

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: P389981

Luminaire Tested: **24CZ2-90VHE-S-UNV-L940-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: P389981  
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-L940-CD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SMOOTH LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8125.7 lumens  
Efficiency: N/A  
Efficacy: 131.5 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

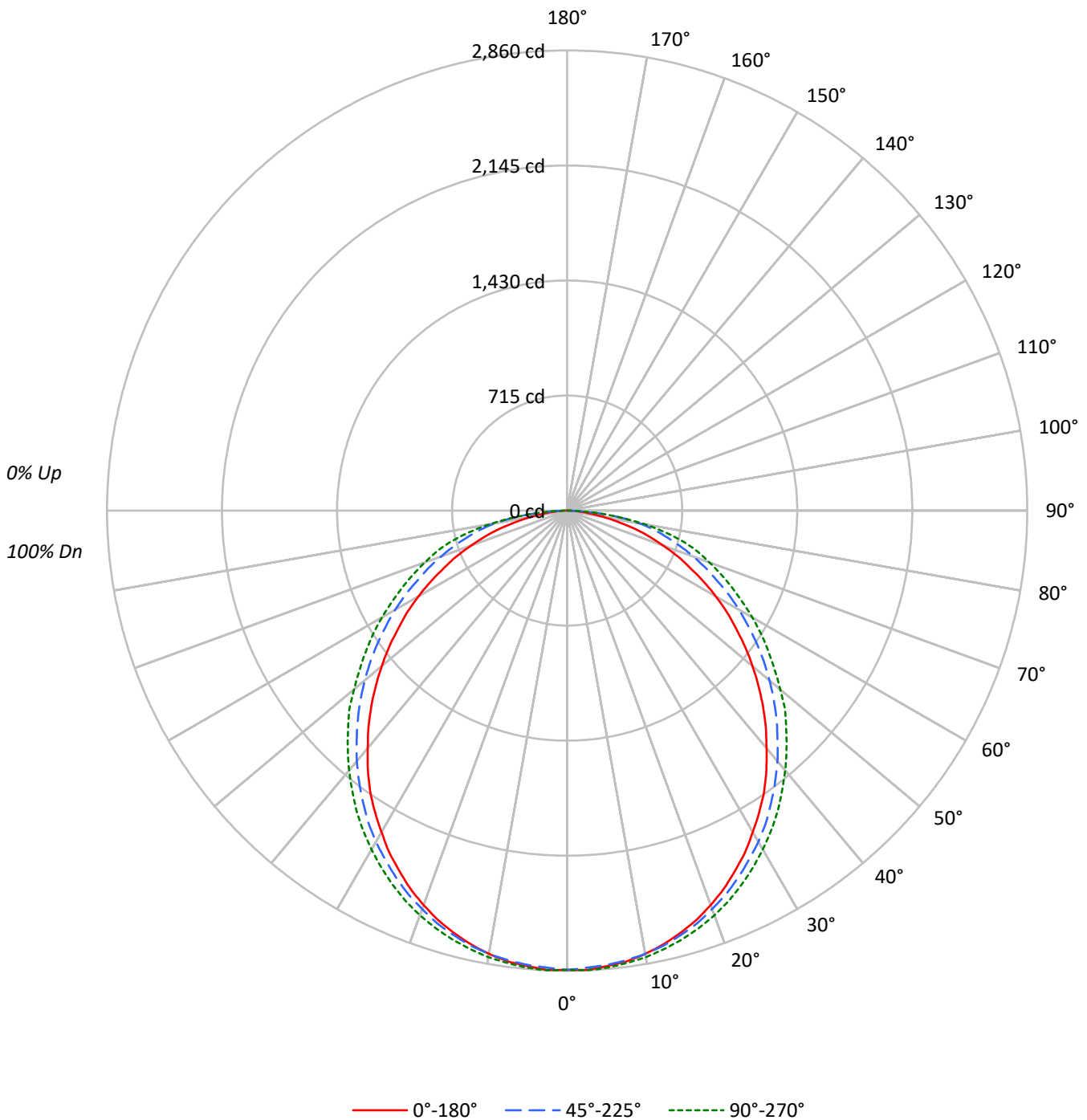
Input Watts (W): 61.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	3841	3841	3841
5°	3838	3828	3852
10°	3822	3822	3851
15°	3786	3804	3843
20°	3736	3773	3832
25°	3667	3736	3809
30°	3585	3693	3777
35°	3506	3633	3748
40°	3386	3572	3704
45°	3276	3502	3664
50°	3150	3436	3620
55°	3009	3372	3584
60°	2869	3320	3577
65°	2687	3262	3599
70°	2488	3280	3696
75°	2227	3341	3905
80°	1800	3539	3820
85°	1355	3108	3029



