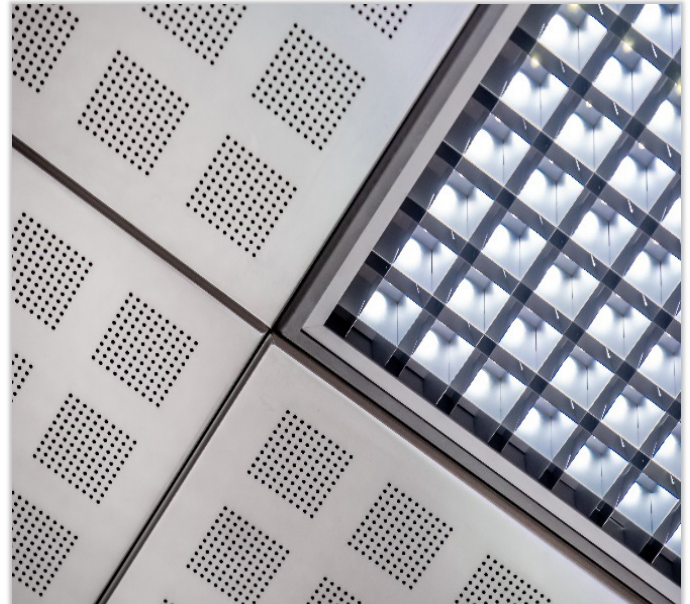


LIBUS SBL13WB LSS-BL IP20

DESCRIPTION : Libus® basic - standard version luminaire configuration with pre-anodized satin matt angled reflector louver & without underlay cover, characterized by *ecodesign* efficacy, low glare levels and precise beam control.

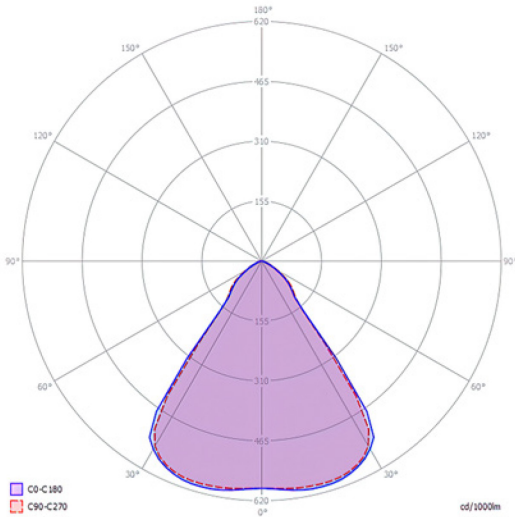
Light output ratio – L.O.R.	73,8 %
Efficacy – lm/w (range depending on the luminaire driving power)	113 – 122
Utilization factor (TM5 UF table average)	91,2
Glare level – UGR (4Hx8H – refl. 70-50-20)	8,1
Beam angle	2x42.1° = 84.2°
Degree of protection	IP20



