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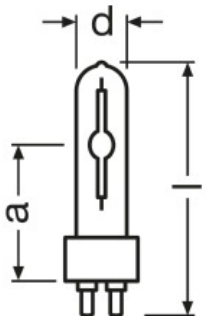
POWERBALL® HCI®-T

Technical Information

POWERBALL® HCI®-T

General product description

- High intensity discharge lamps
- Metal halide lamps with ceramic burner
- POWERBALL[1] technology
- UV-filter technology
- For luminaires with protective shield, only



Basic technical description

Product reference	Nominal lamp wattage [W]	Cap	Correlated colour tempe-rature [K]	Light colour code	Length max. (l) [mm]	Diameter max. (d) [mm]	Weight per piece [g]	Light centre length (a) [mm]	Typical lamp voltage[2] [V]	Typical lamp current[2] [A]
HCI-T 35W/830 WDL PB	35	G12	3000	830	100	20	27	56	93	0.51
HCI-T 35W/942 NDL PB	35	G12	4200	942	100	20	27	56	86	0.53
HCI-T 50W/830 WDL PB	50	G12	3000	830	100	20	27	56	n.a.	n.a.
HCI-T 70W/830 WDL PB	70	G12	3000	830	100	20	28	56	95	0.96
HCI-T 70W/942 NDL PB	70	G12	4200	942	100	20	28	56	91	0.99
HCI-T 100W/830 WDL PB	100	G12	3000	830	105	20	30	56	93	1.22
HCI-T 100W/942 NDL PB	100	G12	4200	942	105	20	30	56	94	1.23
HCI-T 150W/830 WDL PB	150	G12	3000	830	105	25	34	56	93	1.80
HCI-T 150W/942 NDL PB	150	G12	4200	942	105	25	34	56	92	1.85

Performance specification[3]

Product reference	Rated lamp wattage [W]	Rated system wattage[4] [W]	Luminous flux [lm]	Luminous efficacy [lm/W]	Colour rendering index Ra	Colour rendering level	Average life (B50)[5] [h]
HCI-T 35W/830 WDL PB	39	43	3700	95	85	1B	15000
HCI-T 35W/942 NDL PB	39	43	3400	87	91	1A	15000
HCI-T 50W/830 WDL PB	50	54.5	5250	105	89	1B	15000
HCI-T 70W/830 WDL PB	73	80	7400	101	89	1B	15000
HCI-T 70W/942 NDL PB	73	80	6800	93	95	1A	15000
HCI-T 100W/830 WDL PB	100[6]	106	11300	113	86	1B	15000
HCI-T 100W/942 NDL PB	100[6]	106	10500	105	95	1A	15000
HCI-T 150W/830 WDL PB	147	160	15100	103	89	1B	15000
HCI-T 150W/942 NDL PB	147	160	14700	100	95	1A	15000

[1] Round ceramic burner for optimized efficacy
[2] Refers to operation with a reference electromagnetic ballast (IEC 60923).
[3] The specified values refer to operation with electronic control gear at rated lamp wattage, unless otherwise stated. They refer to base-up burning position, in line with IEC 61167. Other burning positions may result in differing values.
[4] With OSRAM POWERTRONIC PTi, PT-FIT or PTo
[5] For all burning positions. In operation with electromagnetic control gear 12000 h for all burning positions.
[6] OSRAM POWERTRONIC PTi and PTo drive lamps at 97 W.

