

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: P388423

Luminaire Tested: **24CZ2-170VHE-SQR-UNV-L940-CD2-SWPD1-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: P388423  
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-SWPD1-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: 13790.5 lumens  
Efficiency: N/A  
Efficacy: 111.8 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

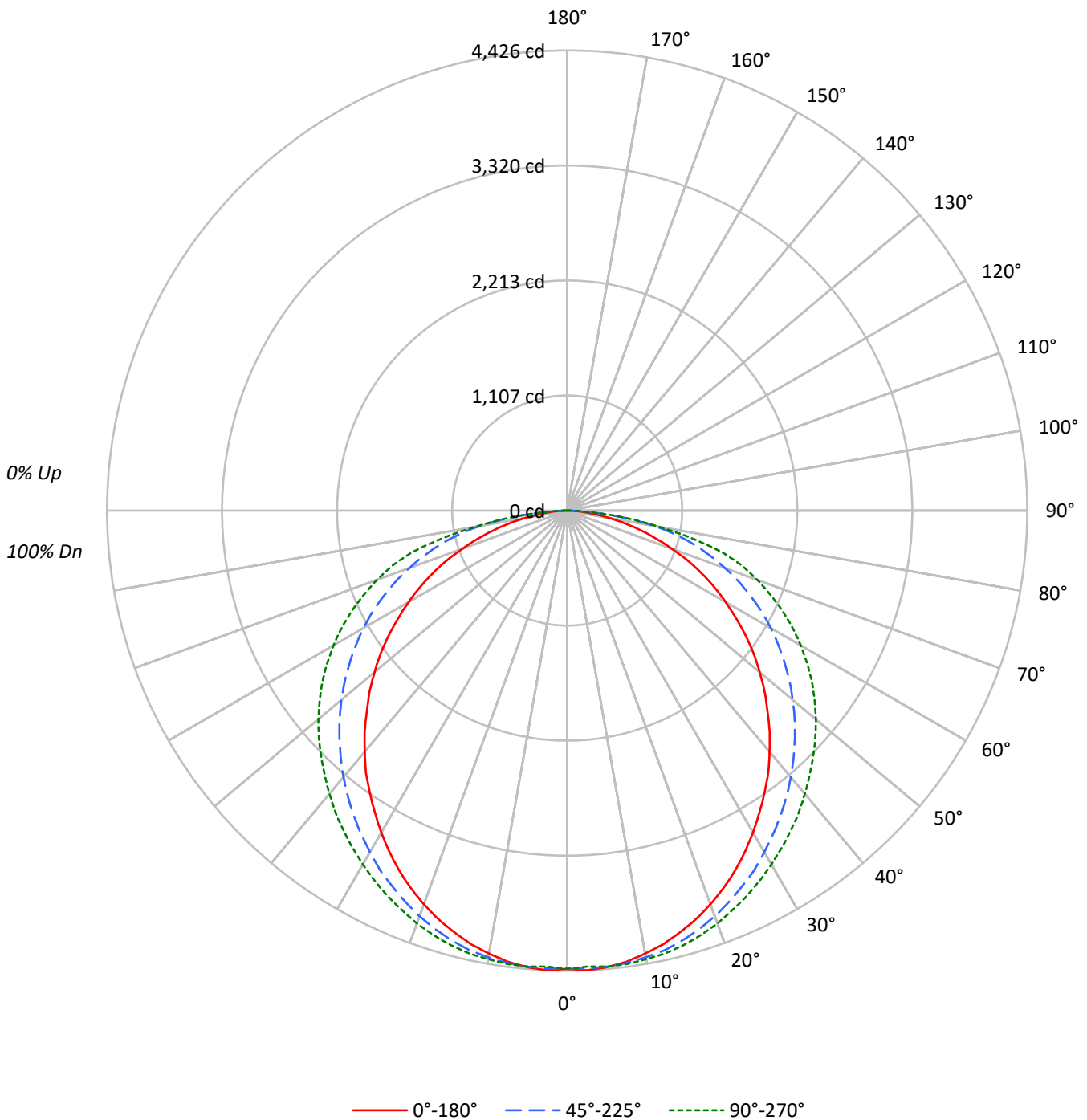
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	5931	5931	5931
5°	5954	5948	5948
10°	5911	5960	5985
15°	5848	5963	6026
20°	5770	5947	6051
25°	5672	5915	6071
30°	5554	5893	6106
35°	5438	5879	6163
40°	5319	5879	6247
45°	5182	5892	6369
50°	5062	5929	6539
55°	4914	5993	6741
60°	4742	6090	6985
65°	4538	6205	7278
70°	4210	6360	7650
75°	3812	6581	8002
80°	3211	6599	6881
85°	2461	4991	4991



