

# Operation of LED-Retrofit Lamps LED Star Reflector PAR16 GU10 with various Dimmers



Legend: green dimmability very good (under 25% light)  
yellow dimmable (under 40% light)  
red dimmability critical (flickering and/or noise possible, and/or only more than 40% light)  
white not tested



36° / 60°



120°

T: Trailing edge phase dimmer  
L: Leading edge phase dimmer  
U: Universal dimmer

| PAR16 35 36° | PAR16 50 36° | PAR16 80 |      |
|--------------|--------------|----------|------|
| 43820751     | 44122568     | 43922570 |      |
| 44122581     | 44122569     | 43922571 | 36°  |
|              | 44020754     | 44122572 |      |
|              |              | 44020758 |      |
|              |              | 44020759 | 60°  |
|              |              | 44122573 |      |
|              |              | 44122574 | 120° |
|              |              | 44020762 |      |

| Manufacturer           | Dimmer-Type, Model | Mains/ Power | Load Range [W] | Dimming Method | 1 Lamp  | 4 Lamps | 1 Lamp  | 4 Lamps | 1 Lamp  | 4 Lamps |
|------------------------|--------------------|--------------|----------------|----------------|---------|---------|---------|---------|---------|---------|
| ABB                    | STD 50-3           | L            | 60-500         | 230V / 50Hz    | 100-0%  | 100-20% | 100-15% | 100-15% | 100-12% | 100-14% |
| Altenburger Electronic | 50.30              | T            | 15-350         | 230V / 50Hz    |         | 100-25% | 100-40% | 100-0%  | 100-10% | 100-10% |
| AURORA                 | DSP400X            | L            | 5-130          | 230V / 50Hz    | 95-0%   | 95-0%   | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Berker                 | 2861               | T            | 50-420         | 230V / 50Hz    |         | 100-5%  | 95-10%  | 100-5%  | 100-5%  | 100-0%  |
| BG                     | DM400AP            | L            | 60-400         | 230V / 50Hz    |         | 95-0%   | 100-20% | 95-20%  | 100-0%  | 100-0%  |
| bticino                | NT4402N            | L            | 500            | 230V / 50Hz    |         | -       | -       | -       | 85-2%   | 99-45%  |
| Busch-Jaeger           | 6526 U             | T            | 40-420         | 230V / 50Hz    |         | -       | -       | -       | 90-0%   | 100-0%  |
| Busch-Jaeger           | 2247U              | L            | 500            | 230V / 50Hz    | 95-0%   | 100-0%  | 95-5%   | 100-5%  | 100-0%  | 100-2%  |
| Busch-Jaeger           | 2250U              | L            | 600            | 230V / 50Hz    | 95-0%   | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 100-0%  |
| Busch-Jaeger           | 6513U-102          | T            | 40-420         | 230V / 50Hz    | 98-16%  | 88-11%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Busch-Jaeger           | 6523U-102          | L            | 2-100          | 230V / 50Hz    | 95-50%  | 97-5%   | 95-70%  | 95-60%  | 100-50% | 100-50% |
| CENTURY CONTROL        | MULTI DIMMER       | L            | 60-600         | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 100-0%  |
| CLICK SCOLMORE         | MD9011             | T            | 5-100          | 230V / 50Hz    | 95-0%   | 95-0%   | 100-30% | 100-25% | 100-0%  | 100-0%  |
| CLICK SCOLMORE         | MD9014             | L            | 5-100          | 230V / 50Hz    | 95-0%   | 95-0%   | 100-0%  | 100-0%  | -       | 99-0%   |
| CLIPSAL                | 32ELEDM            | L            | 1-400          | 230V / 50Hz    |         | 100-0%  | 100-0%  | 100-0%  | 100-5%  | 100-0%  |
| DATA                   | SP0081             | T            | 3-250          | 230V / 50Hz    | 95-0%   | 100-0%  | 95-0%   | 95-0%   | 100-0%  | 100-0%  |
| DimMax                 | 420SL              | L/T          | 200            | 230V / 50Hz    | 100-0%  | 100-0%  | 95-0%   | 100-0%  | 100-0%  | 100-0%  |
| DINUY                  | RE EL1 LE1         | L/T          | 400            | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| ELKO                   | 420GLE/I           | T            | 40-420         | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Eltako                 | EUD61NPN-UC        | L/T          | 5-400          | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Feller                 | 40600 RLC          | L            | 20-600         | 230V / 50Hz    | 100-4%  | 100-5%  | 100-25% | 100-25% | 99-3%   | 100-6%  |
| Gira                   | 030700             | T            | 20-525         | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 50-0%   |
| Gira                   | 117600             | U            | 50-420         | 230V / 50Hz    | 100-0%  | 100-5%  | 95-70%  | -       | 99-5%   | 99-4%   |
| Gira                   | System3000         | T            | 20-210         | 230V / 50Hz    | 95-0%   | 100-0%  | 95-0%   | 95-0%   | 100-0%  | 100-0%  |
| Hager                  | WUD87              | T            | 400            | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Hamilton               | KP1X40             | L            | 400            | 230V / 50Hz    | 100-20% | 100-0%  | 100-0%  | 100-0%  | -       | 100-0%  |
