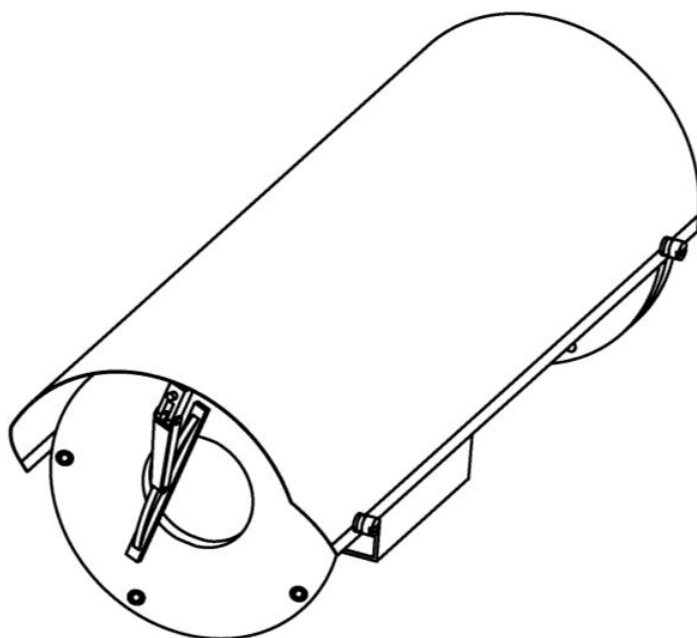


SVEX-T500A

Explosion Proof User Manual



Safety Notes

Please carefully read this Instruction Manual before installation and use.

1. Installation

1. Please carefully read this Instruction Manual and follow the warnings before installation and use.
2. Be sure to cut off the power supply before maintenance and repair of the equipment.
3. Do not turn on the equipment in any place where there is oil smoke, excessive dust, high temperature or condensation; otherwise, it may cause reduced image definition.
4. Please install the cables or optical cables correctly according to the requirements of this Manual; otherwise, it may cause faults.
5. During maintenance of the equipment, pay attention to the protection of flameproof surface; avoid metal chips or other foreign matters from entering the equipment.
6. Do not attempt to disassemble or modify the equipment.

2. Environment Protection

- Our products may contain parts which pollute the environment, such as circuit board, electronic components, plastic products and lubricating grease, etc. During maintenance or scrapping of the equipment, pay attention to collect and control such pollution sources; do not discard them arbitrarily; hand them over to the relevant environment protection department for disposal so as to avoid adverse influence on the environment.

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1- Overview

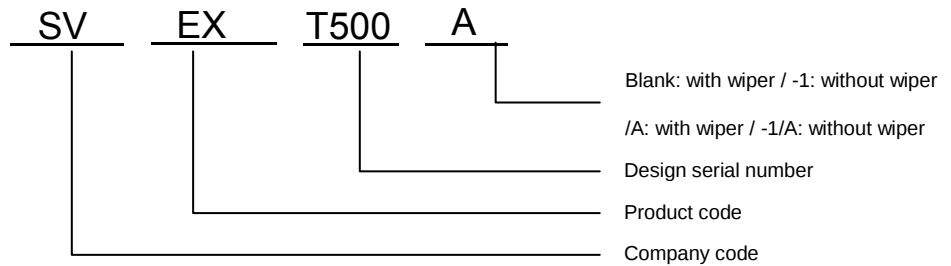
Designed and manufactured strictly according to the standards such as GB3836.1-2010 *Explosive atmospheres - Part 1: Equipment - General requirements*, GB3836.2-2010 *Explosive atmospheres - Part 2: Equipment protection by flameproof enclosure "d"*, GB12476.1-2000 *Electrical apparatus for use in the presence of combustible dust - Part 1-1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus*, EN60079-0:2009 *Explosive atmospheres - Part 0: Equipment - General requirements*, EN60079-1:2007 *Explosive atmospheres - Part 1: Equipment protection by flameproof enclosure "d"*, and EN 60079-31:2009 *Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"*, **SVEX-T500 series explosion-proof camera** has the enclosure of all stainless steel structure with the level of protection up to IP66, and can be widely used in the fields of petroleum, chemical industry, wharf, port, mine, aerospace, aviation, military industry and grain processing, etc.

SVEX-T500 series explosion-proof camera has 4 specifications, including **long type** in which zoom lens cameras can be installed, and **short type** in which fixed lens cameras or integrated cameras can be installed.

