

Operation of LED-Retrofit Lamps LED Star RaLEDina with various Dimmers

Radium

Legende:

green

yellow

red

white

dimmability very good (under 25% light)

dimmable (under 40% light)

dimmability critical (flickering and/or sound possible, and/or only more than 40% light)

not tested

| Manufacturer    | Dimmer-Type, Model      | Mains/ Power | Load Range [W] | Dimming Method |
|-----------------|-------------------------|--------------|----------------|----------------|
| ABB             | STD 50-3                | 230/50Hz     | 60-500         | L              |
| Altenburger     | 50,3                    | 230/50Hz     |                |                |
| AURORA          | DSP 400                 | 230/50Hz     | 400            | L              |
| Berker          | 2861                    | 230/50Hz     | 50-420         | U              |
| Bticino         | L/N/NT4411NHC/HD/HS4411 | 230/50Hz     |                |                |
| bticino         | NT4402N                 | 230/50Hz     | 500            | R              |
| Busch-Jaeger    | 6513 U-102              | 230/50Hz     | 420            | T              |
| Busch-Jaeger    | 6523 U-102              | 230/50Hz     | 40-420         | T              |
| Busch-Jaeger    | 2250 U                  | 230/50Hz     | 60-600         | L              |
| Busch-Jaeger    | 6526 U                  | 230/50Hz     |                |                |
| CENTURY CONTROL | MULTI DIMMER            | 230/50Hz     | 60-600         | U              |
| DINUY           | RE EL1 LE1              | 230/50Hz     | 400            | LED            |
| ELKO            | 400GLI                  | 230/50Hz     |                |                |
| ELKO            | 315GLE                  | 230/50Hz     | 20-315         | T              |
| ELKO            | 600GLE/I                | 230/50Hz     |                |                |
| ELKO            | 600GLi                  | 230/50Hz     | 40-600         | U              |
| ELKO            | 420GLE/I                | 230/50Hz     | 40-420         | U              |
| ELKO            | 1000LRI                 | 230/50Hz     |                |                |
| ELKO            | 630GLE                  | 230/50Hz     | 20-630         | U              |
| Eltako          | EUD61NPN-UC             | 230/50Hz     | 5-400          | R / L / C      |
| Feller          | 40200.LEDxxx            | 230/50Hz     |                |                |
| Feller          | 40600 RLC               | 230/50Hz     | 20-600         | U              |
| Feller          | 40600.RC                | 230/50Hz     |                |                |
| Feller          | 40600.RL                | 230/50Hz     |                |                |
| Feller          | 40420.RLC               | 230/50Hz     |                |                |
| Feller          | 31000                   | 230/50Hz     |                |                |
| GIRA            | 226200                  | 230/50Hz     |                |                |
| Gira            | 030700                  | 230/50Hz     | 20-525         | T              |
| Gira            | 117600                  | 230/50Hz     | 50-420         | U              |
| Gira            | 238500                  | 230/50Hz     |                |                |
| Gira            | 217400                  | 230/50Hz     | 4X20-250       | KNX-U          |
| Hager           | WUD87                   | 230/50Hz     | 400            | LED-U          |
| Hamilton        | KP1X40                  | 230/50Hz     | 400            |                |
| Hugo Müller     | paladin 872110 led      | 230/50Hz     |                |                |
| Jung            | 225 NVDE                | 230/50Hz     | 20-500         | L              |
| Jung            | 225 TDE                 | 230/50Hz     |                |                |
| Jung            | 254 UDIE1               | 230/50Hz     |                |                |

