

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: P474595

Luminaire Tested: **24CZ2-105VHE-SQR-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474595  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-105VHE-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: 9699.8 lumens  
Efficiency: N/A  
Efficacy: 128.1 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

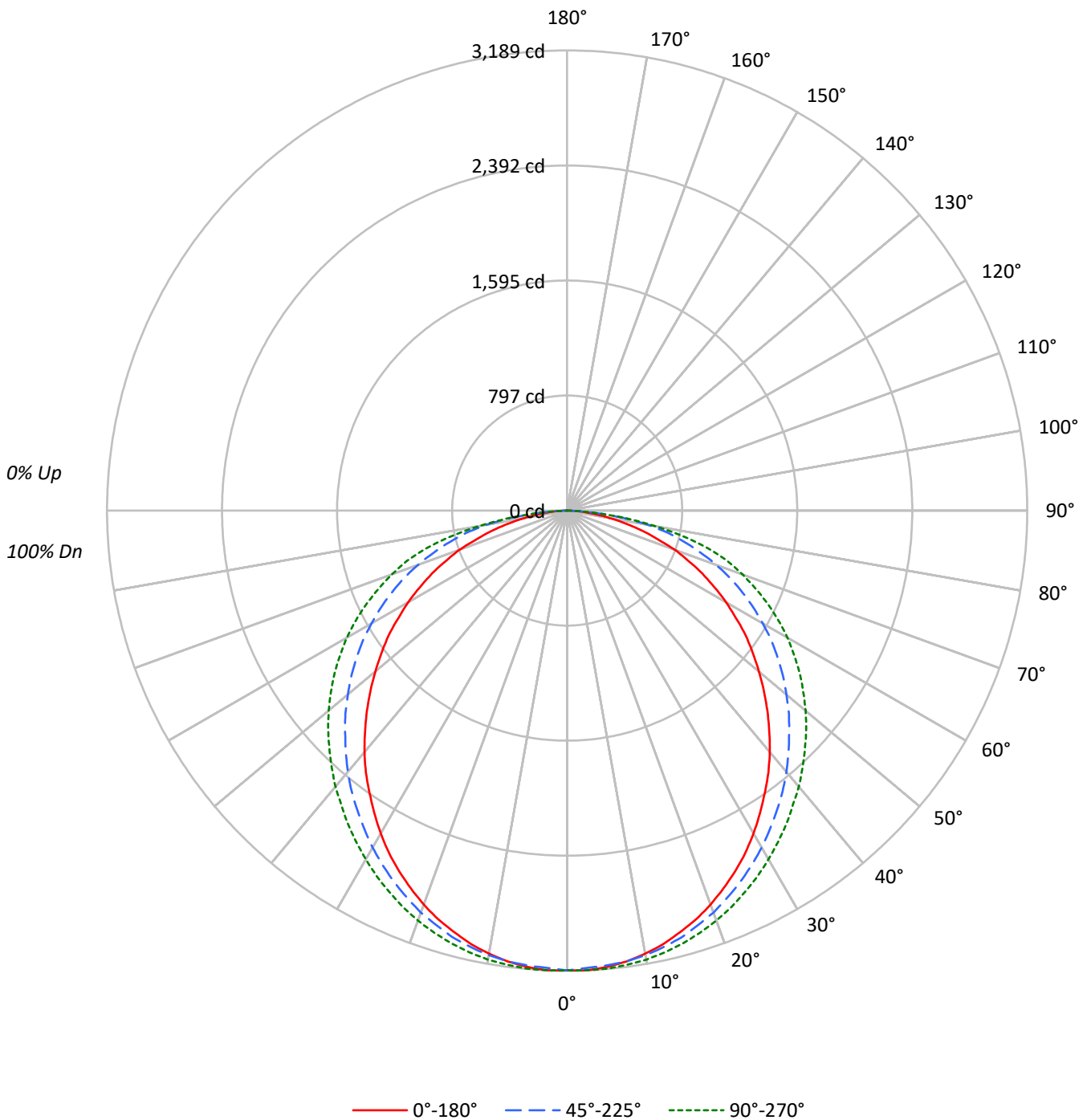
Input Watts (W): 75.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	8574	8574	8574
5°	8573	8548	8606
10°	8520	8549	8634
15°	8427	8531	8647
20°	8321	8489	8658
25°	8185	8429	8659
30°	8027	8378	8672
35°	7845	8328	8705
40°	7676	8302	8775
45°	7466	8280	8870
50°	7266	8304	9031
55°	7096	8361	9233
60°	6856	8423	9491
65°	6581	8525	9778
70°	6242	8644	10168
75°	5591	8765	10505
80°	4706	8790	9534
85°	3492	6651	6268



