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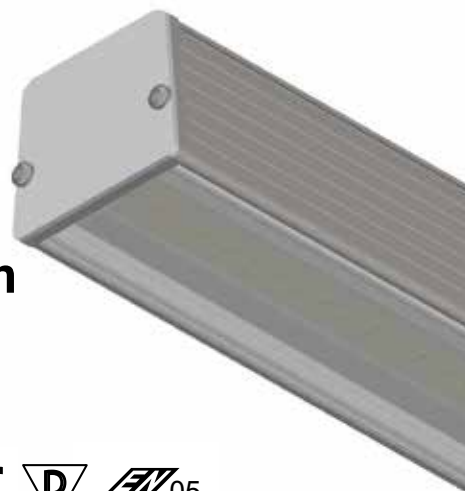
This manual is for usage with shown product families on this page in IP65 specification only.

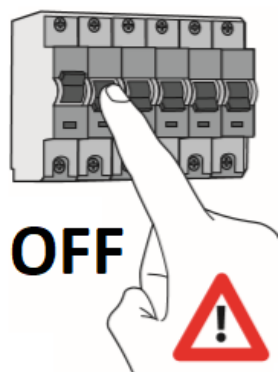
In combination with the following linear lighting profile:

- PWDR-05500

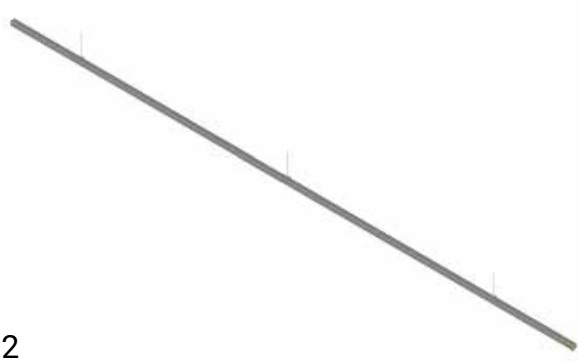
For further information of applicable profiles, see section 3 of this manual.

Duncan





1



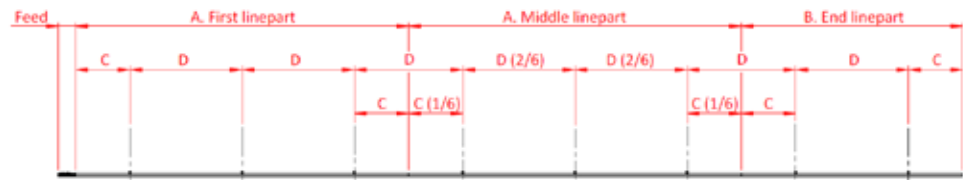
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Measurement	Recommended length (mm)	Maximum length (mm)
A	na.	4600
B	na.	3060
C	750	1150
D	2700	2700
E	2300	2600
F	1150	1300
G	ca. 1500	1700

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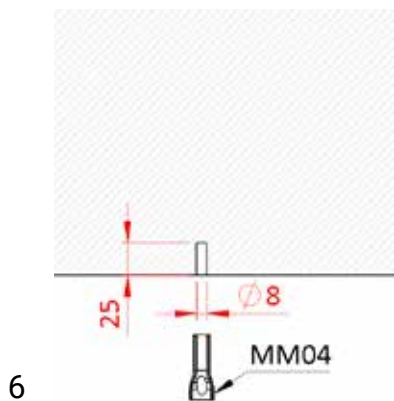


Measurement	Recommended length (mm)	Maximum length (mm)
A	na.	4600
B	na.	3060
C	750	1150
D	ca. 1500	1700

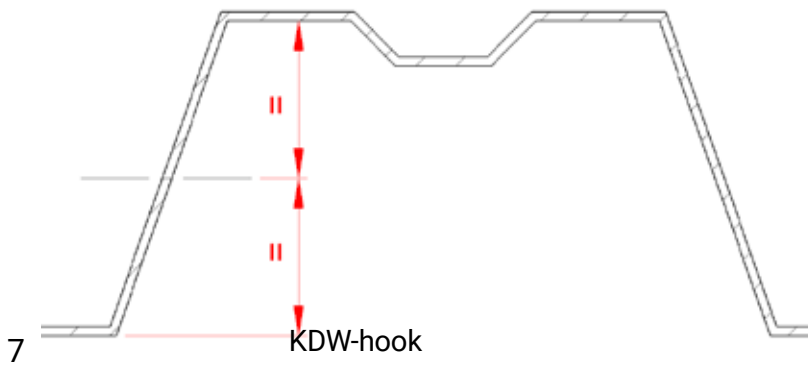
1 Disconnect the mains.
2 Example of a light line.
3 In regular conditions a 2 point suspension is used. **Note:** a light line consists of multiple part segments. the middle linepart may vary in quantity.
Note: measurement F is half of measurement E, deviding E equally over 2 lineparts.

4 In case of:
- Cable duct
- Sports utility
- Swimming pool
Always use a suspension with at least 3 points





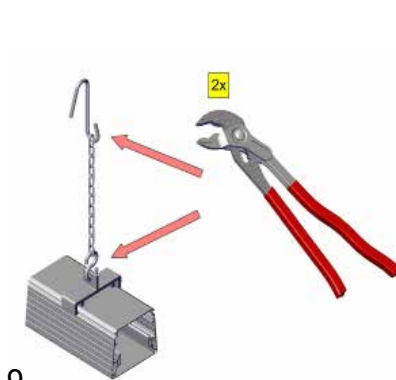
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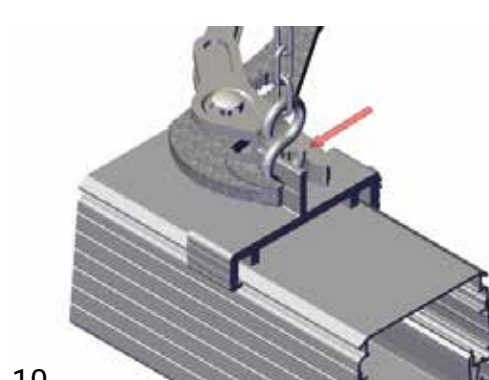
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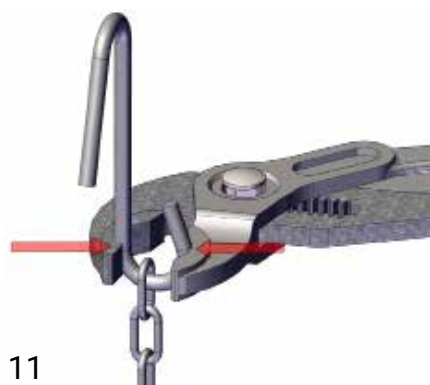
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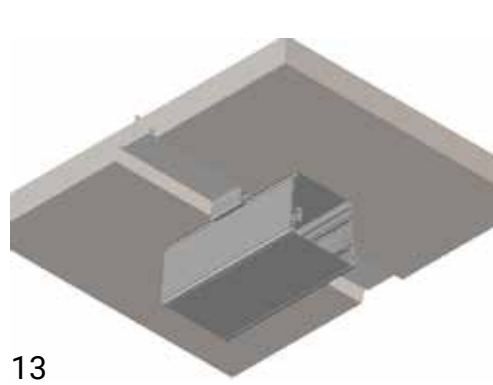
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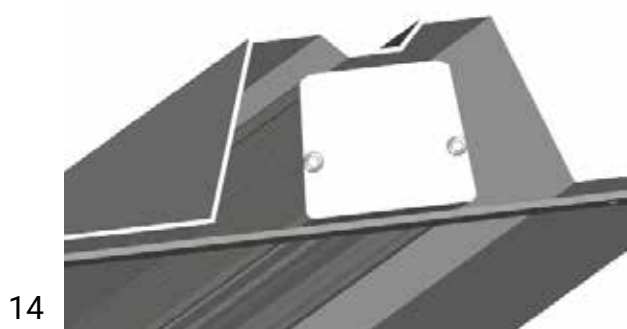
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12



13



14



15

6 In case of mounting in concrete ceiling, Veko recommends a MM04 anchor or similar with according drill sizes.

7 In case of using a hook on a sheet piling roof structure, Veko advises to drill the hole in the center of the profile.

8 Example with KDW-hook, pendula and steel-

wire (left). KDW-hook, chain and S-hook (right).