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

| RAL35    |         |         | RAL60    |         |         | RAL120   |         |         |
|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| 43514840 |         |         | 43514841 |         |         | 42614837 |         |         |
| 43514838 |         |         | 43514839 |         |         |          |         |         |
| 1 Lamp   | 2 Lamps | 3 Lamps | 1 Lamp   | 2 Lamps | 3 Lamps | 1 Lamp   | 2 Lamps | 3 Lamps |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 100-0%  | 98-0%    | 98-0%   | 98-0%   |
|          |         |         | 84-0%    | 98-0%   | 99-0%   |          | 97-0%   | 97-0%   |
| 99-0%    | 99-0%   | 100-0%  | 99-0%    | 99-0%   | 100-0%  | 99-0%    | 98-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 87-0%    | 97-0%   | 99-0%   | 82-0%    | 99-0%   | 99-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
|          |         |         |          | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 100-0%  |
| 100-0%   | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   | 100-0%   | 100-0%  | 99-0%   |
|          |         | 100-0%  | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 98-0%   |
| 100-0%   | 99-0%   | 100-0%  | 100-0%   | 100-0%  | 100-0%  | 100-0%   | 99-0%   | 98-0%   |
| 98-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   |
| 99-0%    | 99-0%   | 99-0%   | 98-0%    | 98-0%   | 99-0%   | 98-0%    | 98-0%   | 99-0%   |
|          |         | 99-0%   | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 98-0%   |
| 80-0%    | 100-0%  | 100-0%  | 96-0%    | 99-0%   | 100-0%  | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 99-0%   | 99-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   |
| 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   |
|          | 100-0%  | 100-0%  | 86-0%    | 100-0%  | 100-0%  | 92-0%    | 100-0%  | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 100-0%  | 99-0%    | 100-0%  | 100-0%  |
| 100-0%   | 100-0%  | 100-0%  | 97-0%    | 100-0%  | 99-0%   | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 99-0%   | 99-0%   |
|          | 100-0%  | 100-0%  | 86-0%    | 100-0%  | 100-0%  | 92-0%    | 100-0%  | 99-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   |
| 97-0%    | 98-0%   | 100-0%  | 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   |
|          |         |         | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| 100-0%   | 100-0%  | 100-0%  | 98-0%    | 97-0%   | 98-0%   | 99-0%    | 100-0%  | 99-0%   |
| 93-0%    | 100-0%  | 99-0%   | 87-0%    | 97-0%   | 99-0%   | 87-0%    | 99-0%   | 99-0%   |
| 76-0%    | 96-0%   | 100-0%  | 91-0%    | 96-0%   | 100-0%  | 94-0%    | 99-0%   | 99-0%   |
| 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 99-0%    | 99-0%   | 100-0%  |
| 94-0%    | 91-0%   | 100-0%  |          |         |         | 89-0%    | 88-0%   | 88-0%   |
| 100-0%   | 100-0%  | 100-0%  | 100-0%   | 99-0%   | 100-0%  | 99-0%    | 99-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 98-0%    | 98-0%   | 99-0%   | 98-0%    | 98-0%   | 99-0%   |
|          |         |         | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| 100-0%   | 100-0%  | 100-0%  | 98-0%    | 97-0%   | 98-0%   | 99-0%    | 100-0%  | 99-0%   |
| 93-0%    | 100-0%  | 99-0%   | 87-0%    | 97-0%   | 99-0%   | 87-0%    | 99-0%   | 99-0%   |

