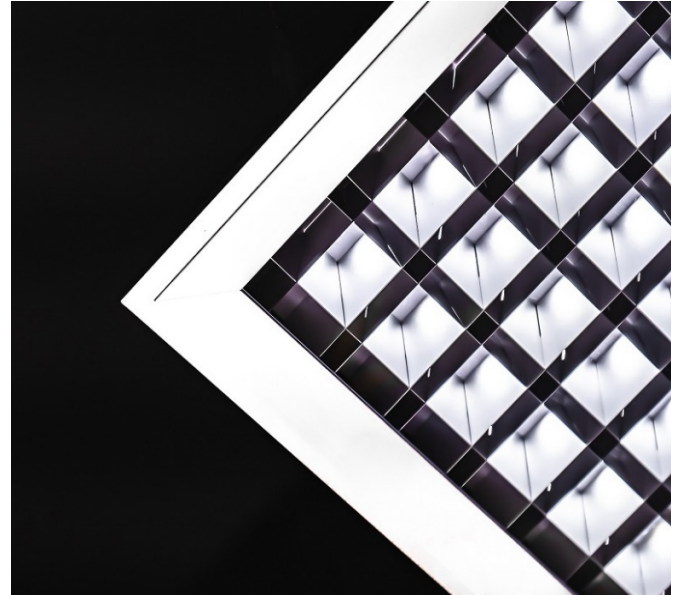


LIBUS SBL13WB LES-BL IP20

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

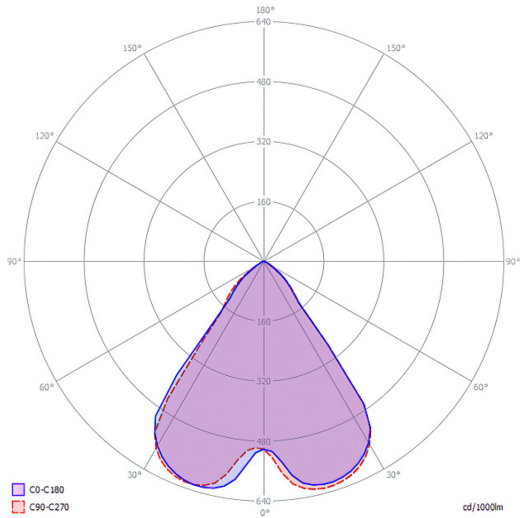
Light output ratio - L.O.R.	86,8%
Efficacy - lm/w <small>(range depending on the luminaire driving power)</small>	133 - 143
Utilization factor <small>(TM5 UF table average)</small>	96,9
Glare level - UGR <small>(4Hx8H - refl. 70-50-20)</small>	7,2
Beam angle	2x40.6° = 81.2°
Degree of protection	IP20



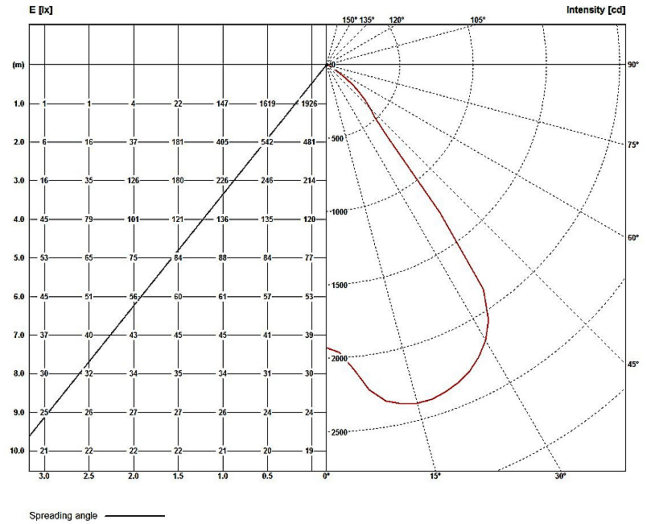
LES_BL IP20		BEAM ANGLE		L.O.R.		DIMENSIONS / POWER OPTIONS										OPTIMAL	SAFE	NOT AVAILABLE	
		2 x 40.6°		%		EFFICACY / LUMEN OUTPUT										lm/w	lm/w	-	
		81.2°		86,8												lumens	lumens	-	
ROW LED STRIPS	WIDTH mm		LENGTH mm		3 - 8 w nominal DIPswitch				11 - 21 w nominal DIPswitch				21 - 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	-	-	-	-	-	142	139	138	138	137	135	134			
	620	588			-	-	2042	2542	2816	2758	3291	3511	3899						
1 x 6	310	278			-	-	-	-	138	137	135	134	133	-	-	-	-		
	334	302			-	-	-	-	1019	1433	1951	2444	2678	-	-	-	-		
1 x 5	269	237			-	-	-	-	138	137	135	134	133	-	-	-	-		
	293	261			-	-	-	-	845	1011	1416	1930	2423	-	-	-	-		
1 x 4	228	197			595	563	-	137	135	134	133	132	-	-	-	-	-		
	252	220			620	588	-	665	828	978	1388	1896	-	-	-	-	-		
1 x 3	187	156			-	-	-	137	135	134	133	-	-	-	-	-	-		
	212	180			-	-	-	658	819	978	1403	-	-	-	-	-	-		
1 x 2	147	115			137	135	134	133	-	-	-	-	-	-	-	-	-		
	171	139			495	650	810	969	-	-	-	-	-	-	-	-	-		
1 x 1	106	74			135	134	133	-	-	-	-	-	-	-	-	-	-		
	130	98			492	643	803	-	-	-	-	-	-	-	-	-	-		
2 x 6	310	278	-	-	-	-	-	-	143	142	139	138	138	135	135	134			
	334	302	-	-	-	-	-	-	1496	2042	2542	2816	2743	3251	3491	3879			
2 x 5	269	237	-	-	-	-	-	-	141	139	137	137	135	135	134	133			
	293	261	-	-	-	-	-	-	1471	2007	2501	2779	2731	3232	3473	3825			
2 x 4	228	197	-	-	-	-	139	138	138	137	135	134	133	-	-				
	252	220	1125	1093	-	-	1027	1452	1991	2501	2760	2687	3188	-	-				
2 x 3	187	156	1150	1118	-	-	138	137	135	134	133	-	-	-	-				
	212	180	-	-	-	-	1014	1441	1951	2444	2678	-	-	-	-				
2 x 2	147	115	-	-	137	135	134	133	132	-	-	-	-	-	-				
	171	139	-	-	658	819	917	1395	1896	-	-	-	-	-	-				
2 x 1	106	74	136	135	134	133	-	-	-	-	-	-	-	-	-				
	130	98	493	650	810	969	-	-	-	-	-	-	-	-	-				

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

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	103	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	100	101	102	103
	0.3		85	89	92	94	97	99	100	101	102
	0.1		83	87	90	92	95	98	98	100	101
0.0	0.0	0.0	81	85	88	90	92	94	95	96	97
			SHR NOM. = 1,50			SHR MAX. = 1,51			SHR MAX TR = 1,59		

TECHNICAL SPECIFICATIONS

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

1. **TR95% PVD 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 **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 **133 to 143 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. 10 μm 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 \leq 1 - SVM \leq 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 **133 to 143 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** ($t_{j,25^{\circ}\text{C}}$) **>50.000 h**. and chromatic stability / color consistency over the entire luminaire life. Luminaire body of 10 μm 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 \leq 1 - SVM \leq 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.