

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: P474701

Luminaire Tested: **24CZ2-135VHE-SQR-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474701  
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-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SQUARE LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13146.9 lumens  
Efficiency: N/A  
Efficacy: 135.8 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

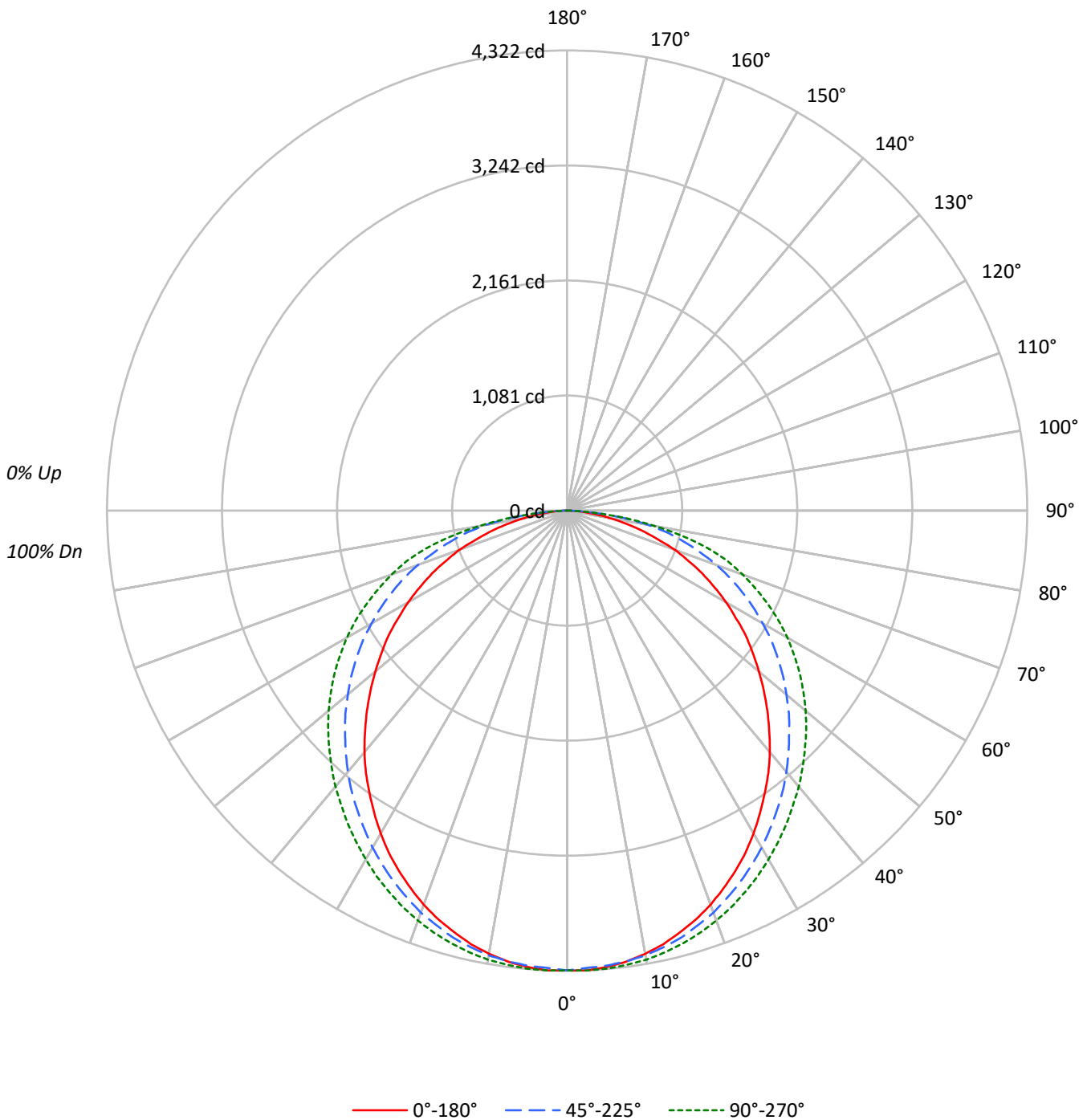
Input Watts (W): 96.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	11620	11620	11620
5°	11619	11585	11665
10°	11547	11587	11702
15°	11422	11562	11720
20°	11278	11506	11735
25°	11094	11425	11737
30°	10880	11356	11754
35°	10632	11288	11799
40°	10403	11252	11894
45°	10119	11222	12022
50°	9848	11255	12240
55°	9617	11332	12515
60°	9292	11417	12864
65°	8920	11555	13254
70°	8461	11717	13782
75°	7577	11880	14238
80°	6380	11912	12921
85°	4733	9013	8494