9 Always close the links of both the KDW and S-hook.

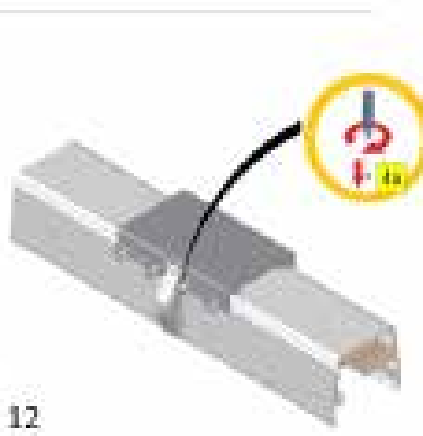
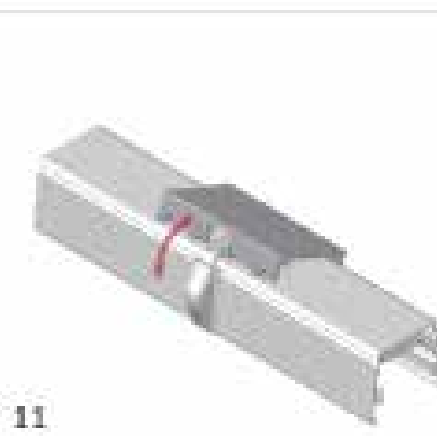
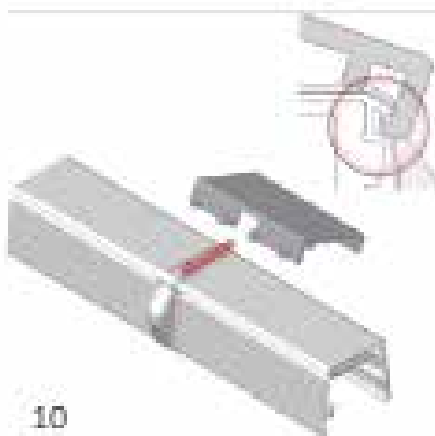
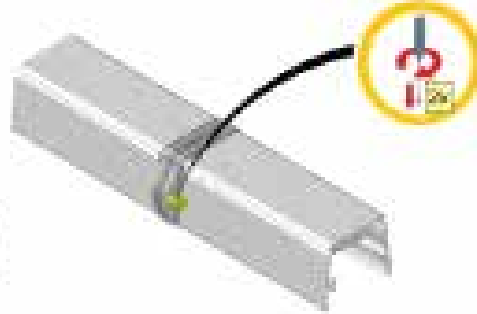
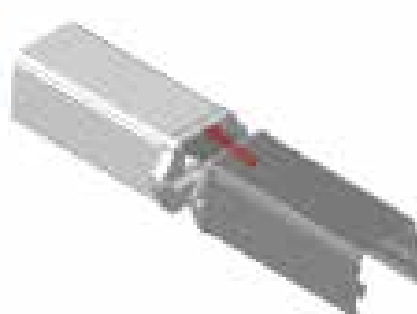
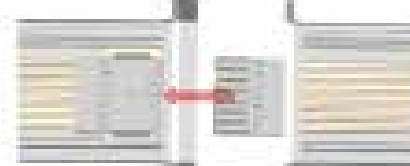
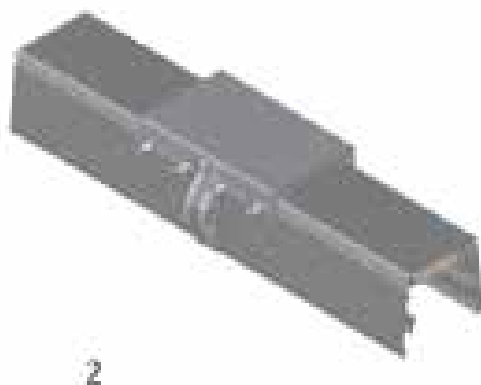
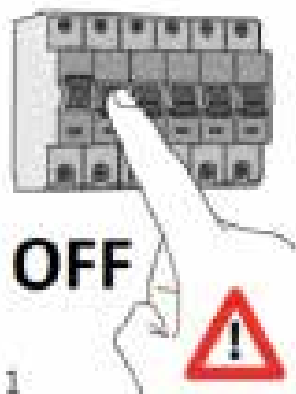
10 Close the link of the S-hook.

11 Close the link of the KDW-hook.

12 Example of mounting with threaded end.

13 Example of mounting with caddy.

14/ 15 When the linear lighting is placed inside the cannellure of the sheet piling, it's recommended to use a metal strud or strip to secure the linear lighting to the metal roof structure.



1 Disconnect the mains before operating the linear lighting system.
2 Example of connected profiles. **Note:** profile and/or brackets may vary.
3 The flatcable is provided with a curl for extra length for an easy connection. Pull out and extend the flatcable.

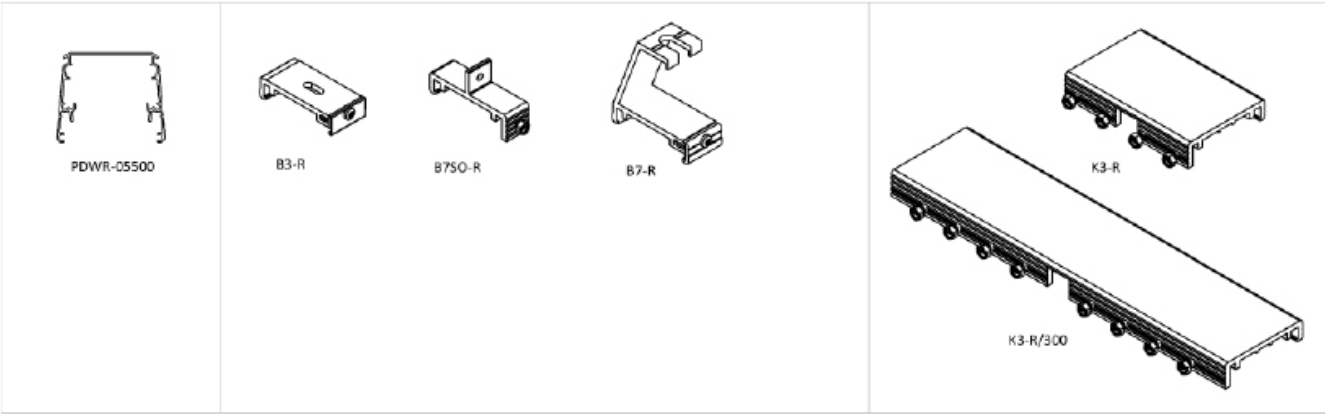
4 Make sure the male connector is positioned outside the profile, with the backside onto the edge of the connection plate.
5 Align both profiles.
6 Insert the connector through the plate and seals.
7 Make sure connectors firmly 'click' into each other.