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	418.4	3.0
10°-20°	1203.9	8.7
20°-30°	1828.6	13.3
30°-40°	2224.2	16.1
40°-50°	2368.1	17.2
50°-60°	2255.5	16.4
60°-70°	1886.2	13.7
70°-80°	1257.6	9.1
80°-90°	348.0	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°	3450.9	25.0
0°-40°	5675.1	41.2
0°-60°	10298.7	74.7
0°-90°	13790.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13790.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4408	4408	4408	4408	4408	
5°	4408	4381	4404	4404	4404	418
15°	4199	4208	4281	4312	4326	1184
25°	3821	3871	3985	4053	4089	1759
35°	3311	3406	3579	3698	3752	2072
45°	2723	2869	3097	3270	3347	2105
55°	2095	2277	2555	2778	2874	1873
65°	1425	1635	1949	2190	2286	1408
75°	733	965	1266	1480	1539	777
85°	159	296	323	319	323	193
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4408.1	4408.1	4408.1	4408.1	4408.1
2.5°	4426.3	4394.5	4408.1	4408.1	4389.9
5°	4408.1	4380.8	4403.6	4403.6	4403.6
7.5°	4376.2	4353.5	4389.9	4399.0	4399.0
10°	4326.1	4317.0	4362.6	4376.2	4380.8
12.5°	4271.5	4266.9	4330.7	4348.9	4362.6
15°	4198.6	4207.7	4280.6	4312.5	4326.1
17.5°	4121.2	4139.4	4221.4	4266.9	4280.6
20°	4030.1	4057.5	4153.1	4198.6	4226.0
22.5°	3930.0	3970.9	4071.1	4125.8	4157.7
25°	3820.7	3870.8	3984.6	4052.9	4089.3
27.5°	3702.3	3766.0	3898.1	3975.5	4011.9
30°	3574.8	3647.6	3793.3	3884.4	3930.0
32.5°	3442.7	3529.2	3688.6	3788.8	3843.4
35°	3310.6	3406.3	3579.3	3697.7	3752.4
37.5°	3178.6	3274.2	3465.5	3593.0	3661.3
40°	3028.3	3142.1	3347.1	3488.2	3556.5
42.5°	2882.6	3005.5	3224.1	3378.9	3451.8
45°	2723.2	2868.9	3096.6	3269.7	3347.1
47.5°	2577.5	2723.2	2969.1	3151.3	3237.8
50°	2418.1	2572.9	2832.5	3032.9	3123.9
52.5°	2263.3	2422.6	2695.9	2909.9	3001.0
55°	2094.8	2276.9	2554.7	2777.8	2873.5
57.5°	1926.3	2122.1	2409.0	2641.2	2736.9
60°	1762.3	1962.7	2263.3	2495.5	2595.7
62.5°	1598.4	1798.8	2113.0	2349.8	2445.4
65°	1425.4	1634.8	1949.0	2190.4	2286.0
67.5°	1252.3	1470.9	1785.1	2026.5	2117.5
70°	1070.2	1302.4	1616.6	1853.4	1944.5
72.5°	901.7	1133.9	1443.6	1675.8	1762.3
75°	733.2	965.4	1266.0	1480.0	1539.2
77.5°	569.2	801.5	1070.2	1211.3	1225.0
80°	414.4	633.0	851.6	892.6	888.0
82.5°	277.8	473.6	587.4	592.0	605.7
85°	159.4	296.0	323.3	318.8	323.3
87.5°	63.8	104.7	91.1	68.3	68.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)