Operating Instructions Truvis Helios S53 UV / 001

We are pleased that you have decided to purchase the Helios S53 UV. This high-quality device will serve you well for a long time if handled properly. The Helios S53 UV Illumination Dome is used to obtain the raw data for the creation of RTI's using software such as Authentica Creator from Truvis. This allows the reflection properties of surfaces to be measured, characterized and realistically displayed.
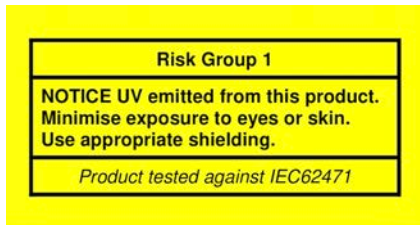
Table of contents

1. Important safety instructions

- General Warning
- Read manual before use
- Socket for mains adapter (section 3.7)
- Socket for PC-Sync cable (section 3.5)

Risk Group 1

NOTICE UV emitted from this product. Minimise exposure to eyes or skin. Use appropriate shielding.

Product tested against IEC62471

- Warning of UV radiation
- The light protection curtains must be attached to the illumination dome before the UV-LED's are put into operation (section 3.6)

The Truvis Helios S53 lighting dome may only be operated by trained personnel. Read all the information in these operating instructions carefully before using the device. It is imperative that you follow the safety instructions contained therein!

Familiarize yourself thoroughly with the operating instructions!

All transport protection and packaging elements must be removed before commissioning!

Pay particular attention to your equipment in the presence of children! Do not leave the lighting dome unattended!

The lighting dome is equipped with UV-LED's! The undesirable side effects on skin and eyes are reduced by using the supplied light protection curtains! The irradiation of unprotected skin and eyes must be avoided! Avoid eye contact with the light source!

The Truvis illumination dome may only be used with original Truvis protective elements and original Truvis accessories!

Connecting the Truvis lighting dome to other power supply units can cause danger to the user and damage to the lighting dome! We expressly disclaim any warranty and liability for damage resulting from such

unauthorized combinations!

Only grounded extension cables that are expressly approved for operation with the lighting dome may be used!

To avoid the risk of fire, electric shock or injury, use only accessories recommended by Truvis!

Check that the mains voltage corresponds to the specifications on the rating plate of the power supply unit!

The lighting dome is designed for operation in a dry environment and an ambient temperature of 5°C to 40°C! The lighting dome must be protected against moisture, condensation, dripping and splashing water, humidity, dirt, sand, metal chips and dust!

The lighting dome must be protected against electromagnetic fields, shocks and vibrations!

Protect the lighting dome from heat and frost! If the lighting dome freezes, severe technical damage may result!

Sudden temperature differences can lead to condensation in the lighting dome! In such situations, the lighting dome must be adjusted to the new temperature in a well-ventilated place for at least one hour before commissioning!

Do not use the lighting dome in an explosive environment!

The lighting dome must not be operated in or near water!

The lighting dome must not be immersed in water or other liquids! This could result in voltage discharges that are dangerous to the touch!

To protect the eyes from UV radiation, the lighting dome may only be operated with the light protection curtains attached!

When using the illumination dome on a tripod, the illumination dome must be secured to its tripod mount by tightening the retaining screw! Also ensure that the tripod is stable and secure it sufficiently against falling over!

Use only intact, grounded connecting cables. Damaged or twisted connecting cables must be replaced by intact connecting cables!

The illuminating dome may only be operated on sockets or emergency power generators or accumulators expressly approved by Truvis!

If an extension cable is necessary, it must be sufficiently dimensioned for the unit to be supplied! Cables that are not designed for the current in question may overheat! If a cable reel is used, it must be completely unrolled before use to prevent the cable from overheating!

Never operate the lighting dome in a bag or container!

The lighting dome must not be completely covered!

When laying, clearing away or rolling up cables, ensure that they do not present a tripping hazard for persons!

Do not touch the connection sockets for the mains cable and do not poke at them with metal objects!

Pull out the plug of the mains connection cable when cleaning or maintaining the lighting dome or when it is not in use! Never pull on the cable itself to unplug it, but always directly on the plug housing!

If the lighting dome has been dropped or damaged, it must be checked by a specialist before being put back into operation!

To avoid dangerous electric shocks, never open the lighting dome! Opening the lighting dome and carrying out service or repair work may only be performed by authorized Truvis service centers!

Shipping instructions:
Only use Truvis original packaging and the transport case to transport the lighting dome! See section 3.1 for packing and unpacking instructions.