8 Press profiles together.
9 Tighten Hexagon M5 screws (2x) on both sides of the profiles.
10 Hook the coupling plate into the profiles.
11 Rotate the plate into position.
12 Tighten the slotted M6 bolts (4x).

Profile

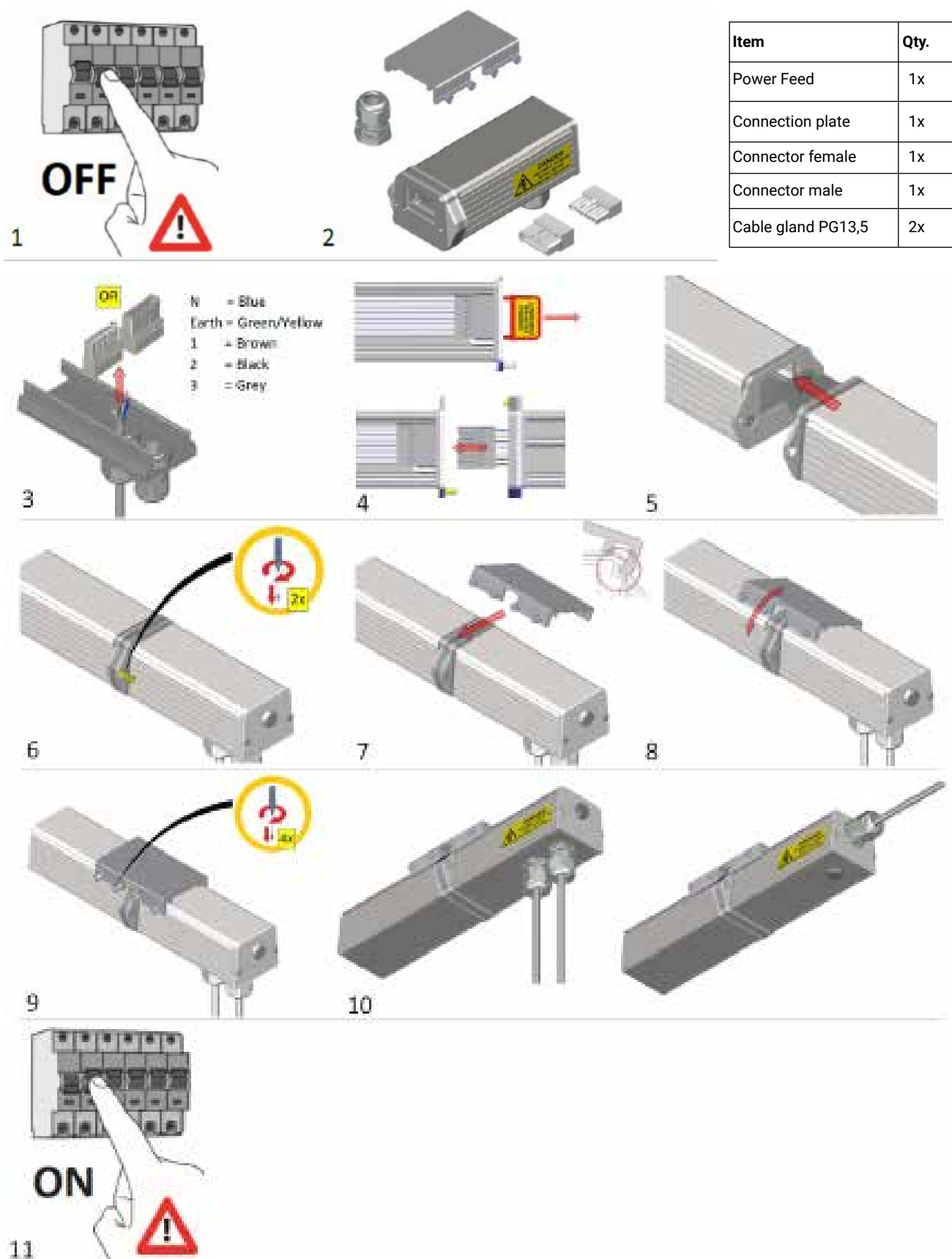
Brackets

Connection pieces



Note: applicability of bracket may vary, depending on the surrounding, light line configuration, light line application and/ or IP-class.





1 Switch off the mains before operating the linear lighting system.

2 Contents.

3 Route wiring through the cable gland and fit with either male or female connector (depending on counterpart on the linear lighting system).

4 Remove plug when final power grid connection is made. Insert the connector.

5 Connectors should firmly 'click' into each other.

6 Tighten the M5 hexagon bolts on both sides.

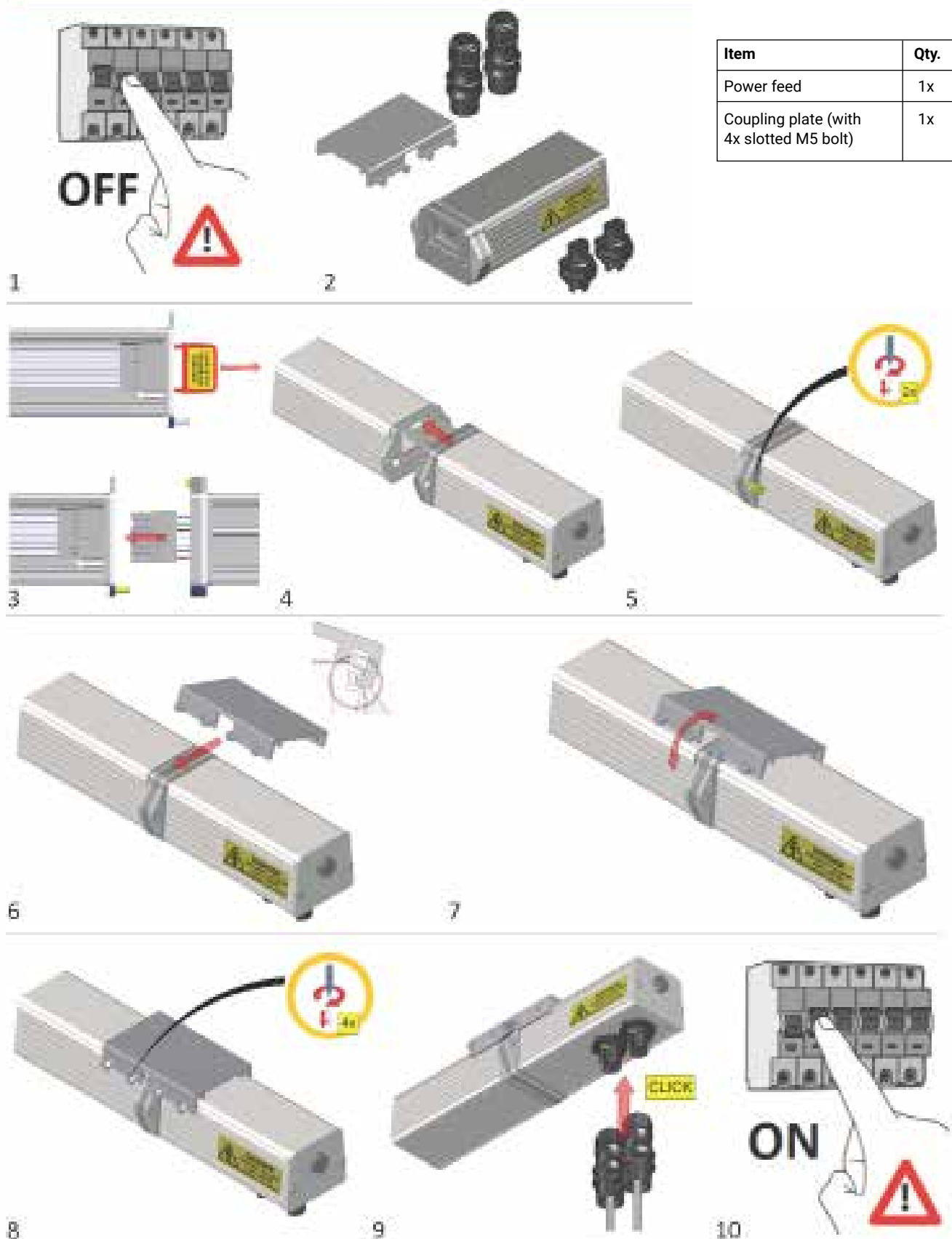
7 Hook the coupling plate into the profiles.

