

# Operation of LED-Retrofit Lamps LED Star RaLEDina with different Dimmers

# Radium

Legend:

green	dimmiability very good (under 25% light)
yellow	dimmiability (under 40% light)
red	dimmiability 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	RAL35		RAL60		RAL120	
					1 Lamp	4 Lamps	1 Lamp	4 Lamps	1 Lamp	4 Lamps
ABB	STD 50-3	230/50Hz	60-500	L	92% - 71%	96% - 77%	84% - 66%	86% - 69%	92% - 71%	92% - 71%
Altenburger	50.3	230/50Hz			56% - 15%	55% - 15%	62% - 27%	58% - 24%	92% - 16%	79% - 18%
AURORA	DSP 400	230/50Hz	400	R	100% - 0%	99% - 0%	99% - 13%	99% - 0%	100% - 9%	100% - 12%
Berker	2861	230/50Hz	50-420	U	99% - 0%	100% - 10%	96% - 7%	98% - 15%	87% - 0%	100% - 18%
Bticino	L/N/NT4411NHC/HD/HS4411	230/50Hz			98% - 0%	99% - 0%	88% - 0%	88% - 7%	97% - 8%	92% - 7%
Bticino	L/N/NT4408HC/HD/HS4408	230/50Hz			76% - 0%	100% - 14%	96% - 0%	99% - 18%	94% - 18%	94% - 27%
bticino	NT4402N	230/50Hz	500	R	98% - 23%	99% - 24%	89% - 20%	91% - 26%	100% - 20%	97% - 15%
Busch-Jaeger	6513 U-102	230/50Hz	420	T	91% - 19%	91% - 9%	94% - 30%	93% - 18%	87% - 21%	96% - 33%
Busch-Jaeger	6523 U-102	230/50Hz	40-420	T	97% - 50%	100% - 59%	90% - 27%	93% - 31%	98% - 0%	100% - 21%
Busch-Jaeger	2250 U	230/50Hz	60-600	L	84% - 0%	97% - 17%	97% - 16%	99% - 19%	94% - 9%	98% - 0%
Busch-Jaeger	6526 U	230/50Hz			99% - 0%	100% - 0%	94% - 0%	94% - 0%	95% - 3%	96% - 0%
CENTURY CONTROL	MULTI DIMMER	230/50Hz	60-600	U	99% - 0%	89% - 0%	93% - 0%	96% - 8%	100% - 0%	95% - 18%
ELKO	400GLI	230/50Hz			99% - 0%	99% - 8%	91% - 0%	94% - 0%	88% - 0%	98% - 0%
ELKO	315GLE	230/50Hz	20-315	T	88% - 0%	89% - 0%	81% - 0%	91% - 0%	97% - 2%	96% - 0%
ELKO	600GLE/I	230/50Hz			88% - 13%	88% - 8%	83% - 25%	91% - 19%	97% - 17%	95% - 18%
ELKO	600GLI	230/50Hz	40-600	U	100% - 7%	100% - 6%	96% - 9%	96% - 9%	94% - 0%	100% - 10%
ELKO	420GLE/I	230/50Hz	40-420	U	95% - 0%	77% - 0%	82% - 18%	89% - 14%	98% - 13%	93% - 13%
ELKO	1000LRI	230/50Hz			99% - 0%	99% - 0%	98% - 98%	99% - 99%	100% - 0%	100% - 104%
ELKO	630GLE	230/50Hz	20-630	U	91% - 18%	82% - 16%	91% - 27%	89% - 25%	94% - 22%	95% - 25%
ELKO	RE EL1 LE1	230/50Hz	400	LED	100% - 0%	100% - 0%	99% - 0%	99% - 0%	100% - 0%	100% - 0%
Eltako	EUD61NPN-UC	230/50Hz	5-400	R / L / C	95% - 0%	95% - 0%	87% - 0%	87% - 0%	92% - 0%	91% - 0%
Feller	40600.RLC	230/50Hz	20 - 600	U	88% - 13%	88% - 8%	83% - 25%	91% - 19%	97% - 17%	95% - 18%
Feller	40600.RC	230/50Hz			91% - 18%	82% - 16%	91% - 27%	89% - 25%	94% - 22%	95% - 25%
Feller	40600.RL	230/50Hz			100% - 7%	100% - 6%	96% - 9%	96% - 9%	94% - 0%	100% - 10%
Feller	40200.LEDxxx	230/50Hz	20 - 600	U	100% - 8%	99% - 15%	93% - 13%	94% - 17%	94% - 11%	98% - 19%
Feller	40420.RLC	230/50Hz			95% - 0%	77% - 0%	82% - 18%	89% - 14%	98% - 13%	93% - 13%
Feller	31000	230/50Hz			99% - 0%	99% - 0%	98% - 98%	99% - 99%	100% - 0%	100% - 104%
GIRA	226200	230/50Hz			99% - 0%	100% - 0%	94% - 8%	97% - 0%	95% - 0%	100% - 0%
Gira	030700	230/50Hz	20-525	T	87% - 8%	88% - 0%	89% - 21%	87% - 17%	95% - 15%	92% - 16%
Gira	117600	230/50Hz	50-420	U	70% - 7%	86% - 7%	89% - 21%	88% - 18%	92% - 15%	92% - 16%
Gira	238500	230/50Hz			99% - 13%	100% - 20%	94% - 18%	94% - 22%	95% - 17%	98% - 23%
