

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: P389978

Luminaire Tested: **24CZ2-90VHE-S-UNV-L935-CD1-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: P389978  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-90VHE-S-UNV-L935-CD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 3500K, 90 LEDS, AND SMOOTH LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8042.5 lumens  
Efficiency: N/A  
Efficacy: 130.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

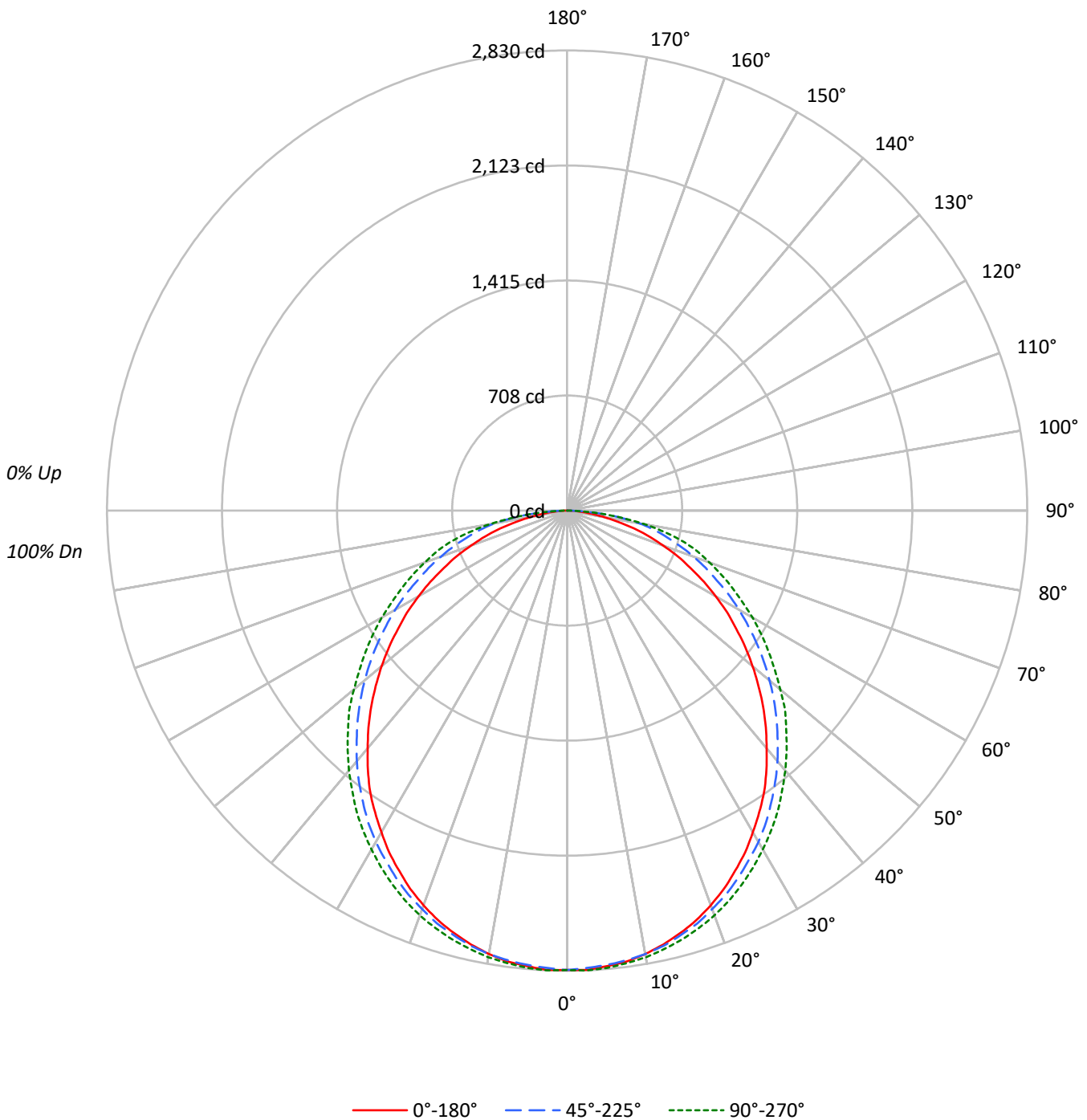
Input Watts (W): 61.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

