

LIBUS SBL13WB LPP-MC IP40

DESCRIPTION : Libus® *optimum performance - upper segment* luminaire configuration with TR98% PVD silver specular aluminum reflector & clear PMMA micro-prismatic underlay cover, characterized by *unique energy efficiency, low glare and effective beam control*.

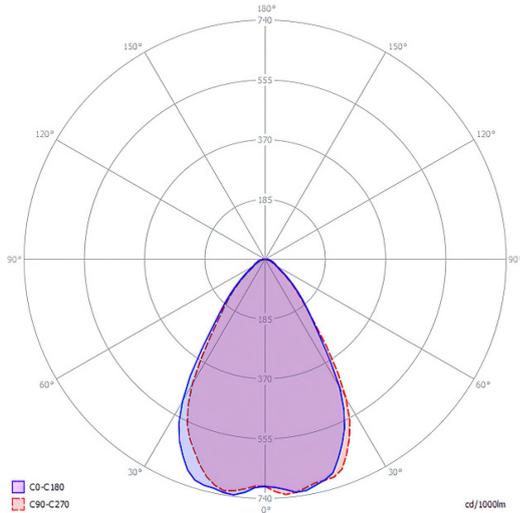
Light output ratio - L.O.R.	92,6 %
Efficacy - lm/w (range depending on the luminaire driving power)	155 - 166
Utilization factor (TM5 UF table average)	84,4
Glare level - UGR (4Hx8H - refl. 70-50-20)	9,2
Beam angle	2x32.7° = 65.4°
Degree of protection	IP40



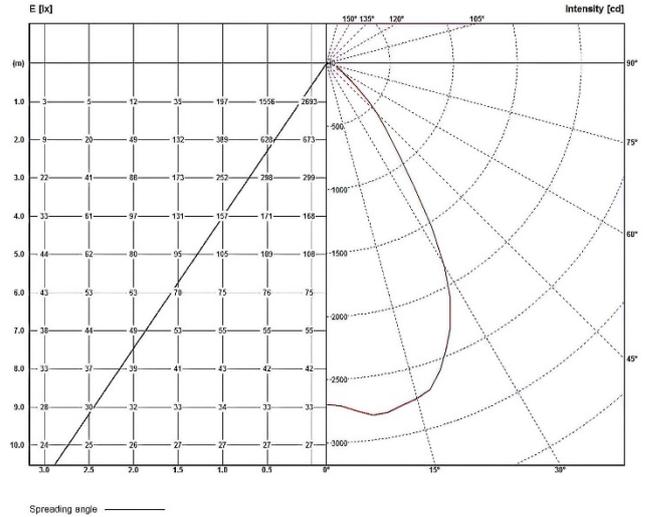
LPP_MC IP40		BEAM ANGLE		L.O.R.		DIMENSIONS / POWER OPTIONS										OPTIMAL	SAFE	NOT AVAILABLE								
		2 x 32.7°		%		EFFICACY / LUMEN OUTPUT										Lm/w	Lm/w	-								
		65.4°		93,0												lumens	lumens	-								
ROW LED STRIPS	WIDTH mm		LENGTH mm		3 - 8 w nominal DIPswitch				11 - 21 w nominal 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	-	-	-	-	-	164	162	160	160	159	157	155	2365	2960	3263	3195	3813	4069	4518			
	620	588			-	-	-	160	159	157	155	154	-	-	-	-	-	-	-	-	-	-	-	-		
1 x 6	310	278			-	-	-	-	160	159	157	155	154	-	-	-	-	-	-	-	-	-	-	-		
	334	302			-	-	-	-	1181	1660	2260	2832	3108	-	-	-	-	-	-	-	-	-	-	-		
1 x 5	269	237			-	-	-	-	160	159	157	155	154	-	-	-	-	-	-	-	-	-	-	-		
	293	261			-	-	-	-	979	1171	1640	2236	2812	-	-	-	-	-	-	-	-	-	-	-		
1 x 4	228	197			595	563	-	159	157	156	155	153	-	-	-	-	-	-	-	-	-	-	-	-		
	252	220			620	588	-	771	959	1138	1622	2197	-	-	-	-	-	-	-	-	-	-	-	-		
1 x 3	187	156			-	-	-	158	156	155	154	-	-	-	-	-	-	-	-	-	-	-	-	-		
	212	180			-	-	-	759	945	1133	1611	-	-	-	-	-	-	-	-	-	-	-	-	-		
1 x 2	147	115			-	-	159	157	155	154	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	171	139			-	-	574	753	939	1125	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1 x 1	106	74			-	-	157	155	154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	130	98			-	-	568	740	926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2 x 6	310	278			1125	1093	-	-	-	-	166	164	161	160	160	157	156	155	1733	2365	2945	3263	3179	3767	4045	4495
	334	302					-	-	-	-	163	161	160	159	158	156	155	154	-	-	-	-	-	-	-	-
2 x 5	269	237	-	-			-	-	-	-	163	161	160	159	158	156	155	154	1704	2325	2913	3220	3180	3745	4024	4440
	293	261	-	-			-	-	-	-	1704	2325	2913	3220	3180	3745	4024	4440	-	-	-	-	-	-	-	
2 x 4	228	197	-	-			-	-	-	161	160	160	159	157	155	154	-	-	-	-	-	-	-	-	-	
	252	220	1125	1093			-	-	-	1190	1683	2306	2898	3197	3114	3700	-	-	-	-	-	-	-	-	-	
2 x 3	187	156	1150	1118			-	-	-	160	159	157	155	154	-	-	-	-	-	-	-	-	-	-	-	
	212	180	-	-			-	-	-	1175	1669	2260	2832	3108	-	-	-	-	-	-	-	-	-	-	-	
2 x 2	147	115	-	-			-	159	157	155	154	153	-	-	-	-	-	-	-	-	-	-	-	-	-	
	171	139	-	-			-	763	949	1062	1620	2197	-	-	-	-	-	-	-	-	-	-	-	-	-	
2 x 1	106	74	-	-			158	157	155	154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	130	98	-	-			571	753	939	1125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