Gira	217400	230/50Hz	4X20-250	KNX-U	97% - 0%	98% - 0%	96% - 17%	96% - 13%	98% - 10%	100% - 12%
Hager	WUD87	230/50Hz	400	LED-U	76% - 0%	76% - 0%	91% - 29%	89% - 14%	98% - 14%	98% - 13%
Hamilton	KP1X40	230/50Hz	400		99% - 0%	100% - 0%	97% - 0%	98% - 0%	98% - 0%	100% - 0%
Hugo Müller	paladin 872110 led	230/50Hz			100% - 0%	100% - 0%	99% - 0%	99% - 0%	100% - 0%	100% - 0%
Jung	225 NVDE	230/50Hz	20-500	L	99% - 0%	100% - 0%	94% - 8%	97% - 0%	95% - 0%	100% - 0%
Jung	225 TDE	230/50Hz			87% - 8%	88% - 0%	89% - 21%	87% - 17%	95% - 15%	92% - 16%
Jung	254 UDIE1	230/50Hz			70% - 7%	86% - 7%	89% - 21%	88% - 18%	92% - 15%	92% - 16%
Jung	1224 LEDUDE	230/50Hz		LED	99% - 13%	100% - 20%	94% - 18%	94% - 22%	95% - 17%	98% - 23%
Jung	3904 REGHE	230/50Hz			97% - 0%	98% - 0%	96% - 17%	96% - 13%	98% - 10%	100% - 12%
Legrand	665114	230/50Hz	400	U	98% - 0%	99% - 0%	88% - 0%	88% - 7%	87% - 0%	92% - 7%
Legrand	067083=048869=048869=048871=078407=079207=572239=572739=574319=574339	230/50Hz			98% - 0%	99% - 0%	88% - 0%	88% - 7%	87% - 0%	92% - 7%
Legrand	770061	230/50Hz	400	RL	93% - 0%	87% - 0%	92% - 0%	93% - 3%	96% - 0%	96% - 8%
Legrand	770062	230/50Hz	400	RLC	99% - 0%	100 - 18%	94 - 7%	96% - 22%	93% - 10%	100% - 25%
Legrand	099314	230/50Hz	300	RL	99% - 0%	99% - 0%	96% - 0%	96% - 14%	93% - 5%	100% - 14%
Legrand	078405	230/50Hz	600	RL	76% - 0%	100% - 14%	96% - 0%	96% - 18%	97% - 8%	100% - 19%
MASTER	DM-DGL	230/50Hz	1000	U / LED	97% - 36%	100% - 36%	97% - 38%	99% - 39%	100% - 41%	100% - 42%
MASTER	DM-2500	230/50Hz	2500	U / LED	97% - 48%	100% - 10%	98% - 0%	99% - 0%	100% - 0%	100% - 0%
Merten	MEG5136-0000	230/50Hz			88% - 0%	89% - 0%	81% - 0%	91% - 0%	97% - 2%	96% - 0%
Merten	MEG5134-0000	230/50Hz			100% - 8%	99% - 15%	93% - 13%	94% - 17%	94% - 11%	98% - 19%
Merten	MEG5139-0000	230/50Hz			88% - 13%	88% - 8%	83% - 25%	91% - 19%	97% - 17%	95% - 18%
Merten	MEG5137-0000	230/50Hz			91% - 18%	82% - 16%	91% - 27%	89% - 25%	94% - 22%	95% - 25%
Merten	MEG5133-0000	230/50Hz			100% - 7%	100% - 6%	96% - 9%	96% - 9%	94% - 0%	100% - 10%
Merten	MEG5138-0000	230/50Hz			95% - 0%	77% - 0%	82% - 18%	89% - 14%	98% - 13%	93% - 13%
Merten	MEG 5170-0300	230/50Hz	10-200	U	100% - 37%	100% - 38%	94% - 34%	93% - 33%	94% - 28%	97% - 38%
Merten	MEG 5131, MEG 5132	230/50Hz			89% - 0%	99% - 17%	83% - 5%	90% - 21%	80% - 9%	95% - 25%
Merten	MEG 5140	230/50Hz	9-100	L	87% - 0%	99% - 0%	96% - 0%	98% - 17%	97% - 8%	100% - 17%
Merten	MEG 5135	230/50Hz	60-1000	L	99% - 0%	99% - 0%	98% - 98%	99% - 99%	100% - 0%	100% - 104%
MK	K4501	230/50Hz	180	L	92% - 0%	98% - 8%	85% - 9%	89% - 13%	92% - 5%	93% - 14%
NEXUS	881P-01	230/50Hz	400	L	99% - 0%	100% - 0%	96% - 0%	98% - 0%	95% - 13%	100% - 0%
NIKO	310-01900	230/50Hz	5-200	U	100% - 0%	100% - 0%	99% - 0%	99% - 0%	100% - 4%	100% - 4%
NIKO	330-00700	230/50Hz	5-200	U	100% - 0%	100% - 0%	99% - 0%	99% - 0%	100% - 8%	100% - 8%
Odace	S520511	230/50Hz			100% - 7%	100% - 6%	96% - 9%	96% - 9%	94% - 0%	100% - 10%
Odace	S520512	230/50Hz			100% - 8%	99% - 15%	93% - 13%	94% - 17%	94% - 11%	98% - 19%
Odace	S520515	230/50Hz			95% - 0%	77% - 0%	82% - 18%	89% - 14%	98% - 13%	93% - 13%
Odace	S520518	230/50Hz			87% - 0%	99% - 0%	96% - 0%	98% - 17%	97% - 8%	100% - 17%