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	301.9	3.1
10°-20°	865.3	8.9
20°-30°	1309.9	13.5
30°-40°	1584.6	16.3
40°-50°	1672.6	17.2
50°-60°	1577.3	16.3
60°-70°	1300.4	13.4
70°-80°	853.1	8.8
80°-90°	234.6	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°	2477.1	25.5
0°-40°	4061.7	41.9
0°-60°	7311.7	75.4
0°-90°	9699.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9699.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3186	3186	3186	3186	3186	
5°	3174	3174	3164	3186	3186	301
15°	3025	3042	3062	3098	3104	853
25°	2757	2791	2839	2898	2916	1270
35°	2388	2450	2535	2622	2650	1495
45°	1962	2050	2176	2292	2331	1514
55°	1512	1619	1782	1915	1968	1347
65°	1034	1158	1339	1482	1536	1021
75°	538	676	843	976	1010	568
85°	113	195	215	209	203	140
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3186.1	3186.1	3186.1	<i>3186.1</i>	3186.1
2.5°	<i>3189.2</i>	<i>3186.1</i>	<i>3172.1</i>	<i>3190.7</i>	<i>3189.2</i>
5°	3173.7	3173.7	3164.4	<i>3186.1</i>	3186.1
7.5°	3152.0	3153.5	3150.4	<i>3175.2</i>	3175.2
10°	3117.9	3124.1	3128.7	<i>3156.6</i>	3159.7
12.5°	3077.6	3088.4	3097.7	<i>3131.8</i>	3134.9
15°	3024.9	3041.9	3062.1	<i>3097.7</i>	3103.9
17.5°	2970.7	2990.8	3012.5	<i>3059.0</i>	3066.7
20°	2905.6	2928.8	2964.5	<i>3011.0</i>	3023.4
22.5°	2832.7	2865.3	2902.5	<i>2958.3</i>	2973.8
25°	2756.8	2790.9	2838.9	<i>2897.8</i>	2916.4
27.5°	2674.7	2715.0	2769.2	<i>2837.4</i>	2857.5
30°	2583.3	2629.7	2696.4	<i>2769.2</i>	2790.9
32.5°	2487.2	2541.4	2615.8	<i>2696.4</i>	2721.2
35°	2388.0	2450.0	2535.2	<i>2622.0</i>	2649.9
37.5°	2290.4	2352.4	2453.1	<i>2544.5</i>	2570.9
40°	2185.0	2253.2	2363.2	<i>2460.8</i>	2498.0
42.5°	2073.4	2154.0	2270.2	<i>2378.7</i>	2414.3
45°	1961.8	2050.2	2175.7	<i>2291.9</i>	2330.7
47.5°	1848.7	1946.4	2084.3	<i>2202.0</i>	2247.0
50°	1735.6	1839.4	1983.5	<i>2110.6</i>	2157.1
52.5°	1620.9	1729.4	1885.9	<i>2020.7</i>	2062.6
55°	1512.5	1619.4	1782.1	<i>1915.4</i>	1968.0
57.5°	1386.9	1507.8	1679.8	<i>1814.6</i>	1865.8
60°	1273.8	1391.6	1565.1	<i>1707.7</i>	1763.5
62.5°	1151.4	1272.3	1455.1	<i>1597.7</i>	1651.9
65°	1033.6	1157.6	1338.9	<i>1481.5</i>	1535.7
67.5°	906.5	1036.7	1222.7	<i>1360.6</i>	1413.3
70°	793.4	915.8	1098.7	<i>1239.7</i>	1292.4
72.5°	655.5	795.0	970.1	<i>1109.5</i>	1166.9
75°	537.7	675.6	843.0	<i>976.3</i>	1010.4
77.5°	413.8	551.7	717.5	<i>804.3</i>	827.5
80°	303.7	433.9	567.2	<i>613.7</i>	615.2
82.5°	204.6	319.2	395.2	<i>418.4</i>	415.3
85°	113.1	195.3	215.4	<i>209.2</i>	203.0
87.5°	46.5	65.1	52.7	<i>37.2</i>	29.4
90°	0.0	0.0	0.0	<i>0.0</i>	0.0

(END OF REPORT)