

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: P388424

Luminaire Tested: **24CZ2-170VHE-SQR-UNV-L940-CD2-U**

Issue Date: 2/28/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P388424  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2002-678-2)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-SQR-UNV-L940-CD2-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13963.8 lumens  
Efficiency: N/A  
Efficacy: 113.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.33 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

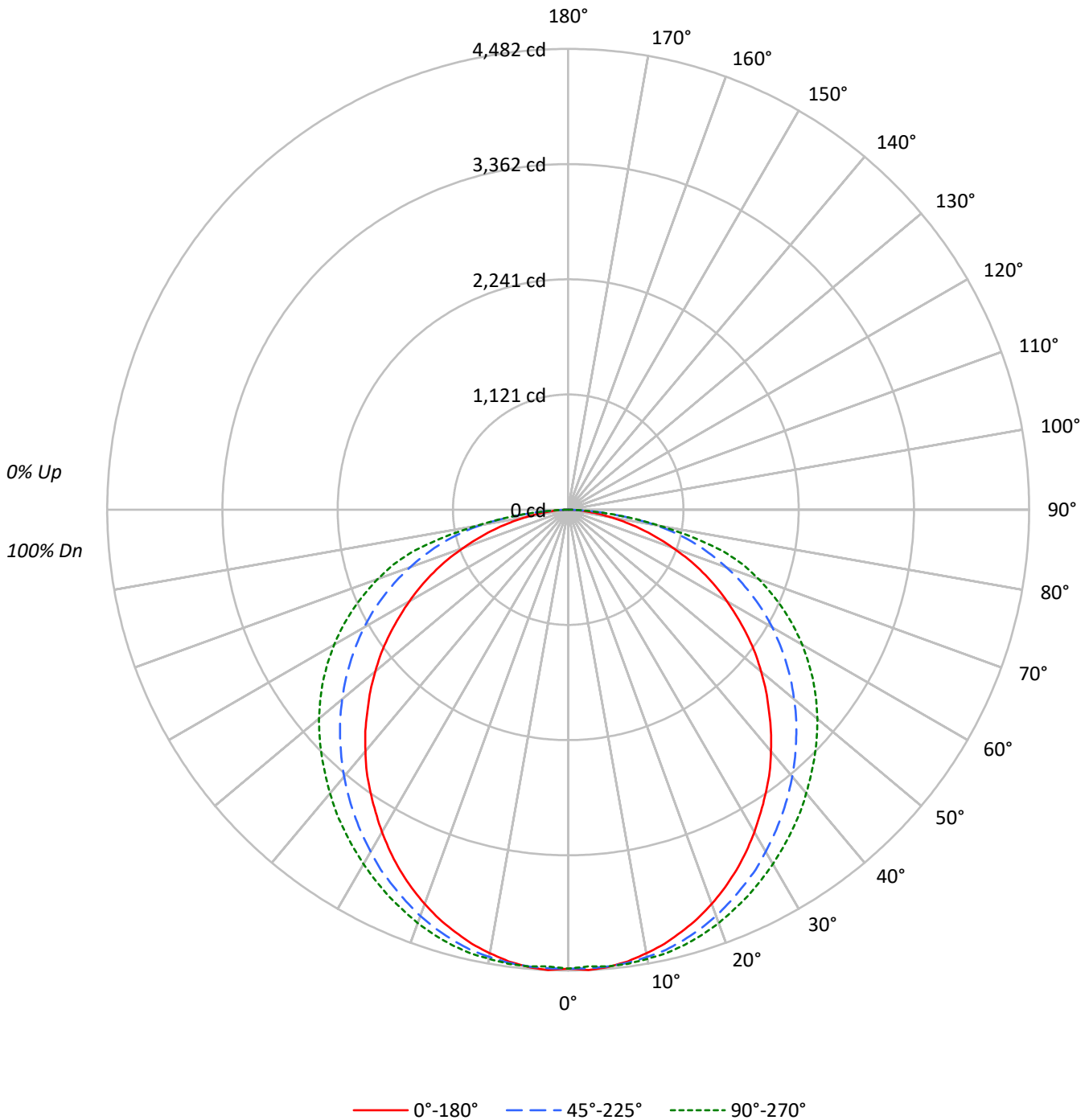
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	96	92	96	93	89	92	89	87	89	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	78	67	58	52	64	57	51	62	55	50	60	54	49	47
5	74	61	51	44	72	60	51	44	57	50	44	55	49	43	54	48	43	41
6	68	55	45	39	66	54	45	38	52	44	38	50	43	38	48	42	37	35
7	63	49	40	34	62	49	40	34	47	39	34	45	39	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	42	35	30	40	34	30	28
9	55	41	33	27	54	41	33	27	39	32	27	38	32	27	37	31	27	25
10	52	38	30	25	50	37	30	24	36	29	24	36	29	24	35	29	24	22

