

DIMMABLE LEDS AND FUTRONIX DIMMERS

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Over the last few years LEDs have gained in popularity due to their energy-saving nature and increased lifespan. Typical savings (based on 3 hours per day use) for an LED lamp replacing a Compact Fluorescent lamp of similar brightness is quoted at **\$1.57 per year***, and for a PAR 38 flood light replacement **\$2.53 per year***.

Today LEDs are more affordable than ever and come in a wide range of standard lamp-fitting sizes, with colours ranging from warm through to bright white. The best lighting designers use LEDs for general and accent lighting, and blend their schemes with other lamp types such as halogen. By mixing different lamp types together, a more attractive blend of overall lighting hues and visual quality can be achieved.

It should be noted that there is a huge range of LED lamps on the market; some of these are from well known brands, while others are OEM China brands. All LEDs are switchable, while some are fully dimmable. It should always be assumed that a lamp that is not marked "dimmable" or is marked "non-dimmable" is ONLY switchable. There may be minimum load requirements if a dimmer channel is used for switching, instead of a relay channel.

The dimmability of an LED is dependent on the driver circuitry, and in particular the microchip inside the Lamp. The best circuits and chips have a cost of several dollars each, so the likelihood is that in order to save cost the cheaper OEM Chinese lamps will not possess the best of these. Therefore, we recommend and have tested the more expensive well known brand lamps, but also included some other brands that we have tested and deemed suitable.

LEDs from the approved DIMMABLE list below can dim successfully all the way down to the lamps cut OFF point, which (depending on LED chip manufacturer) resides at a particular set point near the bottom of the dimming curve. Others may require a minimum load, and if this is not met, a dummy load will need to be added ([Futronix Part No: DL-10](#)).

It should be noted that the following list is offered on an "As is Basis" with no implied guarantee as to the success of any particular LED lamp and its use thereof in any installation. It is up to the installer to determine suitability in each and every case.

** Ref: Sylvania, as compared to the nearest energy efficient lamp of similar type*

RECOMMENDED DIMMABLE LED LAMPS - PAR-16/ GU10

SYLVANIA HI-spot RefLED PAR-16 GU10 - 6.5W

Version tested ES50 operates well with all Futronix dimmers.

No minimum load



Osram Parathom PRO PAR-16 50 Advanced

Dimming up and down function operates very smoothly with the full Futronix range of dimmers.

The lamp must be the PRO & Advanced models



Philips Master LEDspot MV 6W GU10 dimmable

3000K version tested. 10 lamps tested on P100, P400, P800, Envirosce and PFX system. Dimming smoothly without any problems. Use 2 lamps minimum on any circuit.



Megaman LED Reflector GU10 – 7W 500lm

Version tested LR2307dDG-WFL-GU10_2800k
10 lamps tested on P100, P400, P800, Envirosce and PFX system.

Found to dim smoothly with Futronix dimmers - use 2 lamps minimum on a circuit.



**Megaman Energy saving LED reflector PAR16
8W**

Version tested LR1108D-50H35D
Found to dim smoothly with Futronix dimmers.
Manufacturer recommends minimum 2 and
maximum 7 lamps per circuit



**BELL Mini Dimmable 5W LED GU10
Stock Code 05136**

Operates smoothly with all Futronix dimmers.
Cool white version tested. 10 lamps tested on
P100, P400, P800, Envirosce and PFX system.

Minimum load 2 x 5W LED in a circuit
Maximum load 12 x 5W LED in a circuit (may vary
depending on dimmer type)



**BELL Dimmable 7W LED GU10 3000K, 36 deg -
Stock Code: 05177**

Operates smoothly with all Futronix dimmers.

Minimum load 1 x 7W LED in a circuit
Maximum load 10 x 7W LED in a circuit (may vary
depending on dimmer type)



**BELL Dimmable 8W LED GU10
BC/B22**

Cool White version tested.
10 lamps tested on P100, P400, P800,
Envirosce and PFX system.

Found to operate smoothly with Futronix dimmers.
Use 2 lamps minimum on a circuit.



