

LIBUS SBL13WB LEP-BL IP20

DESCRIPTION : Libus® *high efficacy - performance* version luminaire configuration with TR95% PVD satin matt aluminum reflector & without underlay cover characterized by *high energy efficiency, no glare, and effective beam control*.

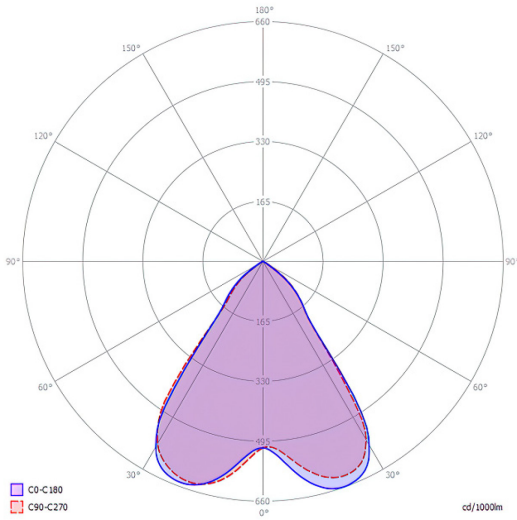
Light output ratio – L.O.R.	86,8 %
Efficacy – lm/w (range depending on the luminaire driving power)	143 - 154
Utilization factor (TM5 UF table average)	96,9
Glare level – UGR (4Hx8H – refl. 70-50-20)	7,7
Beam angle	2x40.6° = 81.2°
Degree of protection	IP20



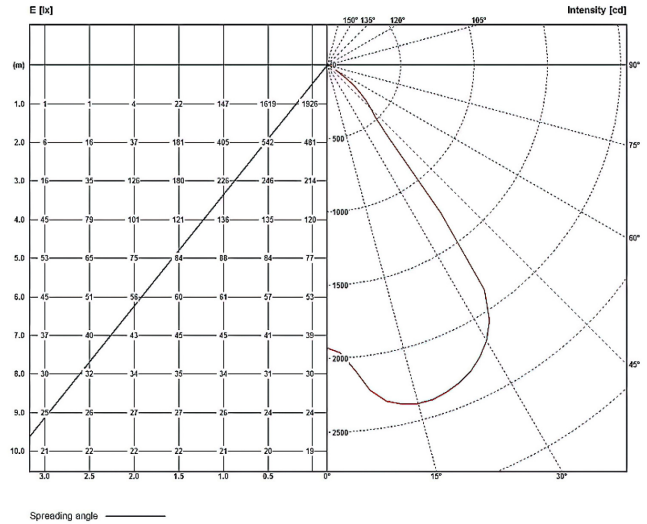
LEP_BL IP20		BEAM ANGLE		L.O.R.		DIMENSIONS / POWER OPTIONS										OPTIMAL	SAFE	NOT AVAILABLE		
		2 x 40.6°		%		EFFICACY / LUMEN OUTPUT										lm/w	lm/w	-		
		81.2°		86,8												lumens	lumens	-		
ROW LED STRIPS	WIDTH mm		LENGTH mm		3 - 8 w nominal DIPswitch				11 - 21 w nominal DIPswitch				21 - 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	-	-	-	-	-	153	150	149	149	148	146	144				
	620	588			-	-	-	-	-	2196	2734	3029	2967	3541	3778	4195				
1 x 6	310	278			-	-	-	149	148	146	144	143	-	-	-	-	-	-		
	334	302			-	-	-	1096	1542	2099	2629	2881	-	-	-	-	-	-		
1 x 5	269	237			-	-	149	148	146	144	143	-	-	-	-	-	-	-		
	293	261			-	-	909	1088	1523	2076	2606	-	-	-	-	-	-	-		
1 x 4	228	197			595	563	-	148	146	144	143	142	-	-	-	-	-	-		
	252	220			620	588	-	715	891	1052	1493	2039	-	-	-	-	-	-		
1 x 3	187	156			-	-	-	148	146	144	143	-	-	-	-	-	-	-		
	212	180			-	-	-	708	881	1052	1509	-	-	-	-	-	-	-		
1 x 2	147	115			148	146	144	143	-	-	-	-	-	-	-	-	-	-		
	171	139			533	700	872	1043	-	-	-	-	-	-	-	-	-	-		
1 x 1	106	74			146	144	143	-	-	-	-	-	-	-	-	-	-	-		
	130	98			529	692	864	-	-	-	-	-	-	-	-	-	-	-		
2 x 6	310	278			-	-	-	-	-	-	154	153	150	149	149	146	145	144		
	334	302			-	-	-	-	-	-	1609	2196	2734	3029	2951	3498	3755	4173		
2 x 5	269	237			-	-	-	-	-	-	151	150	148	148	146	145	144	143		
	293	261			-	-	-	-	-	-	1582	2159	2691	2990	2938	3477	3736	4115		
2 x 4	228	197			-	-	-	150	149	149	148	146	144	144	143	-	-	-		
	252	220			1125	1093	-	1105	1562	2141	2691	2969	2891	3429	-	-	-	-		
2 x 3	187	156	1150	1118	-	149	148	146	144	143	-	-	-	-	-	-				
	212	180	-	-	-	1091	1550	2099	2629	2881	-	-	-	-	-	-				
2 x 2	147	115	-	-	148	146	144	143	142	-	-	-	-	-	-	-				
	171	139	-	-	708	896	1501	2039	-	-	-	-	-	-	-	-				
2 x 1	106	74	147	146	144	143	-	-	-	-	-	-	-	-	-	-				
	130	98	530	700	872	1043	-	-	-	-	-	-	-	-	-	-				

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

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	90	95	98	101	104	106	108	110	111
	0.3		86	91	95	97	101	104	105	108	109
	0.1		83	88	92	95	99	101	103	106	108
0.5	0.5	0.2	89	93	96	99	101	102	104	106	107
	0.3		85	90	93	96	99	101	102	104	106
	0.1		83	88	91	94	97	99	101	103	104
0.3	0.5	0.2	88	92	95	96	99	99	101	102	103
	0.3		85	89	92	94	97	99	100	101	102
	0.1		82	87	90	92	95	97	98	100	101
0.0	0.0	0.0	81	85	88	90	92	94	95	96	101
			SHR NOM. = 1,25			SHR MAX. = 1,44			SHR MAX TR = 1,49		

TECHNICAL SPECIFICATIONS

Rectangular or square shaped, anodized aluminum body, IP20 LED ceiling luminaire, characterized by :

1. **TR95% PVD satine matt aluminum** sight blocking, light distribution and glare control angled cubic louver **without 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 **40.6°** ensures glare-free (**UGR<9**) visual comfort and photometric performance guaranteeing average **96.9%** (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 **143 to 154 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.

Rectangular and square anodized aluminum body IP20 LED ceiling luminaire **with TR95% PVD satin matt aluminum** sight blocking light distribution and glare control angled cubic louver **without 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 **40.6°** ensures glare-free (**UGR<9**) visual comfort and photometric performance guaranteeing average **96.9%** (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 **143 to 154 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.