Helvar’s data driven Service Kit enables sending of data from a lighting system to a cloud platform where authorised users can access it through a REST API or a web browser interface.

The package also provides an encrypted VPN connection for remote Designer assistance to ensure optimal lighting system performance with very little downtime.

Helvar’s Service Kit consists of the following products:

1. Helvar Cloud Gateway (HCG), a small-form-factor computer that uploads the data from the lighting system to Helvar’s Cloud Platform via Ethernet or Wi-Fi.

2. TOSIBOX® Lock 100, a small-form-factor computer that provides an encrypted VPN connection to a lighting site’s router systems for remote Designer assistance.

3. TOSIBOX® Key 200, the cryptoprocessing device that establishes the VPN connection between the PC running Designer and the TOSIBOX® Lock 100.

Online FAQs: [https://helvarsupport.zendesk.com/hc/en-us](https://helvarsupport.zendesk.com/hc/en-us)
1. Overview

Follow these steps to install and set up Helvar’s Service Kit package:
1. Install the Helvar Cloud Gateway. For details, see section 3 on page 2.
2. Configure the router network and the workgroup. For details, see section 4 on page 7.
3. Connect to Helvar Cloud Platform. For details, see section 5 on page 8.
4. Install the TOSIBOX® Lock 100. For details, see section 6 on page 8.
5. Serialise the TOSIBOX® Key 200. For details, see section 7 on page 10.
6. Set up the IP address of the VPN adapter. For details, see section 8 on page 10.
7. Set up the IP address of the TOSIBOX® Lock 100. For details, see section 9 on page 12.
8. Connect the TOSIBOX® Lock 100 to the internet. For details, see section 10.
9. Connect the lighting router network to the TOSIBOX® Key 200. For details, see section 11 on page 15.
10. Test the VPN connection. For details, see section 12 on page 16.

2. DIN-Rail spacing requirements

<table>
<thead>
<tr>
<th>KIT</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(L / W / D) mm</td>
</tr>
<tr>
<td>HCG</td>
<td>✓</td>
</tr>
<tr>
<td>TOSIBOX® Lock 100</td>
<td>✓</td>
</tr>
<tr>
<td>TOSIBOX® Key 200</td>
<td>✓</td>
</tr>
<tr>
<td>PSU 12 V 30 W (HCG)</td>
<td>✓</td>
</tr>
<tr>
<td>PSU 24 V 10 W (TOSIBOX® Lock 100)</td>
<td>✓</td>
</tr>
</tbody>
</table>

* If Wi-Fi is used, place the units in such a way that interference between antennas is minimised. Do not place them in close proximity.
** The TOSIBOX® Key 200 is a USB device that requires temporary connection to the TOSIBOX® Lock 100 during setup only. It does not require permanent DIN-Rail space.

3. Install the Helvar Cloud Gateway

Package contents (HCG1TBLK KIT, HCG1TBL KIT and HCG1 KIT)
Follow these steps to mount the Helvar Cloud Gateway on a standard DIN rail:
1. Mount the PSU on the DIN rail. For details, see section 3.1.
2. Mount the Helvar Cloud Gateway on the DIN rail. For details, see section 3.2.

3.1. Mount the PSU on the DIN rail

Dimensions (mm) and connections

3.2. Mount the Helvar Cloud Gateway on the DIN rail

Mounting dimensions (mm)
Mounting procedure

1. Determine the mounting position of the HCG and identify in the following table the mounting plate holes that you need to use.

<table>
<thead>
<tr>
<th>Orientation</th>
<th>To mount the HCG in this position...</th>
<th>Use these holes in the mounting plate</th>
<th>Length of mounting clip latch</th>
<th>DIN-Rail spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>Front panel down</td>
<td><img src="image1" alt="Holes Diagram" /></td>
<td><img src="image2" alt="Clip Length Diagram" /></td>
<td>4U</td>
</tr>
<tr>
<td></td>
<td>Front panel up</td>
<td><img src="image3" alt="Holes Diagram" /></td>
<td></td>
<td></td>
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<tr>
<td>Vertical</td>
<td>Front panel left</td>
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<td></td>
<td>3U</td>
</tr>
<tr>
<td></td>
<td>Front panel right</td>
<td><img src="image5" alt="Holes Diagram" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Screw the mounting plate to the unit using the appropriate holes. For details, refer to the preceding table.

