

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: P388324

Luminaire Tested: **24CZ2-110VHE-SQR-UNV-L935-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: P388324  
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: 24CZ2-110VHE-SQR-UNV-L935-CD2-SWPD1-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: 8899.6 lumens  
Efficiency: N/A  
Efficacy: 115.0 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

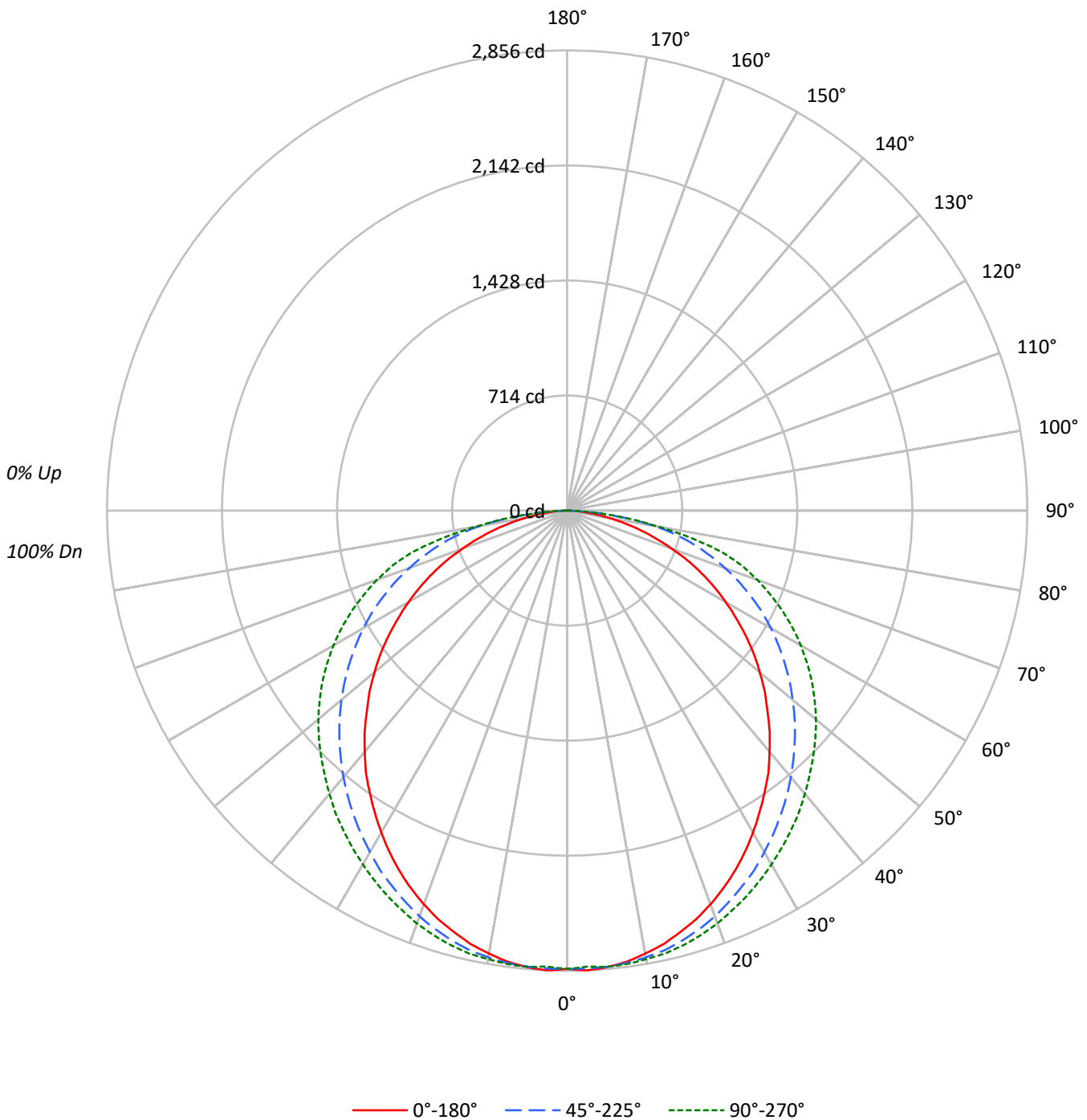
Input Watts (W): 77.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	3828	3828	3828
5°	3842	3838	3838
10°	3814	3847	3863
15°	3774	3848	3889
20°	3724	3838	3905
25°	3660	3817	3918
30°	3584	3803	3940
35°	3509	3794	3978
40°	3433	3794	4031
45°	3344	3803	4110
50°	3266	3826	4220
55°	3171	3868	4350
60°	3060	3930	4508
65°	2928	4004	4697
70°	2717	4104	4937
75°	2459	4247	5164
80°	2072	4259	4441
85°	1589	3222	3222



