This has the following effects on photographs that are not apparent during visual observation.

   1) Since the pointer is always overexposed when exposure is correct for the specimen, the pointer color will fade to white in color photographs.

   2) When taking a photograph with a photomicrography system with automatic exposure control, the brightness of the pointer will cause the specimen to be underexposed. To prevent this, set the photomicrography system’s specimen distribution compensation dial to the “OVER” position.

   3) Since the effects of the pointer are greater when making long exposures of dark specimens, first check the exposure time with the pointer illumination turned off. Then, after turning the pointer illumination back on, make the exposure manually with the exposure time identified above.

3. Take photographs from the primary observer’s position.

   **NOTE** • When taking photographs, be sure to place the reverse incidence prevention cap on the secondary observer’s eyepieces.

   • To avoid reducing stability, do not install the photomicrography system/digital camera at the secondary observer position.
## Specifications

### Side-by-side viewing attachment SZX-SDO2

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distance between primary and secondary observer tubes</td>
<td>650 mm parallel (side by side)</td>
</tr>
<tr>
<td>2. Image orientation</td>
<td>Same at primary and secondary observers’ positions (erect image)</td>
</tr>
<tr>
<td>3. Eyepoint height</td>
<td>Same at primary and secondary observers’ positions</td>
</tr>
<tr>
<td>4. Intermediate attachment magnification</td>
<td>1X at primary and secondary observers’ positions</td>
</tr>
<tr>
<td>5. Maximum field of view (mm)</td>
<td>22 mm dia. at primary and secondary observers’ positions</td>
</tr>
<tr>
<td>6. Mounting base</td>
<td>Mounted on SZX2-STL2 using SZX2-FOFH (or SZX2-FOA). Cannot be mounted on other bases.</td>
</tr>
<tr>
<td>7. Pointer</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>Arrow, upward (when observed through binocular assembly)</td>
</tr>
<tr>
<td>Colors</td>
<td>3-step switching (Top position: Red, Middle position: Light shielded, Bottom position: Green)</td>
</tr>
<tr>
<td>Movement</td>
<td>Joystick. (Controllable only by primary observer)</td>
</tr>
<tr>
<td>8. Pointer power supply</td>
<td>AC adapter U-ACAD4515: Input rating 100-240 V 50-60 Hz 1.2 A MAX. Output rating 15 V 3.34 A</td>
</tr>
<tr>
<td>9. Dimensions</td>
<td>778.2(W) x 204(D) x 204(H) mm (intermediate attachment thickness 56 mm)</td>
</tr>
<tr>
<td>10. Weight</td>
<td>5.1 kg (11.2 lb)</td>
</tr>
</tbody>
</table>
## Large base SZX2-STL2

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Base</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>500 x 350 mm</td>
</tr>
<tr>
<td>Pillar locations</td>
<td>2</td>
</tr>
<tr>
<td>2. Pillar</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>400 mm (from base top surface)</td>
</tr>
<tr>
<td>External diameter</td>
<td>32 mm dia., f7 -0.020 -0.041</td>
</tr>
<tr>
<td>3. Installation of stage adapter</td>
<td>Clamping onto base top surface using screws. Clamped at 2 locations (pillar mounting locations)</td>
</tr>
<tr>
<td>4. Dimensions</td>
<td>500 (W) x 350 (D) x 424 (H) mm</td>
</tr>
<tr>
<td>5. Weight</td>
<td>9.5 kg (20.9 lb)</td>
</tr>
</tbody>
</table>

## Operating environment

- Indoor use.
- Altitude: Max 2,000 m.
- Ambient temperature: 5°C to 40°C (41°F to 104°F)
- Maximum relative humidity 80% for temperatures up to 31°C (88°F), decreasing linearly through 70% (at 34°C/93°F), 60% (at 37°C/99°F) to 50% (at 40°C/104°F).
- Supply voltage fluctuation: ±10%.
- Pollution degree: 2 (in accordance with IEC60664).
- Installation/Overvoltage category: II (in accordance with IEC60664).
5 Assembly

5-1 Assembly diagram

The diagram below shows how to assemble the various microscope modules. The numbers in the diagram indicate the order of assembly.

**CAUTION**
Lay out the cables so that they do not hinder the observers.

**NOTE**
- When assembling the microscope, make sure that all parts are free of dust and dirt, and avoid scratching any parts or touching the glass surfaces.
- Some of the modules are very heavy. Be very careful not to drop them.

**TIP**
When transporting the system, remove the SZX2-FOA or SZX2-FOFH from the pillar.

Required Tools
- Allen wrench (Large) (Provided with the SZX-SDO2)
- Allen wrench (Provided with the large base)
- Allen screwdriver (Provided with the microscope body)

Primary observer
- Observation tube
  - SZX2-TR30
  - SZX2-TR30PT
  - SZX2-TTR
  - SZX2-TTRPT
  - SZX-BI30
  - SZX-BI45

Secondary observer
- Observation tube
  - SZX-BI30
  - SZX-BI45

Side-by-side viewing attachment
- SZX-SDO2

Mount

Microscope body
- SZX2-ZB10
- SZX2-ZB7

Large base
- SZX2-STL2

Focusing assembly
- SZX2-FOFH
- SZX2-FOA

Pillar

AC adapter

Power cord
5-2 Detailed assembly procedure

1 Mounting the pillar

**TIP** When the primary observer is to sit on the right side, the pillar support should be moved to the left side.

1 Using the Allen wrench (3 mm across flats) provided with the base, fully loosen the 2 pillar support clamping screws a.

