Manual BB Lightpipe EVO

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1. Introduction

The BB Lightpipe is a modular light line system suited for application in industrial and infrastructural applications such as parking garages, tunnels, train stations and much more. By making use of durable materials in combination with the long lifetime of the electrical components a maintenance free long lasting fixture is created. The indirect lighting concept with advanced foil techniques result in a glare free light emission and create a comfortable and safe environment. The BB Lightpipe is easy to mount, vandal resistant and water- and dustproof.

Build-up of the BB LEDlightpipe

**Driver housing
+ additional covers and clamps**
Aluminum blank anodized
Vandal resistant IK10+

LED module
1, 2 or 4 modules per fixture
18 Nichia PowerLED's per module
Ceramic based
Optimal heat conduction to extend
LED liftetime

Ridged seal
Completely sealed light tube
Water/ dustproof IP66

Plug & play connectors
For a fast and easy installation
Internally through-wired

LED driver
High quality LED driver for out-
door applications
LED current: 700 mA
Lifetime (min): 100.000 hours
Types: 40, 75 of 150 Watt

Mounting bracket
Stainless steel
Fixture easily clicks into the bracket
Securing with pop rivits

Main carrier profile
Aluminum blank anodized
Lightweight and sturdy
Used for therminal conduction,
reducing heat of the LED module

Light tube
100 x 96 mm polycarbonate
Reflective and prism based 3M foils
to optimize light distribution and
prevent glare
Vandal resistant IK10+

Material usage
All used materials are selected with
the purpose of reuse
All materials, except electrical
components, can be easily disas-
sembled and recycled

2. Article numbering

Te BB Lightpipe EVO is available in different lengths and types. The BB Lightpipe article number can be found as a sticker on the fixture and is structured as follows:

BB
Lightpipe

Fabriekstraat 16-04
7005 AR Doetinchem
The Netherlands
+31 (0)314 39 23 48
info@bblightpipe.com
www.bblightpipe.com

Article code:

Evo / Standard length in m / Wired or End version / number of LED modules / extra custom made info

E12W4 (..)

EVO
The EVO is the type of BB Lightpipe.

Standard lengths
The BB Lightpipe is available in te lengths 2.2, 4, 6, 8 en 12 meter.

Wired or End
This indicates if the BB Lightpipe is pre-wired (wired) or not (end). The through-wiring consists of 3-fase, N and Ground.

All BB Lightpipes have DALI trough-wiring (also the End type).

Number of LED modules
The number of LED modules is related to the power consumption:
1 piece is 40,5W
2 pieces is 78W
4 pieces is 155W

A or B part
The BB Lightpipe with a length of 8 en 12 meter consists of 2 parts, part A and part B. This is shown on the article sticker. A part B always follows an part A. Together they form a single fixture.

Extra custom made info
After the standard article code additional info different from standard can be displayed such as length, light colour, colour rendering, LED current, etcetera.

3. Types

An overview of the standard product range of the BB Lightpipe EVO

Artikelnr.	Naam	IP value	Light color	RA-value	LED current	Tube type	wiring	connectors
E2,2W1	BB Lightpipe EVO Wired 2,2M mono	IP44	5000K	>70	700mA	Diffuse	1-phase	terminal block
E2,2E1	BB Lightpipe EVO End 2,2M mono	IP44	5000K	>70	700mA	Diffuse	1-phase	terminal block
E2,2W2	BB Lightpipe EVO Wired 2,2M bi	IP44	5000K	>70	700mA	Diffuse	1-phase	terminal block
E2,2E2	BB Lightpipe EVO End 2,2M bi	IP44	5000K	>70	700mA	Diffuse	1-phase	terminal block
E4W2	BB Lightpipe EVO Wired 4M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E4E2	BB Lightpipe EVO End 4M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E4W4	BB Lightpipe EVO Wired 4M bi	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E4E4	BB Lightpipe EVO End 4M bi	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E6W2	BB Lightpipe EVO Wired 6M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E6E2	BB Lightpipe EVO End 6M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E6W4	BB Lightpipe EVO Wired 6M bi	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E6E4	BB Lightpipe EVO End 6M bi	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E8W4	BB Lightpipe EVO Wired 8M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E8E4	BB Lightpipe EVO End 8M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E12W4	BB Lightpipe EVO Wired 12M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play
E12E4	BB Lightpipe EVO End 12M mono	IP66	5000K	>70	700mA	Diffuse	3-phase	Plug & play

Specifications can differ from standard. This is stated in de article code as 'custom made'.