LEDUnited LEDGU107/ 7W GU10 dimmable

10 lamps tested on P100, P400, P800, Envirosene and PFX system. Dimming function operates smoothly without any issues - use 2 lamps minimum on any circuit. All lamps tested by Futronix on P100, P400, P800, Hx and Envirosene/ PFX systems



AURORA PAR16 GU10 6W Dimmable LED Lamp AU-DGU106/40

Starts at 15% and dims smoothly from there up. 4000k version tested

10 lamps tested on P100, P400, P800, Envirosene and PFX system. Manufacturer recommends minimum 2 and maximum 7 lamps per circuit



ENLITE PAR-16 GU10 6W Dimmable LED Lamp EN-DGU1006/40

Starts at 15% and dims smoothly from there up. 4000k version tested.

10 lamps tested on P100, P400, P800, Envirosene and PFX system. Manufacturer recommends minimum 2 and maximum 7 lamps per circuit.



GE GU10 Energy Smart 4.5W

Tested on P800 and Envirosene and found to work satisfactorily from around 15% upwards. Available from CPC: LP0644802

SORAA SM16GW-07-25D-927-03-S3

Tested on P100, P400 and P800 Min: 2, Max: Tested 10 - operates from Dim Level 15. HX and Envirosene Min: 2, Max: Tested 10 Operates from Dim Level 30.



RECOMMENDED LED LAMPS – AR111

BELL DIMMABLE 18W LED AR111

Warm White - Stock Code: 04411

Operates smoothly with all Futronix dimmers.

Warm white version tested.

12 lamps tested on P100, P400, P800, starts at 20% while Enviroscene/ HX system starts at 30% dimming and operates smoothly from that point upwards.

In all cases minimum load = 2 x 18W LED's connected per circuit.



Philips Master LEDspot LV D 15W 927 AR111 dimmable

10 lamps tested on Enviroscene with smooth dimming from 15-100% range.

10 lamps tested on P100, P400, P800 smooth dimming from 20- 100% - use 2 lamps minimum on any circuit. Use with Aurora AUE60 transformer, or Philips Driver Primaline 70 @ 1 or 2 lamps per transformer.



LEDUnited LEDAR111D 15W AR111 dimmable

10 lamps tested on P100, P400, P800, Enviroscene and PFX system. Dimming function operates smoothly without any issues - use 2 lamps minimum on any circuit. All lamps tested by Futronix on P100, P400, P800, Hx and Enviroscene/ PFX systems.



Megaman ER0210-50HxxD AR111 dimmable

10 lamps tested on P100, P400, P800 smooth dimming from 10-100%.

- use 2 lamps minimum on any circuit. Use with Megaman LD0310X1v 1-10v driver.



RECOMMENDED LED LAMPS – MR16

OSRAM PARATHOM PRO MR-16 42 Advanced

Dims well using wire-wound transformer or equivalent electronic transformer but must be the PRO & Advanced models.



SAMSUNG LED REFLECTOR MR-16 7W SI-M8T085AD1EU

Tested on P400, P800 Envirosceine and PFX using Aurora AUE60 and Mode ET55 transformers. Works well, starts from level 20 on Envirosceine and level 15 on P800. Used as a low energy replacement for traditional 35W halogen lamps. Available from CPC code: LP0826207.



RECOMMENDED LED LAMPS – E27

SAMSUNG LED A 60 6.7w 2700k dimmable – SI-I8W071181EU

3 x E27 base lamps tested on P400 P800 and Envirosceine. Works well on Envirosceine and P800/ P400. LED starts at 15% dimming. Available from CPC code: LP0824807. Low cost. Looks like a standard frosted bulb.



BELL DIMMABLE 4W LED ES 125 2000K

Amber - Stock Code: 01472

12 lamps tested on all the following dimmers - P100 dimming starts at 20%, P400 & P800 dims down to 15% but requires a higher setting (brighter Scene setting) to first turn the lamp on.

Envirosceine/ HX system starts at 30% dimming and dims smoothly from that point upwards. In all cases minimum load = 2 x 4W LED's connected per circuit



BELL DIMMABLE 4W LED ES 80 2000K

Amber - Stock Code: 01474

12 lamps tested on all the following dimmers - P100, P400 & P800 dimming starts at 20%. P100 minimum load = 2 x 4W, while P400 & P800 minimum load = 1 x 4W LED's connected per circuit.