2. Scope of delivery and accessories

2.1 Standard scope of delivery

|		
1 Helios S53 UV lighting dome	011.011.1	
2 Camera mount	011.020.1	
3 Height-adjustable support legs	011.030.1	
4 Feet for support legs	011.040.1	
5 Tripod adapter	011.050.1	
6 Light protection curtain big	011.060.2	

7 Light protection curtain small	011.070.2	
8 PC-Sync cable	011.081.1	
9 Mains adapter cable	011.091.1	
10 Mains adapter	011.101.1	
11 Transport case	011.110.1	

2.2 Optional accessories

12 Diffusor   011.120.3
13 Mounting screws for diffusor   011.130.1

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3. Start Up
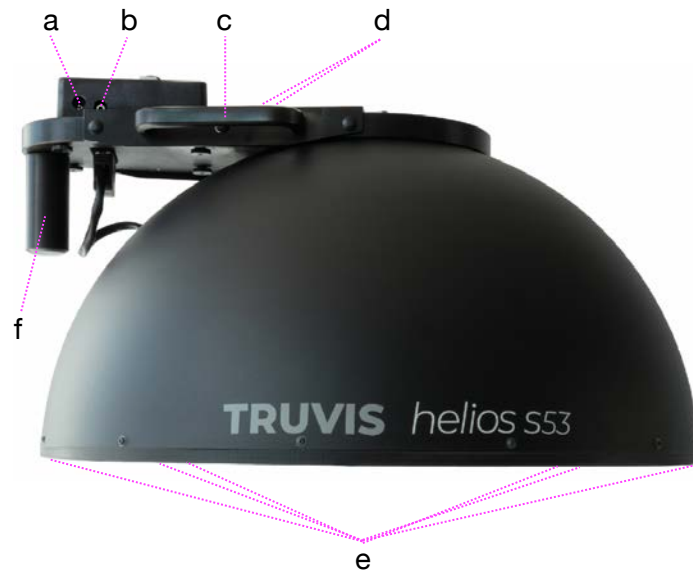
3.1 Unpacking and packing the illumination dome

Open the transport box and remove the protective cover by loosening the two integrated screws. Do not reach into the lighting dome through the opening, but lift the lighting dome vertically out of the transport box using the handles [1c]. The accessories **2-5** are screwed to the bottom of the transport box. When packing the illumination dome, make sure that they are screwed tight and arranged as shown in Figure 3 (camera mount completely retracted, position of the locking lever of the tripod mount). Otherwise they can damage the lighting dome!
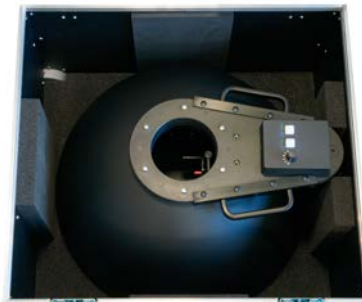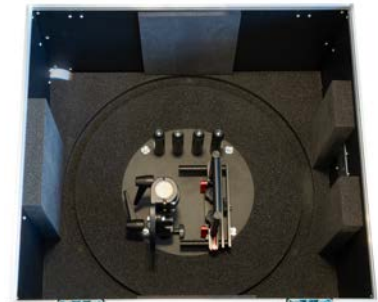

Figure 1

Figure 2

Figure 3

3.2 Setting up the lighting dome

The lighting dome can be used without the support legs, with the support legs or a tripod.

3.2.1 Support legs

Place the lighting dome on a soft, non-slip surface on the edge of a table as shown in Figure 4. Be sure to slide the lighting dome as close as possible to the edge of the table.

Figure 4

Figure 5

Figure 6

Now attach at least three support legs [3] to the screw threads [1e] provided for this purpose (Figure 5) and place the lighting dome upright on a stable, horizontal surface (Figure 6). Ensure that the lighting dome does not slip and, if necessary, adjust the height of the support legs by turning the support legs or support feet [4] such that the lighting dome stands parallel with the horizontal.

<u>3.2.2 Tripod</u>

Attach the supplied tripod adapter [5] to the tripod bracket [1f] of the lighting dome (Figure 7). Lift the lighting dome onto a tripod using the handles and tighten the mounting bolt [5a] on the tripod adapter. Make sure that the tripod is also stable and secure it sufficiently to prevent it from falling over.

Figure 7

Note: Position the lighting dome so that the power supply cable is easily accessible and can be removed from the lighting dome at any time.

3.3 Attaching the diffusor

If you plan to use the optionally available diffusor [11], first place the lighting dome on a table edge as described in 3.2.1. Place the diffusor inside the lighting dome and, if using the support legs, secure the diffusor between the legs and the bottom edge of the lighting dome (Figure 8).