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

	0°	45°	90°
0°	3802	3802	3802
5°	3799	3788	3813
10°	3783	3783	3811
15°	3747	3765	3804
20°	3698	3735	3793
25°	3629	3698	3770
30°	3548	3655	3739
35°	3470	3596	3709
40°	3352	3536	3666
45°	3242	3466	3626
50°	3117	3401	3583
55°	2978	3338	3548
60°	2839	3286	3540
65°	2660	3229	3562
70°	2462	3246	3658
75°	2205	3307	3865
80°	1781	3504	3780
85°	1342	3077	2996



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.5	3.3
10°-20°	764.3	9.5
20°-30°	1148.9	14.3
30°-40°	1368.5	17.0
40°-50°	1400.6	17.4
50°-60°	1261.0	15.7
60°-70°	990.3	12.3
70°-80°	642.7	8.0
80°-90°	198.8	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°	2180.7	27.1
0°-40°	3549.2	44.1
0°-60°	6210.8	77.2
0°-90°	8042.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8042.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2825	2825	2825	2825	2825	
5°	2813	2818	2805	2820	2823	267
15°	2690	2698	2703	2726	2731	758
25°	2445	2465	2491	2532	2539	1126
35°	2113	2138	2189	2243	2258	1318
45°	1704	1745	1821	1890	1906	1314
55°	1270	1326	1423	1497	1512	1138
65°	835	899	1014	1098	1119	832
75°	424	506	636	723	743	449
85°	87	161	199	194	194	105
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2825.4	2825.4	2825.4	2825.4	2825.4
2.5°	2827.9	2827.9	2815.2	2827.9	2830.5
5°	2812.6	2817.7	2804.9	2820.3	2822.8
7.5°	2797.3	2797.3	2789.6	2804.9	2807.5
10°	2769.2	2771.7	2769.2	2787.1	2789.6
12.5°	2733.4	2738.5	2741.1	2759.0	2761.5
15°	2690.0	2697.7	2702.8	2725.8	2730.9
17.5°	2641.5	2649.1	2661.9	2687.4	2692.5
20°	2582.7	2592.9	2608.2	2641.5	2649.1
22.5°	2518.8	2529.0	2554.6	2585.3	2598.0
25°	2444.7	2465.2	2490.7	2531.6	2539.3
27.5°	2370.7	2388.5	2421.8	2465.2	2475.4
30°	2283.8	2311.9	2352.8	2396.2	2406.4
32.5°	2199.5	2227.6	2276.1	2322.1	2334.9
35°	2112.7	2138.2	2189.3	2242.9	2258.3
37.5°	2013.0	2046.2	2102.4	2156.1	2171.4
40°	1908.3	1949.2	2013.0	2069.2	2087.1
42.5°	1808.7	1852.1	1915.9	1977.3	1997.7
45°	1703.9	1744.8	1821.4	1890.4	1905.7
47.5°	1596.6	1642.6	1724.4	1793.3	1818.9
50°	1489.3	1537.9	1624.7	1696.3	1711.6
52.5°	1382.0	1433.1	1525.1	1601.7	1609.4
55°	1269.6	1325.8	1422.9	1497.0	1512.3
57.5°	1167.5	1216.0	1320.7	1397.4	1415.2
60°	1055.0	1108.7	1221.1	1292.6	1315.6
62.5°	947.8	1004.0	1121.5	1193.0	1213.4
65°	835.4	899.2	1014.2	1098.5	1118.9
67.5°	738.3	799.6	922.2	1004.0	1024.4
70°	625.9	694.9	825.1	909.4	929.9
72.5°	528.8	600.3	730.6	812.4	843.0
75°	424.1	505.8	636.1	723.0	743.4
77.5°	321.9	416.4	549.2	615.7	615.7
80°	229.9	329.5	452.2	482.8	487.9
82.5°	150.7	247.8	334.7	332.1	332.1
85°	86.9	160.9	199.3	194.1	194.1
87.5°	33.2	66.4	71.5	71.5	69.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)