Enviroscene/ HX system starts at 30% dimming and dims smoothly from that point upwards. Minimum load = 2 x 4W LED's connected per circuit



SPECTRUM LEDS DIMMABLE 4.5W CANDLE LAMPS

Tested on P800 and Enviroscene and found to work satisfactorily, starts from around 15% upwards. Available from CPC – SES: LP0643228 BC: LP0643428



BELL 4w SES LED C35 Clear Candle dimmable 2700K

(R50) - Stock Code: 05139

Tested on P100, P400, P800, Hx & Enviroscene – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 10 tested



ILLUMISLIGHTS 4 & 6.5W E27/ B22 base dimmable

10 lamps tested on P400, P800. Dimming function operates smoothly without any issues - use 2 lamps minimum on any circuit.



RECOMMENDED LED LAMPS – GLS

BELL 9W LED GLS ES Dimmable 2700K - Stock Code: 05617

Tested on P100, P400, P800, Hx & Envirosce – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 10 tested



BELL 7W LED GLS ES Dimmable 2700K - Stock Code: 05181

Tested on P100, P400, P800, Hx & Envirosce – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 10 tested



RECOMMENDED LED LAMPS – PAR16

BELL SES 6W LED PAR 16 Dimmable 3000K (R50) - Stock Code: 05600

Tested on P100, P400, P800, Hx & Envirosce – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 10 tested



RECOMMENDED LED LAMPS – PAR20

BELL 10W ES LED PAR 20 Dimmable 3000K (R64) - Stock Code: 05601

Tested on P100, P400, P800, Hx & Envirosce – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 10 tested



RECOMMENDED LED LAMPS – PAR25

BELL 10W ES LED PAR 25 Dimmable 3000K (R80) - Stock Code: 05602

Tested on P100, P400, P800, Hx & Enviroscene – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 10 tested



RECOMMENDED LED LAMPS – PAR30

BELL 14W ES LED PAR 30 Dimmable 3000K (R90) - Stock Code: 05603

Tested on P100 - Max: 10, P400 - Max: 8 tested, P800 - Max: 8, Hx - Max: 6 & Enviroscene Max: 6 tested – works well on all dimmers, lamp output starts from approximately 15% upwards.



RECOMMENDED LED LAMPS – PAR38

SYLVANIA ULTRA (Professional series) PAR-38 - 21W

Indoor/ outdoor 1150 Lumens version tested, works very well with all Futronix dimmers both 50 & 60Hz.



BELL 14W ES LED PAR 38 Dimmable 3000K (R90) - Stock Code: 05604

Tested on P100, P400, P800, Hx & Enviroscene – works well on all dimmers, lamp output starts from approximately 15% upwards. Min: 1 - Max: 5 tested



RECOMMENDED LED LAMPS – COB

Vossloh Schwabe DL- Pro 12 & 18

Dimming up and down operates very smoothly with Futronix range of dimmers.

Note: manufacturers minimum lamp number requirements.



Cube Lighting Flip LED. FLR3/50/W7/30/WH

Tested 1-5 lamps on P400, P800 and Envirosceen/PFX using Hamilton DIM700mA/18W 6-26V transformers. Works well, but transformers quite mechanically noisy.

Please note the LED lamp did NOT generate any mechanical noise in use. The noise was limited to Hamilton transformers only.



Halers Lamps H4FF-WDIM 8.5W IP65 downlight

2 - 11 lamps tested on P100, P400, P800, Envirosceen and PFX system turns on at 25% and dims smoothly to 100% - use 2 lamps minimum on any circuit.



Halers Lamps H5 500 Symetric downlight dimmable

2 - 11 lamps tested on P100, P400, P800, Envirosceen and PFX system turns on at 25% and dims smoothly to 100% - use 2 lamps minimum on any circuit.



**Halers Lamps H5 500 Symetric
downlight dimmable**

2 - 3 lamps tested on P100, P400, P800, Envirosene and PFX system turns on at 25% and dims smoothly to 100% - use 2 lamps minimum on any circuit.