8 Rotate the plate into position.

9 Tighten the M6 bolts (4x).

10 Connect the external wiring with the connectors to the power feed.

11 After reassuring all electrical connections correctly in place and corresponding switch the mains back on.



Item	Qty.
Power feed	1x
Coupling plate (with 4x slotted M5 bolt)	1x

1 Disconnect the mains before operating the linear lighting system.

2 Contents.

3 Remove plug when final power grid connection is made. Connect the wiring with the flatcable connectors.

4 Connectors should firmly 'click' into each other.

5 Place the feed onto the light line, aligning the connection plates. Tighten the M5 Hexagon bolts (2x) on both sides of the light line.

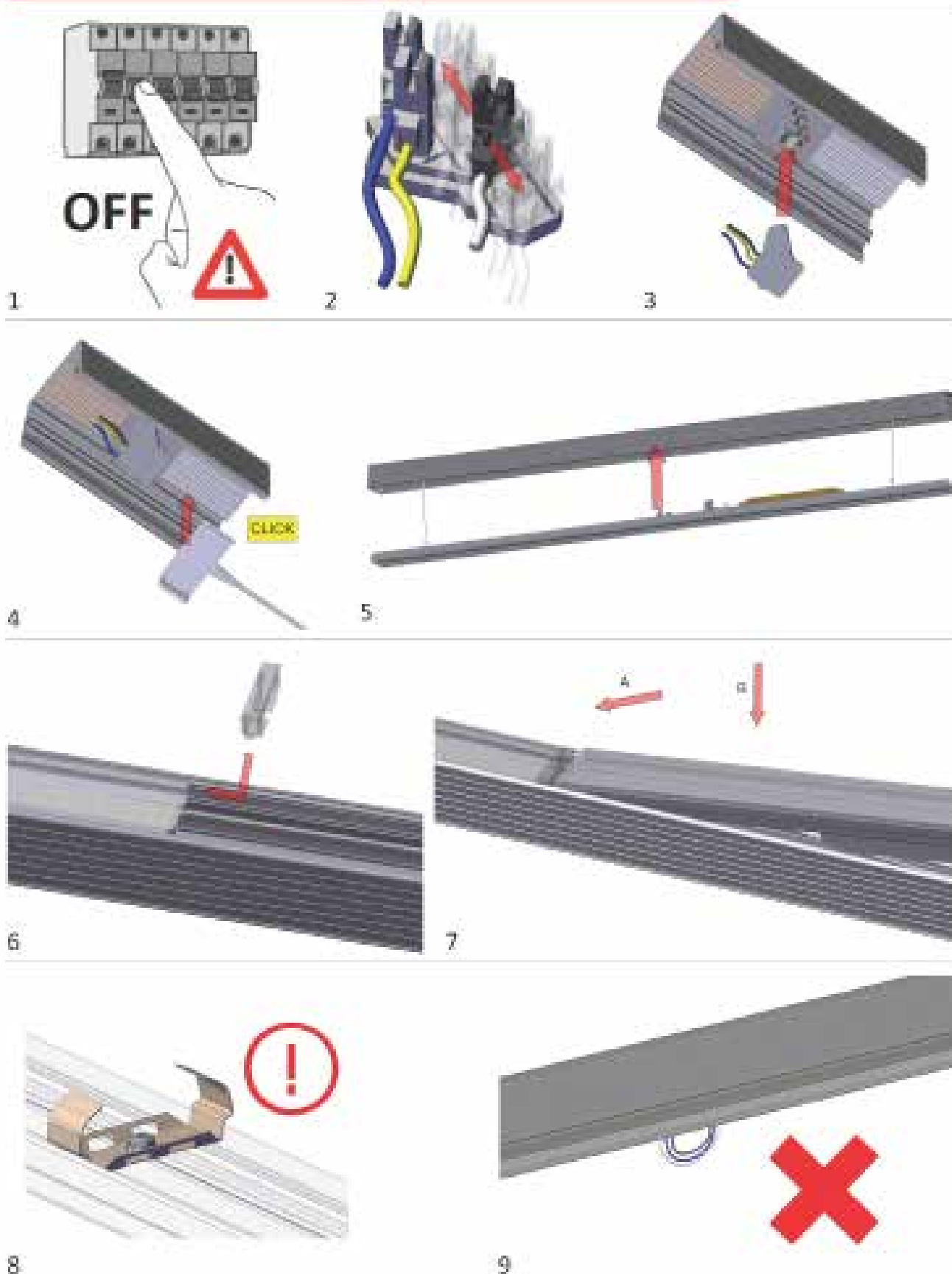
6 Hook the coupling plate into the profiles.

7 Rotate the plate into position.

8 Tighten the M6 bolts (4x).

9 Connect the feed to the main grid using the Wieland connectors.

10 After reassuring all electrical connections are correctly in place and corresponding, switch the mains back on.



- 1 Disconnect the mains before operating the linear lighting system. Note: Type of unit and/or profile may vary.
- 2 Make sure poles and wiring are in correct position.
- 3 Insert connector to the flat cable.
- 4 Press and mount the fallout safety clip into the profile.

- 5 Press the unit into the profile.
- 6 Mount the sealing between units and/or blindplate to secure the IP65 standard.
- 7 Press the unit into the profile. Make sure the blindplate and/or unit are properly placed into the notch(es) of the seal.

- 8 **Caution:** bracket may contain sharp edges.
- 9 **Caution:** make sure wiring doesn't get stuck between the unit and the profile and is placed properly inside the linear lighting system.