Beware: The shorter version with a length of 2.2 meters is standard with a terminal block instead of plug & play wiring because it is usually applied as stand-alone.
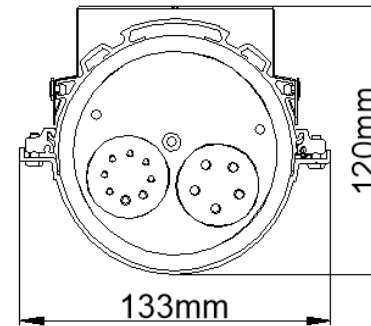
4. Mounting

Standard the BB Lightpipe comes with a high quality stainless steel suspension bracket of spring steel. As a result, the bracket will hang a few millimeters and allows a flexible suspension on a rough surface. The suspension bracket can be placed in any position on the base profile.

metall plug 4-5 mm
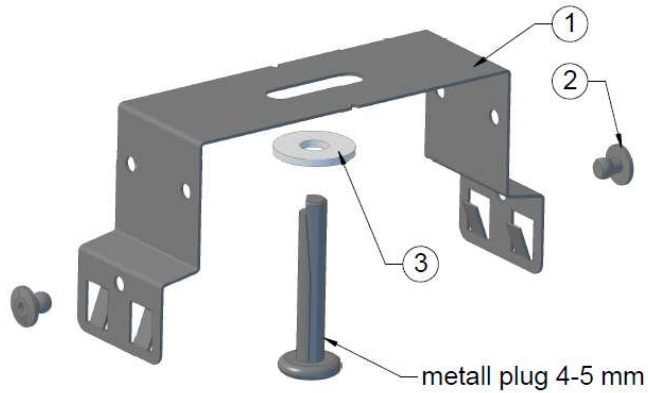
Standard mounting bracket
Article 2977

1. Bracket
2. Securing with pop rivet
3. M6 washer

Dimensions with standard bracket

Fixture length:	Number of brackets:	Positie:
2 to 4 meters	2 mounting brackets	0,5m from the end
6 meters	3 mounting brackets	0,5m from the end + one in the middle.

Different mounting brackets:

Various other suspension brackets are available. Some other commonly used suspension brackets:
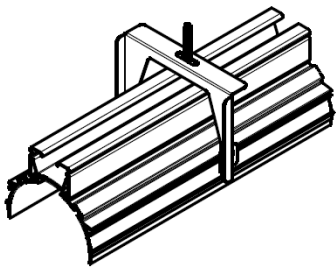
Article 4219
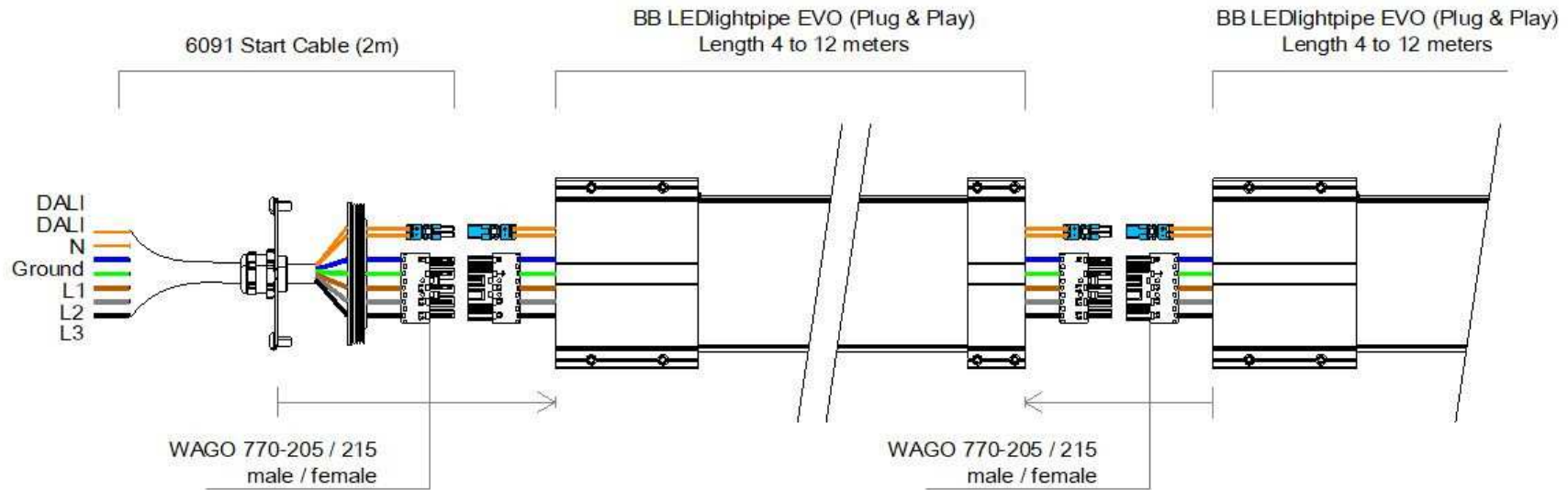For cable trunk on the BB Lightpipe
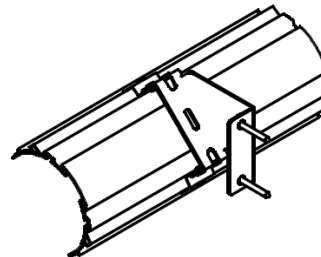
Article 3512
45° bracket for wall mounting

