

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P474601

Luminaire Tested: **24CZ2-135VHE-SQR-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474601  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-135VHE-SQR-UNV-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SQUARE LENS  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12450.2 lumens  
Efficiency: N/A  
Efficacy: 128.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

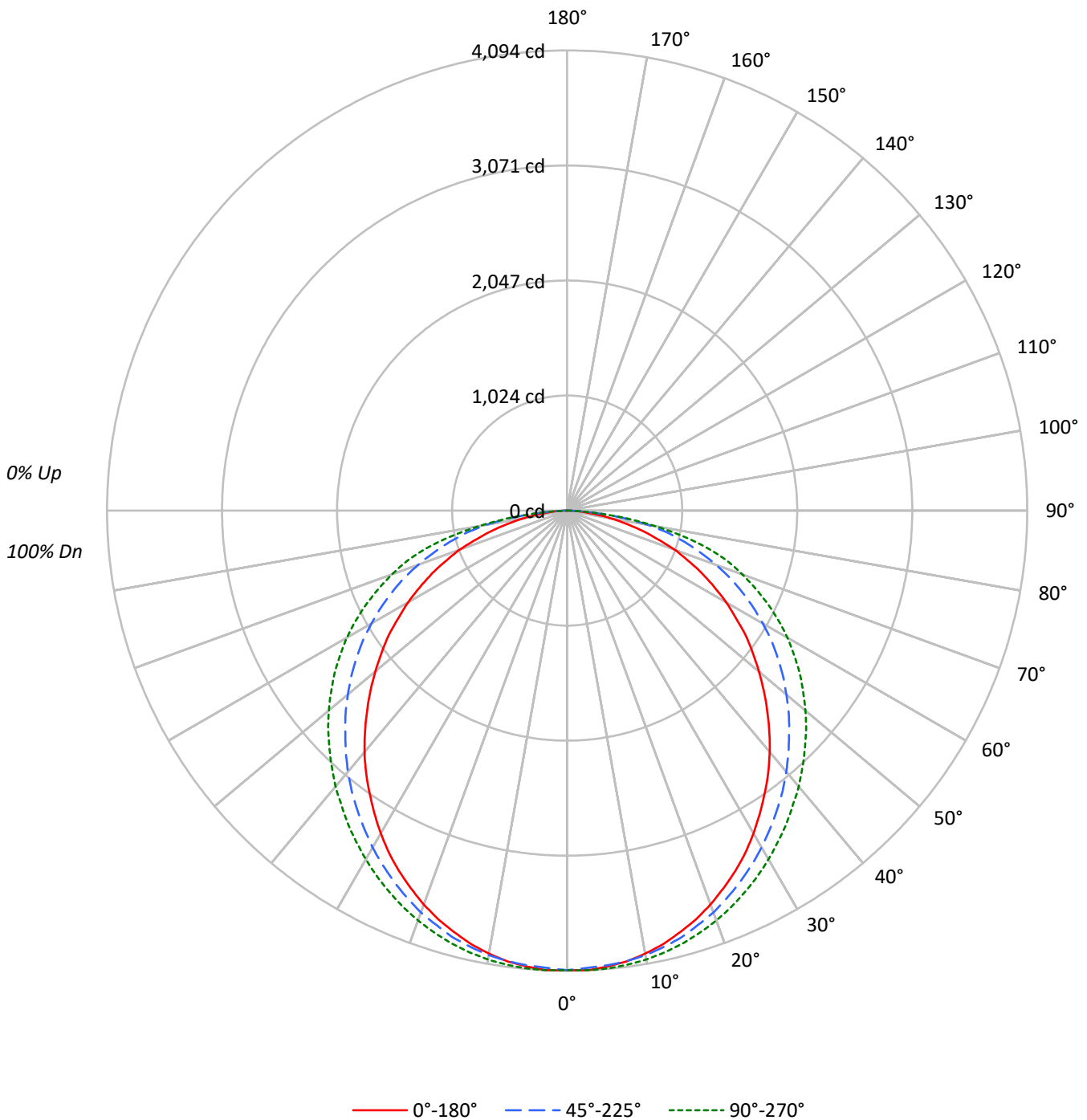
Input Watts (W): 96.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	87	84	82
2	98	89	82	76	95	87	81	75	84	78	73	80	76	71	77	73	70	68
3	89	78	69	62	86	76	68	62	73	66	61	70	64	60	68	63	59	56
4	81	69	59	53	79	67	59	52	65	57	51	62	56	51	60	55	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	39	50	43	38	49	43	38	36
7	64	50	41	34	62	49	40	34	47	40	34	46	39	34	44	38	33	31
8	59	45	37	31	58	45	36	31	43	36	30	42	35	30	41	35	30	28
9	55	42	33	28	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	11005	11005	11005
5°	11004	10971	11047
10°	10935	10973	11082
15°	10817	10950	11099
20°	10680	10897	11113
25°	10506	10819	11115
30°	10303	10754	11131
35°	10069	10690	11174
40°	9852	10655	11263
45°	9583	10628	11385
50°	9326	10659	11591
55°	9108	10732	11851
60°	8800	10812	12182
65°	8448	10942	12551
70°	8013	11095	13052
75°	7176	11250	13484
80°	6042	11282	12238
85°	4483	8537	8046