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	270.2	3.3
10°-20°	772.2	9.5
20°-30°	1160.8	14.3
30°-40°	1382.7	17.0
40°-50°	1415.1	17.4
50°-60°	1274.0	15.7
60°-70°	1000.5	12.3
70°-80°	649.3	8.0
80°-90°	200.8	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°	2203.2	27.1
0°-40°	3585.9	44.1
0°-60°	6275.0	77.2
0°-90°	8125.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8125.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2855	2855	2855	2855	2855	
5°	2842	2847	2834	2849	2852	270
15°	2718	2726	2731	2754	2759	766
25°	2470	2491	2516	2558	2566	1138
35°	2134	2160	2212	2266	2282	1332
45°	1722	1763	1840	1910	1925	1327
55°	1283	1340	1438	1512	1528	1150
65°	844	908	1025	1110	1130	840
75°	428	511	643	730	751	453
85°	88	163	201	196	196	106
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2854.6	2854.6	2854.6	2854.6	2854.6
2.5°	2857.2	2857.2	2844.3	2857.2	2859.8
5°	2841.7	2846.9	2834.0	2849.4	2852.0
7.5°	2826.2	2826.2	2818.5	2834.0	2836.5
10°	2797.8	2800.4	2797.8	2815.9	2818.5
12.5°	2761.7	2766.9	2769.4	2787.5	2790.1
15°	2717.8	2725.6	2730.7	2754.0	2759.1
17.5°	2668.8	2676.5	2689.4	2715.2	2720.4
20°	2609.4	2619.7	2635.2	2668.8	2676.5
22.5°	2544.9	2555.2	2581.0	2612.0	2624.9
25°	2470.0	2490.7	2516.5	2557.8	2565.5
27.5°	2395.2	2413.3	2446.8	2490.7	2501.0
30°	2307.4	2335.8	2377.1	2421.0	2431.3
32.5°	2222.3	2250.7	2299.7	2346.1	2359.1
35°	2134.5	2160.3	2211.9	2266.1	2281.6
37.5°	2033.8	2067.4	2124.2	2178.4	2193.9
40°	1928.0	1969.3	2033.8	2090.6	2108.7
42.5°	1827.4	1871.2	1935.8	1997.7	2018.4
45°	1721.5	1762.8	1840.3	1910.0	1925.4
47.5°	1613.1	1659.6	1742.2	1811.9	1837.7
50°	1504.7	1553.8	1641.5	1713.8	1729.3
52.5°	1396.3	1448.0	1540.9	1618.3	1626.0
55°	1282.8	1339.6	1437.6	1512.5	1528.0
57.5°	1179.5	1228.6	1334.4	1411.8	1429.9
60°	1066.0	1120.2	1233.7	1306.0	1329.2
62.5°	957.6	1014.3	1133.1	1205.3	1226.0
65°	844.0	908.5	1024.7	1109.8	1130.5
67.5°	745.9	807.9	931.7	1014.3	1035.0
70°	632.4	702.0	833.7	918.8	939.5
72.5°	534.3	606.5	738.2	820.8	851.7
75°	428.4	511.0	642.7	730.4	751.1
77.5°	325.2	420.7	554.9	622.0	622.0
80°	232.3	333.0	456.8	487.8	493.0
82.5°	152.3	250.4	338.1	335.5	335.5
85°	87.8	162.6	201.3	196.2	196.2
87.5°	33.6	67.1	72.3	72.3	69.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)