• 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	7,6	8,8	7,9	9,1	9,4	7,5	8,8	7,9	9,1	9,4	7,6	8,8	7,9	9,1	9,4
	3H	8,0	9,1	8,4	9,5	9,8	8,1	9,2	8,5	9,5	9,9	8,0	9,1	8,4	9,5	9,8
	4H	8,3	9,3	8,7	9,7	10,0	8,4	9,5	8,8	9,8	10,2	8,3	9,3	8,7	9,7	10,0
	6H	8,6	9,5	9,0	9,9	10,3	8,8	9,8	9,3	10,1	10,5	8,6	9,5	9,0	9,9	10,3
	8H	8,7	9,6	9,1	9,9	10,3	9,0	9,9	9,4	10,3	10,7	8,7	9,6	9,1	9,9	10,3
12H	8,7	9,5	9,1	9,9	10,3	9,1	9,9	9,5	10,3	10,7	8,7	9,5	9,1	9,9	10,3	
4H	2H	7,6	8,7	8,0	9,0	9,4	7,6	8,6	8,0	9,0	9,4	7,6	8,7	8,0	9,0	9,4
	3H	8,2	9,1	8,7	9,5	9,9	8,3	9,2	8,7	9,6	10,0	8,2	9,1	8,7	9,5	9,9
	4H	8,7	9,4	9,1	9,8	10,3	8,8	9,6	9,3	10,0	10,4	8,7	9,4	9,1	9,8	10,3
	6H	9,0	9,7	9,5	10,2	10,6	9,4	10,0	9,8	10,5	10,9	9,0	9,7	9,5	10,2	10,6
	8H	9,2	9,8	9,7	10,3	10,7	9,6	10,2	10,1	10,7	11,1	9,2	9,8	9,7	10,3	10,7
12H	9,3	9,9	9,8	10,3	10,8	9,8	10,4	10,3	10,9	11,4	9,3	9,9	9,8	10,3	10,8	
8H	4H	8,7	9,3	9,2	9,8	10,2	9,9	9,5	9,3	9,9	10,4	8,7	9,3	9,2	9,8	10,2
	6H	9,2	9,7	9,7	10,2	10,7	9,5	10,0	10,0	10,5	11,0	9,2	9,7	9,7	10,2	10,7
	8H	9,5	9,9	10,0	10,5	11,0	10,0	10,4	10,5	10,9	11,4	9,5	9,9	10,0	10,5	11,0
	12H	9,7	10,0	10,2	10,6	11,1	10,3	10,7	10,8	11,2	11,7	9,7	10,0	10,2	10,6	11,1
12H	4H	8,7	9,3	9,2	9,7	10,2	8,9	9,4	9,3	9,9	10,4	8,7	9,3	9,2	9,7	10,2
	6H	9,3	9,7	9,8	10,3	10,8	9,6	10,0	10,1	10,6	11,1	9,3	9,7	9,8	10,3	10,8
	8H	9,6	10,0	10,1	10,5	11,0	10,0	10,4	10,6	10,9	11,4	9,6	10,0	10,1	10,5	11,0

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	68	78	85	88	94	99	100	104	106
	0.3		62	73	79	83	90	94	98	100	104
	0.1		58	69	75	79	85	91	94	99	102
0.5	0.5	0.2	67	77	82	86	92	96	98	101	102
	0.3		62	72	78	81	87	91	95	98	100
	0.1		58	67	74	78	84	89	91	96	98
0.3	0.5	0.2	66	75	80	84	89	93	95	97	99
	0.3		61	71	76	80	85	89	91	95	97
	0.1		58	66	73	77	82	87	90	93	95
0.0	0.0	0.0	56	64	70	74	79	82	85	89	91
			SHR NOM. = 1,25			SHR MAX. = 1,44			SHR MAX TR = 1,50		

TECHNICAL SPECIFICATIONS

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

1. **TR98% PVD silver specular aluminum** sight blocking light distribution and angled glare control cubic louver **with clear micro-prismatic PMMA 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 **32.7°** ensures low glare (**UGR<10**) visual comfort and photometric performance guaranteeing average **84.4%** (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 **155 to 166 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** ($t_{c,25^{\circ}C}$) **>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.

Rectangular and square anodized aluminum body IP40 LED ceiling luminaire with **TR98% PVD silver specular aluminum** sight blocking light distribution and glare control angled cubic louver **with clear micro-prismatic PMMA 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 **32.7°** ensures glare-free (**UGR<10**) visual comfort and photometric performance guaranteeing average **84.4%** (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 **155 to 166 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** ($t_{c,25^{\circ}C}$) **>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.