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	409.2	3.1
10°-20°	1172.8	8.9
20°-30°	1775.4	13.5
30°-40°	2147.7	16.3
40°-50°	2267.1	17.2
50°-60°	2137.9	16.3
60°-70°	1762.5	13.4
70°-80°	1156.3	8.8
80°-90°	317.9	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°	3357.5	25.5
0°-40°	5505.2	41.9
0°-60°	9910.2	75.4
0°-90°	13146.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13146.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4318	4318	4318	4318	4318	
5°	4302	4302	4289	4318	4318	408
15°	4100	4123	4150	4199	4207	1157
25°	3736	3783	3848	3928	3953	1721
35°	3237	3321	3436	3554	3592	2026
45°	2659	2779	2949	3106	3159	2052
55°	2050	2195	2415	2596	2668	1826
65°	1401	1569	1815	2008	2082	1383
75°	729	916	1143	1323	1369	770
85°	153	265	292	284	275	190
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4318.3	4318.3	4318.3	4318.3	4318.3
2.5°	4322.5	4318.3	4299.4	4324.6	4322.5
5°	4301.5	4301.5	4288.9	4318.3	4318.3
7.5°	4272.1	4274.2	4270.0	4303.6	4303.6
10°	4225.9	4234.3	4240.6	4278.4	4282.6
12.5°	4171.3	4186.0	4198.6	4244.8	4249.0
15°	4099.9	4123.0	4150.3	4198.6	4207.0
17.5°	4026.4	4053.7	4083.1	4146.1	4156.6
20°	3938.2	3969.7	4018.0	4081.0	4097.8
22.5°	3839.4	3883.6	3934.0	4009.6	4030.6
25°	3736.5	3782.7	3847.8	3927.7	3952.9
27.5°	3625.2	3679.8	3753.3	3845.7	3873.1
30°	3501.3	3564.3	3654.6	3753.3	3782.7
32.5°	3371.1	3444.6	3545.4	3654.6	3688.2
35°	3236.6	3320.7	3436.2	3553.8	3591.6
37.5°	3104.3	3188.3	3324.9	3448.8	3484.5
40°	2961.5	3053.9	3203.0	3335.4	3385.8
42.5°	2810.3	2919.5	3077.0	3224.0	3272.4
45°	2659.0	2778.8	2948.9	3106.4	3158.9
47.5°	2505.7	2638.0	2825.0	2984.6	3045.5
50°	2352.4	2493.1	2688.5	2860.7	2923.7
52.5°	2197.0	2344.0	2556.1	2738.9	2795.6
55°	2049.9	2194.9	2415.4	2596.0	2667.5
57.5°	1879.8	2043.6	2276.8	2459.5	2528.8
60°	1726.5	1886.1	2121.4	2314.6	2390.2
62.5°	1560.6	1724.4	1972.2	2165.5	2239.0
65°	1400.9	1569.0	1814.7	2007.9	2081.5
67.5°	1228.7	1405.1	1657.2	1844.1	1915.5
70°	1075.4	1241.3	1489.2	1680.3	1751.7
72.5°	888.4	1077.5	1314.8	1503.9	1581.6
75°	728.8	915.8	1142.6	1323.2	1369.4
77.5°	560.8	747.7	972.5	1090.1	1121.6
80°	411.7	588.1	768.7	831.7	833.8
82.5°	277.2	432.7	535.6	567.1	562.9
85°	153.3	264.6	291.9	283.5	275.1
87.5°	63.0	88.2	71.4	50.4	39.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)