Relevant technical data, patterns and prototypes of **SVEX-T500 series explosion-proof camera** (hereinafter referred to as the camera) have been reviewed to be qualified by the China National Quality Supervision and Test Centre for Explosion Protected Electrical Products (CQST).

2- Technical Index

2.1 Model Description



2.2 Certification

Explosion-proof mark



II 2 GD Ex d II C T6 Gb
 Ext III C T80°C Db

2.3 Model

SVEX-T500A

Explosion-proof camera, with wiper, long type

2.4 Electrical Index

	220VAC/110VAC/24VAC 50/60Hz (24V is a special type; please specify when ordering)
	±10%
Input voltage	≤2A
	12VDC (provided by external equipment)
Input voltage range	Started at the temperature below -10°C±5 °C
Operating current	30W
Camera power supply	2-core cable for power supply
Heater	4-core cable for lens control
Power consumption	Video cable for video signal output
Electrical connection	

2.5 Mechanical Index

SVEX-T500A

Material	Stainless steel 304 or 316L
Level of protection	IP66
Outside dimension	657(L) x 198(H) x 212(W) mm
Inside dimension	344(L) x 90(H) x 70(W) mm
Sight window	15mm thick
Area of sight window	Φ80mm
Weight / Shipping weight	16Kg / 18Kg
Number of outlet holes	3
Thread size of outlet holes	G-3/4" or M25×1.5
Installation mode	Electric pan-tilt, semi-fixed pan-tilt, fixed support

2.6 Ambient Condition

Atmospheric pressure	80~110KPa
Ambient temperature	-40°C~+60°C
Relative humidity	≤95%RH (+25°C)

2.7 Product Dimension

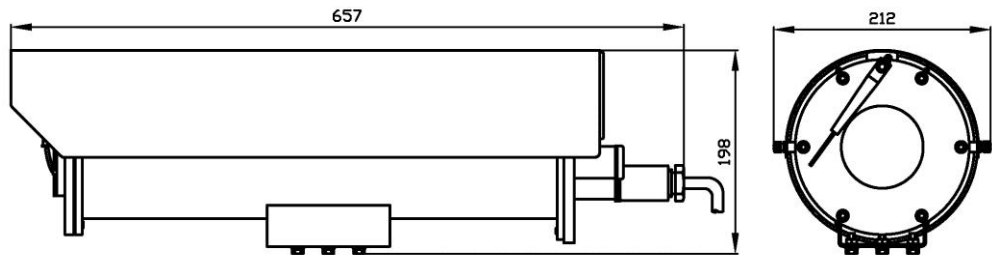


Figure 1. Outside Dimension of SVEX-T500A Explosion-proof All-weather Camera Housing

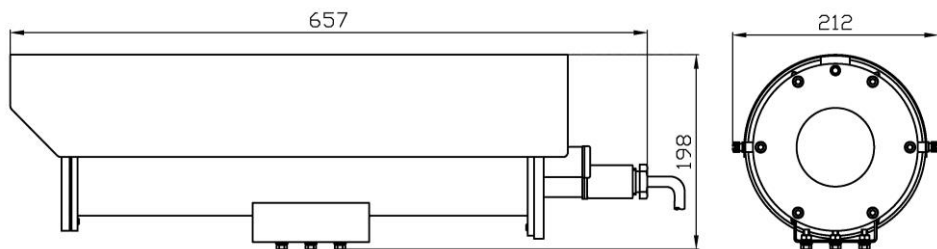


Figure3. Outside Dimension of SVEX-T500A Explosion-proof All-weather Camera Housing

2.8 Installation Dimension

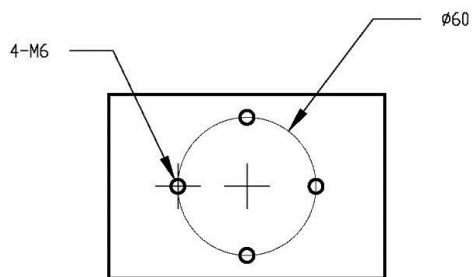


Figure 3. Fixing Holes at the Bottom of Housing

3- Installation

3.1 Installation of Camera and Lens

Carefully read the instruction manual before installation to learn whether the CCD specifications and interface forms of the lens and camera are consistent; the 1/3 or 1/2 inch lens can be installed in the 1/3 inch CCD camera, and only the 1/2 inch lens can be installed in the 1/2 inch CCD camera, otherwise, vignette may be generated on the picture edge.

