

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: P389979

Luminaire Tested: **24CZ2-90VHE-S-UNV-L940-CD1-SDWPD1-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: P389979  
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-SDWPD1-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: 7928.1 lumens  
Efficiency: N/A  
Efficacy: 128.3 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

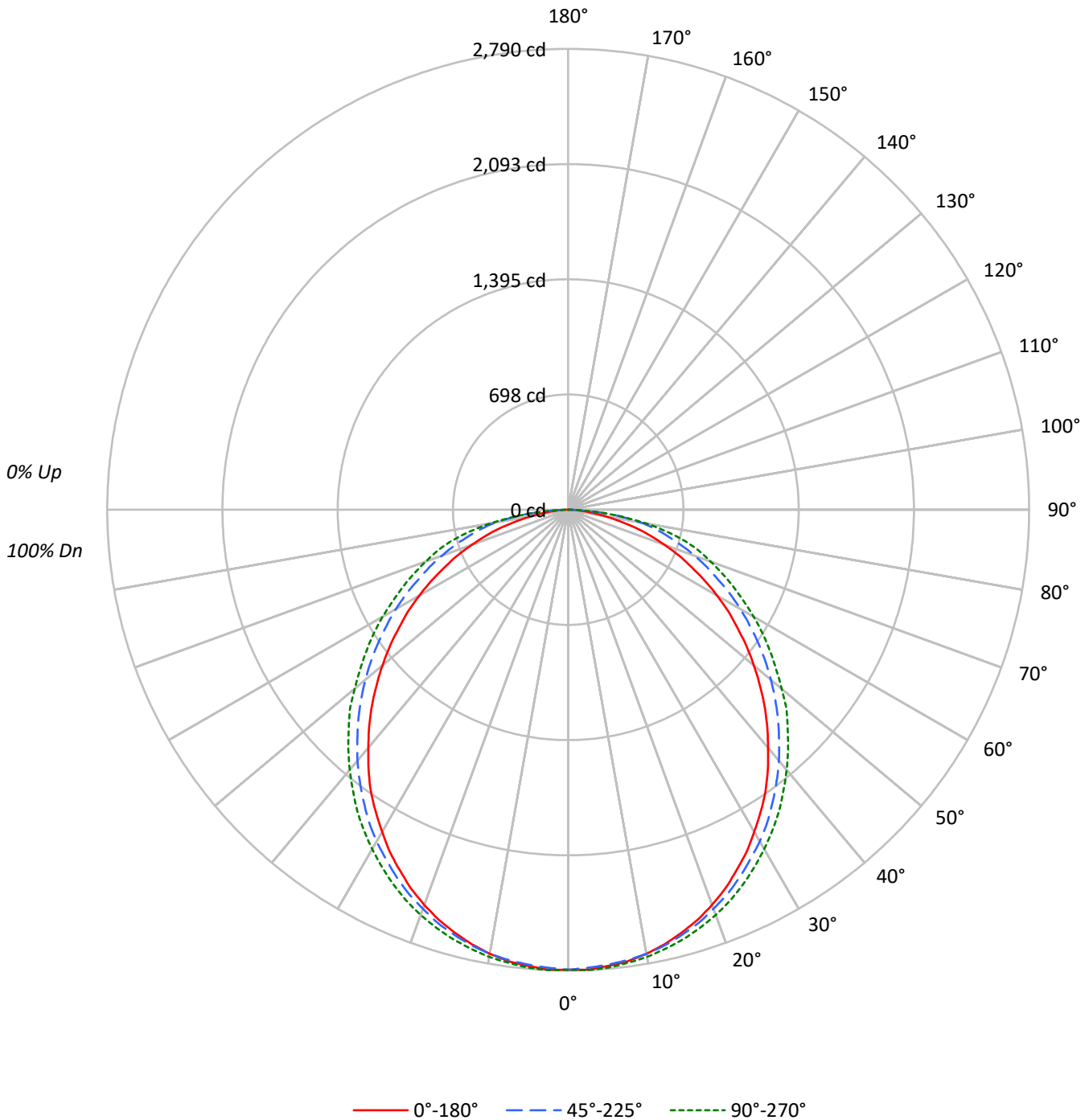
Input Watts (W): 61.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P389979

CATALOG NUMBER: 24CZ2-90VHE-S-UNV-L940-CD1-SDWPD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P389979