Pool application

Not all standard components can be used in a pool environment. Due to high humidity as well as vapors of chlorine and cleaning products, high levels of corrosion can occur. To prevent corrosion, all aluminium profiles, including mounting brackets and coupling pieces (as shown on this page) will be finished with a anodized layer of at least 25µm (according to standard). To protect the LED's, the LED-board will be provided with an extra protective coating. All used suspension material (as shown on this page) will be hot dip galvanized.

Important notes

After installation, inspection off all used products is necessary due to safety regulations.

This inspection should be on a regular basis and occur at least once a year.

This inspection is the sole responsibility of the end user.

Applicable standards

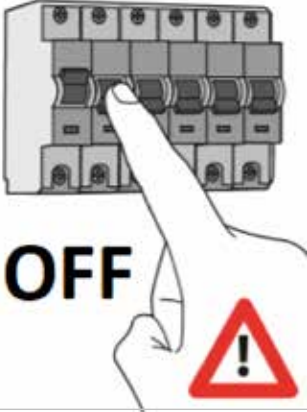
All Veko swimming pool products and components meet the following standards:

- NEN 1010 Safety for low voltage installations;
- NEN-EN 12193 Lights and lighting - sports lighting;
- NEN-EN 15288-1 Safety requirements for design;
- NEN-EN 60598-1 Lighting fixtures - Part 1: General requirements and tests;
- NEN-EN 60598-2-22 Lighting fixtures - Part 2-22: Particular requirements for emergency lighting fixtures;
- NPR 9200 Metal suspension structures and fasteners in swimming pools.


Applicable products

Profiles	Mounting	Coupling	Material
<p>PWDR-05500(a)</p>	<p>B750-R(a)</p>	<p>K3-R(a)</p> <p>K3-R(a)/300</p>	<p>Chain(a)</p> <p>KDW-hook(a)</p> <p>S-hook(a)</p> <p>Screw-eye(a) (wood)</p>


MANUAL INSTALLATION VEKO SENSOR



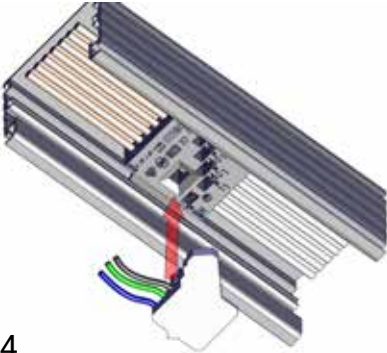
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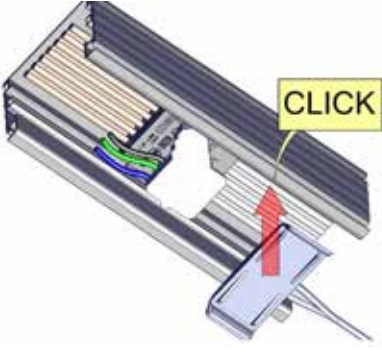
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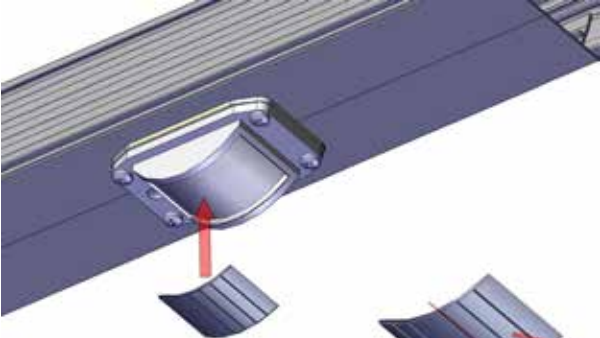
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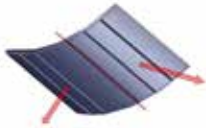
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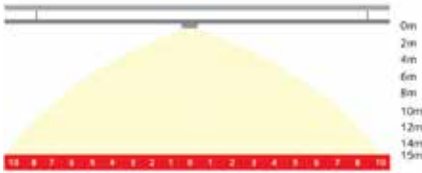


8

Technical data	
Power (W)	1,5 W < 4 W (Switched off- < on)
Voltage (V)	220-240 V
Length (mm)	300 mm
Frequency (Hz)	50 ÷ 60 Hz
Circuit	6 A
Sensitivity settings	5 (standard max. sensitivity)
Twilight circuit	Adjustable in 9 steps 0-1.000 Lux
Switch-off delay relay	Relay 0-99 minutes
Environment application	-25 °C - + 35 °C
Corridor function / dynamic switch (example: 10-100 %)	In combination with DALI driver and control gear
Programming	Readout and re-programmable by colour coding with LED in sensor
ENEC certification	In application at DEKRA
Warranty	5 years

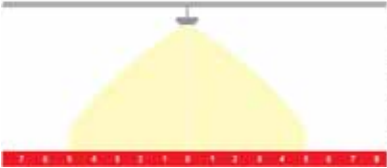


MD-L-R




MD-L-N

- Length -



MD-L-R



MD-L-N

- Width -

This page applies to all MD-L subtypes and configurations.

1 Switch off the power supply before connecting the light system.

2 Example of a sensor. Note: sensor type and/or linear lighting profile may vary.

3 Ensure correct position of poles and wiring.

4 Plug the connector into the flat cable.

5 Press and attach the safety clip for emergencies in the continuous-row lighting profile.

6 Install the sensor in the profile.

7 In the case of the narrow lens, a cover can be used to limit the range of the

sensor, if necessary. This cover can be cut to size with pliers or scissors on the break line to achieve the desired range and angle of the sensor.

8 Technical data.

9 Sensor range: MD-L-R (round lens)
MD-L-N (narrow lens)

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MANUAL CONFIGURATION MD-L-R / MD-L-N

