
































EVG Product Overview

Secondary current	voltage	Primary current	Type designation	Order number	Dimensions (mm)			Housing no.	Dimmable	Open circuit protection	Suitable f. outdoor
					Length	Width	Height				
20 mA	990 volts	0.20 A	 EVG 20/1SL	1 2010 266	160	29	25	1	no	no	yes
	2,000 volts	0.25 A	 EVG 20/2SL	1 2020 266	160	29	25	1	no	optional	yes
	2,000 volts	0.25 A	 EVG 20/2SLR	1 2020 276	160	29	25	1	no	optional	yes
	3,000 volts	0.35 A	 EVG 20/3	1 2030 200	160	40	35	2	no	optional	yes
	4,000 volts	0.50 A	 EVG 20/4	1 2040 200	170	53	44	6	no	optional	yes
	5,000 volts	0.55 A	 EVG 20/5D	1 2050 204	205	39	37	3	Potentiometer	yes	no
	8,000 volts	0.95 A	 EVG 20/8D	1 2080 204	207	52	46	4	Potentiometer	Yes	no
30 mA	2,000 volts	0.40 A	 EVG 30/2	1 3020 200	160	40	35	2	no	optional	yes
	4,000 volts	0.60 A	 EVG 30/4	1 3040 200	170	53	44	6	no	optional	yes
40 mA	990 volts	0.25 A	 EVG 40/1SL	1 4010 266	160	29	25	1	no	no	yes
	2 x 990 volts	0.45 A	 EVG 40/1Duo	1 4010 215	186	44	29	5	no	no	yes
	1,500 volts	0.35 A	 EVG 40/1.5	1 4015 200	160	40	35	2	no	optional	yes
	3,000 volts	0.60 A	 EVG 40/3	1 4030 200	170	53	44	6	no	optional	yes
50 mA	990 volts	0.35 A	 EVG 50/1	1 5010 200	160	40	35	2	no	no	yes
	2,500 volts	0.60 A	 EVG 50/2.5	1 5025 200	170	53	44	6	no	optional	yes
60 mA	990 volts	0.40 A	 EVG 60/1	1 6010 200	160	40	35	2	no	no	yes
	2,000 volts	0.60 A	 EVG 60/2	1 6020 200	170	53	44	6	no	optional	yes
80 mA	990 volts	0.45 A	 EVG 80/1	1 8010 200	170	53	44	6	no	no	yes
	1,500 volts	0.60 A	 EVG 80/1.5	1 8015 200	170	53	44	6	no	optional	yes
Dimmable EVGs, dimmable by reverse phase control											
40 mA	990 volts	0.25 A	 EVG 40/1D	1 4010 202	205	39	37	7	Phase	yes	yes
	2 x 990 volts	0.50 A	 EVG 40/1D Duo	1 4010 212	205	49	29	8	Phase	yes	yes
80 mA	990 volts	0.50 A	 EVG 80/1D	1 8010 202	205	39	37	7	Phase	yes	yes
	2 x 990 volts	0.95 A	 EVG 80/1D Duo	1 8010 215	205	49	29	9	Phase	yes	yes
Dimmable EVGs, dimmable by control voltage (0-10 volts)											
40 mA	3,000 volts	0.60 A	 EVG 40/3D	1 4030 002	260	62	46	10	0-10 V	yes	yes
50 mA	2,000 volts	0.60 A	 EVG 50/2D	1 5020 002	260	62	46	10	0-10 V	yes	yes
EVGs with integrated flasher unit											
20 mA	5,000 volts	0.55 A	 EVG 20/5B	1 2050 204	205	39	37	11	no	yes	no
	8,000 volts	0.95 A	 EVG 20/8B	1 2080 204	207	52	46	11	no	yes	no
EVG for 12 volts DC, dimmable											
15 mA	3,000 volts	2.50 A	 C 12/3000	1 1230 200	98	40	34	12	yes	no	yes

Explanations

Blue/red discharge:

-  These types are suitable for blue discharge tubes. Connecting red discharge tubes may cause the so-called "jelly-bean effect".
-  These types are suitable for red discharge tubes only.
-  These types are suitable for blue and red discharge tubes.

Earth leakage trip

All EVGs above 1,000 volts are provided with an integrated earth leakage trip.

Open circuit protection

The EVGs 20/5 and 20/8 are provided with open circuit protection as standard. For all other types above 1,000 volts open circuit protection is available as an option.

Dimmability:

The terms given in the "dimmable" column have the following meaning:

Potentiometer: The EVG can be dimmed by means of a potentiometer located on the housing.