3. Do the following to adjust the mounting clip latch to the length that is appropriate for the required mounting orientation:
   a. Press the upper part of the mounting clip on both sides.
   b. Push the mounting clip latch forwards to unlock it.
   c. Slide the latch upwards or downwards to the length that is appropriate for your mounting orientation. For details, refer to the table on page 4.
   d. Push the latch backwards to lock it.
4. Screw the mounting clip to the mounting plate.

3.3. Connect the PSU, the Ethernet cable for the router network, and the Ethernet internet cable and/or Wi-Fi antennas

Follow these recommendations to optimise the performance and reliability of the wireless connection:

a. If required, connect the Wi-Fi antenna to the magnetic base of the antenna extension.

b. Set up your Helvar Cloud Gateway as close as possible to the centre of the area for which you want to provide wireless networking.

c. Keep the antenna away from objects that cause wireless interference. Large metal objects, fluorescent or halogen lights, microwaves, cordless phones and their base stations and wall ducting or vents can block or interfere with wireless signals.

d. Place the antenna in an elevated location.
4. Configure the router network and the workgroup

Before the HCG can communicate with the router system, do the following to configure the router network and indicate to which workgroup the HCG should connect on LAN 2.

1. Make sure that the HDR-30-12 PSU is on and is connected to the HCG.
2. Turn on the PC that is connected to the HCG.
3. Set the IP address of this PC to the same IP range as the HCG.

Note: The HCG shipping static IP address for LAN 2 is 10.24.15.5, and the subnet mask is 255.0.0.0. Therefore, you could, for example, set your PC to the IP address 10.24.15.99 and to the subnet mask 255.0.0.0.

4. Open Google Chrome, and navigate to http://10.24.15.5:5000 to access the Network configuration pages of the HCG.

5. In the dialog box, specify how you want to connect to the internet:
   - To connect to the internet over LAN 1, do one of the following on the Network tab:
     - To obtain the IP address automatically via the Dynamic Host Configuration Protocol (DHCP), click APPLY (default option).
     - To enter the IP address manually, type the required IP Address, Broadcast Address and Subnet Mask, and then click APPLY.
   
   - To connect to the internet over Wi-Fi, click the WIFI tab, and then do the following:
     a. Type the exact SSID and passphrase for the Wi-Fi network that you want to connect to.
     b. Click Apply to save your settings.

6. To change the static IP address for the connection to the router network, click the LAN2 tab, and then type the new IP address.

Note 1: The static IP address for the connection to the router network must be in the same range as the router workgroup to which the HCG will connect. Changing this IP address will change the HCG’s address for the network configuration pages. For example:
   - If you change the IP to 10.254.0.100, the network configuration address will change from http://10.24.15.5:5000 to http://10.254.0.100:5000.
   - If you change the first octet of the HCG to 192.x.x.x, you will need to set the broadcast address of the HCG to match accordingly: 192.255.255.255.

Note 2: The static IP address for the connection to the router network must be a unique IP address that does not conflict with any other devices on the network.
7. Click **Apply** to save your settings.

8. Click **Workgroups**, type the exact name of the workgroup that you want the HCG to connect to, and then click **Apply**.

   **Note:** After the settings that you have entered are saved, a message will appear at the bottom of the browser. This is only an indication that your settings have been saved, not a status that the HCG is connected to the network.

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**5. Connect to Helvar Cloud Platform**

Once you have installed and configured the HCG, follow these steps to make sure that you can access the Helvar Cloud Platform:

1. Open Google Chrome, and navigate to [https://service.helvar.io](https://service.helvar.io)
2. Click **Sign Up**, and then complete the process as directed.

   Once you are signed up, Helvar service will grant you access to your site(s) within two working days.

   **Note:** Before access is granted, an error may be shown on the web interface.

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**6. Install the TOSIBOX® Lock 100**

This section applies only to HCG1TBLK KIT and HCG1TBL KIT.

