

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: P389977

Luminaire Tested: **24CZ2-90VHE-S-UNV-L935-CD1-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: P389977  
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-SWPD1-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: 7942.7 lumens  
Efficiency: N/A  
Efficacy: 128.5 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

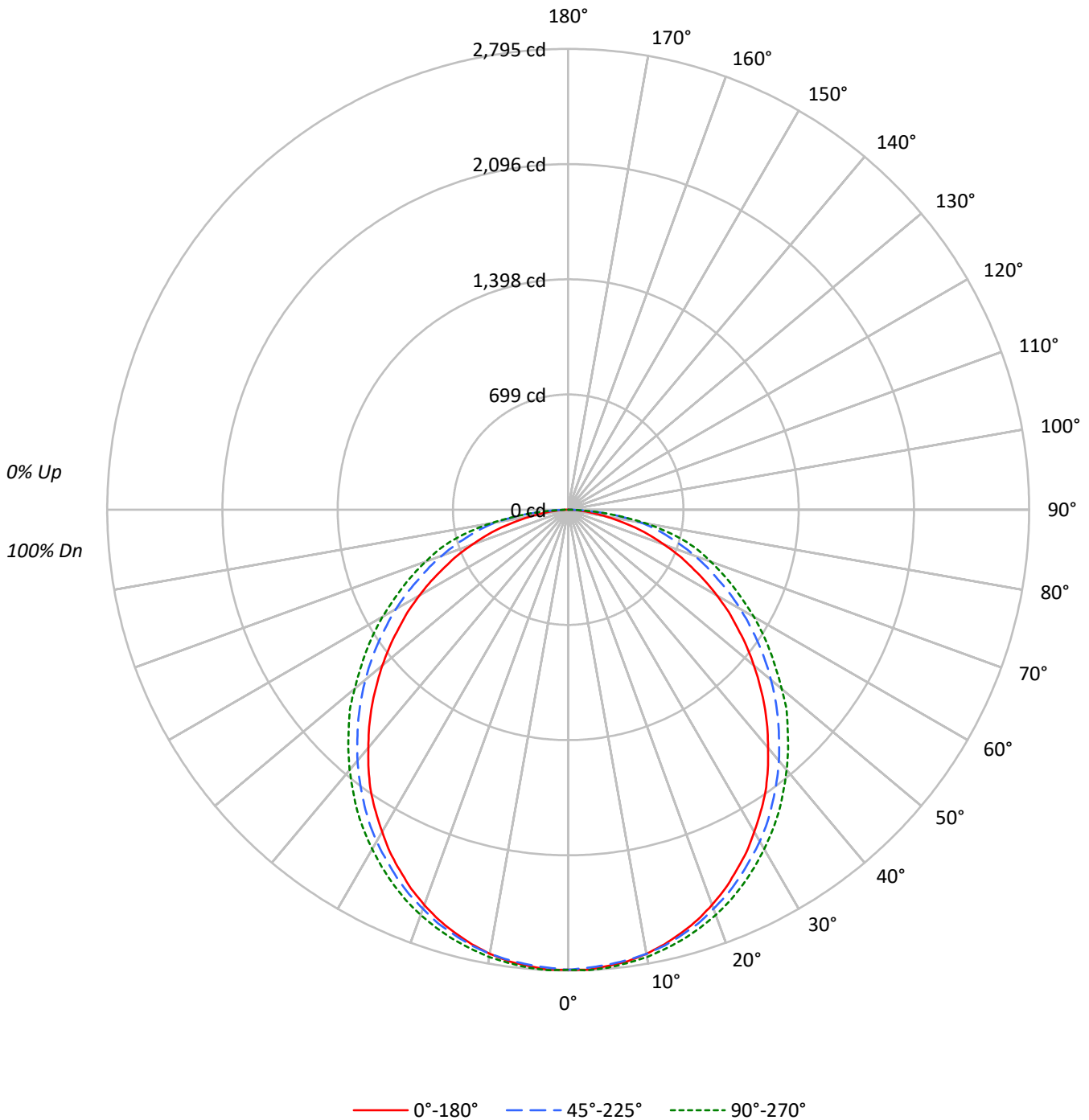
Input Watts (W): 61.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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					100			
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83					83			
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69					69			
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58					58			
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49					49			
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42					42			
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37					37			
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33					33			
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29					29			
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26					26			
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24					24			

