

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: P474702

Luminaire Tested: **24CZ2-140VHE-SQR-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474702  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-140VHE-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: 13589.3 lumens  
Efficiency: N/A  
Efficacy: 135.2 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

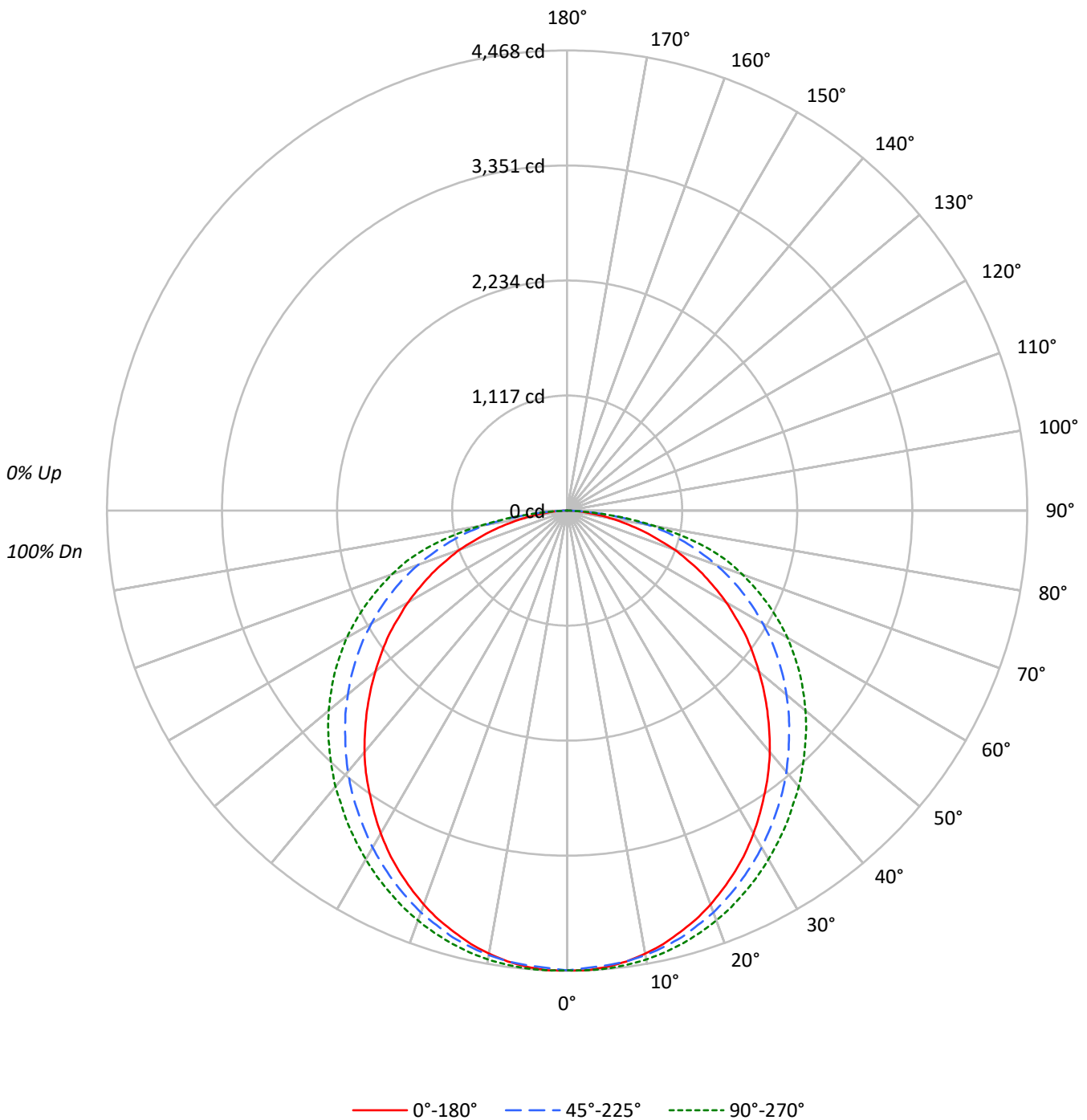
Input Watts (W): 100.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	12012	12012	12012
5°	12011	11975	12058
10°	11936	11977	12096
15°	11806	11952	12115
20°	11657	11893	12130
25°	11468	11809	12132
30°	11246	11738	12149
35°	10991	11668	12196
40°	10753	11630	12294
45°	10460	11600	12426
50°	10180	11634	12652
55°	9941	11713	12936
60°	9605	11801	13297
65°	9221	11944	13699
70°	8746	12111	14246
75°	7832	12279	14717
80°	6594	12314	13357
85°	4894	9318	8781