**Package contents**

- TOSIBOX® Lock 100
- DIN-rail mounting bracket
- Screws (2)
- AMR1-24 PSU
- DC feed plug
- 12 VDC AC/DC power adaptor
- 2 × Wi-Fi antenna
- Antenna extension with magnetic base
Follow these steps to mount the TOSIBOX® Lock 100 on a standard DIN rail:
1. Mount the PSU on the DIN rail. For details, refer to section 6.1.
2. Mount the TOSIBOX® Lock 100 on the DIN rail. For details, refer to section 6.2.

6.1. Mount the PSU on the DIN rail

Dimensions (mm) and connections

6.2. Mount the TOSIBOX® Lock 100 on the DIN rail

For information on how to mount the TOSIBOX® Lock 100 on the DIN rail, refer to Tosibox Inc.’s documentation available at www.tosibox.com.

6.3. If required, connect the Wi-Fi antennas

For recommendations on how to connect the Wi-Fi antennas, refer to section 3.1 on page 3.
6.4. Connect the PSU

To serialize the TOSIBOX® Key 200, follow these steps:

1. Insert the TOSIBOX® Key 200 into the USB port of the TOSIBOX® Lock 100, and then wait two minutes.

When the TOSIBOX® Key 200 LED stops blinking or shuts off, the serialization is complete.

2. Remove the TOSIBOX® Key 200 from the TOSIBOX® Lock 100.

8. Set up the IP address of the VPN adapter

To set up the IP address of the VPN adapter, follow these steps:

1. Connect a PC to the Service port of the TOSIBOX® Lock 100 via an Ethernet cable.
1. Make sure that the Ethernet LAN properties on the PC are set to obtain an IP address automatically.

2. Open the web browser of the PC, type `http://172.17.17.17` (IP address of the Service port) in the address bar, and then press Enter to access the TOSIBOX® Lock 100 home page.

3. Click Login in the upper right corner to access the TOSIBOX® Lock 100. Login details are printed on the back of the TOSIBOX® Lock 100.

4. Click SETTINGS > Lock name, type an appropriate name for the TOSIBOX® Lock 100 in the Lock Name text box, and then click Save.
5. Click **SETTINGS > Keys and Locks** to display the **Keys and Locks** page.

6. In the **Connection name** text box, type an appropriate name for this connection.

7. Clear the **Deny new IP connections towards this client** check-box.

8. From the drop-down list, select the **Layer 2 – bridged** connection type.

9. In the **static IP for the connection**, type the IP address that you want the PC to use. This will be the IP address of the PC’s VPN adapter.

   **Examples:**
   - For single-cluster systems: 10.254.1.40 (next key 10.254.1.41, etc.).
   - For multi-cluster systems: 10.254.254.40 (next key 10.254.254.41 etc.).

   **Note:** The **static IP address for the connection must be a unique IP address that does not conflict with any other devices on the network.**

9. **Set up the IP address of the TOSIBOX® Lock 100**

To set up the IP address of the TOSIBOX® Lock 100, follow these steps:

1. In the TOSIBOX® Lock 100 home page, click **SETTINGS > NETWORK > LAN DHCP server** to display the LAN DHCP server page.

2. Clear the **DHCP server for LAN interface** check-box, and then click **Save**.
3. Click **NETWORK** to display the **LAN configuration** page.

4. From the **Protocol** drop-down list, select **Static address**.

5. In the **IPv4 address** text box, type the appropriate IPv4 static IP address.
   - **Examples:**
     - For single-cluster systems: 10.254.1.99.

6. In the **IPv4 netmask** box, type the appropriate IPv4 netmask.
   - **Example netmask for above IP addresses:** 255.0.0.0

   **Note:** The static IP address for the connection must be a unique IP address that does not conflict with any other devices on the network.

7. Click **Save**.

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### 10. Connect the TOSIBOX® Lock 100 to the internet

To connect the TOSIBOX® Lock 100 to the internet, do one of the following:
- To use a wired connection, follow these steps:
  a. Connect an Ethernet internet cable into the **WAN** port of the TOSIBOX® Lock 100.

b. Go to the TOSIBOX® Lock 100 home page and make sure that the internet connection shown under **Status** is active.