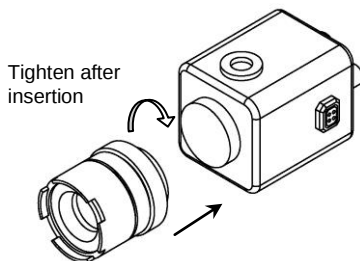
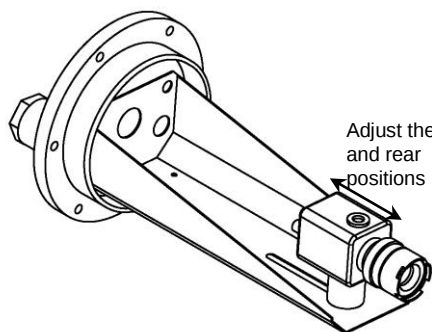


Figure 4. Lens Installation

After the lens and camera are installed, adjust the back focal length of the camera, and then observe the clear degree of test card on the monitor.

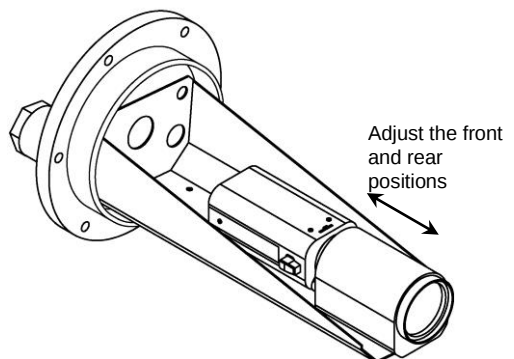
Install the properly debugged lens and camera on the drawer plate of the housing, and adjust their front and rear positions to ensure that the picture edge has no vignette after the barrel is mounted.



Fasten with screw

SVEX-T500A

Figure 5. Installation of Camera and Prime Lens
on Drawer Plate



Fasten with screw

SVEX-T500A

Figure 6. Installation of Camera and Zoom Lens
on Drawer Plate

3.2 Cable Treatment

3.2.1 Cable Treatment at Delivery

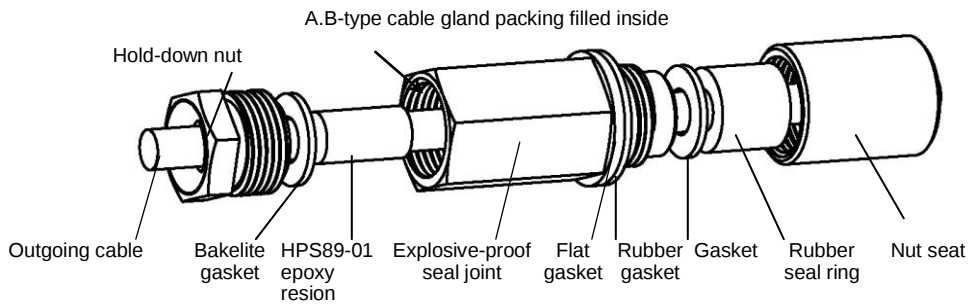


Figure 3.3.1 Structure of Standard Packing Box at Delivery

3.2.2 Use of Explosion-proof Flexible Tube

a. As shown in Figure 7, attach the explosion-proof flexible tube assembly onto the cable; after removing the hold-down nut, reserve standard gasket and rubber ring (it is also OK to use spare parts in the packaging box).

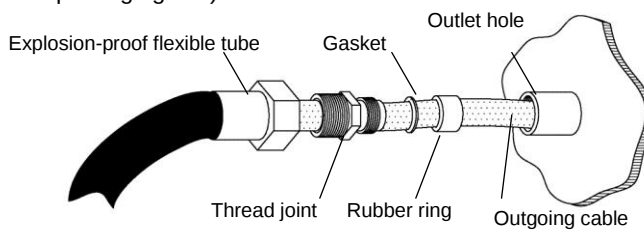


Figure 7.

b. As shown in Figure 8, first tighten the thread joint, and then tighten the explosion-proof flexible tube.