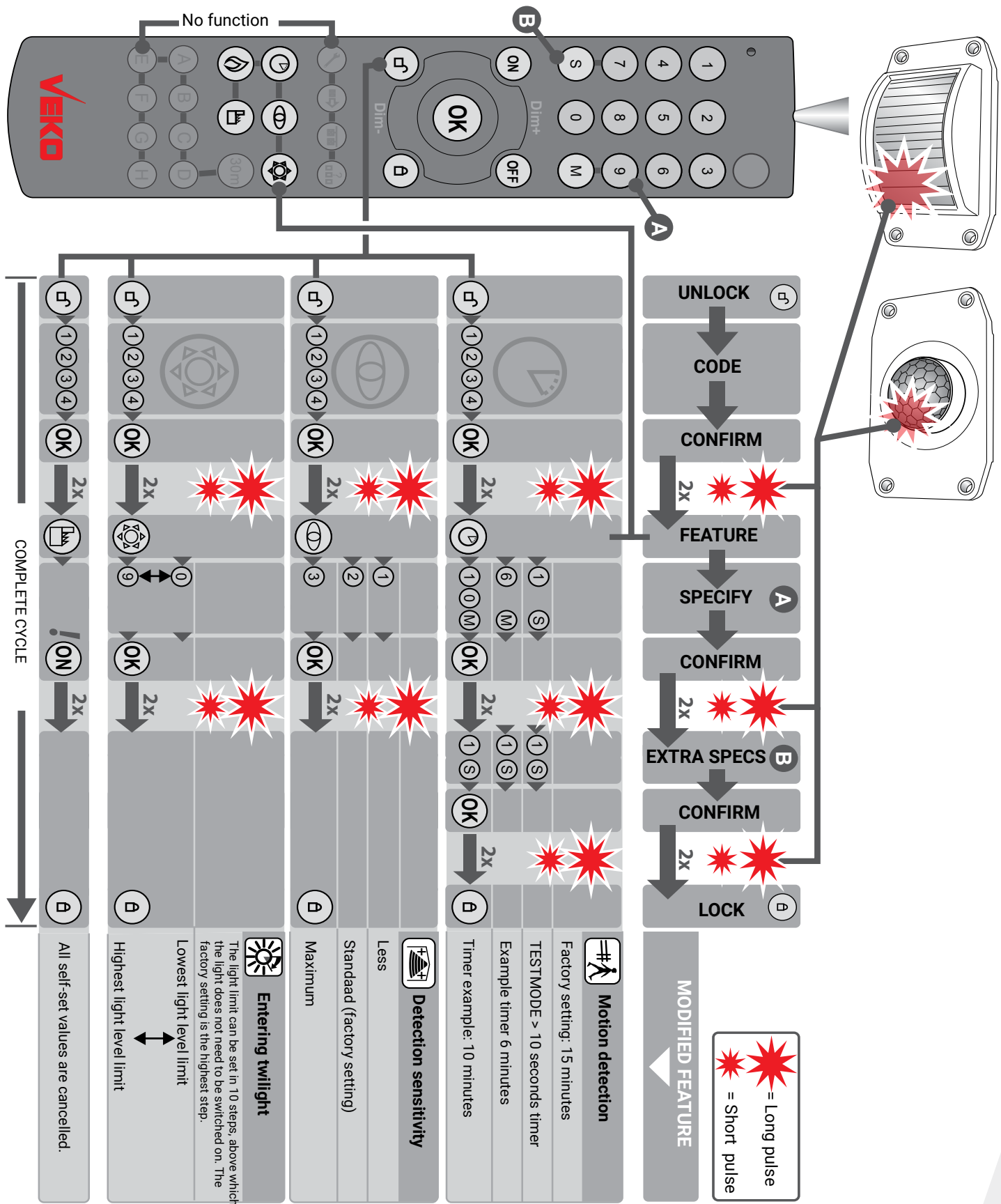
When the MD-L-R / MD-L-N is plugged into the light line and connected to power, it will fully function and perform as a motion detection sensor. All Veko sensors have a standard configuration. Some of these features are manual adjustable with a remote control (TR67). These functions are described in the manual below. You can use this manual on site when a re-configuration is needed, a maintenance test is required, or the lights need to be manually overruled.

1 Switch off delay* The duration of switch on after detection can be set between 1 and max. 99 minutes.	<p>Red Fast Blink, Blue Solid, 0-9 keypad, OK/Cancel buttons, 3 flashes / Colour (Red, Green, Red, Blue), 1x</p>
2 Sensitivity detection* The sensitivity of the movement detection can be adjusted according to your preferences.	<p>Red Fast Blink, Green Solid, 0-5 keypad, OK/Cancel buttons, 3 flashes / Colour (Red, Green, Red, Blue), 1x</p>
3 Sensitivity twilight mode* The sensitivity of switch on relative to the available daylight can be adjusted.	<p>Red Fast Blink, Red Solid, 0-9 keypad, OK/Cancel buttons, 3 flashes / Colour (Red, Green, Red, Blue), 1x</p>
4 Sensitivity twilight mode off* Switch off twilight mode. Note: standard/factory setting is: off.	<p>Red Fast Blink, Red Solid, OFF button, 3 flashes / Colour (Red, Green, Red, Blue), 1x</p>
5 Check the programmed setting* of: 5.1 Time frame light on 5.2 Detection accuracy 5.3 Sensitivity twilight mode 5.4 Hardware version	<p>Green Fast Blink, Blue Solid, Green Fast Blink, Green Solid, Green Fast Blink, Red Solid, Blue Solid, Green Fast Blink, Blue Solid, Green Fast Blink, Blue Solid</p> <p>Flashes blue colour X times for set duration. Long blink for first digit and short blink for second digit.</p> <p>Flashes blue colour for 1 second pulse mode.</p> <p>Flashes green colour X times for set detection sensitivity.</p> <p>Flashes red colour X times for set Lux level.</p> <p>Flashes 3x red/blue colour when twilight mode is switched off.</p> <p>1x= Relay Sensor 2x= Veko System Sensor 3x= Smart Cast Sensor</p>
6 Overrule function Overrule all current settings and switched all lighting on or off for a set amount of hours.	<p>Blue Fast Blink, Blue Solid, 0-9 keypad, OK/Cancel buttons, ON/OFF buttons, 3 flashes / Colour (Red, Green, Red, Blue), 1x</p>
7 Test functions The lights will flash on and off for 10 sec.	<p>Blue 3x Flash, Hold until light responds</p>
8 Factory settings Set back all functions to factory settings	<p>Green/Red Blink, OK/Cancel buttons, 3 flashes / Colour (Red, Green, Red, Blue), 1x</p>

* Automatically returns to normal mode, if there is no activity for 20 seconds. Settings will be saved.

CLEVER
SWIFT
SOLID

MANUAL CONFIGURATION MD-L-R / MD-L-N



DECENTRAL EMERGENCY LIGHTING

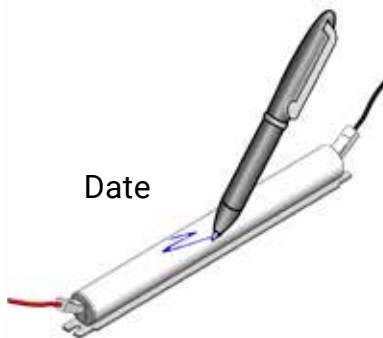
Logbook

NEN-EN 1838 & NEN-EN-IEC 60598-2-22

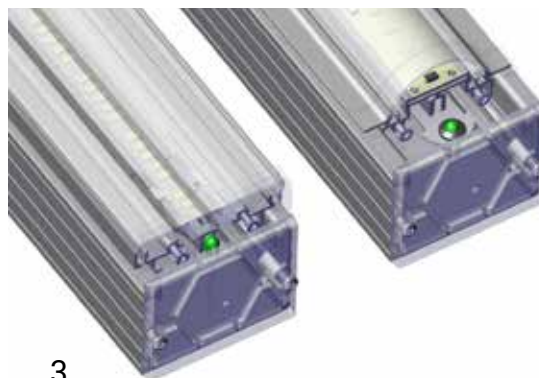


1

Date



2



3

Trustsight

LED color / flashing	Error condition	Cause	Solution
Green / no flashing		System OK, battery fully charged	
Off		Main off, EM mode, Rest mode, test in progress	
Green / slow (0,25s on, 1,25s off)		System OK, battery is charging	
Green / fast (0,25s on, 0,25s off)		System OK, recently tested (<5 days, Australia mode only)	
Red / no flashing	Battery voltage too high or too low	No battery connected	Connect battery
		Wrong or bad battery connected	Replace battery
		Battery pack replaced with different type	Reset driver
Red / slow (0,25s on, 1,25s off)	Failed test due to battery	Battery end of life	Replace battery and preform duration test
		Charger failure	Replace driver
Red / fast (0,25s on, 0,25s off)	Output voltage too high or to low	Wrong LED load connected	Connect right load and preform functional test
		Wrong connection	
Red-Green/fast (0,25s on, 0,25s off)		Dali device identification	
Green / short (50ms on, 0,95s off)		Battery detection	

4

ELP

Module mode	Indicator LED	Status	Emergency lamp
Green	Normal	Mains operation mode Standby mode	Off
Fast flashing green	Normal	Function test in progres	On
Slow flashing green	Normal	Duration test in progress	On
Slow flashing green	Normal	Commissioning in progres	Off, except during test
Slow flashing red/green	Normal	Identification mode	Off
Off	Normal	Prolong mode	On
Slow flashing double pulse green	Normal	Rest mode	Off
Green slow flashing double pulse	Normal	Inhibit mode	Off
Off	Normal	Emergency operation mode	On
Red	Fault	Lamp fault	Off
Red / slow	Fault	Battery / Test failure	Off
Red / slow	Fault	Battery charging failure	Off
Off	Fault	Loss of mains and battery supply	Off

5

1 Owner of the building/ luminaires (or acting party) is obliged to keep a logbook according to NEN-EN 1838 & NEN-EN-IEC 60598-2-22.