   **Note:** You should still be connected to the service port, and your browser should still be open to http://172.17.17.17. But if you are not, repeat steps 1–2 in section 8.
To use a wireless connection, follow these steps:

a. Click **NETWORK > WLAN** to display the **Wireless Overview** page.

b. Click the **Edit** button on the right side of the screen to display the **Wireless Network** page.

c. Under **Device Configuration**, click the **Enable** button to activate the WLAN.

d. The **Enable** button toggles to **Disable**.

e. In the **General Setup** tab, type the name of the wireless network in the **Network Name [ESSID]** text box, and then select **Client** from the **Mode** drop-down list.
f. If the wireless network uses encryption and password protection, click the **Wireless Security** tab, select the type of encryption from the **Encryption** drop-down list, and then type the password in the **Key** text box.

![Wireless Network Configuration](image)

g. Click **Save**.

11. **Connect the lighting router network to the TOSIBOX® Key 200**

Connect the lighting router network to the LAN 1 port of the TOSIBOX® Lock 100 using an Ethernet cable.

![LAN 1 to router network](image)
12. Test the VPN connection

To test the VPN connection between the TOSIBOX® Lock 100 and the PC running Designer, do the following:

1. Make sure that the PC running Designer is connected to the Internet.
2. Disconnect the Ethernet cable from the Service port on the TOSIBOX® Lock 100.
3. Insert the TOSIBOX® Key 200 into a USB port on your PC.
   An auto play window will appear with options to install the TOSIBOX® Key 200 software.
4. Complete the installation process of the software.
5. When the List of TOSIBOX® Locks window appears, select the appropriate TOSIBOX® Lock 100, and then click Connect.
6. Wait a few moments for the TOSIBOX® Key 200 to establish connection to the TOSIBOX® Lock 100.
7. Run Designer and check that the remote routers appear in the Devices tree.
8. Connect to the workgroup and use Designer normally.
13. Technical data

13.1. HCG

Power
Input voltage: 12 VDC – 19 VDC

Connectivity
LAN 1: 10/100/1000 Mbps Intel I210 GbE. For router network.
LAN 2: 10/100/1000 Mbps Intel I210 GbE.
Wi-Fi: 2 × Wi-Fi antenna

I/O interface
HDMI: 2 × HDMI-out, max. resolution: 3840 × 2160 @ 30 Hz, 2560 × 1600 @ 60 Hz, 24 bpp
On/Off: Power button with LED
USB interface: 4 × USB 3.0

Mechanical data
Dimensions: 140.8 mm × 107.5 mm × 28 mm
Mounting: DIN rail (installation in switchgear/controlgear cabinet)
Weight: 0.56 kg
IP code: IP20

Connections
Front panel
4 × USB 3.0

Rear panel
2 × HDMI-out
LAN 1 for internet (DHCP)

Right panel

Left panel

Not used

Operating and storage conditions
Ambient temperature: 0 °C to +40 °C
Relative humidity: Max. 90 %, noncondensing
Storage temperature: -20 °C to +60 °C

Conformity and standards
EMC: EN 55032
EN 55024
RED: EN 301489-1
EN 301489-17
Safety: EN 60950-1
Environment: Complies with WEEE and RoHS directives.

Software compatibility
Designer: 5.4.3 or later

Dimensions (mm)
13.2. TOSIBOX® Lock 100

For technical data, refer to Tosibox Inc.’s documentation available at [www.tosibox.com](http://www.tosibox.com).

**Dimensions (mm)**

For technical data, refer to Tosibox Inc.’s documentation available at [www.tosibox.com](http://www.tosibox.com).

13.3. TOSIBOX® Key 200

For technical data, refer to Tosibox Inc.’s documentation available at [www.tosibox.com](http://www.tosibox.com).
14. System diagram

- Ethernet
- LAN1, LAN2 or LAN3 port
- Internet
- WAN port

LAN2 port
LAN1 port