Phase: The EVG can be dimmed by a line-side reverse phase dimmer.

0-10 V: The EVG can be dimmed by means of a control voltage of 0-10 volts.

No: The EVG is not dimmable.

Housing
1

EVG 20/1SL
EVG 20/2SL
EVG 40/1SL



Length: 160mm
Width: 29mm
Height: 25mm
Weight: 290g

Housing
2

EVG 20/3 EVG 50/1
EVG 30/2 EVG 60/1
EVG 40/1,5



Length: 160mm
Width: 40mm
Height: 35mm
Weight: 390g

Housing
3

EVG 20/5D



Length: 205mm
Width: 39mm
Height: 37mm
Weight: 710g

Housing
4

EVG 20/8D



Length: 207mm
Width: 52mm
Height: 46mm
Weight: 990g

Housing
5

EVG 40/1Duo



Length: 186mm
Width: 44mm
Height: 29mm
Weight: 470g

Housing
6

EVG 20/4 EVG 50/2,5
EVG 30/4 EVG 60/2
EVG 40/3 EVG 80/1
 EVG 80/1,5



Length: 170mm
Width: 53mm
Height: 44mm
Weight: 670g

Housing
7

EVG 40/1D
EVG 80/1D



Length: 205mm
Width: 39mm
Height: 37mm
Weight: 710g

Housing
8

EVG 40/1D Duo



Length: 205mm
Width: 49mm
Height: 29mm
Weight: 650g

Housing
9

EVG 80/1D Duo



Length: 205mm
Width: 56mm
Height: 38mm
Weight: 970g

Housing
10

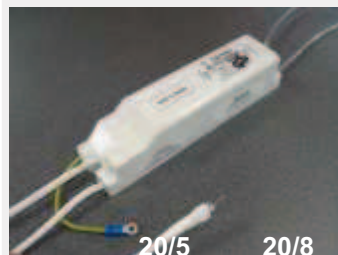
EVG 40/3D
EVG 50/2D



Length: 260mm
Width: 62mm
Height: 46mm
Weight: 1350g

Housing
11

EVG 20/5B (Blinker)
EVG 20/8B (Blinker)



Length: 205mm 207mm
Width: 39mm 52mm
Height: 37mm 46mm
Weight: 710g 990g

Housing
12

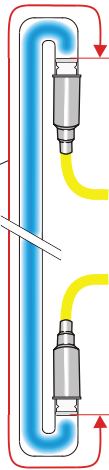
C15/3000



Length: 98mm
Width: 40mm
Height: 34mm
Weight: 230g

The values given in the tables indicate the maximum tube length that can be connected to the EVG.

The tube length is measured from one electrode to the other.



The calculations are based on the filling pressure recommendations of the German Fachverband Lichtwerbung as of Nov. 1992.

Blue discharge (outdoor)

Diameter	10	12	15	18	20	22
1 Syst.	0.9	1.1	1.4	1.7	1.8	2.0
2 Syst.	0.5	0.6	0.8	0.9	1.0	1.1

Blue discharge (indoor)

Diameter	10	12	15	18	20	22
1 Syst.	1.2	1.5	1.8	2.1	2.3	2.5
2 Syst.	0.8	1.0	1.2	1.4	1.5	1.6

Red discharge

Diameter	10	12	15	18	20	22
1 Syst.	0.6	0.7	0.9	1.1	1.2	1.2
2 Syst.	0.3	0.4	0.5	0.6	0.6	0.7

990 volts

Blue discharge (outdoor)

Diameter	10	12	15	18	20	22
1 Syst.	1.6	2.0	2.5	2.9	3.1	3.4
2 Syst.	1.2	1.5	1.8	2.1	2.3	2.5
3 Syst.	0.8	1.0	1.2	1.4	1.5	1.7

Blue discharge (indoor)

Diameter	10	12	15	18	20	22
1 Syst.	2.0	2.5	3.0	3.5	3.8	4.1
2 Syst.	1.6	2.0	2.4	2.8	3.0	3.3
3 Syst.	1.2	1.5	1.8	2.1	2.3	2.5

Red discharge

Diameter	10	12	15	18	20	22
1 Syst.	1.0	1.2	1.6	1.9	2.0	2.1
2 Syst.	0.7	0.9	1.2	1.4	1.5	1.6
3 Syst.	0.5	0.6	0.8	0.9	1.0	1.0

1,500 volts

Blue discharge (outdoor)