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5. Connection diagram light lines

The connection diagram below applies to the lengths 4, 6, 8 en 12 meter.

Light line diagram:

6091 Start Cable (2m)

BB LEDlightpipe EVO (Plug & Play)
Length 4 to 12 meters

BB LEDlightpipe EVO (Plug & Play)
Length 4 to 12 meters

DALI
DALI
N
Ground
L1
L2
L3

WAGO 770-205 / 215
male / female

WAGO 770-205 / 215
male / female

Wago 770-205 (male)
Wago 770-215 (female)

Fase selection
Adjustment over the 3 phases is possible by replugging the wire to the LED driver (black). Standard is L1

6. Mounting sequence light lines

1. plant out the position of mounting brackets (see chapter 4) by means of a laser
2. drill the holes and mount the brackets
3. click the BB Lightpipe into the bracket with 2 persons
4. lock the luminaires into the bracket by means of pop rivets
5. connect the trough-wiring and infeed cable (1) with the Plug & play connectors (3)
6. if necessary, adjust the phase selection
7. place the connectors (3) and sealing disc (2) into the driver housing (4)
8. make sure the sealing disc properly closes the driver housing
9. slide the cover (5) over the open gap of the fixture to finish
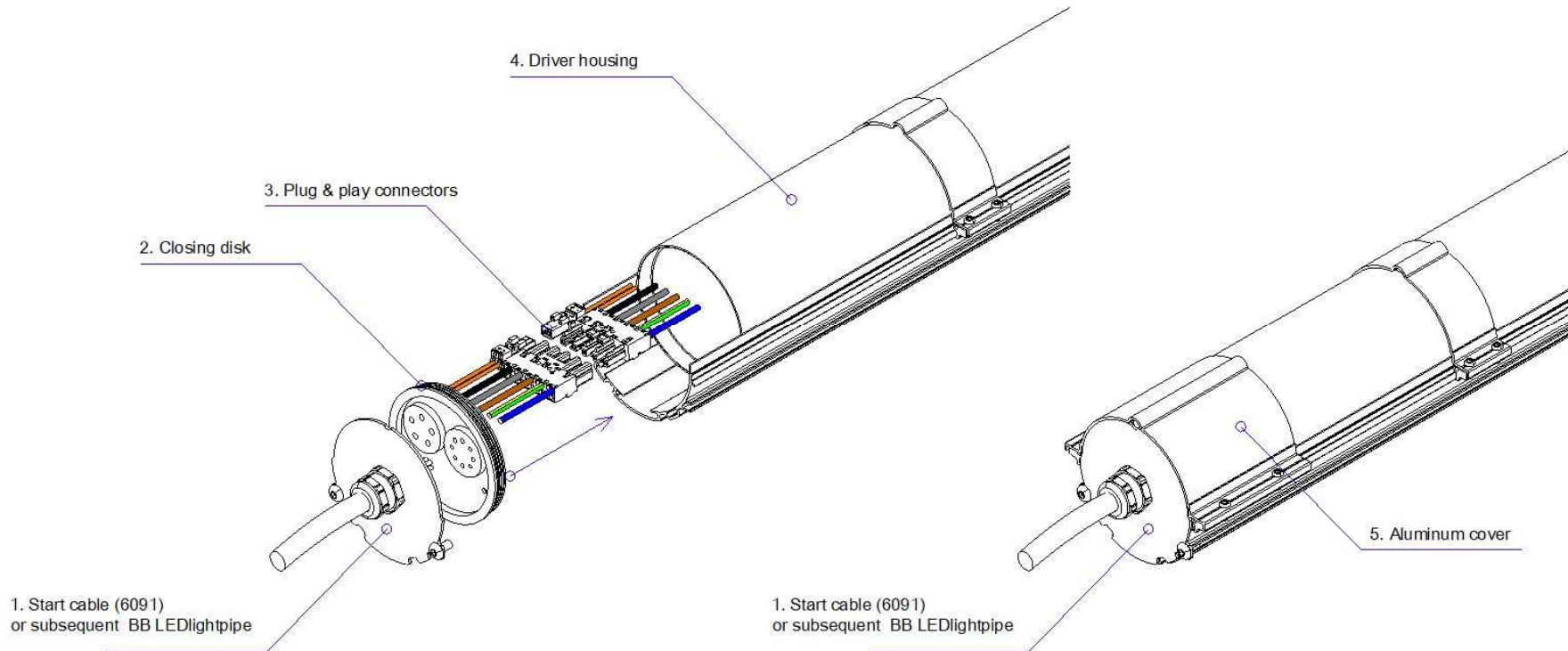
Picture: connecting a Start Cable (6091)

