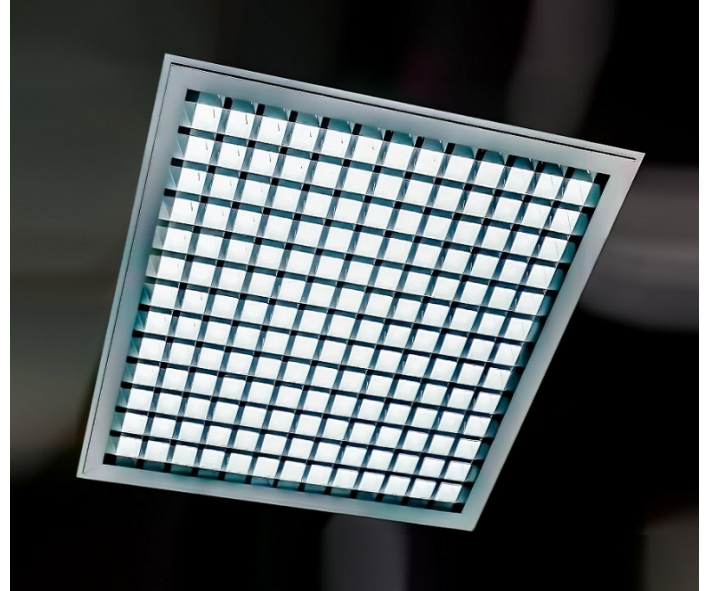


## LIBUS SBL13WB LPP-CT IP40

**DESCRIPTION** : Libus® *optimum performance - upper segment* luminaire configuration with TR98% PVD silver luminal matt reflector & clear transparent PMMA or PC underlay cover, characterized by *unique energy efficiency, no glare and effective beam control*.

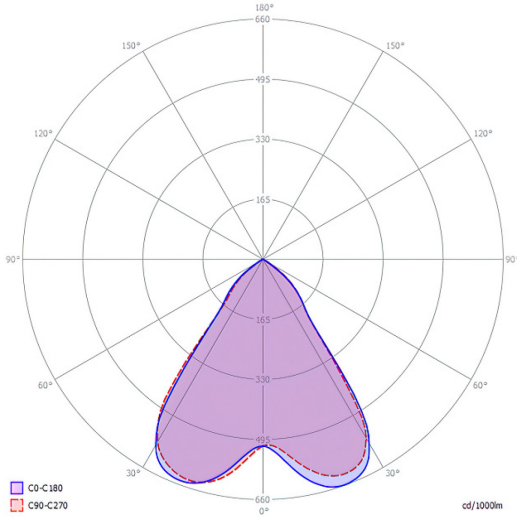
Light output ratio – L.O.R.	93,9%
Efficacy – lm/w (range depending on the luminaire driving power)	162 – 173
Utilization factor (TM5 UF table average)	89,8
Glare level – UGR (4Hx8H – refl. 70-50-20)	8,6
Beam angle	2x40.5° = 81.0°
Degree of protection	IP40