Diameter	10	12	15	18	20	22
1 Syst.	2.3	2.8	3.5	4.1	4.4	4.8
2 Syst.	1.9	2.3	2.9	3.4	3.6	4.0
3 Syst.	1.5	1.8	2.2	2.6	2.8	3.1
4 Syst.	1.0	1.3	1.6	1.9	2.1	2.2
5 Syst.	0.6	0.8	1.0	1.2	1.3	1.4

Blue discharge (indoor)

Diameter	10	12	15	18	20	22
1 Syst.	2.8	3.5	4.2	5.0	5.3	5.8
2 Syst.	2.4	3.0	3.6	4.3	4.6	5.0
3 Syst.	2.0	2.5	3.0	3.5	3.8	4.1
4 Syst.	1.6	2.0	2.4	2.8	3.0	3.3
5 Syst.	1.2	1.5	1.8	2.1	2.3	2.5

Red discharge

Diameter	10	12	15	18	20	22
1 Syst.	1.5	1.8	2.2	2.7	2.9	3.0
2 Syst.	1.2	1.5	1.8	2.2	2.4	2.5
3 Syst.	0.9	1.1	1.4	1.7	1.8	2.0
4 Syst.	0.7	0.8	1.0	1.2	1.3	1.4
5 Syst.	0.4	0.5	0.6	0.8	0.8	0.9

2,000 volts

Blue discharge (outdoor)

Diameter	10	12	15	18	20	22
1 Syst.	3.0	3.7	4.5	5.3	5.7	6.2
2 Syst.	2.6	3.2	3.9	4.6	5.0	5.4
3 Syst.	2.1	2.7	3.3	3.9	4.2	4.5
4 Syst.	1.7	2.2	2.7	3.1	3.4	3.7
5 Syst.	1.3	1.6	2.2	2.4	2.6	2.8

Blue discharge (indoor)

Diameter	10	12	15	18	20	22
1 Syst.	3.6	4.5	5.4	6.4	6.9	7.5
2 Syst.	3.2	4.0	4.8	5.7	6.1	6.6
3 Syst.	2.8	3.5	4.2	5.0	5.3	5.8
4 Syst.	2.4	3.0	3.6	4.2	4.6	5.0
5 Syst.	2.0	2.5	3.0	3.7	3.8	4.1

Red discharge

Diameter	10	12	15	18	20	22
1 Syst.	1.9	2.3	2.9	3.5	3.7	4.0
2 Syst.	1.6	2.0	2.5	3.0	3.2	3.4
3 Syst.	1.4	1.7	2.1	2.5	2.7	2.9
4 Syst.	1.1	1.3	1.7	2.0	2.2	2.3
5 Syst.	0.8	1.0	1.3	1.6	1.7	1.8

2,500 volts

Blue discharge (outdoor)

Diameter	10	12	15	18	20	22
2 Syst.	3.2	4.0	5.0	5.8	6.3	6.8
3 Syst.	2.8	3.5	4.3	5.1	5.5	6.0
4 Syst.	2.4	3.0	3.7	4.3	4.7	5.1
5 Syst.	2.0	2.5	3.1	3.6	3.9	4.2
6 Syst.	1.6	2.0	2.5	2.9	3.1	3.4

Blue discharge (indoor)

Diameter	10	12	15	18	20	22
2 Syst.	4.0	5.0	6.0	7.1	7.6	8.3
3 Syst.	3.6	4.5	5.4	6.4	6.9	7.5
4 Syst.	3.2	4.0	4.8	5.7	6.1	6.6
5 Syst.	2.8	3.5	4.2	5.0	5.3	5.8
6 Syst.	2.4	3.0	3.6	4.2	4.6	5.0

Red discharge

Diameter	10	12	15	18	20	22
2 Syst.	2.1	2.5	3.2	3.8	4.1	4.3
3 Syst.	1.8	2.2	2.8	3.3	3.6	3.8
4 Syst.	1.5	1.9	2.4	2.8	3.1	3.2
5 Syst.	1.3	1.6	2.0	2.4	2.5	2.7
6 Syst.	1.0	1.2	1.6	1.9	2.0	2.1

3,000 volts

Blue discharge (indoor)

Diameter	8	10	12	15	18	20
2 Syst.	4.3	5.6	7.0	8.5	10.0	10.7
3 Syst.	4.0	5.2	6.5	7.9	9.2	10.0
4 Syst.	3.7	4.8	6.0	7.3	8.5	9.2
5 Syst.	3.4	4.4	5.5	6.7	7.8	8.4
6 Syst.	3.1	4.0	5.0	6.0	7.1	7.6

Blauentladung (outdoor)

