

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: P388421

Luminaire Tested: **24CZ2-170VHE-SQR-UNV-L935-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: P388421  
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-L935-CD2-U  
Description: 2x4 CRUZE LED TROFFER WITH 3500K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13820.8 lumens  
Efficiency: N/A  
Efficacy: 112.0 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

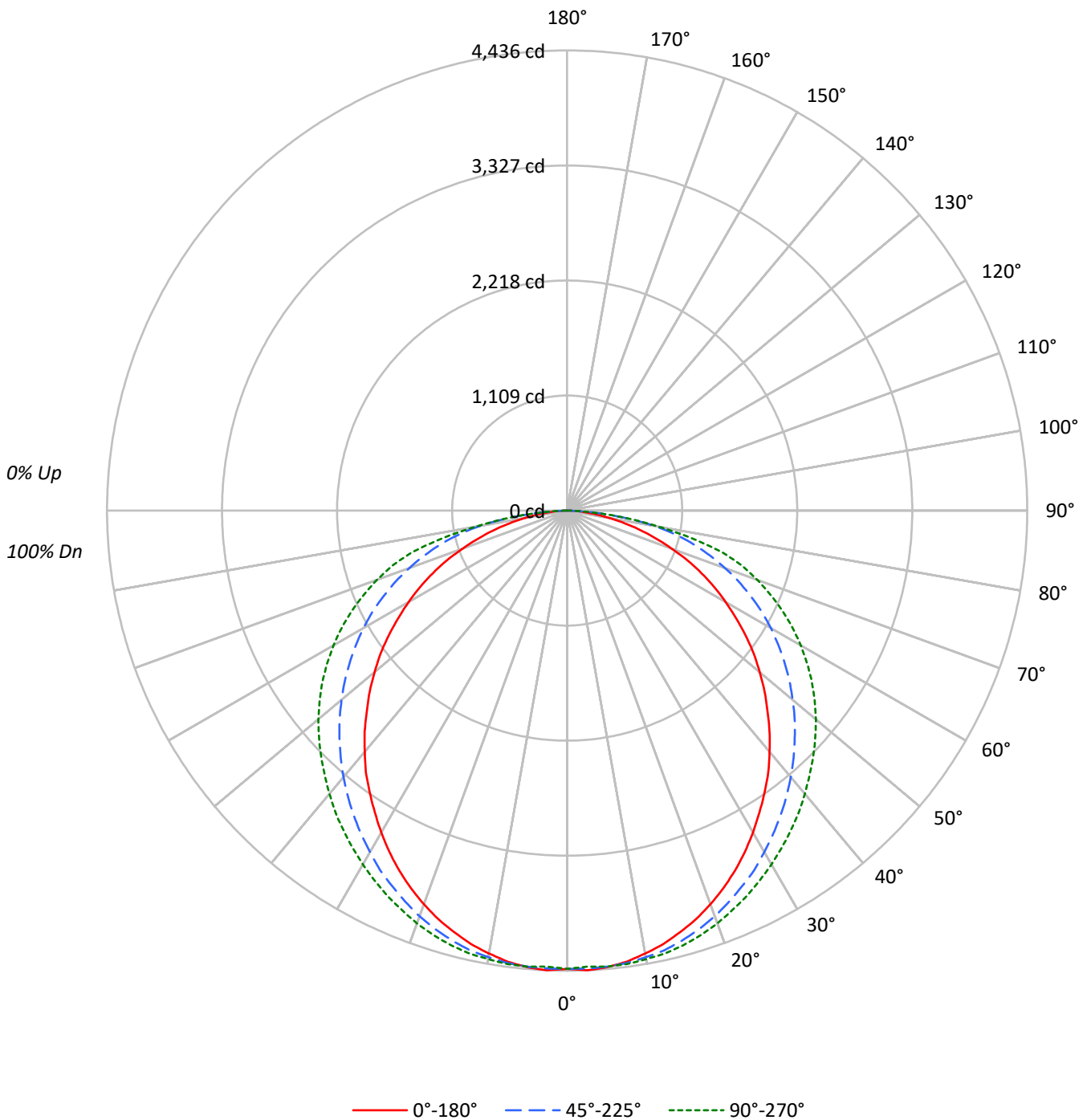
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	5944	5944	5944
5°	5967	5961	5961
10°	5924	5973	5998
15°	5861	5976	6039
20°	5783	5960	6064
25°	5685	5929	6084
30°	5566	5906	6119
35°	5450	5892	6177
40°	5331	5892	6261
45°	5193	5905	6383
50°	5073	5942	6553
55°	4925	6006	6755
60°	4753	6104	7000
65°	4548	6219	7294
70°	4219	6374	7666
75°	3820	6595	8019
80°	3218	6612	6895
85°	2465	5002	5002