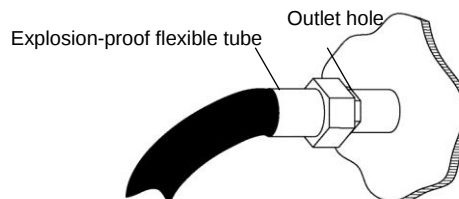


Figure 8.

3.3 Installation of Housing Barrel

The **flameproof surface** of the housing fits quite closely since the explosion-proof grade is high. During installation, especially pay attention to protecting the **flameproof surface**; as shown in the figure, the rear cover and the rear side of the barrel are flameproof surfaces, which shall not be impacted or scratched during installation.

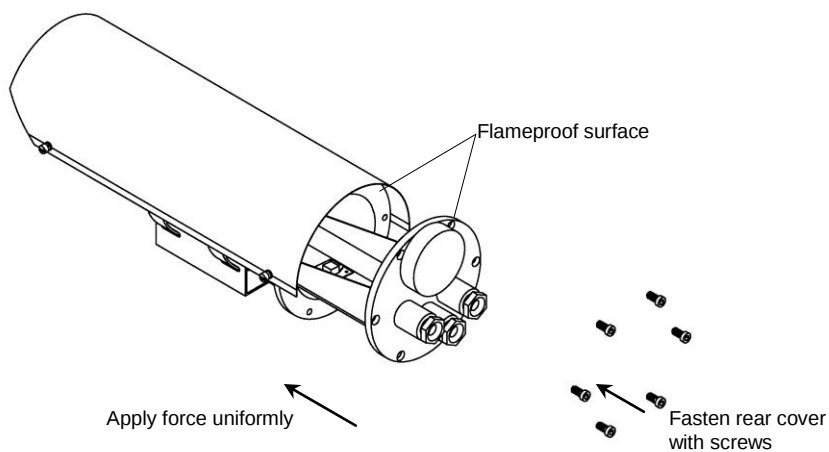


Figure 11. Careful Installation of Housing Rear Cover

An insulating spacer is provided between the drawer plate and the rear cover plate in the rear cover assembly, and its insulation performance shall be paid attention to in case disassembling is required; after assembling, measure its insulating resistance to ensure that it is not less than 100MΩ. There is an externally grounded bolt in the center of the rear cover, which shall be reliably connected to the earth when the equipment is installed.

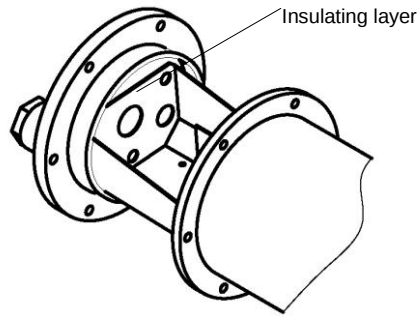


Figure 12. Pay Attention to Insulating Layer between Rear Cover and Drawer Plate

Note:

1. S/N 1 consists of 2 line groups. One group is for heating (red, 0.5mm^2); the other group is the common motor terminal (white, yellow);
2. S/N 2 consists of 2 line groups. One group is for heating (red, 0.5mm^2); the other group is the jumper from No. 2 terminal to No. 3 terminal (white);
3. S/N 3 consists of 2 line groups. One group is for the wiper limit switch (white); the other group is the jumper from No. 2 terminal to No. 3 terminal (white);
4. S/N 4 consists of 3 line groups. One group is for the capacitor (red), one group is for the

motor (0.14mm^2 , red), and the other group is for the wiper limit switch (brown).

3.4 Installation of Housing onto Electric Pan-tilt

Please refer to the instruction manual of electric pan-tilt.

3.5 Installation of Housing onto Fixed support

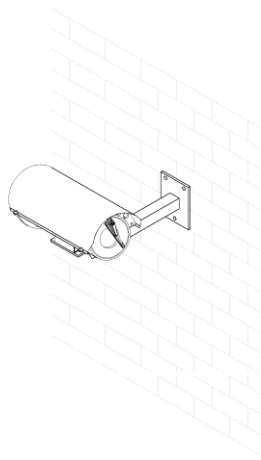


Figure 14. SVEX-T500A Support Installation Diagram

3.6 Installation Precautions

- Check the following items before installing the product, and the product cannot be used if it is non-conforming.
 - a. Whether there is explosion-proof certificate number;
 - b. Whether the explosion-proof mark applies to the environment of explosive gas mixture;
 - c. Whether all explosion-proof parts are free from cracks and defects affecting the explosion-proof performance.
- Correctly select the cable, ensure that the diameter of lead-in cable matches with the bore diameter of rubber seal ring, select the minimum cable OD as per the mark on the end face of the rubber seal ring, and guarantee that the gaps between the rubber seal ring and the cable as well as the rubber seal ring and the lead-in device meet the explosion-proof requirement after the hold-down nut is tightened.
- Set the nameplate and the warning sign “No Opening with Power” in an obvious position on the surface of the product.
- During wiring, select the seal ring with inner bore of $\Phi 10$ and characters “ $\geq \Phi 9.5$ ” cast on