Diameter	8	10	12	15	18	20
2 Syst.	3.1	4.6	5.7	7.0	8.2	8.9
3 Syst.	2.8	4.2	5.2	6.4	7.5	8.1
4 Syst.	2.5	3.8	4.7	5.8	6.8	7.3
5 Syst.	2.2	3.4	4.2	5.2	6.0	6.5
6 Syst.	1.9	2.8	3.5	4.3	5.1	5.5

Red discharge

Diameter	8	10	12	15	18	20
2 Syst.	2.4	2.9	3.6	4.5	5.4	5.8
3 Syst.	2.2	2.7	3.3	4.1	4.9	5.3
4 Syst.	2.0	2.4	3.0	3.7	4.4	4.8
5 Syst.	1.7	2.1	2.6	3.3	4.0	4.3
6 Syst.	1.5	1.9	2.3	2.9	3.5	3.7

4,000 volts

Blue discharge (indoor)

Diameter	8	10	12	15	18	20
2 Syst.	5.6	7.2	9.0	10.9	12.8	13.8
3 Syst.	5.3	6.8	8.5	10.3	12.1	13.0
4 Syst.	5.0	6.4	8.0	9.7	11.4	12.3
5 Syst.	4.6	6.0	7.5	9.1	10.7	11.5
6 Syst.	4.3	5.6	7.0	8.5	10.0	10.8
7 Syst.	4.0	5.2	6.5	7.9	9.2	10.0
8 Syst.	3.7	4.8	6.0	7.3	8.5	9.2
9 Syst.	3.4	4.4	5.5	6.7	7.8	8.4

Red discharge

Diameter	8	10	12	15	18	20
2 Syst.	3.1	3.8	4.7	5.8	7.0	7.5
3 Syst.	2.9	3.5	4.4	5.4	6.5	7.0
4 Syst.	2.7	3.3	4.0	5.0	6.0	6.5
5 Syst.	2.5	3.0	3.7	4.6	5.6	6.0
6 Syst.	2.2	2.8	3.4	4.2	5.1	5.5
7 Syst.	2.0	2.5	3.1	3.8	4.6	5.0
8 Syst.	1.8	2.2	2.7	3.4	4.1	4.4
9 Syst.	1.6	2.0	2.4	3.0	3.6	3.9

5,000 volts

Blue discharge (indoor)

Diameter	8	10	12	15	18	20
2 Syst.	9.3	12.0	15.0	18.2	21.4	23.0
3 Syst.	9.0	11.6	14.5	17.6	20.7	22.3
4 Syst.	8.7	11.2	14.0	17.0	20.0	21.5
5 Syst.	8.4	10.8	13.5	16.4	19.2	20.7
6 Syst.	8.1	10.4	13.0	15.8	18.5	20.0
7 Syst.	7.8	10.0	12.5	15.2	17.8	19.2
8 Syst.	7.5	9.6	12.0	14.6	17.1	18.4
9 Syst.	7.1	9.2	11.5	14.0	16.4	17.6

Red discharge

Diameter	8	10	12	15	18	20
2 Syst.	5.2	6.4	7.9	9.8	11.8	12.7
3 Syst.	5.0	6.2	7.6	9.4	11.3	12.2
4 Syst.	4.8	5.9	7.3	9.0	10.8	11.7
5 Syst.	4.6	5.7	6.9	8.6	10.4	1.2
6 Syst.	4.4	5.4	6.6	8.2	9.9	10.6
7 Syst.	4.2	5.1	6.3	7.8	9.4	10.1
8 Syst.	4.0	4.9	6.0	7.4	8.9	9.5
9 Syst.	3.7	4.6	5.6	7.0	8.4	9.1

8,000 volts

Electronic converters for simple and safe neon installations

In principle, the installation of electronic converters (EVGs) in neon systems very simple. The housings are small allowing easy installation. The required protective switches are already integrated in the device and do not have to be installed additionally.

The constant current from the EVGs ensures a uniform brightness of the tubes. However, the high frequency of the EVGs of approx. 20,000 Hz must be taken into account when installing the system.

The golden rule for a troublefree installation is to avoid installing the high-voltage cables from the EVG to the neon tubes in parallel and keep them as short as possible.

Otherwise the same rules and safety precautions apply as for the installation of traditional core & coil transformers or as published in the relevant installation standards (eg. EN 50107).

EMC, CE marking, and radio interference protection

The EVGs have been tested in accordance with the relevant EMC regulations and are checked regularly during production.

This is done according to the following standards:

- EN 55015 - EN 61000-3-2
- EN 61547 - EN 61000-3-3

Compliance with these standards is indicated by the CE mark on the device.