2 Hold the pillar b with the hex screwdriver storage hole made of white rubber up, and gently insert the pillar all the way into the mounting hole until it stops.

3 Using the Allen wrench, tighten the 2 clamping screws a securely.

2 Mounting the focusing assembly

1 Fully loosen the focusing assembly clamping knob a. While holding the focusing assembly with both hands, insert the pillar c into the mounting hole b.

**NOTE** Insert gently without applying excessive force.

2 After inserting the focusing assembly until it reaches the stop position, secure it with the focusing assembly clamping knob a.

**CAUTION** • To prevent the microscope body from turning over, be sure to mount the focusing assembly so that it is located on the front as shown by “O” in figure below and clamp securely. The microscope will turn over if the focusing assembly is mounted facing the rear.

• When attaching the focusing assembly on the top of the pillar of the SZX2-STL2 base, be sure to insert the SZX-R drop prevention ring (optionally available) immediately below the focusing assembly without leaving any clearance.
### Mounting the side-by-side viewing attachment (SZX-SDO2)

1. Remove the dovetail mount clamping screw cap on the focusing assembly by inserting a thin object into the notch.
2. Using the provided Allen wrench, loosen the dovetail mount clamping screw inside the cap on the focusing assembly.
3. Align the dovetail mount on the focusing assembly with the dovetail mount on the SZX-SDO2 side-by-side viewing attachment, and insert them gently.

**NOTE**
Do not insert them at an angle or with excessive force as this may cause malfunctions.

4. When the side-by-side viewing attachment has been inserted until it stops, tighten the clamping screw using the Allen wrench.
5. Place the cap in the original position.
6. Place the SZX-SDO2 side-by-side viewing attachment on the mount so that the secondary observer’s position is on the right side (as shown in figure). Insert the 4 clamping screws provided with the SZX-SDO2 attachment into the 4 screw holes and tighten using the Allen wrench (4 mm across flats) provided with the SZX-SDO2 attachment. (If the pillar support is installed on the left side of the base, mount the attachment so that the secondary observer’s position is on the left side.)

**CAUTION**
To prevent the side-by-side viewing attachment from dropping, be sure to hold it by hand until it has been clamped securely.
It is easier and safer to mount the attachment with two people.

7. Attach the 4 provided plastic caps onto the 4 screw holes to hide the clamping screws.
4 Mounting the microscope body

**CAUTION**
Remove the objective beforehand to prevent it from being damaged by falling out during installation of the microscope body. Also be sure to hold the microscope body firmly until it has been clamped securely.

1. Using the Allen screwdriver, fully loosen the observation attachment clamping screw [a] on the microscope body.
2. Align the positioning groove on the side-by-side viewing attachment with the positioning pin [b] on the microscope body and insert the dovetail mount [c] on the microscope body into the dovetail on the bottom of the side-by-side viewing attachment.
3. Using the Allen screwdriver, tighten the observation attachment clamping screw [a].

5 Mounting the observation tubes

**TIP**
The observation tubes for the primary and secondary observers are both mounted the same way.

1. Using the Allen screwdriver, fully loosen the observation attachment clamping screw [a] (on the secondary observer’s observation tube, this screw is located on the front), and remove the dust cap.
2. Align the positioning groove [b] on the observation tube with the positioning pin [c] on the side-by-side viewing attachment and insert the dovetail [d] on the bottom of the observation tube into the dovetail mount [e] of the side-by-side viewing attachment.
3. Using the Allen screwdriver, tighten the clamping screw [a].

**NOTE**
Do not mount a photomicrography system or video camera on the secondary observer’s observation tube by using a trinocular observation tube. This will reduce stability.
6 Connecting the AC adapter

**NOTE**
- Before connecting the AC adapter, turn the pointer brightness control fully counterclockwise to the OFF position.
- The power cord is vulnerable when bent or twisted. Never subject it to excessive force.
- Always use the power cord and AC adapter provided by Olympus. If no power cord is provided with the microscope, please select the proper power cord by referring to section “PROPER SELECTION OF THE POWER SUPPLY CORD” at the end of this instruction manual.

1. Firmly connect the AC adapter’s output plug \(a\) to the AC adapter input connector \(b\) on the left side panel of the side-by-side viewing attachment.

2. Connect the power cord’s connector \(d\) into the AC adapter’s input connector \(c\), then connect the power cord’s plug \(e\) to the wall power outlet.

**CAUTION**
The power cord should be connected to a grounded, 3-conductor power outlet. If the power outlet is not grounded properly, Olympus can no longer warrant the electrical safety performance of the equipment.