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Product reference	Lamp lumen maintenance factor (LLMF) vs. operation hours					
	2000 h	4000 h	6000 h	8000 h	12000 h	15000 h
HCI-T 35W/830 WDL PB	86%	82%	78%	75%	73%	71%
HCI-T 35W/942 NDL PB	92%	91%	91%	89%	84%	79%
HCI-T 50W/830 WDL PB	94%	91%	86%	84%	80%	76%
HCI-T 70W/830 WDL PB	85%	81%	80%	78%	75%	72%
HCI-T 70W/942 NDL PB	87%	81%	78%	77%	76%	69%
HCI-T 100W/830 WDL PB	88%	83%	80%	79%	76%	74%
HCI-T 100W/942 NDL PB	95%	90%	87%	83%	80%	75%
HCI-T 150W/830 WDL PB	87%	81%	78%	75%	69%	64%
HCI-T 150W/942 NDL PB	92%	85%	82%	78%	74%	69%

Product reference	Lamp survival factor[7] (LSF) vs. operation hours					
	2000 h	4000 h	6000 h	8000 h	12000 h	15000 h
HCI-T 35W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-T 35W/942 NDL PB	99%	98%	97%	96%	80%	50%
HCI-T 50W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-T 70W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-T 70W/942 NDL PB	99%	98%	97%	96%	80%	50%
HCI-T 100W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-T 100W/942 NDL PB	99%	98%	97%	96%	80%	50%
HCI-T 150W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-T 150W/942 NDL PB	99%	98%	97%	96%	80%	50%

Operation conditions

- Burning position: any

Product reference	Max. permitted outer bulb temperature [°C]	Max. permitted pinch temperature [°C]	Ignition voltage min. / max. [kV_p]	Required control gear[8]	Suitable OSRAM electronic control gear	Dimming
HCI-T 35W/830 WDL PB	500	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PT-FIT, PTo	not allowed
HCI-T 35W/942 NDL PB	500	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PT-FIT, PTo	not allowed
HCI-T 50W/830 WDL PB	500	350	3.0[9] / 5.0[10]	ECG only	PTi, PT-FIT, PTo	with PTo[11]
HCI-T 70W/830 WDL PB	500	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PT-FIT, PTo	with PTo[11]
HCI-T 70W/942 NDL PB	500	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PT-FIT, PTo	with PTo[11]
HCI-T 100W/830 WDL PB	500	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PTo	with PTo[11]
HCI-T 100W/942 NDL PB	500	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PTo	with PTo[11]
HCI-T 150W/830 WDL PB	550	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PTo	with PTo[11]
HCI-T 150W/942 NDL PB	550	350	3.6[9] / 5.0[10]	ECG, CCG	PTi, PTo	with PTo[11]

[7] Indicates the percentage of operational lamps after a given period of operation time.
[8] ECG stands for low frequency square wave electronic ballast. See the respective lamp data sheet in IEC 61167 and Annexes G and H, therein.
CCG stands for electromagnetic ballast (see IEC 61347).
[9] For superimposed ignition with square wave electronic ballast 3.0 kV_p are sufficient.
[10] This limit is for safety reasons.
[11] Depending on the dimming level both correlated colour temperature and colour rendering index Ra may substantially change; average life may not increase.

Safety, materials and environment

- Compliant with safety specifications according to EN 62035
- Compliant with RoHS.
- Only for luminaires with protective shield according to IEC 60598-1
- For operation with an electromagnetic ballast[12] a protection against rectifying effect at end-of-life required
- Staring at operating light source to be avoided because of high brightness

Product description	Typical specific effective radiant UV power [mW/1000 lm]	Typical mercury content [mg]
HCI-T 35W/830 WDL PB	0.46	2.7
HCI-T 35W/942 NDL PB	0.24	4.9
HCI-T 50W/830 WDL PB	0.22	6.5
HCI-T 70W/830 WDL PB	0.23	5.5
HCI-T 70W/942 NDL PB	0.12	7.2
HCI-T 100W/830 WDL PB	0.13	7.7
HCI-T 100W/942 NDL PB	0.20	11.8
HCI-T 150W/830 WDL PB	0.10	24.1
HCI-T 150W/942 NDL PB	0.15	16.5

Energy labelling[13]