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	423.0	3.1
10°-20°	1212.3	8.9
20°-30°	1835.2	13.5
30°-40°	2220.0	16.3
40°-50°	2343.4	17.2
50°-60°	2209.8	16.3
60°-70°	1821.9	13.4
70°-80°	1195.2	8.8
80°-90°	328.6	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°	3470.5	25.5
0°-40°	5690.5	41.9
0°-60°	10243.6	75.4
0°-90°	13589.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13589.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4464	4464	4464	4464	4464	
5°	4446	4446	4433	4464	4464	422
15°	4238	4262	4290	4340	4349	1196
25°	3862	3910	3977	4060	4086	1779
35°	3346	3432	3552	3673	3712	2094
45°	2748	2872	3048	3211	3265	2121
55°	2119	2269	2497	2683	2757	1888
65°	1448	1622	1876	2076	2152	1430
75°	753	947	1181	1368	1416	796
85°	158	274	302	293	284	197
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4463.7	4463.7	4463.7	4463.7	4463.7
2.5°	4468.0	4463.7	4444.1	4470.2	4468.0
5°	4446.3	4446.3	4433.3	4463.7	4463.7
7.5°	4415.9	4418.1	4413.7	4448.5	4448.5
10°	4368.1	4376.8	4383.3	4422.4	4426.7
12.5°	4311.7	4326.9	4339.9	4387.7	4392.0
15°	4237.9	4261.7	4290.0	4339.9	4348.6
17.5°	4161.9	4190.1	4220.5	4285.6	4296.5
20°	4070.7	4103.3	4153.2	4218.3	4235.7
22.5°	3968.7	4014.2	4066.4	4144.5	4166.2
25°	3862.3	3910.0	3977.3	4059.8	4085.9
27.5°	3747.2	3803.7	3879.6	3975.2	4003.4
30°	3619.1	3684.2	3777.6	3879.6	3910.0
32.5°	3484.5	3560.5	3664.7	3777.6	3812.3
35°	3345.6	3432.4	3551.8	3673.4	3712.5
37.5°	3208.8	3295.6	3436.8	3564.8	3601.7
40°	3061.2	3156.7	3310.8	3447.6	3499.7
42.5°	2904.8	3017.7	3180.6	3332.5	3382.5
45°	2748.5	2872.3	3048.1	3211.0	3265.2
47.5°	2590.0	2726.8	2920.0	3085.0	3148.0
50°	2431.6	2577.0	2778.9	2957.0	3022.1
52.5°	2270.9	2422.9	2642.2	2831.0	2889.6
55°	2118.9	2268.7	2496.7	2683.4	2757.2
57.5°	1943.1	2112.4	2353.4	2542.3	2613.9
60°	1784.6	1949.6	2192.7	2392.5	2470.6
62.5°	1613.1	1782.4	2038.6	2238.3	2314.3
65°	1448.1	1621.8	1875.8	2075.5	2151.5
67.5°	1270.1	1452.4	1712.9	1906.2	1980.0
70°	1111.6	1283.1	1539.3	1736.8	1810.6
72.5°	918.3	1113.7	1359.1	1554.5	1634.8
75°	753.3	946.6	1181.0	1367.8	1415.5
77.5°	579.7	772.9	1005.2	1126.8	1159.3
80°	425.5	607.9	794.6	859.7	861.9
82.5°	286.6	447.2	553.6	586.2	581.8
85°	158.5	273.6	301.8	293.1	284.4
87.5°	65.1	91.2	73.8	52.1	41.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)