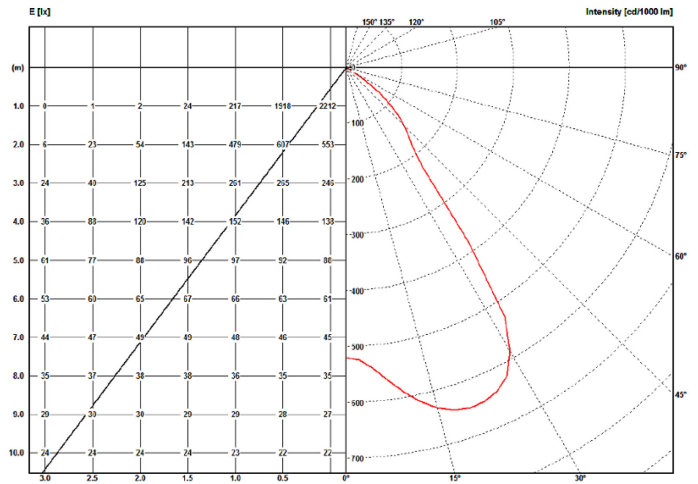
LPP_CT IP40		BEAM ANGLE		L.O.R.		DIMENSIONS / POWER OPTIONS										OPTIMAL	SAFE	NOT AVAILABLE		
		2 x 40.5°		%		EFFICACY / LUMEN OUTPUT										Lm/w	Lm/w	-		
		81.0°		93,9												lumens	lumens	-		
ROW LED STRIPS	WIDTH mm		LENGTH mm		3 - 8 w nominal DIPswitch				11 - 21 w nominal DIPswitch				21 - 30 w nominal DIPswitch							
	OPTIMAL	MINIMUM	OPTIMAL	MINIMUM	3,8 w	5 w	6,3 w	7,6 w	11 w	15 w	19 w	21 w	21 w	25 w	27 w	30 w				
1 x 13	595	563	595	563	-	-	-	-	-	171	168	167	167	166	164	162				
	620	588			-	-	-	-	-	2464	3068	3399	3329	3972	4238	4706				
1 x 6	310	278			-	-	-	167	166	164	162	161	-	-	-	-	-	-	-	-
	334	302			-	-	1230	1730	2355	2950	3238	-	-	-	-	-	-	-	-	-
1 x 5	269	237			-	-	167	166	164	162	161	-	-	-	-	-	-	-	-	-
	293	261			-	-	1020	1220	1709	2329	2929	-	-	-	-	-	-	-	-	-
1 x 4	228	197			595	563	-	166	164	162	162	159	-	-	-	-	-	-	-	-
	252	220			620	588	-	803	999	1180	1690	2288	-	-	-	-	-	-	-	-
1 x 3	187	156			-	-	-	166	164	162	161	-	-	-	-	-	-	-	-	-
	212	180			-	-	-	794	989	1180	1696	-	-	-	-	-	-	-	-	-
1 x 2	147	115			-	-	166	164	162	161	-	-	-	-	-	-	-	-	-	-
	171	139			-	-	598	785	978	1172	-	-	-	-	-	-	-	-	-	-
1 x 1	106	74			-	-	164	162	161	-	-	-	-	-	-	-	-	-	-	-
	130	98			-	-	594	776	971	-	-	-	-	-	-	-	-	-	-	-
2 x 6	310	278	1125	1093	-	-	-	-	173	171	168	167	167	164	163	162				
	334	302			-	-	-	-	-	1805	2464	3068	3399	3311	3924	4213	4682			
2 x 5	269	237			-	-	-	-	-	170	168	166	166	164	163	162	161			
	293	261			-	-	-	-	-	1775	2422	3034	3354	3296	3901	4192	4625			
2 x 4	228	197			-	-	-	168	167	167	166	164	162	162	161	-	-	-	-	
	252	220			1125	1093	-	1240	1753	2403	3019	3331	3244	3854	-	-	-	-	-	
2 x 3	187	156			1150	1118	-	167	166	164	162	161	-	-	-	-	-	-	-	
	212	180			-	-	-	1224	1739	2355	2950	3238	-	-	-	-	-	-	-	
2 x 2	147	115			-	-	-	166	164	162	161	159	-	-	-	-	-	-	-	
	171	139			-	-	-	794	989	1106	1687	2288	-	-	-	-	-	-	-	
2 x 1	106	74			-	-	165	164	162	161	-	-	-	-	-	-	-	-	-	
	130	98			-	-	595	785	978	1172	-	-	-	-	-	-	-	-	-	

• Due to material properties and processing condition tolerances, photometric data may vary in different production batches within EU directive.