Earth leakage trip and open circuit protection

The installation standard EN 50107 requires a suitable earth leakage protection for all luminous discharge tube circuits in installations exceeding 1,000 volts. In order to fulfill this requirement, all our EVGs above 1,000 volts are equipped with an integrated earth leakage trip.

In addition, the EN 50107 requires luminous discharge tube circuits in installations within the so-called "arm's reach" to be equipped with an open circuit protection. This open circuit protection is available as an option for all our EVGs above 1,000 volts. It is not recommended to build in this protection in general as operational disturbances due to false tripping can be expected particularly in outdoor systems.

The EVGs 20/5 and 20/8 come with an integrated earth leakage trip as standard. All EVGs below 1,000 volts are not equipped with any protective switches.

Using EVGs in outdoor installations

EVG with a maximum output voltage of 3,000 volts can be used in outdoor installations. Because of the higher stresses due to environmental influences (moisture, dirt etc.) our installation advice should be strictly observed, particularly in terms of cable installation and adherence to creepage distances and clearances.

Dimmable EVGs

We offer several types of EVG that are dimmable. Depending on the type of EVG, dimming is achieved by three different methods:

EVG 20/5D and EVG 20/8D are equipped with a potentiometer located on the housing. The brightness can be adjusted using a small screwdriver.

EVG 40/3D and EVG 50/2D are equipped with an additional cable connection for a control voltage of 0-10 volts, which can be used to dim or switch one or more EVGs (advantage: no losses and no flicker).

EVG 40/1D (Duo) and EVG 80/1D (Duo) can be dimmed with the mains voltage using reverse phase control (advantage: simple cabling on the mains side).

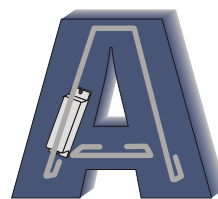
Further information on the Internet

Please visit our homepage www.hansen-neon.de for detailed information on our products (eg. data sheets) in PDF format.

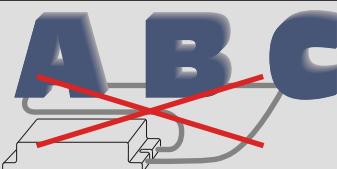
Further information on neon and LED in general can be found under "Neon Know-How" and "LED Know-How" respectively.

Installation advice for electronic converters (EVGs)

Do not connect more than one letter



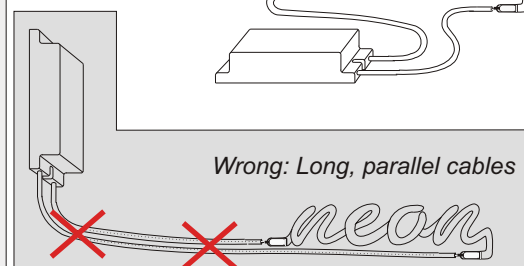
Correct:
Connect only the tubes of one letter to the converter!



Wrong:
Never combine the tubes of multiple letters!

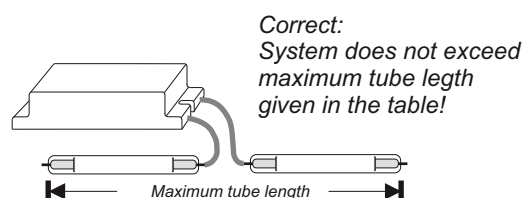
Do not use long/parallel high-voltage cables

Correct:
Short high-voltage cables, not installed in parallel, supplying the power centrally, if possible

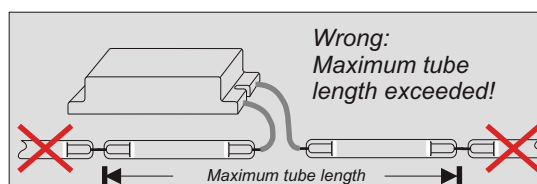


Wrong: Long, parallel cables

Observe maximum connectable tube lengths

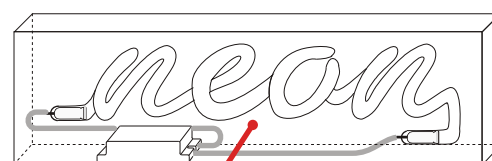


Correct:
System does not exceed maximum tube length given in the table!



Wrong:
Maximum tube length exceeded!

Avoid accumulation of heat



max. 60°C
(temperature within the box)

Correct:
Install the converter so that no excessive heating will occur.

Wrong:
- too many neon tubes with the converter in a too small housing
- risk of external heating (eg. due to sunlight)