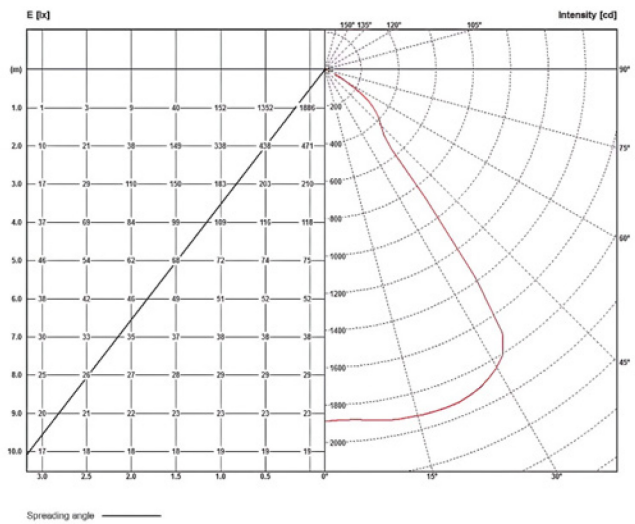
LSS_BL IP20	BEAM ANGLE		L.O.R.		DIMENSIONS / POWER OPTIONS												OPTIMAL	SAFE	NOT AVAILABLE	
	2 x 42.1°		%		EFFICACY / LUMEN OUTPUT												lm/w	lm/w	-	
	84.2°		73,8														lumens	lumens	-	
ROW LED STRIPS	WIDTH mm		LENGTH mm		3 - 8 w nominal DIPswitch				11 - 21 w nominal DIPswitch				21 - 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	-	-	-	-	-	121	119	118	118	117	115	114				
	620	588			-	-	-	-	-	1737	2162	2396	2346	2800	2987	3317				
1 x 6	310	278			-	-	-	118	117	115	114	113	-	-	-	-	-	-	-	-
	334	302			-	-	867	1219	1660	2079	2278	-	-	-	-	-	-	-	-	-
1 x 5	269	237			-	-	118	117	115	114	113	-	-	-	-	-	-	-	-	-
	293	261			-	-	719	860	1204	1642	2061	-	-	-	-	-	-	-	-	-
1 x 4	228	197			595	563	-	117	115	114	113	112	-	-	-	-	-	-	-	-
	252	220			620	588	-	566	704	832	1181	1613	-	-	-	-	-	-	-	-
1 x 3	187	156			-	-	-	117	115	113	113	-	-	-	-	-	-	-	-	-
	212	180			-	-	-	560	697	828	1193	-	-	-	-	-	-	-	-	-
1 x 2	147	115			117	115	114	113	-	-	-	-	-	-	-	-	-	-	-	-
	171	139			421	553	689	824	-	-	-	-	-	-	-	-	-	-	-	-
1 x 1	106	74			115	114	113	-	-	-	-	-	-	-	-	-	-	-	-	-
	130	98			419	547	683	-	-	-	-	-	-	-	-	-	-	-	-	-
2 x 6	310	278			-	-	-	-	-	-	122	121	119	118	118	115	115	114		
	334	302			-	-	-	-	-	-	1272	1737	2162	2396	2334	2766	2970	3300		
2 x 5	269	237	-	-	-	-	-	-	120	119	118	117	115	115	114	113				
	293	261	-	-	-	-	-	-	1251	1707	2149	2364	2324	2750	2955	3254				
2 x 4	228	197	-	-	-	119	118	118	117	115	114	113	-	-	-	-	-	-		
	252	220	1125	1093	874	1235	1694	2128	2348	2286	2712	-	-	-	-	-	-	-		
2 x 3	187	156	1150	1118	-	-	-	118	117	115	114	113	-	-	-	-	-	-		
	212	180	-	-	-	863	1226	1660	2079	2278	-	-	-	-	-	-	-	-		
2 x 2	147	115	-	-	117	115	114	113	112	-	-	-	-	-	-	-	-	-		
	171	139	-	-	560	697	780	1187	1613	-	-	-	-	-	-	-	-	-		
2 x 1	106	74	116	115	114	113	-	-	-	-	-	-	-	-	-	-	-	-		
	130	98	419	553	689	824	-	-	-	-	-	-	-	-	-	-	-	-		

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

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	79	87	92	95	100	103	105	108	109
	0.3		74	82	87	91	96	100	102	105	107
	0.1		70	78	84	88	93	97	99	103	105
0.5	0.5	0.2	78	85	90	93	97	100	102	104	105
	0.3		73	81	86	89	94	97	99	102	103
	0.1		70	78	83	87	91	95	97	100	102
0.3	0.5	0.2	77	84	88	91	95	97	98	100	102
	0.3		73	80	85	88	92	95	96	99	100
	0.1		70	77	82	85	90	93	95	97	99
0.0	0.0	0.0	68	75	80	83	87	89	91	93	94
			SHR NOM. = 1,25			SHR MAX. = 1,47			SHR MAX TR = 1,55		

Technical Specifications

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

1. **pre-anodized satin 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 **42.1°** ensures excellent glare-free (**UGR<10**) visual comfort and photometric performance guaranteeing average **+91.2%** (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 *eco-design*
5. energy efficacy level ranging between **113 to 122 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.

IP20 LED ceiling luminaire of rectangular – square anodized aluminum body **with pre-anodized 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 **42.1°** ensures excellent glare-free (**UGR<10**) visual comfort and photometric performance guaranteeing average **+91.2%** (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 **113 to 122 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. Control gear unit **output ripple < 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.