

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: P389190

Luminaire Tested: **24CZ2-90VHE-SQR-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: P389190  
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: 24CZ2-90VHE-SQR-UNV-L940-CD1-SDWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7246.3 lumens  
Efficiency: N/A  
Efficacy: 117.3 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

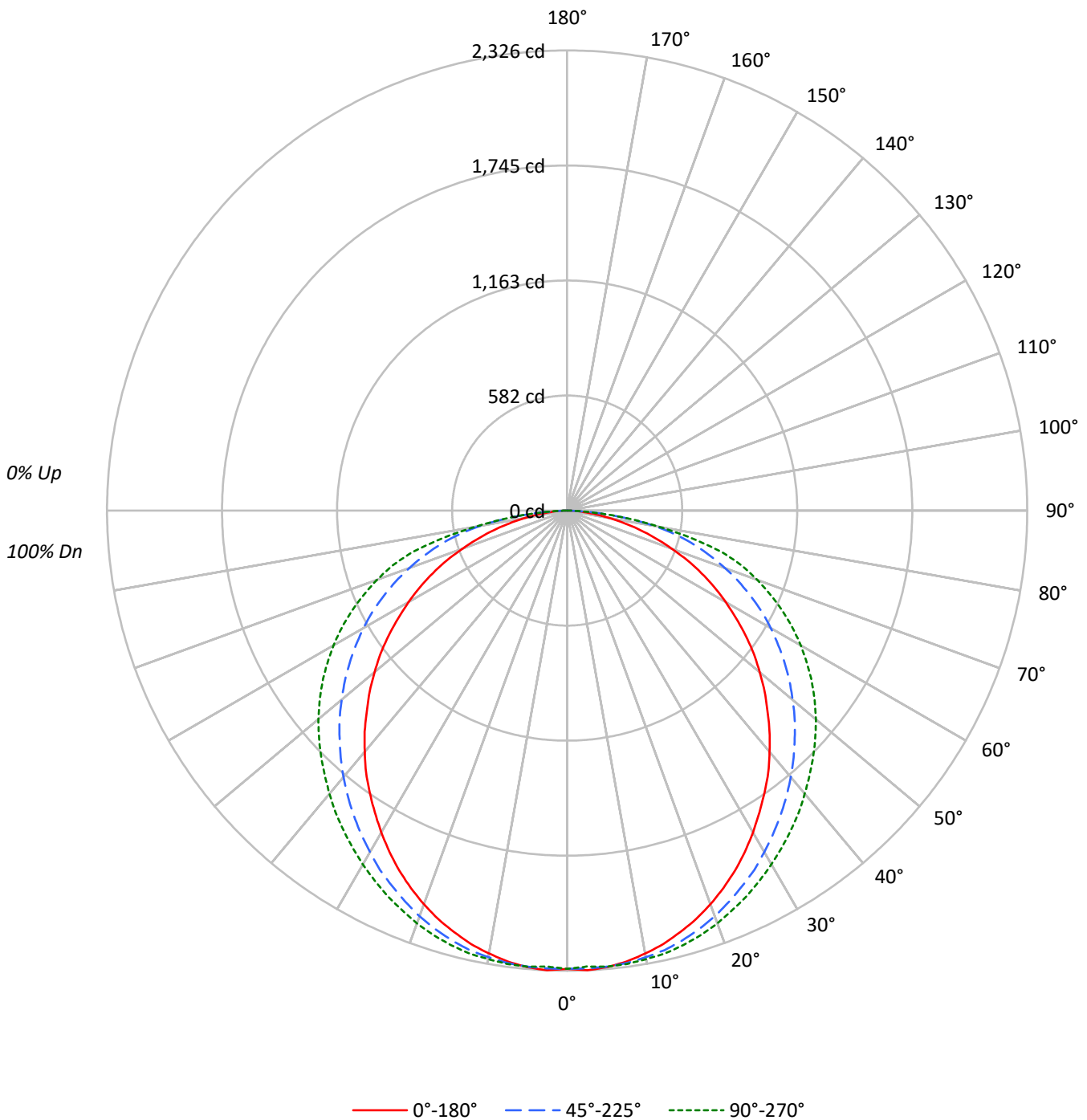
Input Watts (W): 61.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P389190