| Honeywell              | K1501LV            | L            | 60-240         | 230V / 50Hz    | 100-13% | 100-0%  | 95-10%  | 100-5%  | 100-5%  | 99-4%   |
| Jung                   | 225 NVDE           | L            | 20-500         | 230V / 50Hz    | 100-0%  | 100-15% | 100-0%  | 100-0%  | 100-45% | 99-0%   |
| Jung                   | 1224 LEDUDE        | T            | 50-420         | 230V / 50Hz    |         | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Knightsbridge          | VFR200M            | T            | 200            | 230V / 50Hz    | 95-0%   | 100-0%  | 95-0%   | 100-0%  | 100-0%  | 100-0%  |
| KOPP                   | 8455               | L            | 3-100          | 230V / 50Hz    | 95-0%   | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-15%  |
| Legrand                | 665114 L400        | L            | 75             | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 99-0%   |
| Legrand                | 066721             | L            | 3-75           | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  |         |         |
| Legrand                | 770062             | T            | 5-60W          | 230V / 50Hz    | 99-45%  | 99-45%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Legrand                | CAT400L            | T            | 10-400         | 230V / 50Hz    |         | 95-35%  | 95-30%  | 100-25% | 100-40% | 100-40% |
| Legrand                | 665114             | T            | 3-75           | 230V / 50Hz    |         |         | 100-50% | 100-50% | 100-20% | 100-45% |
| MASTER                 | DM-DGL             | L            | 1000           | 230V / 50Hz    | 100-0%  | 100-0%  | 100-85% | 100-90% | 99-0%   | 100-0%  |
| MASTER                 | DM-2500            | L            | 2500           | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Merten                 | MEG 5136           | T            | 20-315         | 230V / 50Hz    | 100-0%  | 100-0%  | 65-5%   | 100-0%  | 99-0%   | 99-0%   |
| Merten                 | MEG 5133           | L            | 40-600         | 230V / 50Hz    | 100-2%  | 100-0%  | 95-0%   | 100-0%  | 100-0%  | 100-0%  |
| Merten                 | MEG 5137           | T            | 20-630         | 230V / 50Hz    | 100-0%  | 100-0%  | 95-0%   | 100-0%  | 100-0%  | 100-0%  |
| Merten                 | MEG 5170-0300      | T            | 10-200         | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 92-3%   | 92-3%   |
| Merten                 | MEG 5131           | L            | 40-400         | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 99-0%   |
| Merten                 | MEG 5140           | L            | 9-100          | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Merten                 | MEG 5135           | L            | 60-1000        | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| MK                     | K4501              | L            | 180            | 230V / 50Hz    | 100-0%  | 95-0%   | 100-5%  | 100-0%  | 100-0%  | 100-2%  |
| NIKO                   | 310-01900 / 01901  | L/T          | 5-200          | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| NIKO                   | 330-00700 / 00701  | L/T          | 5-200          | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| OBI                    | W13-C62            | T            | 20-300         | 230V / 50Hz    | 95-0%   | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| OBI                    | DM175              | T            | 3-200          | 230V / 50Hz    | 95-0%   | 100-0%  | 100-0%  | 100-0%  | -       | 99-10%  |
| OBI                    | DM075              | T            | 2-75           | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | -       |
| Osram                  | Hti DALI 315 DIM   | DALI T       | 20-315         | 230V / 50Hz    | 100-0%  | 100-0%  | 95-0%   | 100-0%  | 99-0%   | 99-0%   |
| PEHA                   | 435 HAN            | L            | 60-600         | 230V / 50Hz    | 100-30% | 100-30% | 100-25% | 100-25% | 100-15% | 100-15% |
| Schneider              | ELKO 400GLI        | /            | 400            | 230V / 50Hz    |         | 100-50% | 100-20% | 100-20% | 97-30%  | 97-20%  |
| Schneider              | mertenSBD200LED    | L            | 4-400          | 230V / 50Hz    | 100-0%  | 95-0%   | 95-0%   | 100-0%  | 100-0%  | 100-0%  |
| Shuttle                | SDIM-T-LED-500W    | T            | 2-500          | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| SIEMENS                | 5TC8 284           | T            | 20-525         | 230V / 50Hz    |         | 95-30%  | 100-95% | 100-95% | -       | -       |
| theben                 | DIMAX 544 plus P   | T            | 250            | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 100-0%  |
| theben                 | DIMAX 534 plus     | T            | 400            | 230V / 50Hz    | 100-0%  | 100-0%  | -       | -       | 99-0%   | 99-0%   |