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	387.6	3.1
10°-20°	1110.7	8.9
20°-30°	1681.3	13.5
30°-40°	2033.9	16.3
40°-50°	2146.9	17.2
50°-60°	2024.6	16.3
60°-70°	1669.1	13.4
70°-80°	1095.0	8.8
80°-90°	301.1	2.4
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3179.5	25.5
0°-40°	5213.5	41.9
0°-60°	9385.0	75.4
0°-90°	12450.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12450.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4090	4090	4090	4090	4090	
5°	4074	4074	4062	4090	4090	387
15°	3883	3904	3930	3976	3984	1095
25°	3538	3582	3644	3720	3743	1630
35°	3065	3145	3254	3366	3401	1919
45°	2518	2632	2793	2942	2992	1943
55°	1941	2079	2287	2458	2526	1729
65°	1327	1486	1718	1902	1971	1310
75°	690	867	1082	1253	1297	729
85°	145	251	276	268	261	180
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4089.5	4089.5	4089.5	4089.5	4089.5
2.5°	4093.5	4089.5	4071.6	4095.5	4093.5
5°	4073.6	4073.6	4061.6	4089.5	4089.5
7.5°	4045.7	4047.7	4043.7	4075.6	4075.6
10°	4002.0	4009.9	4015.9	4051.7	4055.7
12.5°	3950.3	3964.2	3976.1	4019.9	4023.8
15°	3882.6	3904.5	3930.4	3976.1	3984.1
17.5°	3813.0	3838.9	3866.7	3926.4	3936.3
20°	3729.5	3759.3	3805.1	3864.7	3880.6
22.5°	3636.0	3677.8	3725.5	3797.1	3817.0
25°	3538.5	3582.3	3643.9	3719.5	3743.4
27.5°	3433.1	3484.8	3554.4	3642.0	3667.8
30°	3315.7	3375.4	3460.9	3554.4	3582.3
32.5°	3192.4	3262.0	3357.5	3460.9	3492.8
35°	3065.1	3144.7	3254.1	3365.5	3401.3
37.5°	2939.8	3019.4	3148.7	3266.0	3299.8
40°	2804.6	2892.1	3033.3	3158.6	3206.3
42.5°	2661.3	2764.8	2914.0	3053.2	3098.9
45°	2518.1	2631.5	2792.6	2941.8	2991.5
47.5°	2372.9	2498.2	2675.3	2826.4	2884.1
50°	2227.7	2361.0	2546.0	2709.1	2768.8
52.5°	2080.5	2219.8	2420.7	2593.7	2647.4
55°	1941.3	2078.6	2287.4	2458.5	2526.1
57.5°	1780.2	1935.3	2156.1	2329.2	2394.8
60°	1635.0	1786.2	2008.9	2191.9	2263.5
62.5°	1477.9	1633.0	1867.7	2050.7	2120.3
65°	1326.7	1485.8	1718.5	1901.5	1971.1
67.5°	1163.6	1330.7	1569.4	1746.4	1814.0
70°	1018.4	1175.5	1410.2	1591.2	1658.9
72.5°	841.4	1020.4	1245.1	1424.2	1497.8
75°	690.2	867.2	1082.0	1253.1	1296.9
77.5°	531.1	708.1	920.9	1032.3	1062.2
80°	389.9	556.9	728.0	787.7	789.7
82.5°	262.6	409.7	507.2	537.0	533.1
85°	145.2	250.6	276.5	268.5	260.6
87.5°	59.7	83.5	67.6	47.7	37.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)