POLAR DIAGRAMME (cd/1000lm)



ILLUMINANCE – CANDELA DIAGRAMME (lux/cd)



UGR GLARE RATIOS

Ceiling reflectance		0.7		0.5		0.3		0.7		0.5		0.3				
Wall reflectance		0.5		0.3		0.5		0.3		0.5		0.3				
Floor cavity reflectance		0.2														
Room dimensions		Viewed crosswise						Viewed endwise								
2H	2H	9,2	10,2	9,4	10,8	11,1	8,8	10,0	9,2	10,3	10,6	8,8	10,0	9,2	10,3	10,6
	3H	8,9	10,0	9,3	10,3	10,7	8,6	9,7	9,0	10,0	10,4	8,6	9,7	9,0	10,0	10,4
	4H	9,0	9,9	9,4	10,2	10,6	8,6	9,5	8,9	9,9	10,3	8,6	9,5	8,9	9,9	10,3
	6H	8,8	9,8	9,2	10,1	10,5	8,6	9,4	8,9	9,8	10,2	8,6	9,4	8,9	9,8	10,2
	8H	8,7	9,7	9,3	10,0	10,4	8,4	9,3	8,8	9,7	10,1	8,4	9,3	8,8	9,7	10,1
	12H	8,8	9,6	9,2	9,9	10,3	8,4	9,2	8,8	9,6	10,0	8,4	9,2	8,8	9,6	10,0
4H	2H	8,8	9,8	9,2	10,2	10,6	8,5	9,6	8,9	10,0	10,7	8,5	9,6	8,9	10,0	10,7
	3H	8,8	9,4	9,1	9,9	10,3	8,4	9,2	8,9	9,6	9,7	8,4	9,2	8,9	9,6	9,7
	4H	8,8	9,5	9,2	9,8	10,2	8,4	9,1	8,8	9,5	9,8	8,4	9,1	8,8	9,5	9,8
	6H	8,5	9,1	9,0	9,8	10,0	8,3	8,9	8,7	9,3	9,8	8,3	8,9	8,7	9,3	9,8
	8H	8,6	9,0	9,1	9,5	10,0	8,2	9,1	8,7	9,2	9,7	8,2	9,1	8,7	9,2	9,7
	12H	8,4	9,1	8,9	9,4	9,9	8,2	8,7	8,6	9,1	9,6	8,2	8,7	8,6	9,1	9,6
8H	4H	8,6	9,0	9,1	9,7	10,0	8,2	8,8	8,7	9,2	9,7	8,2	8,8	8,7	9,2	9,7
	6H	8,3	8,8	8,8	9,5	10,0	8,0	8,6	8,5	9,0	9,5	8,0	8,6	8,5	9,0	9,5
	8H	8,3	8,7	9,0	9,2	9,7	8,0	8,4	8,6	9,0	9,4	8,0	8,4	8,6	9,0	9,4
	12H	8,4	8,6	8,8	9,1	9,6	8,0	8,4	8,5	8,8	9,3	8,0	8,4	8,5	8,8	9,3
12H	4H	8,4	9,1	8,9	9,4	9,9	8,2	8,7	8,6	9,1	9,6	8,2	8,7	8,6	9,1	9,6
	6H	8,3	8,7	9,0	9,2	9,7	8,0	8,4	8,6	8,9	9,4	8,0	8,4	8,6	8,9	9,4
	8H	8,4	8,6	8,8	9,1	9,6	8,0	8,4	8,6	8,8	9,3	8,0	8,4	8,6	8,8	9,3

TM5 UTILISATION FACTORS

Utilization factors			LOR = 100.0%			DLOR = 100.0%			ULOR = 0.0%		
Room reflection			Room index								
C	W	F	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00
0.7	0.5	0.2	76	84	91	94	99	103	104	107	109
	0.3		71	79	85	90	96	99	102	104	107
	0.1		66	76	82	86	92	96	98	103	105
0.5	0.5	0.2	74	83	89	91	96	100	101	103	105
	0.3		70	79	84	87	92	96	99	102	103
	0.1		66	75	81	84	90	94	96	100	102
0.3	0.5	0.2	73	81	86	89	94	97	98	100	101
	0.3		68	77	83	86	90	94	95	98	100
	0.1		66	74	80	84	88	92	95	97	99
0.0	0.0	0.0	64	72	77	81	85	87	90	93	94
			SHR NOM. = 1,25			SHR MAX. = 1,47			SHR MAX TR = 1,57		