Operation of LED-Retrofit Lamps LED Star RaLEDina with various Dimmers

Radium

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

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

| Manufacturer | Dimmer-Type, Model | Mains/ Power | Load Range [W] | Dimming Method |
|--------------|--------------------|--------------|----------------|----------------|
| Jung         | 1224 LEDUDE        | 230/50Hz     |                | LED            |
| Jung         | 3904 REGHE         | 230/50Hz     |                |                |
| Legrand      | 665114             | 230/50Hz     | 400            | U              |
| Legrand      | 574319/574339      | 230/50Hz     | 400            | U              |
| Legrand      | 572239/572739      | 230/50Hz     | 400            | U              |
| Legrand      | 078407/079207      | 230/50Hz     | 400            | U              |
| Legrand      | 048869/048871      | 230/50Hz     | 400            | U              |
| Legrand      | 067083/048869      | 230/50Hz     | 400            | U              |
| Legrand      | 099314             | 230/50Hz     | 300            | RL             |
| Legrand      | 770062             | 230/50Hz     | 400            | RLC            |
| MASTER       | DM-DGL             | 230/50Hz     | 1000           | U / LED        |
| MASTER       | DM-2500            | 230/50Hz     | 2500           | U / LED        |
| Merten       | MEG5136-0000       | 230/50Hz     |                |                |
| Merten       | MEG5134-0000       | 230/50Hz     |                |                |
| Merten       | MEG5139-0000       | 230/50Hz     |                |                |
| Merten       | MEG5137-0000       | 230/50Hz     |                |                |
| Merten       | MEG5133-0000       | 230/50Hz     |                |                |
| Merten       | MEG5138-0000       | 230/50Hz     |                |                |
| Merten       | MEG 5170-0300      | 230/50Hz     | 10-200         | U              |
| Merten       | MEG 5131           | 230/50Hz     | 40-400         | L              |
| Merten       | MEG 5132           | 230/50Hz     |                |                |
| Merten       | MEG5140            | 230/50Hz     | 9-100          | L              |
| Merten       | MEG 5135           | 230/50Hz     | 60-1000        | L              |
| MK           | K4501              | 230/50Hz     | 180            | L              |
| NEXUS        | 881P-01            | 230/50Hz     | 400            | L              |
| NIKO         | 310-0190001901     | 230/50Hz     | 5-200          | U              |
| NIKO         | 330-0070000701     | 230/50Hz     | 5-200          | U              |
| Odace        | S520512            | 230/50Hz     |                |                |
| Odace        | S520511            | 230/50Hz     |                |                |
| Odace        | S520515            | 230/50Hz     |                |                |
| Osram        | HTi DALI 315 DIM   | 230/50Hz     | 20-315         | DALI-T         |
| PEHA         | 435 HAN            | 230/50Hz     | 60-600         | L              |
| Schneider    | 400GLI             | 230/50Hz     | 40-400         | T              |
| Schneider    | SBD315RC           | 230/50Hz     |                |                |
| Schneider    | SBD200LED          | 230/50Hz     | 400            |                |
| Schneider    | SBD600RCRL         | 230/50Hz     |                |                |
| Schneider    | SBD630RC           | 230/50Hz     |                |                |

| RAL35    |         |         | RAL60    |         |         | RAL120   |         |         |
|----------|---------|---------|----------|---------|---------|----------|---------|---------|
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| 43514838 |         |         | 43514839 |         |         |          |         |         |
| 1 Lamp   | 2 Lamps | 3 Lamps | 1 Lamp   | 2 Lamps | 3 Lamps | 1 Lamp   | 2 Lamps | 3 Lamps |
| 76-0%    | 96-0%   | 100-0%  | 91-0%    | 96-0%   | 100-0%  | 94-0%    | 99-0%   | 99-0%   |
| 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 99-0%    | 99-0%   | 100-0%  |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 94-0%    | 98-0%   | 98-0%   |
| 98-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 99-0%   | 98-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 98-0%    | 97-0%   | 98-0%   | 98-0%    | 98-0%   | 98-0%   |
| 93-0%    | 95-0%   | 93-0%   | 93-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   |         |
| 97-0%    | 99-0%   | 97-0%   | 99-0%    |         | 99-0%   |          | 99-0%   | 100-0%  |
| 80-0%    | 100-0%  | 100-0%  | 96-0%    | 99-0%   | 100-0%  | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 97-0%    | 100-0%  | 99-0%   | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 99-0%   | 99-0%   |
|          | 100-0%  | 100-0%  | 86-0%    | 100-0%  | 100-0%  | 92-0%    | 100-0%  | 99-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   |
| 57-0%    | 55-0%   | 56-0%   | 50-0%    | 51-0%   | 51-0%   | 51-0%    | 51-0%   | 51-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 98-0%   |
| 100-0%   | 99-0%   | 100-0%  | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 98-0%   | 97-0%   |
| 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 98-0%   |
| 99-0%    | 99-0%   | 100-0%  | 99-0%    | 99-0%   | 99-0%   | 98-0%    | 98-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 100-0%  | 100-0%  |
| 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 100-0%  | 100-0%   | 100-0%  | 100-0%  |
| 100-0%   | 100-0%  | 100-0%  | 97-0%    | 100-0%  | 99-0%   | 100-0%   | 99-0%   | 99-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 100-0%   | 100-0%  | 100-0%  | 100-0%   | 99-0%   | 100-0%  |
| 97-0%    | 99-0%   | 104-0%  | 102-0%   | 100-0%  | 100-0%  | 99-0%    | 98-0%   | 98-0%   |
|          |         | 99-0%   | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 99-0%   | 98-0%   |
| 80-0%    | 100-0%  | 100-0%  | 96-0%    | 99-0%   | 100-0%  | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 100-0%  | 100-0%  | 97-0%    | 100-0%  | 99-0%   | 100-0%   | 99-0%   | 99-0%   |
| 100-0%   | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 99-0%   | 99-0%   |
|          | 100-0%  | 100-0%  | 86-0%    | 100-0%  | 100-0%  | 92-0%    | 100-0%  | 99-0%   |