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

	0°	45°	90°
0°	3754	3754	3754
5°	3752	3741	3765
10°	3736	3736	3764
15°	3701	3718	3757
20°	3652	3688	3746
25°	3584	3652	3723
30°	3504	3610	3692
35°	3427	3551	3663
40°	3310	3492	3620
45°	3202	3423	3581
50°	3079	3359	3538
55°	2941	3297	3504
60°	2804	3245	3496
65°	2627	3189	3518
70°	2432	3206	3613
75°	2177	3266	3817
80°	1760	3460	3734
85°	1325	3038	2959



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	264.2	3.3
10°-20°	754.8	9.5
20°-30°	1134.6	14.3
30°-40°	1351.5	17.0
40°-50°	1383.2	17.4
50°-60°	1245.3	15.7
60°-70°	978.0	12.3
70°-80°	634.7	8.0
80°-90°	196.3	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°	2153.6	27.1
0°-40°	3505.1	44.1
0°-60°	6133.7	77.2
0°-90°	7942.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7942.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2790	2790	2790	2790	2790	
5°	2778	2783	2770	2785	2788	264
15°	2657	2664	2669	2692	2697	749
25°	2414	2435	2460	2500	2508	1112
35°	2086	2112	2162	2215	2230	1302
45°	1683	1723	1799	1867	1882	1297
55°	1254	1309	1405	1478	1494	1124
65°	825	888	1002	1085	1105	821
75°	419	500	628	714	734	443
85°	86	159	197	192	192	104
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2790.3	2790.3	2790.3	2790.3	2790.3
2.5°	2792.8	2792.8	2780.2	2792.8	2795.4
5°	2777.7	2782.8	2770.1	2785.3	2787.8
7.5°	2762.6	2762.6	2755.0	2770.1	2772.7
10°	2734.8	2737.3	2734.8	2752.5	2755.0
12.5°	2699.5	2704.5	2707.1	2724.7	2727.3
15°	2656.6	2664.2	2669.2	2691.9	2697.0
17.5°	2608.7	2616.2	2628.9	2654.1	2659.1
20°	2550.6	2560.7	2575.9	2608.7	2616.2
22.5°	2487.6	2497.7	2522.9	2553.2	2565.8
25°	2414.4	2434.6	2459.8	2500.2	2507.8
27.5°	2341.2	2358.9	2391.7	2434.6	2444.7
30°	2255.5	2283.2	2323.6	2366.5	2376.6
32.5°	2172.2	2200.0	2247.9	2293.3	2305.9
35°	2086.4	2111.7	2162.1	2215.1	2230.2
37.5°	1988.0	2020.8	2076.3	2129.3	2144.5
40°	1884.6	1925.0	1988.0	2043.5	2061.2
42.5°	1786.2	1829.1	1892.2	1952.7	1972.9
45°	1682.8	1723.1	1798.8	1866.9	1882.1
47.5°	1576.8	1622.2	1703.0	1771.1	1796.3
50°	1470.8	1518.8	1604.6	1675.2	1690.3
52.5°	1364.9	1415.3	1506.2	1581.9	1589.4
55°	1253.9	1309.4	1405.3	1478.4	1493.6
57.5°	1153.0	1200.9	1304.3	1380.0	1397.7
60°	1042.0	1094.9	1205.9	1276.6	1299.3
62.5°	936.0	991.5	1107.6	1178.2	1198.4
65°	825.0	888.1	1001.6	1084.8	1105.0
67.5°	729.1	789.7	910.8	991.5	1011.7
70°	618.1	686.2	814.9	898.2	918.3
72.5°	522.2	592.9	721.5	802.3	832.6
75°	418.8	499.5	628.2	714.0	734.2
77.5°	317.9	411.2	542.4	608.0	608.0
80°	227.1	325.5	446.6	476.8	481.9
82.5°	148.9	244.7	330.5	328.0	328.0
85°	85.8	158.9	196.8	191.7	191.7
87.5°	32.8	65.6	70.6	70.6	68.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)