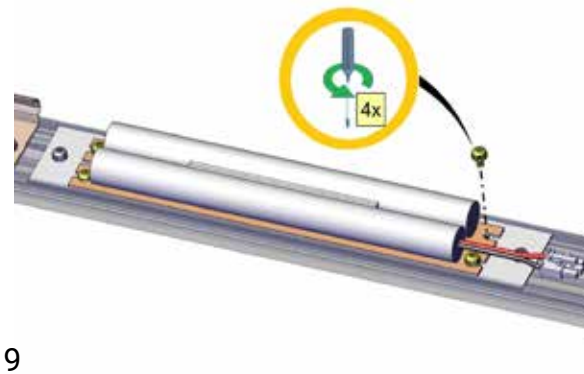
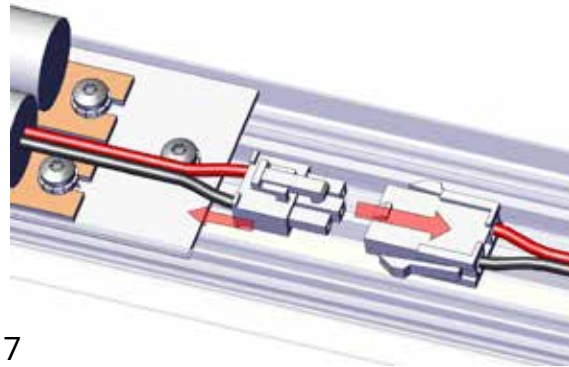
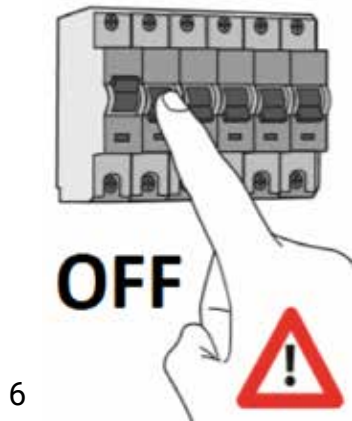
2 Before installing the emergency unit or replacing the battery, write the installation date onto the battery.

3 Example of emergency unit indication LED.

4 LED status indicator - Index Trustsight

5 LED status indicator - Index ELP

DECENTRAL EMERGENCY LIGHTING

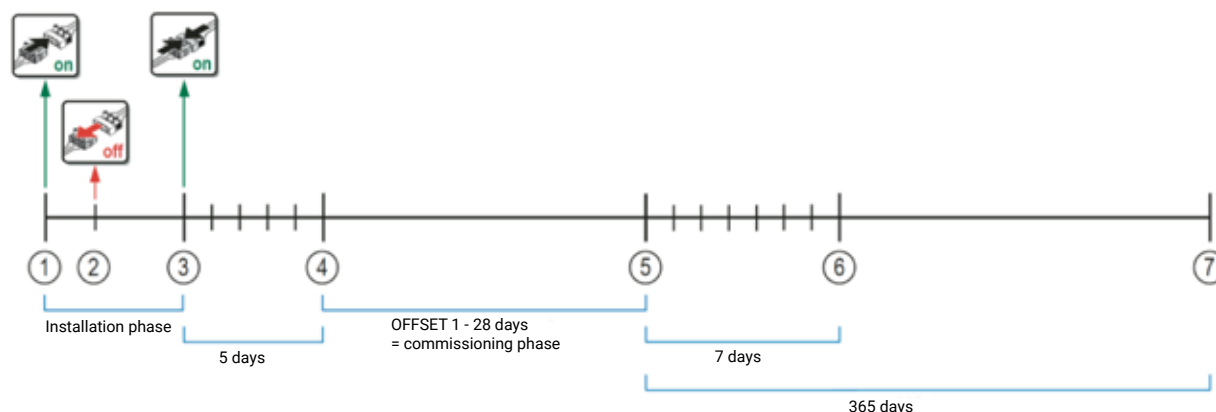


- 6 Disconnect the mains before operating the linear lighting system.
- 7 Disconnect the battery from the emergency module.
- 8 Type and/or quantity of batteries may vary as well.

- 9 Unscrew the battery from the mounting plate and replace. Re-tighten screws and reconnect the battery wires with the emergency module. Replace emergency unit as described in section 6 of this manual.

DECENTRAL EMERGENCY LIGHTING

Self-test according IEC 62034



Intelligent multilevel/pulse battery charging system

The multilevel/pulse battery charging system minimizes charging time while maximizing battery life. In normal, efficient network operation, the module charges the batteries using a specially developed charging algorithm, NiMH batteries are charged with pulse charging.

Initial charging mode

Increased charging current at the beginning of 48 hours to properly prepare and fully charge the new battery cells.

Trickle charge mode

Continuously low charge to maintain battery life and reduce battery temperature.

Fast charge mode

10 or 15-hour fast charge after a discharge to provide the full operating time quickly available again.

Commissioning test

A full commissioning check is automatic if the mains voltage (unswitched phase) has not been interrupted for 5 days. The function for easy commissioning sets date and time for the initial test firm to ensure random testing of the units.

Functional test

Functional tests are performed weekly for 5 seconds and controlled by the microprocessor. The initiation and date / time of these exams are set at commissioning of the luminaire.

Duration test

To check the battery performance is a full annual endurance test carried out (1 or 3 hours).

Delay Timer (1-28 days)

To prevent that all the luminaires perform the emergency test at the same time, each luminaire has a pre-programmed code with a value of 1-28, which delays the test time of that luminaire for a specified time.

Devices with code 1 will be tested one day after the completion of the 5 day long monitoring of the power supply (that is 6 days after the uninterrupted connection to the supply).

Devices with code 2 will be tested two days after the completion of the 5 day long monitoring of the power supply (that is 7 days after the uninterrupted connection to the supply).

Devices with higher code numbers will be tested with a delay that corresponds to that code number.

28 days after the start of the commissioning all devices will have completed the required commissioning test. The day of the commissioning test serves as a reference point for all further function and duration tests times and test intervals. Function tests will be performed on the same day in a weekly interval, duration tests will be performed on the same day in an annual interval.

