

POWERBALL® HCI®-TC

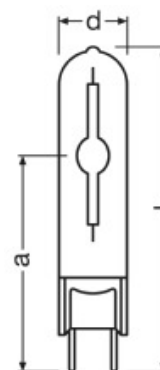
Technical Information



POWERBALL® HCI®-TC

General product description

- High intensity discharge lamps
- Metal halide lamps with ceramic burner
- POWERBALL¹ technology
- UV-filter technology
- For luminaires with protective shield, only



Basic technical description

Product reference	Nominal lamp wattage	Cap	Correlated colour temperature	Light colour code	Length max. (l)	Diameter max. (d)	Weight	Light centre length (a)	Typical lamp voltage ²	Typical lamp current ²
	[W]		[K]		[mm]	[mm]	[g]	[mm]	[V]	[A]
HCI-TC 20W/830 WDL PB	20	G8.5	3000	830	81	15	8	52	n.a.	n.a.
HCI-TC 35W/830 WDL PB	35	G8.5	3000	830	81	15	9	52	93	0.52
HCI-TC 35W/942 NDL PB	35	G8.5	4200	942	81	15	9	52	85	0.53
HCI-TC 50W/830 WDL PB	50	G8.5	3000	830	81	15	9	52	n.a.	n.a.
HCI-TC 70W/830 WDL PB	70	G8.5	3000	830	81	15	9	52	96	0.95
HCI-TC 70W/942 NDL PB	70	G8.5	4200	942	81	15	9	52	86	1.00

Performance specification³

Product reference	Rated lamp wattage	Rated system wattage ⁴	Luminous flux	Luminous efficacy	Colour rendering index Ra	Colour rendering level	Average life (B50) ⁵
	[W]	[W]	[lm]	[lm/W]			[h]
HCI-TC 20W/830 WDL PB	20	23	1700	85	83	1B	15000
HCI-TC 35W/830 WDL PB	39	43	3700	95	85	1B	15000
HCI-TC 35W/942 NDL PB	39	43	3500	90	90	1A	15000
HCI-TC 50W/830 WDL PB	50	54.5	5250	105	89	1B	15000
HCI-TC 70W/830 WDL PB	73	80	7200	99	89	1B	15000
HCI-TC 70W/942 NDL PB	73	80	6800	93	96	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 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 PT_o

⁵ For all burning positions. In operation with electromagnetic control gear 12000 h for all burning positions.

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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-TC 20W/830 WDL PB	80%	75%	71%	69%	65%	61%
HCI-TC 35W/830 WDL PB	83%	82%	78%	77%	76%	70%
HCI-TC 35W/942 NDL PB	93%	92%	91%	90%	85%	82%
HCI-TC 50W/830 WDL PB	94%	91%	86%	84%	80%	76%
HCI-TC 70W/830 WDL PB	84%	82%	80%	78%	70%	64%
HCI-TC 70W/942 NDL PB	90%	88%	86%	84%	80%	75%

Product reference	Lamp survival factor ⁶ (LSF) vs. operation hours					
	2000 h	4000 h	6000 h	8000 h	12000 h	15000 h
HCI-TC 20W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-TC 35W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-TC 35W/942 NDL PB	99%	98%	97%	92%	80%	50%
HCI-TC 50W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-TC 70W/830 WDL PB	99%	98%	97%	96%	80%	50%
HCI-TC 70W/942 NDL PB	99%	98%	97%	92%	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 ⁷	Suitable OSRAM electronic control gear	Dimming
HCI-TC 20W/830 WDL PB	400	300	3.6 ⁸ / 5.0 ⁹	ECG only	PTi	not allowed
HCI-TC 35W/830 WDL PB	500	300	3.6 ⁹ / 5.0 ¹⁰	ECG, CCG	PTi, PT-FIT, PTo	not allowed
HCI-TC 35W/942 NDL PB	500	300	3.6 ⁹ / 5.0 ¹⁰	ECG, CCG	PTi, PT-FIT, PTo	not allowed
HCI-TC 50W/830 WDL PB	500	300	3.0 ⁹ / 5.0 ¹⁰	ECG only	PTi, PT-FIT, PTo	with PTo ¹¹
HCI-TC 70W/830 WDL PB	550	350	3.6 ⁹ / 5.0 ¹⁰	ECG, CCG	PTi, PT-FIT, PTo	with PTo ¹⁰
HCI-TC 70W/942 NDL PB	550	350	3.6 ⁹ / 5.0 ¹⁰	ECG, CCG	PTi, PT-FIT, PTo	with PTo ¹¹

⁶ Indicates the percentage of operational lamps after a given period of operation time.