## TECHNICAL SPECIFICATIONS

Rectangular or square shaped, anodized aluminum body, IP40 LED ceiling luminaire, characterized by:

1. **TR98% PVD silver luminal matt** sight blocking light distribution and glare control angled cubic louver **with clear transparent PMMA or PC underlay** diffusing elements.
2. suitability for recessing in T24 600 x 600 and 625 x 625 mm grid ceilings as well as plaster & clip-in system ceilings and pendant, surface and rail track mounting with accessories to be ordered separately
3. providing precise light distribution control over **40.5°** ensures glare-free (**UGR<9**) visual comfort and photometric performance guaranteeing average **89.8%** (TM5 utilization factors table average) of generated light to be conveyed directly to working plane
4. eco-friendly construction enabling easy disassembly & re-cycling of components and easy replacement of lamp unit as required by **ecodesign**.
5. energy efficacy level ranging between **162 to 173 lm/w** combined with high UF values enabling the driving of the luminaires at low current levels which in turn provides low LED junction temperature promising **luminaire efficient service life / L80B10** ( $t_{j,25^{\circ}\text{C}}$ ) **>50.000h.** and chromatic stability / color consistency over the entire luminaire life.
6. 10µm natural anodized aluminum body. Further color anodized and RAL colors painted finishes on request
7. open-circuit proof control gear unit, protected against faulty connection, short circuit, overload and over-temperature
8. replaceable control gear and PCB lamp unit
9. control gear unit **output ripple <5% - PSTLM ≤1 - SVM ≤0.4** for effective control of the LED system and for flicker-free light
10. complying with fundamental requirements of applicable EU regulations and product safety legislation and bears the CE symbol. The luminaire is part of a range of recessed, surface-mounted and suspended luminaires with a harmonized appearance. Project-specific versions with varying luminaire characteristics are possible on request.

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Rectangular and square anodized aluminum body IP40 LED ceiling luminaire **with TR98% PVD silver luminal matt** sight blocking light distribution and glare control angled cubic louver **with clear transparent PMMA or PC underlay** diffusing elements. Suitable for recessing in T24 600 x 600 and 625 x 625 mm grid ceilings as well as plaster & clip-in system ceilings and pendant, surface and rail track mounting with accessories to be ordered separately. Precise light distribution control over **40.5°** ensures glare-free (**UGR<9**) visual comfort and photometric performance guaranteeing average **89.8%** (TM5 utilization factors table average) of generated light to be conveyed directly to working plane. Eco-friendly construction enables easy disassembly & re-cycling of components and easy replacement of lamp unit as required by **ecodesign**. Energy efficacy level ranging between **162 to 173 lm/w** coupled with high UF values enable driving luminaires at low current which in turn provides low LED junction temperature promising **luminaire efficient service life / L80B10** ( $t_{j,25^{\circ}\text{C}}$ ) **>50.000h.** and chromatic stability / color consistency over the entire luminaire life. Luminaire body of 10µm anodized aluminum. Further color anodized and RAL colors painted finishes on request. Control gear unit is open-circuit proof and protected against faulty connection, short circuit, overload and over-temperature. The control gear and PCB lamp unit are replaceable. **Output ripple** of the control gear unit **<5% - PSTLM ≤1 - SVM ≤0.4** for effective control of the LED system and for flicker-free light. The luminaire complies with fundamental requirements of applicable EU regulations and product safety legislation and bears the CE symbol. The luminaire is part of a range of recessed, surface-mounted and suspended luminaires with a harmonized appearance. Project-specific versions with varying luminaire characteristics are possible on request.