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

	0°	45°	90°
0°	6006	6006	6006
5°	6029	6022	6022
10°	5985	6035	6060
15°	5922	6038	6102
20°	5843	6021	6127
25°	5743	5990	6147
30°	5624	5968	6182
35°	5506	5953	6241
40°	5386	5953	6325
45°	5247	5966	6449
50°	5125	6004	6621
55°	4976	6068	6825
60°	4802	6167	7073
65°	4595	6283	7370
70°	4263	6439	7746
75°	3859	6664	8102
80°	3251	6681	6967
85°	2492	5054	5054



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	423.7	3.0
10°-20°	1219.0	8.7
20°-30°	1851.6	13.3
30°-40°	2252.2	16.1
40°-50°	2397.9	17.2
50°-60°	2283.8	16.4
60°-70°	1909.9	13.7
70°-80°	1273.4	9.1
80°-90°	352.4	2.5
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°	3494.3	25.0
0°-40°	5746.5	41.2
0°-60°	10428.2	74.7
0°-90°	13963.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13963.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4464	4464	4464	4464	4464	
5°	4464	4436	4459	4459	4459	423
15°	4251	4261	4334	4367	4380	1199
25°	3869	3919	4035	4104	4141	1781
35°	3352	3449	3624	3744	3800	2098
45°	2757	2905	3136	3311	3389	2132
55°	2121	2306	2587	2813	2910	1896
65°	1443	1655	1974	2218	2315	1426
75°	742	978	1282	1499	1558	786
85°	161	300	327	323	327	195
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4463.5	4463.5	4463.5	4463.5	4463.5
2.5°	4482.0	4449.7	4463.5	4463.5	4445.1
5°	4463.5	4435.8	4458.9	4458.9	4458.9
7.5°	4431.2	4408.2	4445.1	4454.3	4454.3
10°	4380.5	4371.3	4417.4	4431.2	4435.8
12.5°	4325.2	4320.6	4385.1	4403.6	4417.4
15°	4251.4	4260.6	4334.4	4366.7	4380.5
17.5°	4173.0	4191.5	4274.5	4320.6	4334.4
20°	4080.8	4108.5	4205.3	4251.4	4279.1
22.5°	3979.3	4020.8	4122.3	4177.6	4209.9
25°	3868.7	3919.4	4034.7	4103.8	4140.7
27.5°	3748.8	3813.3	3947.1	4025.5	4062.3
30°	3619.7	3693.5	3841.0	3933.2	3979.3
32.5°	3486.0	3573.6	3735.0	3836.4	3891.7
35°	3352.2	3449.1	3624.3	3744.2	3799.5
37.5°	3218.5	3315.4	3509.0	3638.1	3707.3
40°	3066.4	3181.6	3389.1	3532.1	3601.2
42.5°	2918.8	3043.3	3264.6	3421.4	3495.2
45°	2757.4	2905.0	3135.5	3310.7	3389.1
47.5°	2609.9	2757.4	3006.4	3190.9	3278.5
50°	2448.5	2605.3	2868.1	3071.0	3163.2
52.5°	2291.7	2453.1	2729.7	2946.5	3038.7
55°	2121.1	2305.5	2586.8	2812.7	2909.6
57.5°	1950.5	2148.8	2439.3	2674.4	2771.2
60°	1784.5	1987.4	2291.7	2526.9	2628.3
62.5°	1618.5	1821.4	2139.5	2379.3	2476.1
65°	1443.3	1655.4	1973.5	2217.9	2314.8
67.5°	1268.0	1489.4	1807.5	2051.9	2144.1
70°	1083.6	1318.8	1636.9	1876.7	1968.9
72.5°	913.0	1148.2	1461.7	1696.9	1784.5
75°	742.4	977.5	1281.9	1498.6	1558.5
77.5°	576.4	811.5	1083.6	1226.5	1240.4
80°	419.6	640.9	862.3	903.8	899.2
82.5°	281.3	479.6	594.8	599.4	613.3
85°	161.4	299.7	327.4	322.8	327.4
87.5°	64.6	106.1	92.2	69.2	69.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)