

# Perfect dimming. Less is more.

<sup>1</sup> Trouble-free dimming behaviour depends on the transformer used. Recommended Philips transformer: Philips Primaline 70 W (1 – 2 lamps per transformer).

The Busch-Dimmer® LED is also suitable for dimming selected Osram and Ledon LED lamps.

<sup>A</sup> Rotary dimmer control element

<sup>B</sup> Touch dimmer control element

<sup>C</sup> Presence tech/ Presence tech DualLINE

<sup>D</sup> Comfort timer

## Busch-Jaeger



A



B



C



D

### Article number

6523 U-500  
2-wire dimmer  
rotary dimmer

6524 U-500  
3-wire dimmer  
touch dimmer

### Load type

R, LC

R, L, C

### LED power

2 – 100 VA

2 – 100 VA

## Philips



**MASTER  
LEDbulb 8 W**

A60 / E27

8 Watt  
470 lm

8 pieces

8 pieces



**MASTER  
LEDbulb 12 W**

A60 / E27

12 Watt  
806 lm

8 pieces

8 pieces



**MASTER  
LEDbulb 17 W**

A67 / E27

17 Watt  
1055 lm

6 pieces

6 pieces



**MASTER  
LEDcandle  
4 W**

B35 / E14

4 Watt  
250 lm

20 pieces

20 pieces



**MASTER  
LEDluster 4 W**

P45 / E14

4 Watt  
250 lm

20 pieces

20 pieces



**MASTER  
LED PAR20  
6,5–50 W**

PAR20 / E27

6,5 Watt  
≈ 430 lm

14 pieces

14 pieces



**MASTER  
LEDspot  
4–35 W**

GU10

4 Watt  
≈ 300 lm

20 pieces

20 pieces



**MASTER  
LEDspot  
5,5–50 W**

GU10

5,5 Watt  
≈ 300 lm

16 pieces

16 pieces



**MASTER  
LEDspot 7 W**

MR16 / GU5.3

7 Watt  
≈ 400 lm

14 pieces

14 pieces



**MASTER  
LEDspot 10 W**








MR16 / GU5.3

10 Watt  
≈ 400 lm

10 pieces <sup>1</sup>

10 pieces

# Perfect dimming. Less is more.

The listed KNX dimmers are basically suitable for dimming Philips retrofit LED lamps (LEDi), but the following points must be considered for the proper operation.				Busch-Jaeger			
							
				Article number	6197/12-101-500 6197/13-101-500	6197/14-101-500	6197/15-101-500
				Load type	R, L, C	R, L, C	R, L, C
Philips				per channel	per channel	per channel	
	MASTER LEDbulb 12 W MV 806	A60/E27	12 Watt 806 lm	1–15 pieces	1–6 pieces	1–15 pieces	
	MASTER Glow LEDbulb 8 W	A60/E27	8 Watt 470 lm	1–10 pieces	1–10 pieces	1–12 pieces	
	MASTER LED PAR20	PAR20/E27	7 Watt 280 lm	1–10 pieces	1–10 pieces	1–12 pieces	
	MASTER LEDspot 7 W	MR16/GU5.3	7 Watt ≈ 330 lm	12 pieces with 3 electronic transformers 105 VA. Please consider manufacturer instructions.			
	MASTER LEDspot 10 W	MR16/GU5.3	10 Watt ≈ 400 lm	12 pieces with 3 electronic transformers 105 VA. Please consider manufacturer instructions.			
	MASTER LEDspot 6 W	GU10	6 Watt ≈ 300 lm	1–10 pieces	1–10 pieces	1–10 pieces	

## Please consider these advices when using a KNX dimmer in combination with LEDs:

### 1. Operation mode of the dimmers:

The maximum load is depending on the charging current of a lamp, so the indicated number of lamps per channel is not transferable on lamps with similar power.

The operation mode has to be set manually on leading edge operation via PowerTool.

### 2. Channel bundling:

It is not recommended to bundle channels (connecting outputs parallel) in order to raise the load. LEDs should be connected individually.

### 3. Number of LEDs per channel:

In general you can never utilize the full load of an incandescent lamp when using a LED.

Rule of thumb: In case of using LED, the max. load should not exceed one-fifth to one-sixth of the indicated load for an incandescent lamp.

Retrofit LEDs have a very high inrush current, which is many times higher than the one of an incandescent lamp, because of the integrated ballast in the lamps. This must be considered.

Example: In case the dimmer indicates a max. load of 100 W for incandescent lamps, the max. load for LED should not exceed 20 W.

### 4. Dimming curve/dimming run of LEDs:

The dimming curve of an incandescent lamp is not the same as the one of an LED.

A LED reaches 100 % of the max. brightness faster, which results in the fact that in the upper dimming range (beyond 70 % of max. brightness) it is not possible to recognize any change in brightness anymore.

### Preventive measure:

Limit upper dimming range to 80 % of max. brightness via PowerTool.

### 5. LED flickering in lower dimming section:

Retrofit LEDs have small ballasts, which require a min. voltage. According to the connected LED and load-sided output voltage (< 100 – 120 V) at the dimming channel, soft flickering effects may occur. Some LEDs cannot be dimmed as low as incandescent lamps.

### Preventive measure:

Limit lower dimming range via PowerTool.

### Result:

LED cannot be dimmed as low as an incandescent lamp.

### 6. Ripple control signal stability:

Nearly with every LED flickering can occur several times a day. However this is not a dimmer problem at all. It is rather related to the ballasts. The dimmer has already a ripple control signal filter.

7. According to IEC 61000-3-2 there are necessary measurements to increase the connection load when exceeding 25W/VA. E.g. using harmonic wave filters.