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	270.0	3.0
10°-20°	776.9	8.7
20°-30°	1180.1	13.3
30°-40°	1435.4	16.1
40°-50°	1528.2	17.2
50°-60°	1455.6	16.4
60°-70°	1217.3	13.7
70°-80°	811.6	9.1
80°-90°	224.6	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°	2227.0	25.0
0°-40°	3662.4	41.2
0°-60°	6646.2	74.7
0°-90°	8899.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8899.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2845	2845	2845	2845	2845	
5°	2845	2827	2842	2842	2842	270
15°	2710	2715	2762	2783	2792	764
25°	2466	2498	2571	2616	2639	1135
35°	2136	2198	2310	2386	2422	1337
45°	1757	1851	1998	2110	2160	1359
55°	1352	1469	1649	1793	1854	1208
65°	920	1055	1258	1414	1475	909
75°	473	623	817	955	993	501
85°	103	191	209	206	209	124
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2844.7	2844.7	2844.7	2844.7	2844.7
2.5°	2856.5	2835.9	2844.7	2844.7	2833.0
5°	2844.7	2827.1	2841.8	2841.8	2841.8
7.5°	2824.2	2809.5	2833.0	2838.9	2838.9
10°	2791.8	2786.0	2815.4	2824.2	2827.1
12.5°	2756.6	2753.6	2794.8	2806.5	2815.4
15°	2709.6	2715.4	2762.5	2783.0	2791.8
17.5°	2659.6	2671.4	2724.3	2753.6	2762.5
20°	2600.8	2618.5	2680.2	2709.6	2727.2
22.5°	2536.2	2562.6	2627.3	2662.5	2683.1
25°	2465.6	2498.0	2571.4	2615.5	2639.0
27.5°	2389.2	2430.4	2515.6	2565.6	2589.1
30°	2306.9	2354.0	2448.0	2506.8	2536.2
32.5°	2221.7	2277.6	2380.4	2445.1	2480.3
35°	2136.5	2198.2	2309.9	2386.3	2421.6
37.5°	2051.3	2113.0	2236.4	2318.7	2362.8
40°	1954.3	2027.8	2160.0	2251.1	2295.2
42.5°	1860.3	1939.6	2080.7	2180.6	2227.6
45°	1757.4	1851.4	1998.4	2110.0	2160.0
47.5°	1663.4	1757.4	1916.1	2033.6	2089.5
50°	1560.5	1660.4	1827.9	1957.2	2016.0
52.5°	1460.6	1563.4	1739.8	1877.9	1936.7
55°	1351.8	1469.4	1648.7	1792.7	1854.4
57.5°	1243.1	1369.5	1554.6	1704.5	1766.2
60°	1137.3	1266.6	1460.6	1610.5	1675.1
62.5°	1031.5	1160.8	1363.6	1516.4	1578.1
65°	919.8	1055.0	1257.8	1413.6	1475.3
67.5°	808.2	949.2	1152.0	1307.8	1366.5
70°	690.6	840.5	1043.3	1196.1	1254.9
72.5°	581.9	731.8	931.6	1081.5	1137.3
75°	473.1	623.0	817.0	955.1	993.3
77.5°	367.3	517.2	690.6	781.7	790.5
80°	267.4	408.5	549.6	576.0	573.1
82.5°	179.3	305.6	379.1	382.0	390.9
85°	102.9	191.0	208.7	205.7	208.7
87.5°	41.1	67.6	58.8	44.1	44.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)