- (1) First connection to the power supply
- (2) Phase, in which the power supply is switched on and off (possibly numerous times)
- (3) Phase, in which the power supply is "permanently" connected (no interruption for at least 5 days)
- (4) Delaying the commissioning test for 1-28 day
- (5) Commissioning test begins
- (6) First function test
- (7) First duration test

Weekly function test

The 5 second long, weekly function test serves to check the functionality of the emergency unit, the batteries and the LED module. The first function test after the commissioning test would normally take place one week after the start of the commissioning test. In the actual implementation of this and all further functional tests two aspects must be considered, however:

To prevent that people are on the site and are disturbed by the test, the start of the function test is delayed until the switched phase is switched off. If this is the case, the function test will be carried out 10 seconds later. If this is not the case, because the switched phase remains permanently switched on, the function test will be carried out exactly 24 hours later, regardless of whether the switched phase is then turned off or not.

Annual duration test

The annual duration test checks whether the batteries are able to ensure the required operating time of 1, 2 or 3 hours.

The first duration test after the commissioning test would normally take place exactly one year after the start of the commissioning test. In the actual implementation of this and all further duration tests two aspects must be considered, however: To prevent that the duration test is carried out at a time of maximum hazard or highest presence density, the device automatically uses the adaptive test mode to determine a suitable test time.

Furthermore, the test time can be set manually, please refer to "setting the test time".

Adaptive test mode sets the time for the duration test to a time of minimum risk and minimum presence. This is achieved by monitoring the switched phase of the lighting. This tells the emergency lighting unit which times the lighting is switched off (i.e. no one is in the room) and the unit stores these times. If non-presence of more than five hours is detected the start time for the duration test is set to two hours after the start of the non-presence time.

Setting the test time

The time and day for the function and duration test is stored in the internal timer. To change the test time, the timer needs to be reset. The previously stored test time will be deleted and replaced by the time of resetting. If the unswitched power supply of an emergency lighting circuit is switched on and off 5 times within 60 seconds, the timers for all the emergency units in the emergency lighting circuit is reset (to the current time). The adaptive memory will be also deleted.

Emergency lighting Notes

Owner of the building / luminaires (or acting party instead) is obliged to keep a logbook according to NEN-EN 1838 & NEN-EN-IEC 60598-2-22 of their emergency installation. The logbook should state at least:

- Installation date of luminaires;
- Document regular inspection routines;
- Document replacements and/or maintenance;
- Logbook should be available for a minimum period of three years;
- Emergency fittings are foreseen with at minimum one continuous power circuit (phase) connection. When installing emergency luminaire(s) make sure there is a continuous power supply available and connected;
- After installation it should be avoided that there are any interruptions in this continuous power supply.

In case of self-contained emergency:

- The emergency luminaire(s) can operate between +5 °C to +25 °C with a maximum humidity of 65 % ± 5 %;
- Before installing the emergency luminaire(s) write the installation date on the battery;
- The luminaire(s) must be installed within a period of 3 months after production of the luminaire(s);
- If the luminaire(s) is not connected within a period of 1 month, disconnect the battery from the luminaire;
- After full installation of all the emergency luminaire(s) a period of 48 hours is required to fully charge the batteries, afterwards document the functioning of all luminaire(s) for the building operator;
- Repeated power outages will reduce the lifespan of the batteries dramatically;
- The emergency luminaire(s) may be discharged max. 4 cycles per year plus 2 cycles during commissioning.

DALI

Each DALI emergency gear is individually addressable on its DALI bus and each gear can be commanded individually to carry out an emergency test. So rather than testing all the emergency luminaires in one zone together each emergency luminaire in the zone can be tested at a different time, therefore ensure the safety of the zone at all times.

If the emergency and normal drivers in a luminaire are both DALI gear, then each can be separately addressed on the same DALI bus. This allows common wiring to be used for both normal lighting control and emergency test control. During a failure of the permanent mains supply, the TrustSight driver or ELP driver acts autonomously to provide escape lighting, regardless of the state of the DALI bus.

The TrustSight DALI or ELP driver version is equipped with a self-test functionality according to IEC 62034. Automatic tests will be performed according to the duration test (every 52 weeks) and functional test (every 7 days) programmable interval times. DALI standard operating mode the duration test will be performed as long as the rated duration time (3 hours).

The automatic duration test will always run until the battery is fully discharged. Full discharges are recommended for battery maintenance.

Conditions for self-test

The TrustSight or ELP driver must be permanently connected to mains power whenever a duration test or functionality test is executed and the battery must be charging or fully charged. When scheduling a duration or functionality test the operation of the AC-driver is also checked. When the AC-driver is powered up, the test can be postponed up to 3 days (in 24/7 lighting situations). When the AC-driver is off for at least 2 hours the test will be started.

LED status indicator

The LED status indicator shows whether:

- The system is in charging mode;
- Batteries are fully charged;
- A system error had occurred, see also the overview table in section 2 of this manual.

GENERAL DISCLAIMER

Product specifications

- Ambient working range -25 °C-+35 °C (-13 °F - 95 ° F)
- Storage -25 °C-+35 °C (-13 °F - 95 ° F)
- Rated voltage range 220 V~240 V~ 50/60 Hz
- Relative humidity 10 %-85 % RH - not condensing
- Cable specification 7&3 pin suitable for solid wiring (Ø1.5-2.5 mm²)

Important

- Caution, risk of electric shock!
- Hot plug-in is not an option and may cause damage to the luminaire.
- Disconnect the mains before installing or modifying this product.
- Installation and commissioning of the luminaire must be performed by a qualified electrician in accordance with all national and/or local regulations.
- Install all individual light lines before connecting to the grid.
- NEVER install this product without reading this installation guide.
- NEVER stare into this product when switched on.
- NEVER modify or alter this product, this will result in loss of warranty.
- Read the product labels carefully for all product details.
- This product is not suitable for signal functions, in case of emergency function see next paragraph.
- This product is not suitable for outdoor use.
- This product is not suitable for off-grid power solutions.
- On this product no condensation is allowed during storage, operation and application.
- When operating the electrical connections and connecting to the mains or grid always work according to standard NEN 1010 and NEN 3140.

Note

- A Veko linear lighting system is considered as a single luminaire (a 'closed' system) and not an electrical installation at itself.
- The light source of this product is custom made and shall only be replaced by the manufacturer or his service agent.
- At end of life, the whole product needs to be replaced.
- This product is not intended for household usage.
- Take care with the usage of power cables and prevent damage to the cables when installing them.
- Avoid touching the product if active, it might cause harm due to heat
- When the product is unpacked, take care of placement. Do not let the product rest on top of the optics, damage to optics will result in light output loss.
- The manufacturer is not liable for damages resulting from improper or faulty installation or operation from unauthorized modifications to the luminaire.
- Specifications are subject to change without notice! If you have questions please contact the manufacturer.
- Take appropriate precautions: wear gloves.
When adjusting the length of the light lines between the walls, an expansion coefficient of 24×10^{-6} (2.4 mm per 100 m per °C) should be taken into account.
- Keep at least one copy of this document as future reference material.

Cleaning

- ALWAYS switch off the power to the product before cleaning.
- This product can be cleaned with a damp cloth.
- Choose cleaning materials which are suitable for plastic.
- Do not use coarse or rough cleaning tools on this product.
- Do not use bleach or solvents on this product.
- Do not use any type of high pressure equipment to clean this product.
- Do not submerge this product.

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