Operation of LED-Retrofit Lamps LED Star RaLEDina with various Dimmers

Radium

Legende:

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yellow

red

white

dimmability very good (under 25% light)

dimmable (under 40% light)

dimmability critical (flickering and/or sound possible, and/or only more than 40% light)

not tested

|           |                 |          |         |           |          |         |         |          |         |         |          |         |         |
|-----------|-----------------|----------|---------|-----------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
|           |                 |          |         |           | RAL35    |         |         | RAL60    |         |         | RAL120   |         |         |
|           |                 |          |         |           | 43514840 |         |         | 43514841 |         |         | 42614837 |         |         |
|           |                 |          |         |           | 43514838 |         |         | 43514839 |         |         |          |         |         |
|           |                 |          |         |           | 1 Lamp   | 2 Lamps | 3 Lamps | 1 Lamp   | 2 Lamps | 3 Lamps | 1 Lamp   | 2 Lamps | 3 Lamps |
| Schneider | SBD600RL        | 230/50Hz |         |           | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 98-0%   | 98-0%   |
| Schneider | SBD420RCRL      | 230/50Hz |         |           | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   |
| Schneider | 5170            | 230/50Hz |         |           | 57-0%    | 55-0%   | 56-0%   | 50-0%    | 51-0%   | 51-0%   | 51-0%    | 51-0%   | 51-0%   |
| Schneider | SBD400RL        | 230/50Hz |         |           | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 98-0%   |
| Schneider | ATTD1000RL      | 230/50Hz |         |           | 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   | 98-0%    | 99-0%   | 99-0%   |
| Shuttle   | SDIM-T-LED-500W | 230/50Hz | 2-500   | T & LED-T | 100-0%   | 100-0%  | 100-0%  | 100-0%   | 100-0%  | 100-0%  |          | 99-0%   | 99-0%   |
| Siemens   | 5TC8 284        | 230/50Hz | 20-525  | T         | 89-0%    | 96-0%   | 98-0%   | 81-0%    | 85-0%   | 88-0%   | 83-0%    | 91-0%   | 93-0%   |
| Siemens   | 5WG1-528-1AB31  | 230/50Hz | 20-500  | KNX-U     | 99-0%    | 100-0%  | 99-0%   | 99-0%    | 99-0%   | 99-0%   | 100-0%   | 99-0%   | 100-0%  |
| VADSBO    | LD 220          | 230/50Hz | 1-200   | U         | 98-0%    | 99-0%   | 99-0%   | 99-0%    | 98-0%   | 99-0%   | 98-0%    | 98-0%   | 98-0%   |
| VARILIGHT | HQ3W            | 230/50Hz | 400     |           | 96-0%    | 98-0%   | 98-0%   | 95-0%    | 99-0%   | 98-0%   | 97-0%    | 97-0%   | 98-0%   |
| VARILIGHT | JQP401W         | 230/50Hz | 400     | T         |          | 99-0%   | 100-0%  | 84-0%    | 100-0%  | 100-0%  | 99-0%    | 98-0%   | 99-0%   |
| Vimar     | 20135           | 230/50Hz | 3 - 100 | U         | 100-0%   | 100-0%  | 100-0%  | 99-0%    | 99-0%   | 99-0%   | 99-0%    | 100-0%  | 100-0%  |
| ZANO      | WH401           | 230/50Hz | 400     | L         |          | 99-0%   | 100-0%  | 100-0%   | 99-0%   | 100-0%  | 99-0%    | 99-0%   | 99-0%   |
| ZANO      | WH251           | 230/50Hz | 250     |           | 99-0%    | 99-0%   | 100-0%  | 99-0%    | 99-0%   | 100-0%  | 99-0%    | 98-0%   | 98-0%   |
| ZANO      | Z GRID 500      | 230/50Hz | 500     |           | 99-0%    | 99-0%   | 99-0%   | 82-0%    | 78-0%   | 84-0%   | 98-0%    | 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.