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Legend:

green	dimmiability very good (under 25% light)
yellow	dimmiability (under 40% light)
red	dimmiability 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	RAL35		RAL60		RAL120	
					1 Lamp	4 Lamps	1 Lamp	4 Lamps	1 Lamp	4 Lamps
Osram	HTi DALI 315 DIM	230/50Hz	20-315	DALI-T	91% - 19%	85% - 16%	90% - 27%	90% - 25%	94% - 23%	96% - 25%
PEHA	435 HAN	230/50Hz	60-600	L	96% - 0%	100% - 0%	87% - 0%	91% - 0%	87% - 0%	95% - 0%
Schneider	400GLI	230/50Hz	40-400	T	99% - 0%	99% - 8%	91% - 0%	94% - 0%	88% - 0%	98% - 0%
Schneider	SBD315RC	230/50Hz			88% - 0%	89% - 0%	81% - 0%	91% - 0%	97% - 2%	96% - 0%
Schneider	SBD200 LED	230/50Hz	400		100% - 8%	99% - 15%	93% - 13%	94% - 17%	94% - 11%	98% - 19%
Schneider	SBD600RCRL	230/50Hz			88% - 13%	88% - 8%	83% - 25%	91% - 19%	97% - 17%	95% - 18%
Schneider	SBD630RC	230/50Hz			91% - 18%	82% - 16%	91% - 27%	89% - 25%	94% - 22%	95% - 25%
Schneider	SBD600RL	230/50Hz			100% - 7%	100% - 6%	96% - 9%	96% - 9%	94% - 0%	100% - 10%
Schneider	SBD420RCRL	230/50Hz			95% - 0%	77% - 0%	82% - 18%	89% - 14%	98% - 13%	93% - 13%
Schneider	5170	230/50Hz			100% - 37%	100% - 38%	94% - 34%	93% - 33%	94% - 28%	97% - 38%
Schneider	SBD400RL	230/50Hz			89% - 0%	99% - 17%	83% - 5%	90% - 21%	80% - 9%	95% - 25%
Schneider	SBDSPL	230/50Hz			87% - 0%	99% - 0%	96% - 0%	98% - 17%	97% - 8%	100% - 17%
Schneider	ATTD1000RL	230/50Hz			99% - 0%	99% - 0%	98% - 98%	99% - 99%	100% - 0%	100% - 104%
Shuttle	SDIM-T-LED-500W	230/50Hz	2-500	T & LED-T	93% - 0%	95% - 0%	96% - 0%	95% - 0%	100% - 8%	99% - 11%
Siemens	5TC8 284	230/50Hz	20-525	T	92% - 21%	87% - 0%	92% - 30%	87% - 11%	94% - 13%	88% - 0%
Siemens	5WG1-528-1AB31	230/50Hz	20-500	KNX-U	100% - 0%	100% - 0%	97% - 27%	97% - 0%	95% - 11%	100% - 16%
VADSBO	LD 220	230/50Hz	1-200	U	99% - 13%	99% - 35%	98% - 0%	99% - 0%	100% - 0%	100% - 41%
VARILIGHT	HQ3W	230/50Hz	400		84% - 0%	99% - 0%	89% - 5%	97% - 12%	79% - 0%	100% - 13%
VARILIGHT	JQP401W	230/50Hz	400	T	99% - 0%	100% - 0%	92% - 0%	94% - 0%	50% - 0%	99% - 0%
Vimar	20135	230/50Hz	3 - 100	U	100% - 0%	100% - 0%	95% - 7%	95% - 0%	95% - 6%	98% - 6%
ZANO	WH401	230/50Hz	400	L	99% - 0%	100% - 0%	97% - 0%	98% - 0%	51% - 0%	100% - 0%
ZANO	WH251	230/50Hz	250		70% - 0%	87% - 0%	90% - 7%	90% - 6%	98% - 6%	97% - 6%
ZANO	Z GRID 700	230/50Hz	250	LED	71% - 0%	76% - 0%	77% - 0%	81% - 0%	86% - 0%	85% - 0%
ZANO	Z GRID 500	230/50Hz	500		100% - 0%	100% - 0%	96% - 0%	98% - 0%	98% - 0%	100% - 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 conditons, 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.