# Perfect dimming. Less is more.

<sup>1</sup> In the lower dimming range it may come to slight flickering/ unsteady light. Recommendation: Limit the lower dimming range via the device parameters.

<sup>2</sup> Lamps may emit very slight noise.

<sup>3</sup> Lamps may have an afterglow when switched off.

<sup>4</sup> With these lamps always operate the dimmer with trailing edge control (setting via the device parameters)

<sup>5</sup> Recommended Philips transformer: Primaline 70 W (1 – 2 lamps per transformer)

## Busch-Jaeager



### Article number

SDAF-2.1.1

DA-M-0.4.1

### Load type

R, L, C

R, L, C

### LED power

Typ. 2-80 W/VA

Typ. 1 x 8 - 160 W/VA  
Typ. 2 x 4 - 120 W/VA  
Typ. 4 x 2 - 80 W/VA

## Philips



**MASTER  
LEDbulb 7 W**

E27

7 Watt  
470 lm

8 pieces

12 pieces



**MASTER  
LEBbulb 12 W**

E27

12 Watt  
860 lm

7 pieces

7 pieces



**MASTER  
LEDbulb 13 W**

E27

13 Watt  
1055 lm

4 pieces

6 pieces



**MASTER  
LEDbulb 20 W**

E27

20 Watt  
1521 lm

4 pieces

4 pieces



**MASTER  
LEDbulb 8 W**

E27

8 Watt  
470 lm

10 pieces <sup>1</sup>



**MASTER  
LEDspot 8-50 W  
8718291 68243100**

GU10

8 Watt  
1800 cd

10 pieces <sup>1</sup>



**Masters  
LEDspot  
6W-50 W**

GU10

6 Watt  
1000 cd

14 pieces <sup>1</sup>

14 pieces



**MASTER  
LEDspot  
4-35 W**

GU10

4 Watt  
700 cd

20 pieces <sup>1, 3</sup>

20 pieces <sup>1, 3</sup>



**MASTER  
LEDspot 8-50 W  
8718291 68231800**

GU10

8 Watt  
1800 cd

7 pieces <sup>2</sup>

10 pieces <sup>2</sup>



**Masters  
LEDspot LV  
7-35 W**

GU5.3

7 Watt  
1050 cd

12 pieces <sup>2, 4, 5</sup>

12 pieces <sup>2, 4, 5</sup>



**Masters  
LEDspot LV  
10-50 W**

GU5.3

10 Watt  
1500 cd

8 pieces <sup>1, 2, 4, 5</sup>

8 pieces <sup>1, 4, 5</sup>



**Masters  
LEDspot MV  
D 6-50 W**

GU10

6 Watt

10 pieces <sup>1</sup>

10 pieces <sup>1</sup>



**MASTER  
LEDcandle  
D 4-25 W**

E14

4 Watt  
250 lm

20 pieces <sup>1, 2</sup>

20 pieces <sup>1, 2</sup>



**MASTER  
LEDbulb 12-60 W**

E27

12 Watt  
806 lm

7 pieces

7 pieces



**MASTER  
LEDspot LVD  
10-50 W**

GU5.3

10 Watt  
980 mA

8 pieces <sup>1, 4, 5</sup>

10 pieces <sup>1, 2, 4, 5</sup>



**MASTER  
LEDspot LVD  
7-35 W**

GU5.3

7 Watt  
650 mA

12 pieces <sup>1, 4, 5</sup>

12 pieces <sup>1, 4, 5</sup>

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<sup>3</sup> Lamps may have an afterglow when switched off.

<sup>4</sup> With these lamps always operate the dimmer with trailing edge  
control (setting via the device parameters)

<sup>5</sup> Recommended transformer: Electronic transformer OSRAM  
"Maus" 105VA

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### Article number

SDAF-2.1.1

DA-M-0.4.1

### Load type

R, L, C

R, L, C

### LED power

Typ. 2-80 W/VA

Typ. 1 x 8 - 160 W/VA  
Typ. 2 x 4 - 120 W/VA  
Typ. 4 x 2 - 80 W/VA

## Megaman

### Per channel

MM21016  
LED Classic  
LG1511dv

E27

11 Watt  
810 lm

8 pieces

8 pieces

MM27442 LED  
LP2307dDG

GU10

7 Watt  
500 lm

12 pieces

12 pieces

MM17522 LED  
LR2008d

GU10

8 Watt  
480 lm

10 pieces<sup>3</sup>

10 pieces<sup>3</sup>

MM27222 LED  
ER1708d

GU5.3

8 Watt  
400 lm

10 pieces<sup>1</sup>

10 pieces<sup>3,5</sup>

## OSRAM

LED Parathom  
Classic A 75

E27

14.4 Watt  
1055 lm

6 pieces<sup>1</sup>

6 pieces<sup>2</sup>

LED Parathom  
Classic B 25  
4 008321 994042

E14

3.8 Watt  
250 lm

21 pieces<sup>2</sup>

8-21 pieces<sup>2</sup>

LED Parathom  
Classic B 25  
4 008321 979230

E14

3.8 Watt  
250 lm

21 pieces<sup>2</sup>

7-21 pieces<sup>2</sup>

LED Parathom  
PAR16  
4 008321 881816

GU10

3 Watt  
130 lm

7 pieces

17 pieces

LED Parathom  
PAR16  
4 008321 882035

GU10

5 Watt  
260 lm

10 pieces

16 pieces

LED Parathom  
MR16

GU5.3

6.4 Watt  
365 lm

11 pieces<sup>1,5</sup>

12 pieces<sup>5</sup>

LED Parathom PRO  
Par16

GU10

6.8 Watt  
350 lm

12 pieces

12 pieces

BJE 1473-1-8577/2.7.14/0502-D, dpi 407791