7. Through-wiring the light line

Aluminum expansion
Between two BB Light pipes, 5mm space must be used to consider expansion and shrinkage of the aluminum at ambient temperature

Picture 1:
Connect the Plug & play connectors

LED module wiring
In the 8 and 12 meter BB Lightpipe, consisting of two parts (A + B parts), there's an extra connector with a black and white wire for the LED module wiring

Picture 2:
Place the connectors and the sealing disk in the aluminum housing. Make sure the sealing disk closes the housing properly to ensure water resistance.
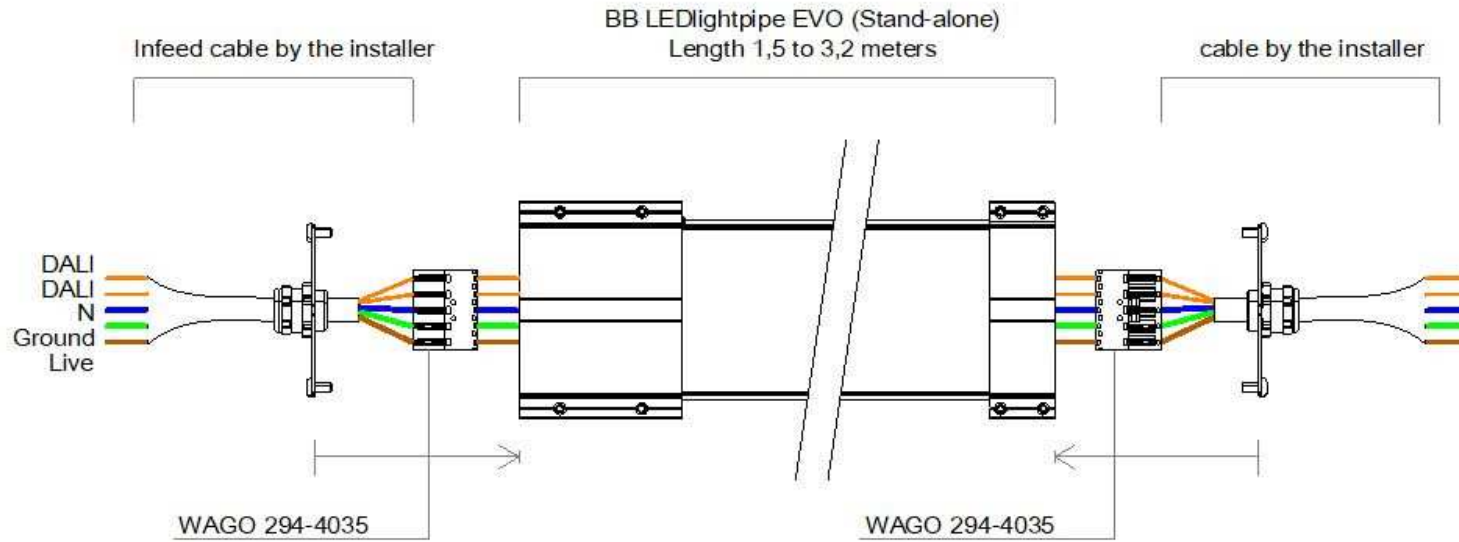

