ActiveAhead Node

ActiveAhead Node - small radiocommunication unit

- Brain of the truly intelligent wireless lighting control solution Helvar ActiveAhead.
- Connects to the Freedom LED driver offering flexible and easy-toinstall solution for an ActiveAhead luminaire
- Connect an ActiveAhead sensor to enjoy the benefits of the ActiveAhead self-learning
- Optimized mechanics to fit especially in linear luminaires with optimal radio performance.
- Wide LED driver offering of compact and linear shape LED drivers for flexible luminaire solutions.

Order Codes

Freedom Drivers

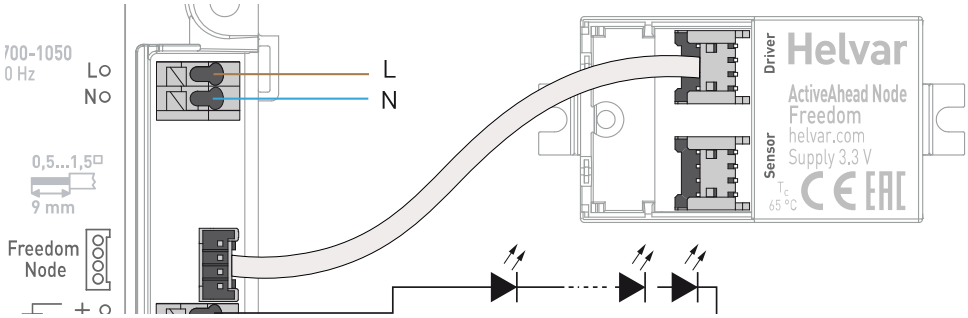
Helvar Model	Order code
LC25-FD-350-700	5815000
LC35-FD-700-1050	5814000
LC50-FD-900-1400	5816000
LL10-42-FD-120-350	5810000
LL50SE-FD-100-1400	5776000
LL23-80-FD-150-350	5812000
LL80-FD-350-700	5813000
LL110-FD-350-700	5811000

Freedom Cables

Helvar Model	Order code
Connection cable 15 cm	58090
Connection cable 30 cm	58091
Connection cable 45 cm	58092
Connection cable 150 cm	58094

Connections

Picture below presents how an ActiveAhead Node is connected to a Freedom driver.

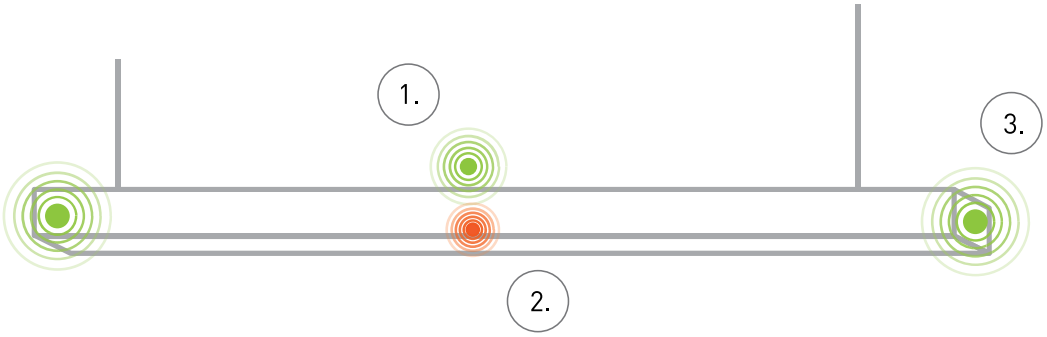


* See mechanical considerations regarding the connection on page 3.

Installation

ActiveAhead Node can be installed both in and outside of the luminaire. In general, the following things is good to be considered:

- The best radio performance is achieved, when the ActiveAhead Node is placed on top of non-blocking material (in regard of radiocommunication signals), e.g. on top of plastic.
- It is recommended not to place any wiring over the ActiveAhead Node.
- ActiveAhead Node to LED Driver interconnecting cable is advised not to be bundled together with other wiring inside the luminaire; for example mains or load.



1. When in middle of blocking material (metallic/aluminium), installing outside is recommended.
2. When installed in the middle of the luminaire and inside, the radio performance is poor if non-blocking material is not close.
3. Near ends is good positioning, when the surrounding material is non-blocking (e.g. plastic, rubber or glass).