⁷ 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).

⁸ For superimposed ignition with square wave electronic ballast 3.0 kV_p are sufficient.

⁹ This limit is for safety reasons.

¹⁰ Depending on the dimming level both correlated colour temperature and colour rendering index Ra may substantially change; average life may not increase.

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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 ballast¹¹ 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-TC 20W/830 WDL PB	0.50	3.4
HCI-TC 35W/830 WDL PB	0.67	2.7
HCI-TC 35W/942 ND L PB	0.66	4.6
HCI-TC 50W/830 WDL PB	0.46	6.5
HCI-TC 70W/830 WDL PB	0.23	4.7
HCI-TC 70W/942 ND L PB	0.44	6.9

Energy labelling¹²

Product description	Energy efficiency class	Weighted energy consumption E _c [kWh/1000h]
HCI-TC 20W/830 WDL PB	A	22
HCI-TC 35W/830 WDL PB	A+	43
HCI-TC 35W/942 ND L PB	A+	43
HCI-TC 50W/830 WDL PB	A+	55
HCI-TC 70W/830 WDL PB	A+	81
HCI-TC 70W/942 ND L PB	A+	81

Logistics data

Product description	ILCOS	EAN 10	EAN 40	Standard pack quantity
HCI-TC 20W/830 WDL PB	MT/UB-20/830-H/E/L-G8.5-17/85	4008321683007	4008321683014	12
HCI-TC 35W/830 WDL PB	MT/UB-35/830-H/E/SL-G8.5-17/85	4008321681997	4008321682000	12
HCI-TC 35W/942 ND L PB	MT/UB-35/942-H/E/SL-G8.5-17/85	4008321682031	4008321682048	12
HCI-TC 50W/830 WDL PB	MT/UB-50/830-H/E/L-G8.5-17/85	4052899031784	4052899031791	12
HCI-TC 70W/830 WDL PB	MT/UB-70/830-H/E/SL-G8.5-17/85	4008321681799	4008321681805	12
HCI-TC 70W/942 ND L PB	MT/UB-70/942-H/E/SL-G8.5-17/85	4008321681836	4008321681843	12

¹¹ See IEC 61347.

¹² According to Regulation (EU) No 874/2012 of July 12, 2012

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Typical spectral power distribution

Light colour code	Fig. no.
830	1
942	2

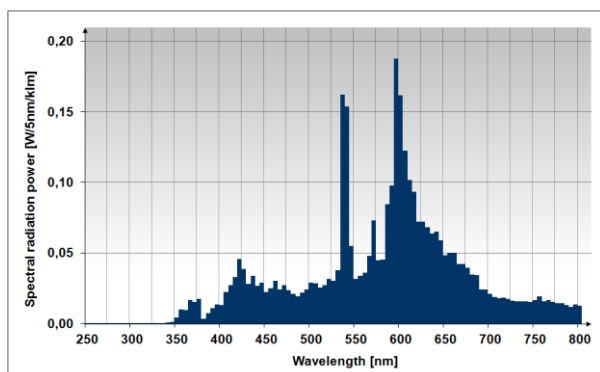


Fig. 1

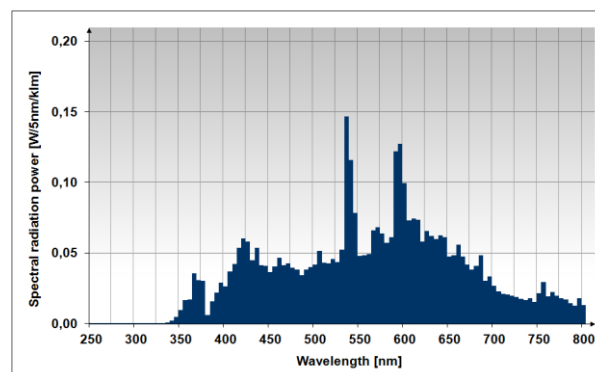


Fig. 2

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