Picture 3:
Slide the cover onto the transition of the two fixtures and fasten the torx screws.

8. Diagram for 'stand-alone' mounting

The electric diagram below shows the connection of the 2,2 meter BB Lightpipe.

Single mounted wiring diagram:

Infeed cable by the installer

BB LEDlightpipe EVO (Stand-alone)
Length 1,5 to 3,2 meters

cable by the installer

DALI
DALI
N
Ground
Live

WAGO 294-4035

WAGO 294-4035

For the 'stand-alone' fixtures the installer needs to take care of the infeed cable. With the wago connector the infeed cable can be connected to the fixture.

Wago 294-4035

9. Product specifications

Input voltage	220-240 VAC
Frequenty	50 / 60 Hz
Nominal power	40, 75 of 155 Watt
Dim signal	DALI (1-10V optional)
Shock resistance	IK 10+
Isolation class	Class I
Dust / waterproof	IP44 / IP66
LED type	NICHIA, High power ceramic
LED circuit	All LEDs in series
LED protection	NTC on LED main board
Ambient temperature	- 40 / + 50 °C
Colour value	5000 Kelvin (standard) 2700 – 6500 K (optional)
All wires	LSZH (Low Smoke Zero Halogen)
Light output	3.457 lumen with 1 LED module
	6.915 lumen with 2 LED modules
	13.830 lumen with 4 LED modules

Certificates	DEKRA	LED performance mark for the LED module
		IEC/EN60598-2-1; EN61347-2-13; EN62031; EN62384:2006
	EMC:	IEC/EN55015; IEC/EN61547; IEC/EN 61000-3-2 Class C
	Other:	CE; RoHS; C2C (Cradle to Cradle)

10. Delivery and transportation

Because of the long lenghts of the BB Lightpipe fixtures the pallets for transport are bigger than usual.

The maximum dimensions are 6,2m to 0,8m to 1,5m (l x b x h), and the pallets have a maximum weight of 1000kg.

In the factory the light emitting part of the BB Lightpipe is provided with a protective foil. This foil protects the polycarbonate tube from dust during the construction process.

Picture: Packaging and transportation of the BB Lightpipes

11. Additional Information

DALI

When a DALI light management system is implemented there are some limits to take into account. One DALI-loop can contain 64 addresses and 250mA power consumption. A motion sensor is powered by the DALI loop and consumes 15mA. A fixture consumed 2mA.

These limits are taken into account when a lighting control is offered to determine the number of DALI routers needed. In addition, the loop should not be longer than 300 meters because of the voltage drop. The E-installer needs to take this into account when drafting his installations.

Inrush current

The inrush current of the LED driver has to be taken into account when designing the electrical installation and determining fuse types. The inrush current peak can cause the fuse to clog out when turning on multiple fixtures at once. Because of the inrush current it may therefore be necessary to implement an inrush current limiter.

The specifications of the LED driver are available on request.

Do's and don'ts

- always disconnect the power when working with wiring
- always work with 2 persons to click the BB Lightpipe into the fixture
- the distance between the mounting brackets can be 2,5 meters maximum
- the BB Lightpipe can be turned off by DALI, take into account that in this case there is still power on the driver
- always use pop rivits to secure the BB Lightpipe to the bracket
- the warranty of the electronic components will be cancelled if damage to the BB Lightpipe occurs when using a temporary power supply