the end face, and select the cable of which the outer diameter matches with the internal bore diameter of the seal ring, as shown in the figure.

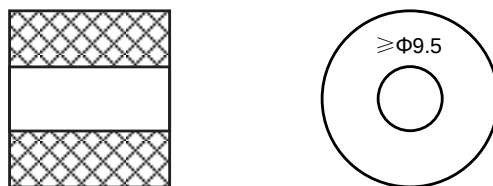


Figure 15. Seal Ring Diagram

4-Description of Explosion-proof Structure

- Various special circumstances are adequately considered during structural design, so that no explosion will occur in the environment full of explosive mixture outside the equipment if sparks are generated in the equipment; moreover, the explosion-proof performance of the equipment is guaranteed from the following aspects: enclosure strength, gap between components, and highest surface temperature limitation of enclosure.
- The explosion-proof enclosure after finish machining must be able to withstand the hydraulic test pressure specified in GB3836.2: 2.0MPa, not less than 10s, judged as qualified in case of no water dripping and intact structure.
- The highest surface temperature of enclosure shall not exceed +80°C during normal operation.
- The lead-in device for the camera is fastened with the hold-down nut.
- The sight window of the camera is made of tempered glass, and thus can withstand the impact and thermal shock tests.

5- Troubleshooting

Failure	Cause	Solution	Remark
Wiper problem	Stuck wiper		Return to Veilux for repair
	Dead corners	Adjust the wiper shaft	DYI
No image	Open-circuit power supply	Check the wiring	DYI
	Open-circuit signal line	Check the wiring	DYI
	Damaged camera	Replace the camera	Return to Veilux for repair
	Faulty lens	Replace the lens	Return to Veilux for repair

6- Transportation and Storage

The packaged product can be transported by various methods in the condition that it is protected from direct exposure to rain and snow; it can be stored for more than one year in the environment with the temperature of 0°C~+40°C and the relative humidity of not more than 90%.

7- Installation Accessories

At delivery, 10mm rubber seal ring is mounted in the outlet hole of the camera, and 10mm blocking core and hold-down nut are mounted in the hole without threaded line. Provide one 8mm rubber seal ring, one 12mm rubber seal ring, and one portion of desiccant; provide one 1/4" copper screw, one 6mm copper screw and one 12mm copper screw for the housing. Other accessories: (to be ordered separately)

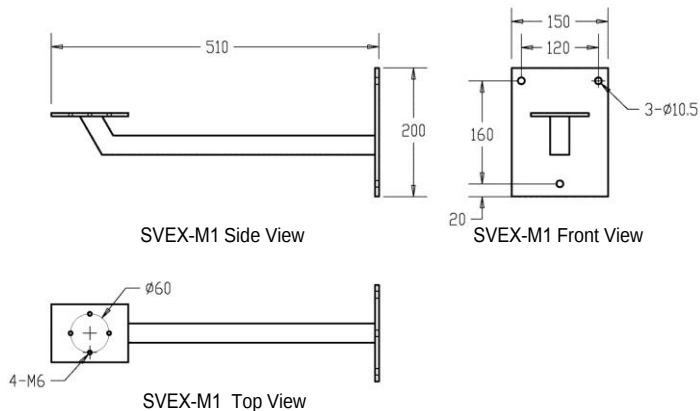


Figure 16. SVEX-M1 Support

8- Quality Guarantee

For any camera produced by Veilux, we promise a one year to repair warranty.
During Guarantee period, we supply free service except following situations:

- „ User does not operate as manual book requires
- „ User un-install the whole product by themselves
- „ Lightning or Act of God

If there are additional agreements between Veilux and buyer, then agreements shall be strictly done