7 Mounting the cord hook

The AC adapter cord may interfere with operation if it gets entangled around the zooming handle \(a\) on the left of the microscope body. To prevent this, attach the cord hook \(b\) provided with the side-by-side viewing attachment to the rear side or any other convenient position on the attachment and hook the cord on 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**

<table>
<thead>
<tr>
<th>Voltage rating</th>
<th>125 V AC (for 100-120 V AC area) or, 250 V AC (for 220-240 V AC area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current rating</td>
<td>6 A minimum</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>60 °C minimum</td>
</tr>
<tr>
<td>Length</td>
<td>3.05 m maximum</td>
</tr>
<tr>
<td>Fittings configuration</td>
<td>Grounding type attachment plug cap. Opposite terminates in molded-on IEC configuration appliance coupling.</td>
</tr>
</tbody>
</table>

**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 the agencies listed in Table 1. In case you are unable to buy locally 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.

<table>
<thead>
<tr>
<th>Country</th>
<th>Agency</th>
<th>Certification mark</th>
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### Table 2  HAR flexible cord

**Approval organizations and cordage harmonization marking methods**

<table>
<thead>
<tr>
<th>Approval organization</th>
<th>Printed or embossed harmonization marking (May be located on jacket or insulation of internal wiring)</th>
<th>Alternative marking utilizing black-red-yellow thread (Length of color section in mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comite Electrotechnique Belge (CEBEC)</td>
<td>CEBEC  &lt;HAR&gt;</td>
<td>Black  10  Red  30  Yellow  10</td>
</tr>
<tr>
<td>Verband Deutscher Elektrotechniker (VDE) e.V. Prüfstelle</td>
<td>&lt;VDE&gt;  &lt;HAR&gt;</td>
<td>Black  30  Red  10  Yellow  10</td>
</tr>
<tr>
<td>Union Technique de l'Electricite' (UTE)</td>
<td>USE  &lt;HAR&gt;</td>
<td>Black  30  Red  10  Yellow  30</td>
</tr>
<tr>
<td>Instituto Italiano del Marchio di Qualita’ (IMQ)</td>
<td>IEMMEQU  &lt;HAR&gt;</td>
<td>Black  10  Red  30  Yellow  50</td>
</tr>
<tr>
<td>British Approvals Service for Electric Cables (BASEC)</td>
<td>BASEC  &lt;HAR&gt;</td>
<td>Black  10  Red  10  Yellow  30</td>
</tr>
<tr>
<td>N.V. KEMA</td>
<td>KEMA-KEUR  &lt;HAR&gt;</td>
<td>Black  10  Red  30  Yellow  30</td>
</tr>
<tr>
<td>SEMKO AB Svenska Elektriska Materielkontrollanstalter</td>
<td>SEMKO  &lt;HAR&gt;</td>
<td>Black  10  Red  10  Yellow  50</td>
</tr>
<tr>
<td>Österreichischer Verband für Elektrotechnik (OVE)</td>
<td>&lt;OVE&gt;  &lt;HAR&gt;</td>
<td>Black  30  Red  10  Yellow  50</td>
</tr>
<tr>
<td>Danmarks Elektriske Materialkontroll (DEMKO)</td>
<td>&lt;DEMKO&gt;  &lt;HAR&gt;</td>
<td>Black  30  Red  10  Yellow  30</td>
</tr>
<tr>
<td>National Standards Authority of Ireland (NSAI)</td>
<td>&lt;NSAI&gt;  &lt;HAR&gt;</td>
<td>Black  30  Red  30  Yellow  50</td>
</tr>
<tr>
<td>Norges Elektriske Materiellkontroll (NEMKO)</td>
<td>NEMKO  &lt;HAR&gt;</td>
<td>Black  10  Red  10  Yellow  70</td>
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<tr>
<td>Asociacion Electrotecnica Y Electronica Espanola (AEE)</td>
<td>&lt;UNED&gt;  &lt;HAR&gt;</td>
<td>Black  30  Red  10  Yellow  70</td>
</tr>
<tr>
<td>Hellenic Organization for Standardization (ELOT)</td>
<td>ELOT  &lt;HAR&gt;</td>
<td>Black  30  Red  30  Yellow  70</td>
</tr>
<tr>
<td>Instituto Portages da Qualidade (IPQ)</td>
<td>np  &lt;HAR&gt;</td>
<td>Black  10  Red  10  Yellow  90</td>
</tr>
<tr>
<td>Schweizerischer Elektro Technischer Verein (SEV)</td>
<td>SEV  &lt;HAR&gt;</td>
<td>Black  10  Red  30  Yellow  90</td>
</tr>
<tr>
<td>Elektriska Inspektoratet</td>
<td>SETI  &lt;HAR&gt;</td>
<td>Black  10  Red  30  Yellow  90</td>
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Underwriters Laboratories Inc. (UL) | SV, SVT, SJ or SJT, 3 X 18AWG |
Canadian Standards Association (CSA) | SV, SVT, SJ or SJT, 3 X 18AWG |
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<td><strong>Our Website</strong></td>
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