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|-----------------|--------------------|--------------|----------------|----------------|---------|---------|---------|---------|---------|---------|
| VADSBO          | LD 220             | T            | 1-200          | 230V / 50Hz    | 100-70% | 100-60% | 100-50% | 95-50%  | 99-40%  | 99-40%  |
| VARILIGHT       | HQ3W               | L            | 400            | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| Varilight V-Pro | JQP401W            | T            | 120            | 230V / 50Hz    | 95-0%   | 95-0%   | 95-0%   | 100-0%  | 100-0%  | 100-0%  |
| Vimar           | 20135              | L/T          | 3 - 100        | 230V / 50Hz    | 100-16% | 100-20% | 100-15% | 100-15% | 100-12% | 100-15% |
| ZANO            | WH401              | L            | 400            | 230V / 50Hz    | 100-0%  | 95-0%   | 100-0%  | 100-0%  | 100-0%  | 100-0%  |
| ZANO            | WH251              | L            | 250            | 230V / 50Hz    |         | 100-40% | 95-30%  | 100-0%  | 99-20%  | 99-15%  |
| ZANO            | Z GRID 500         | L            | 500            | 230V / 50Hz    | 100-0%  | 100-0%  | 100-0%  | 100-0%  | 99-0%   | 99-0%   |

Typical values. Test performed with regarded lamps named. The test results reflect the measurement of the individual devices that were used in tests. Radium does not take over any responsibility, warranty or liability that this results can also be achieved by using the devices under other conditions or when using successor models of the tested devices or different models of the same manufacturer. The test results were achieved by using the above mentioned LED-lamp types.

Radium does not take over any responsibility, warranty or liability that these results can also be achieved by using the devices under other conditions or when using other LED-lamp types.

Due to the big number of electronic components and many other influence factors noise can emerge in unfavourable condiditons, which may be well audible in the case of resonance.

Generally speaking, employment of trailing edge dimmers is recommended. They require the neutral wire for installation.

Changes, errors and omissions excepted.