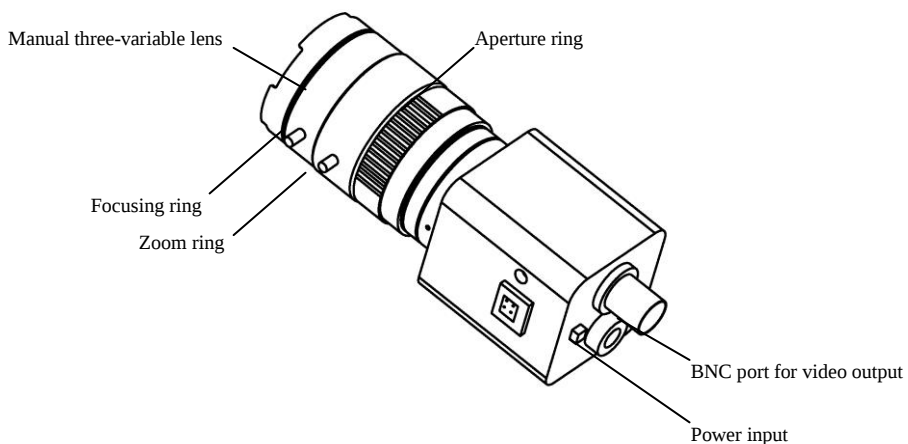
9- Company Commitment

„ Veilux owns the final design changing and final specification rights and no responsibility to inform user.

„ This manual book belongs to Veilux rights, without permits or any book inform, any company or

private copy of whole or part of the book shall be prohibited.

Appendix I: Lens Adjustment



Take the computer H2Z4516CS-2 lens which has three adjustable rings as an example: "OPEN" and "CLOSE" are marked on the aperture ring, and the aperture ring can be directly rotated to adjust the aperture; "OPEN" means increasing the aperture, and "CLOSE" means decreasing the aperture. In the environment with weak light, increase the aperture to improve the viewing effect; in the environment with ample light, properly decrease the aperture, so that the screen will not turn white. In addition, increasing the aperture makes the depth of field get smaller, and decreasing the aperture makes the same get larger.

A locking screw is set for the zoom ring and focusing ring respectively. Before adjustment, rotate the screw anticlockwise, so that the zoom and focusing rings are in the adjustable state; after adjustment, properly lock the screw.

"W" and "T" are marked on the zoom ring, and mean "WIDE" and "TELE"; adjusting towards the "W" direction increases the view angle of the lens to the maximum, so "W" means wide angle; adjusting towards the "T" direction decreases the view angle, and thus farther views can be seen.

"∞" and "N" are marked on the focusing ring, and mean "Infinite" and "NEAR" respectively; focusing is adjusted as per the distance (i.e., object distance) of the observed view, till the scenery is clear.

Please don't touch the surface of the lens when operating it, and please clean the dust or pollutants (if any) on the lens with special cleaning cloth.

Appendix II: Use of Desiccant

The desiccant bag is included in the accessories packed along with the product. Place the desiccant in the equipment cavity after installation and electrical connection of the equipment. Please pay attention to the placement position: keep away from driving and electrical connection parts, and be relatively static and tight, so as to avoid the line fault or driving fault due to absorption saturation of the desiccant.

Appendix III: Content Reference Table of Toxic and Hazardous Substances or Elements

Part Name	Toxic and Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr ⁶⁺)	Polybrominated Biphenyls (PPB)	Polybrominated Diphenyl Ethers (PBDE)
Stainless steel 304	○	○	○	○	○	○
Die casting	○	○	○	○	○	○
Circuit board	○	○	○	○	○	○
Core	○	○	○	○	○	○
Connecting wire	○	○	○	○	○	○
Power supply (if any)	○	○	○	○	○	○
Support (if any)	○	○	○	○	○	○
Accessories	○	○	○	○	○	○

Note:

- indicates that the content of the toxic and hazardous substance or element in all the homogeneous materials of the part is below the concentration limit requirement as described in SJ/T 11363-2006.
- × indicates that the content of the toxic and hazardous substance or element in at least one homogeneous material of the part exceeds the concentration limit requirement as described in SJ/T 11363-2006. As long as the product is used properly within the environment-friendly use period, these substances or elements will not leak or mutate, and will not result in any bodily injury or damage to the property of the user. Do not dispose of these substances or elements by yourself; please hand them over to the relevant department designated by the government for recycling according to the government decree.