Figure 8

If you are using the illumination dome on a tripod, attach the diffusor to the lower edge of the illumination dome using the diffusor screws [12] supplied.

3.4 Mounting the camera

Fasten the supplied camera mount [2] with the integrated fastening screws [2b] to the screw threads [1d]. Then fasten the camera to the camera mount with the integrated screw [2a]. Adjust the position of the camera so that the lens is in the middle of the hole and flush with the inner edge of the illumination dome.

Note: The position of the camera may differ to a certain extent from the optimum position described above. However, this may lead to less than optimal results when calculating RTI images in the Authentica Creator Software.

3.5 Connecting the camera
If your camera does not have a PC-Sync cable connector, attach a hot shoe adapter with a PC-Sync connector to the camera's hot shoe. Now connect the PC-Sync connectors on the hot shoe adapter or camera and the lighting dome [1b] with the PC-Sync cable [8] provided. If you intend to control the camera using a capture software, connect the camera to your computer as well.

3.6 Attaching the light protection curtains
Attach the large light protection curtain [6] by placing it over the lighting dome and tightening the integrated elastic band. Fasten the small light protection curtain [7] by putting it over the camera lens and tightening the integrated elastic band. Make sure that the light protection curtains close tightly and that no ambient light enters (Figure 10).

3.7 Mains operation
Connect the mains adapter [10] to the mains adapter socket [1a] on the lighting dome. Then connect the mains adapter to the mains using the corresponding mains cable [9]. The backlight of the MOD/SEQ button will light up continuously in green and that of the UV/VIS button will flash green. To turn off the lighting dome, disconnect the power supply from the lighting dome.

Figure 9: Built-up lighting dome without light protection curtains

Figure 10: Built-up lighting dome with light protection curtains

4. Operating elements

The illumination dome has three controls: the intensity control [x], the UV/VIS button [y] and the MOD/SEQ button [z]. With the UV/VIS and MOD/SEQ buttons, the illumination dome can be set to three different operating modes and the intensity of the VIS and UV LEDs can be adjusted with the 6-step intensity control.

Note: Make sure that the light protection curtains are mounted (section 3.6) before switching on the LEDs.
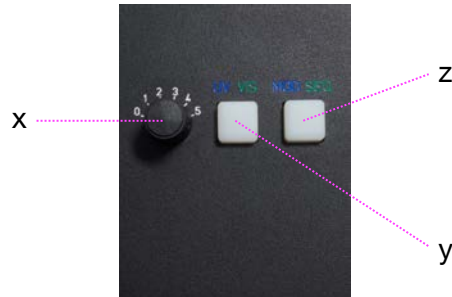
4.1 Operating modes

4.1.1 VIS-SEQ mode

When the lighting dome is started up, the backlight of the MOD/SEQ button will light up continuously in green and that of the UV/VIS button will flash green. The illumination dome is in VIS-SEQ mode and is ready for sequence capture. When the sequence capture starts, the VIS LED's in the lighting dome will light up one after the other for 150 ms. During this time, the MOD/SEQ button briefly lights up in red. If a running sequence capture is interrupted, the lighting dome can be reset to the start of the sequence by pressing and holding the MOD/SEQ button.

4.1.2 VIS-MOD mode

In this operating mode, all VIS LED's in the lighting dome light up continuously. This operating mode allows you to work on camera settings before starting a sequence capture or to use the illumination dome as a light source for normal photography. You can enter this operating mode by first making sure that the UV/VIS button lights up green (otherwise press it once) and then pressing the MOD/SEQ button. The MOD/SEQ button will now light up continuously in blue.

4.1.3 UV-MOD mode

In this operating mode, all UV LED's in the lighting dome light up continuously. This operating mode allows you to use the lighting dome as a UV light source for UV photography. You can enter this operating mode by pressing the UV/VIS button. The button will now light up continuously in blue. Since it is not possible to take sequential shots with UV light, the lighting dome automatically changes to MOD mode and the MOD/SEQ button also lights up continuously in blue.

Note: To reduce exposure to UV irradiation the UV-LED's switch of automatically after one minute and the lighting dome switches to the VIS-SEQ mode. To switch back to the UV-MOD mode just press the UV-VIS button once.

4.2 Intensity control

The intensity of the VIS and UV LED's can be adjusted with the 6-stage intensity control [x]. The power of the LED's is shown in the table below for each operating mode and intensity level.