RECOMMENDED LED TRANSFORMERS

MeanWell LPF40D-12

Found to operate smoothly when dimming LED 12v strips using P800 1-10v control and power switched by mains output in ON/OFF mode (effectively 2 circuits used). Only 1 transformer tested. It is important that the transformer load is correct, as a low current load will NOT dim. The later LPF dimmable 1-10v versions also work well



**Lightech LED 36 CC 700 P240DL (1-10V)
(output 12v-48v)**

A single transformer tested on P400, P800 and Envirosene using a mains switching channel and 1-10v control. Worked well on all above systems.



Osram ET-A 60/220-240

Works well with Philips MR16 LEDs



Deltalight DC JOLLY TN101 (1-10v)

Tested on bench with P400 using 12v led strip. Powered from one mains channel in ON/OFF mode and one 1-10v output channel. Dimming found to operate smoothly.



Hamilton DIM700mA/18W 6-26V transformer

Tested 1-5 on P400, P800 and Envirosene/PFX and found to work ok. Transformer is quite mechanically noisy at low-to-medium dimming levels and, therefore, we would recommend testing samples in the ceiling before using.



Power LED Model PCC70018TD 6-26V

Tested one transformer only. Found to work well. Transformer is quite mechanically noisy at low to medium dimming levels and therefore we would recommend testing samples in the ceiling before using.



Led United Triac CH-120 /80/45/ 20-TD transformer (80/ 45/ 20 Watt)

Tested on P400, P800 and Envirosce/ PFX and found to work well. 80W version of transformer is quite mechanically noisy at low-to-medium dimming levels and, therefore, we would recommend testing samples in the ceiling before using. These transformers are ideal for dimming 12v LED strips.



Aurora AU-LEDD7010CC 10W 700ma Dimmable LED Driver

Tested as single and 4 lamps on P100, P400, P800 and Envirosce/ PFX. Works well with good dimming level control and minimum flicker at low levels. On Envirosce /PFX, good range of brightness level setting available on settings above level 10.



Aurora AU-LEDD3510CC 10W 350ma Dimmable LED Driver

Tested as single and 4 lamps on P100, P400, P800 and Envirosce/ PFX. Works well with good dimming level control and minimum flicker at low levels. On Envirosce /PFX, good range of brightness level setting available on settings above level 10.



Both of the above Aurora transformers tested together on same and separate circuits on dimmers (2 x 4 lamps and 1 x 8 lamps loading). Performance not affected.

Note: the above are Aurora models in “red” tint semi-transparent plastic cases only.

Power LED Model PCC70018TD 6-26V

Tested one transformer only. Found to work well. Only reservation is that the transformer is quite mechanically noisy at low-to-medium dimming levels and therefore we would recommend testing samples in the ceiling before using.



JCC FGLED6 6W 240v Model JC94472BN/CH/WH

This complete fitting was tested on P400, P800, Envirosceine and PFX systems and found to be satisfactory.



RECOMMENDED FOR SWITCHING ONLY

Philips Master LEDspot 10W MR16

3000K version tested. 10 lamps tested with Futronix compatible transformers and found to be only compatible with Futronix switching systems.



Philips Master LEDspot MR16 LV - 10W

10 lamps tested with Futronix compatible transformers and found to be only compatible with Futronix switching systems.



**British Electric Lamps Dimmable LED GU10
6W**

Cool White version tested.
10 lamps tested with Futronix compatible
transformers and found to be only compatible with
Futronix switching systems



Aurora Luna PAR16 GU10

Tested with Futronix compatible transformers and
found to be only compatible with Futronix
switching systems.



**Lightech LED-28-700-240-TB (output: 5.6v -
29v)**

Single transformer tested on Envirosce, P400
and P800 with a single, three LED cluster, 700ma
lamp. Tested with Futronix compatible
transformers and found to be only compatible with
Futronix switching systems



Ledtek Dimmable GU10

Tested with Futronix compatible transformers and
found to be only compatible with Futronix
switching systems.



**SAMSUNG LED REFLECTOR PAR 16 GU10 –
SI-MV073BB1EU 3000K**

Low cost lamps that are suitable for ON/OFF operation. Available from CPC code: LP0825407



The LEDs and transformers above have been tested on the Futronix dimmer range from Domestic and Commercial systems.

The true data for industrial and domestic installations can only be collected over time. Please help us by providing feedback on lamp and dimmer performance: technical@futronix.com

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