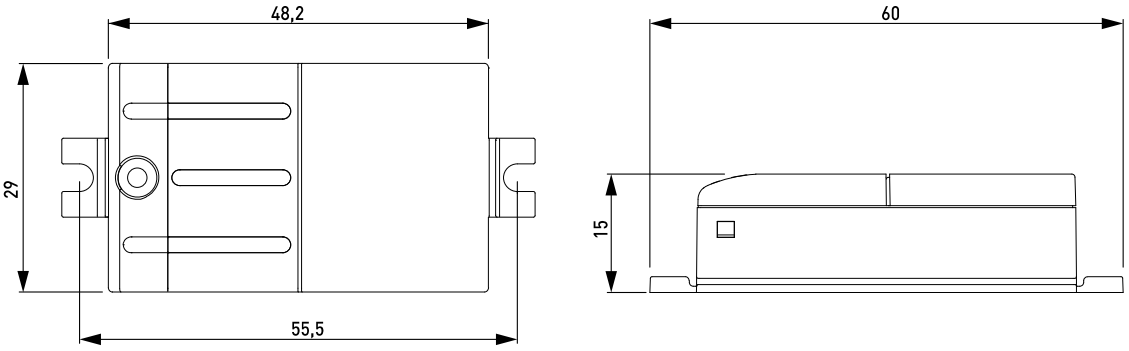
When the ActiveAhead Node is installed inside luminaire with the driver, the following things needs to be taken in consideration regarding the communication:

- To ensure good connectivity between ActiveAhead Nodes, the Node shall never be fully surrounded with metallic parts. The radiocommunication signals can't pass through metal.
- The ActiveAhead Node should be positioned close to such non-blocking materials that bypass radio frequency signals (e.g. plastic, rubber and glass). When inside metallic linear luminaire, there should always be holes (can be either open or spots with nonblocking material) bigger than 2 cm diameter / length close to the ActiveAhead Node, to allow the radiocommunication flow out of the luminaire.
- If placed on top of metal, inside the luminaire, e.g. metallic luminaire, the luminaire design should have non-blocking material close to the Node. Optimal case is that on the opposite side of metallic material, where the node lays, is non-blocking material.
- The connectivity distance between two Nodes is greatly affected if there is a lot of wireless communication around (WiFi, other bluetooth devices).
- When installed to a long chained linear aluminium / metallic luminaire, the Node should not be installed inside the luminaire e.g. in middle of it.
- When doing the luminaire installation, it is critical to always test the connectivity beforehand due to the things mentioned above.

When the ActiveAhead Node is outside the luminaire:

- Currently there are three cable length options (15 cm / 30 cm / 45 cm) to allow flexible positioning of the ActiveAhead Node outside the luminaire.
- The surrounding material and the available space around the Node should always be considered when the Node is installed outside the luminaire to e.g. dropped ceiling. If the space around is metallic without holes, it will disturb the radiocommunication.
- The strain-relief must always be used when the ActiveAhead Node is placed outside the luminaire structure.

Dimensions (mm)



The mounting tabs can be removed in case they are not needed.

The integrated strain-relief is needed in independent installation. In built-in use it is not required to be connected.

Electrical, mechanical and chemical considerations

- The protection class of the final installation must be adequate for the application.
- The voltage rating of the ActiveAhead Node is always same as the operating LED driver. E.g if the LED driver is 400 V maximum voltage output, the ActiveAhead Node is classed as 400 V device.
- While handling the ActiveAhead Node avoid excess mechanical stress or pressure applied to it. Also do not bend the connectors and the Node to a pressured direction.
- ActiveAhead Node should not be dropped.
- Mechanical modifications (drilling, milling, sawing or cutting of the strain reliefs) are not permitted.

Chemical substances may cause damage to the ActiveAhead Node. Avoid materials and substances containing:

- Acetone, ketones, ethers, and aromatic and chlorinated hydrocarbons
- Aqueous or alcoholic alkaline solutions, ammonia gas and its solutions and amines
- Do not expose ActiveAhead Node to humid environments.

Technical Data

Input characteristics	
Input voltage	3.0 – 3.6 V
Max. power consumption	< 53 mW

Wireless connectivity	
Frequency range	2.402 – 2.480 GHz
Wireless network	Bluetooth® mesh
Control system	Helvar ActiveAhead
Working range from Node to Node	30 m ⚠ Note: The working distance varies greatly based on the installation environment and surroundings. Please see page 2 for more information. Mesh network must consist of minimum 10 ActiveAhead Nodes for proper operation.
Antenna design	Omnidirectional pattern

Operating Conditions and Characteristics	
Tp point (performance measurements)	Tc = 65 °C
Max. temperature at Tc point	65 °C
Ambient temperature range	-25...+50 °C
Storage temperature	-40...+80 °C
Humidity	No condensation

Mechanical Data	
Material	Fire-retardant polycarbonate
Driver to node - cables available	15 cm / 30 cm / 45 cm
Weight	12 g
Colour	White
IP rating	IP20

Conformity & Standards	
Conformity:	CE UKCA
Particular requirements for miscellaneous electronic circuits used with luminaires	EN 61347-2-11
Equipment for general lighting purposes - EMC immunity requirements	EN61547
Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	EN55015
EMC standard for radio equipment and services; Specific conditions for Broadband Data Transmission Systems	EN301489-17
Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum	EN300328
Compliant with relevant EU directives	
RoHS/REACH compliant	