Operating mode \ Intensity level	0	1	2	3	4	5
VIS-SEQ (Power per LED [W])	0	0.63	1.3	2.5	5.0	10
VIS-MOD (Total Power [W])	0	0.94	1.9	3.8	7.5	15
UV-MOD (Total Power [W])	0	1.1	2.3	4.5	9.0	18

5. RTI-Capture

5.1 Placing the object

Place the object on a non-reflecting surface centrally under the lighting dome. The highest point of the object should be flush with the lower edge of the lighting dome. If necessary, use a suitable support or adjust the height of the light dome.

5.2 Camera settings

Make sure that the UV/VIS button is lit green. If not, press it once. Set the intensity control [x] to 1 and press the MOD/SEQ button [z] to turn on the modeling light. The color of the MOD/SEQ button changes to blue and all LED's in the illumination dome light up continuously. The illumination dome is now in VIS-MOD mode (see 4.1.2).

Note: Make sure that the light protection curtains are mounted (section 3.6) before switching on the LED's.

Now you can make the settings on the camera:
- If your camera has an orientation sensor, turn it off. If it is not turned off, some images may be rotated.
- White balance: If your camera allows you to adjust the color temperature, select a color temperature of 5700K. If this option is not available, select normal daylight settings. For maximum accuracy in color reproduction, place a color checker next to the object. This allows you to apply individual white point corrections for each image when converting RAW files later.
- Image quality: RAW or TIFF with sRGB color space
- Exposure: In general, we recommend ISO sensitivities of maximum 800 at a shutter speed of 1/60 to 1/80 and an aperture of 11 to 14.
- Interval shooting: If your camera offers this option, set the number of intervals to 48, the length of the interval to 1 second, and select one shot per interval. If you are using capture software, you may need to select longer intervals to ensure that images are transferred to your computer quickly enough.

5.3 Capture

Press the MOD/SEQ button to switch the lighting dome to VIS-SEQ mode (section 4.1.1). The MOD/SEQ button now flashes green and the LED's in the lighting dome switch off. Make sure that no other light sources illuminate the object by checking the live view of your camera. Weak ambient light is well tolerated and does not affect the result too much. If necessary, increase the light intensity by turning the intensity control.

You can now start the recording process by using the interval recording function of your camera or a capture software of your choice. (In principle, you can trigger the camera manually 48 times, but this is not recommended as it may cause blurred images and slight changes in camera position).

Note: If, for any reason, interval shooting is interrupted in the middle of the sequence, you can reset the lighting dome to the beginning of the sequence by pressing and holding the MOD/SEQ button.

6. UV-Capture

Note: The undesirable side effects on skin and eyes are reduced by using the supplied light protection curtains. Make sure that they are fitted correctly! Avoid irradiation of unprotected skin and eyes! Avoid eye contact with the light source!

6.1 Placing the object

Place the object on a non-reflecting surface centrally under the lighting dome. The highest point of the object should be flush with the lower edge of the lighting dome. If necessary, use a suitable support or adjust the height of the light dome.

6.2 Switch on UV light

Make sure that the UV/VIS button is lit blue. If not, press it once. Set the intensity control [x] to 1 and press the MOD/SEQ button [z] to turn on the UV LEDs. The color of the MOD/SEQ button changes to blue and the UV LED's in the illumination dome light up continuously.

Note: To reduce exposure to UV irradiation the UV-LED's switch of automatically after one minute and the lighting dome switches to the VIS-SEQ mode. To switch back to the UV-MOD mode just press the UV-VIS button once.

6.3 Capture

Adjust the light intensity by turning the intensity control and choose the settings on the camera to obtain the desired result. You can now trigger the camera manually or via your capture software.

7. Cleaning

To clean the outside of the lighting dome, use a silicone- and solvent-free plastic cleaner with a matte effect (e.g. XTREME Cockpit Cleaner Matteffect from Sonax) and a microfiber cloth. The inside must not be cleaned with a cleaning agent! Use a brush with soft hairs to clean the inside and the LED's from dust.

8. Technical data

Helios S53 UV / Typ 001
Dimensions: 54x53x31 cm
Weight: 8.7 kg
Input: DC, 15V, 2A
Input mains adapter: 100-240 VAC 10%, 50/60 Hz, 1.5A
Overvoltage category mains adapter: 2
Operating temperature: 5°C - 40°C
Ambient conditions:
Max. rel. humidity 80% up to 31 °C, linearly decreasing to 50% at 40 °C
Max. altitude 2000 m
Pollution degree: 2
IP protection class: IP 20

Transport box
Dimensions: 59x63x40 cm
Weight: 15.3 kg

Total weight Standard scope of delivery: 27.5 kg

9. Support

For support requests regarding the lighting dome, please contact support@truvis.ch or Truvis AG, Prattelerstrasse 23, CH-4052 Basel