Product description	Energy efficiency class	Weighted energy consumption E_C [kWh/1000h]
HCI-T 35W/830 WDL PB	A+	43
HCI-T 35W/942 NDL PB	A+	43
HCI-T 50W/830 WDL PB	A+	55
HCI-T 70W/830 WDL PB	A+	81
HCI-T 70W/942 NDL PB	A+	81
HCI-T 100W/830 WDL PB	A+	110
HCI-T 100W/942 NDL PB	A+	110
HCI-T 150W/830 WDL PB	A+	162
HCI-T 150W/942 NDL PB	A+	162

[12] See IEC 61347.
[13] According to Regulation (EU) No 874/2012 of July 12, 2012

Logistics data

Product description	ILCOS	EAN 10	EAN 40	Standard pack quantity
HCI-T 35W/830 WDL PB	MT/UB-35/930-H/E/SL-G12-20/90	4008321681850	4008321681867	12
HCI-T 35W/942 NDL PB	MT/UB-35/942-H/E/SL-G12-20/90	4008321681898	4008321681904	12
HCI-T 50W/830 WDL PB	MT/UB-50/830-H/E/L-G12-20/90	4052899031760	4052899031777	12
HCI-T 70W/830 WDL PB	MT/UB-70/830-H/E/SL-G12-20/90	4008321678430	4008321678447	12
HCI-T 70W/942 NDL PB	MT/UB-70/942-H/E/SL-G12-20/90	4008321678522	4008321678539	12
HCI-T 100W/830 WDL PB	MT/UB-100/830-H/E/SL-G12-20/100	4008321682963	4008321682970	12
HCI-T 100W/942 NDL PB	MT/UB-100/942-H/E/SL-G12-20/100	4008321682987	4008321682994	12
HCI-T 150W/830 WDL PB	MT/UB-150/830-H/E/SL-G12-26/100	4008321682055	4008321682062	12
HCI-T 150W/942 NDL PB	MT/UB-150/942-H/E/SL-G12-26/100	4008321682079	4008321682086	12

Typical spectral power distribution

Light colour code	Fig. no.
830	1
942	2

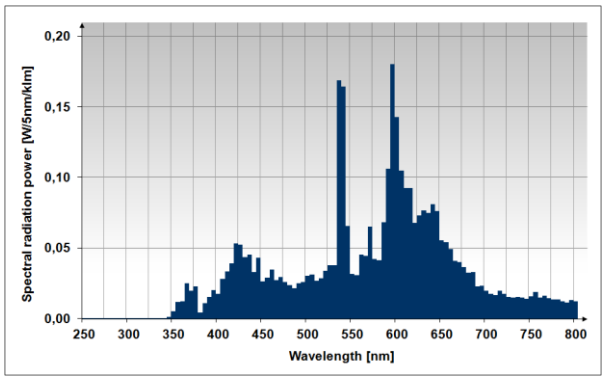

Fig. 1

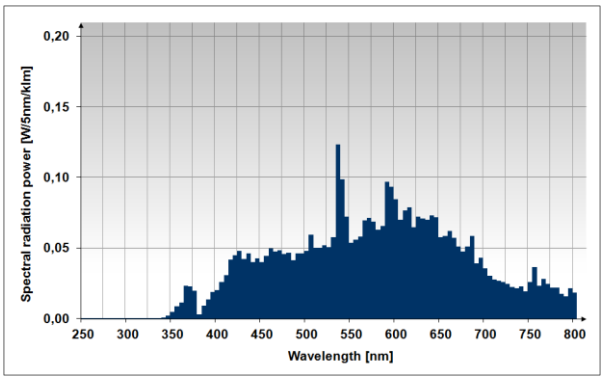

Fig. 2

References

Reference	
Brochure “Metal halide lamps. Instructions for the use and application”	www.osram.com
Brochure “High Intensity Discharge lamps. Technical information on reducing the wattage”	www.osram.com
Ray data (e.g. ASAP, SPEOS, LightTools)	available on request
3D data (e.g. Parasolid, STEP)	available on request
System+ guarantee	level 3C, see www.osram.com

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