CATALOG NUMBER: 24CZ2-90VHE-S-UNV-L940-CD1-SDWPD1-U

**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°	3747	3747	3747
5°	3745	3734	3758
10°	3730	3730	3757
15°	3694	3711	3750
20°	3645	3681	3739
25°	3578	3645	3716
30°	3498	3603	3686
35°	3421	3545	3656
40°	3304	3485	3614
45°	3196	3416	3575
50°	3073	3352	3532
55°	2936	3290	3497
60°	2799	3239	3490
65°	2622	3183	3512
70°	2427	3200	3606
75°	2173	3260	3810
80°	1756	3453	3727
85°	1321	3032	2955



TEST NUMBER: P389979

CATALOG NUMBER: 24CZ2-90VHE-S-UNV-L940-CD1-SDWPD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	263.7	3.3
10°-20°	753.4	9.5
20°-30°	1132.6	14.3
30°-40°	1349.0	17.0
40°-50°	1380.7	17.4
50°-60°	1243.0	15.7
60°-70°	976.2	12.3
70°-80°	633.6	8.0
80°-90°	196.0	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°	2149.6	27.1
0°-40°	3498.7	44.1
0°-60°	6122.4	77.2
0°-90°	7928.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7928.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2785	2785	2785	2785	2785	
5°	2773	2778	2765	2780	2783	263
15°	2652	2659	2664	2687	2692	748
25°	2410	2430	2455	2496	2503	1110
35°	2083	2108	2158	2211	2226	1299
45°	1680	1720	1796	1864	1879	1295
55°	1252	1307	1403	1476	1491	1122
65°	824	886	1000	1083	1103	820
75°	418	499	627	713	733	442
85°	86	159	196	191	191	103
90°	0	0	0	0	0	



TEST NUMBER: P389979

CATALOG NUMBER: 24CZ2-90VHE-S-UNV-L940-CD1-SDWPD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2785.2	2785.2	2785.2	2785.2	2785.2
2.5°	2787.7	2787.7	2775.1	2787.7	2790.2
5°	2772.6	2777.6	2765.0	2780.2	2782.7
7.5°	2757.5	2757.5	2749.9	2765.0	2767.6
10°	2729.8	2732.3	2729.8	2747.4	2749.9
12.5°	2694.5	2699.6	2702.1	2719.7	2722.2
15°	2651.7	2659.3	2664.3	2687.0	2692.0
17.5°	2603.9	2611.4	2624.0	2649.2	2654.2
20°	2546.0	2556.0	2571.1	2603.9	2611.4
22.5°	2483.0	2493.1	2518.3	2548.5	2561.1
25°	2410.0	2430.1	2455.3	2495.6	2503.1
27.5°	2336.9	2354.6	2387.3	2430.1	2440.2
30°	2251.3	2279.0	2319.3	2362.1	2372.2
32.5°	2168.2	2195.9	2243.8	2289.1	2301.7
35°	2082.6	2107.8	2158.1	2211.0	2226.1
37.5°	1984.4	2017.1	2072.5	2125.4	2140.5
40°	1881.1	1921.4	1984.4	2039.8	2057.4
42.5°	1782.9	1825.7	1888.7	1949.1	1969.3
45°	1679.7	1720.0	1795.5	1863.5	1878.6
47.5°	1573.9	1619.2	1699.8	1767.8	1793.0
50°	1468.1	1516.0	1601.6	1672.1	1687.2
52.5°	1362.4	1412.7	1503.4	1578.9	1586.5
55°	1251.6	1307.0	1402.7	1475.7	1490.8
57.5°	1150.8	1198.7	1301.9	1377.5	1395.1
60°	1040.0	1092.9	1203.7	1274.2	1296.9
62.5°	934.3	989.7	1105.5	1176.0	1196.2
65°	823.5	886.4	999.7	1082.9	1103.0
67.5°	727.8	788.2	909.1	989.7	1009.8
70°	617.0	685.0	813.4	896.5	916.6
72.5°	521.3	591.8	720.2	800.8	831.0
75°	418.0	498.6	627.0	712.7	732.8
77.5°	317.3	410.5	541.4	606.9	606.9
80°	226.6	324.9	445.7	476.0	481.0
82.5°	148.6	244.3	329.9	327.4	327.4
85°	85.6	158.7	196.4	191.4	191.4
87.5°	32.7	65.5	70.5	70.5	68.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)