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	419.3	3.0
10°-20°	1206.5	8.7
20°-30°	1832.6	13.3
30°-40°	2229.1	16.1
40°-50°	2373.3	17.2
50°-60°	2260.5	16.4
60°-70°	1890.4	13.7
70°-80°	1260.3	9.1
80°-90°	348.7	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°	3458.5	25.0
0°-40°	5687.6	41.2
0°-60°	10321.4	74.7
0°-90°	13820.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13820.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4418	4418	4418	4418	4418	
5°	4418	4390	4413	4413	4413	419
15°	4208	4217	4290	4322	4336	1187
25°	3829	3879	3993	4062	4098	1763
35°	3318	3414	3587	3706	3761	2076
45°	2729	2875	3103	3277	3354	2110
55°	2099	2282	2560	2784	2880	1877
65°	1428	1638	1953	2195	2291	1411
75°	735	968	1269	1483	1543	778
85°	160	297	324	320	324	193
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4417.8	4417.8	4417.8	4417.8	4417.8
2.5°	4436.1	4404.1	4417.8	4417.8	4399.5
5°	4417.8	4390.4	4413.2	4413.2	4413.2
7.5°	4385.9	4363.0	4399.5	4408.7	4408.7
10°	4335.7	4326.5	4372.2	4385.9	4390.4
12.5°	4280.9	4276.3	4340.2	4358.5	4372.2
15°	4207.9	4217.0	4290.0	4322.0	4335.7
17.5°	4130.3	4148.5	4230.7	4276.3	4290.0
20°	4039.0	4066.4	4162.2	4207.9	4235.2
22.5°	3938.6	3979.7	4080.1	4134.8	4166.8
25°	3829.1	3879.3	3993.4	4061.8	4098.3
27.5°	3710.4	3774.3	3906.6	3984.2	4020.7
30°	3582.6	3655.6	3801.7	3893.0	3938.6
32.5°	3450.3	3537.0	3696.7	3797.1	3851.9
35°	3317.9	3413.8	3587.2	3705.8	3760.6
37.5°	3185.6	3281.4	3473.1	3600.9	3669.3
40°	3035.0	3149.1	3354.4	3495.9	3564.4
42.5°	2888.9	3012.1	3231.2	3386.4	3459.4
45°	2729.2	2875.2	3103.4	3276.8	3354.4
47.5°	2583.1	2729.2	2975.6	3158.2	3244.9
50°	2423.4	2578.6	2838.7	3039.5	3130.8
52.5°	2268.2	2428.0	2701.8	2916.3	3007.6
55°	2099.4	2281.9	2560.3	2783.9	2879.8
57.5°	1930.5	2126.8	2414.3	2647.0	2742.9
60°	1766.2	1967.0	2268.2	2501.0	2601.4
62.5°	1601.9	1802.7	2117.6	2354.9	2450.8
65°	1428.5	1638.4	1953.3	2195.2	2291.0
67.5°	1255.1	1474.1	1789.0	2030.9	2122.2
70°	1072.5	1305.3	1620.2	1857.5	1948.8
72.5°	903.6	1136.4	1446.7	1679.5	1766.2
75°	734.8	967.5	1268.7	1483.2	1542.6
77.5°	570.5	803.2	1072.5	1214.0	1227.7
80°	415.3	634.4	853.4	894.5	889.9
82.5°	278.4	474.6	588.7	593.3	607.0
85°	159.7	296.6	324.0	319.5	324.0
87.5°	63.9	105.0	91.3	68.5	68.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)