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

### Luminous Intensity Polar Plot





TEST NUMBER: P389190

CATALOG NUMBER: 24CZ2-90VHE-SQR-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	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°	3117	3117	3117
5°	3128	3125	3125
10°	3106	3132	3145
15°	3073	3133	3166
20°	3032	3125	3180
25°	2980	3108	3190
30°	2918	3097	3208
35°	2857	3089	3239
40°	2795	3089	3282
45°	2723	3096	3346
50°	2660	3115	3436
55°	2582	3149	3542
60°	2492	3200	3670
65°	2385	3260	3824
70°	2212	3342	4019
75°	2002	3458	4205
80°	1687	3467	3615
85°	1292	2623	2623



TEST NUMBER: P389190

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

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.9	3.0
10°-20°	632.6	8.7
20°-30°	960.9	13.3
30°-40°	1168.7	16.1
40°-50°	1244.3	17.2
50°-60°	1185.2	16.4
60°-70°	991.1	13.7
70°-80°	660.8	9.1
80°-90°	182.8	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°	1813.3	25.0
0°-40°	2982.0	41.2
0°-60°	5411.5	74.7
0°-90°	7246.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7246.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2316	2316	2316	2316	2316	
5°	2316	2302	2314	2314	2314	220
15°	2206	2211	2249	2266	2273	622
25°	2008	2034	2094	2130	2149	924
35°	1740	1790	1881	1943	1972	1089
45°	1431	1508	1627	1718	1759	1106
55°	1101	1196	1342	1460	1510	984
65°	749	859	1024	1151	1201	740
75°	385	507	665	778	809	408
85°	84	156	170	168	170	101
90°	0	0	0	0	0	



TEST NUMBER: P389190

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

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2316.3	2316.3	2316.3	2316.3	2316.3
2.5°	2325.8	2309.1	2316.3	2316.3	2306.7
5°	2316.3	2301.9	2313.9	2313.9	2313.9
7.5°	2299.5	2287.6	2306.7	2311.5	2311.5
10°	2273.2	2268.4	2292.3	2299.5	2301.9
12.5°	2244.5	2242.1	2275.6	2285.2	2292.3
15°	2206.2	2211.0	2249.3	2266.0	2273.2
17.5°	2165.5	2175.1	2218.2	2242.1	2249.3
20°	2117.7	2132.0	2182.3	2206.2	2220.6
22.5°	2065.0	2086.6	2139.2	2167.9	2184.7
25°	2007.6	2033.9	2093.7	2129.6	2148.8
27.5°	1945.4	1978.9	2048.3	2089.0	2108.1
30°	1878.4	1916.7	1993.2	2041.1	2065.0
32.5°	1809.0	1854.5	1938.2	1990.8	2019.6
35°	1739.6	1789.8	1880.8	1943.0	1971.7
37.5°	1670.2	1720.5	1821.0	1888.0	1923.8
40°	1591.2	1651.1	1758.7	1832.9	1868.8
42.5°	1514.7	1579.3	1694.1	1775.5	1813.8
45°	1430.9	1507.5	1627.1	1718.1	1758.7
47.5°	1354.3	1430.9	1560.1	1655.8	1701.3
50°	1270.6	1352.0	1488.3	1593.6	1641.5
52.5°	1189.2	1273.0	1416.6	1529.0	1576.9
55°	1100.7	1196.4	1342.4	1459.6	1509.9
57.5°	1012.2	1115.1	1265.8	1387.8	1438.1
60°	926.0	1031.3	1189.2	1311.3	1363.9
62.5°	839.9	945.2	1110.3	1234.7	1285.0
65°	749.0	859.0	1024.1	1151.0	1201.2
67.5°	658.0	772.9	938.0	1064.8	1112.7
70°	562.3	684.4	849.5	973.9	1021.7
72.5°	473.8	595.8	758.5	880.6	926.0
75°	385.2	507.3	665.2	777.7	808.8
77.5°	299.1	421.1	562.3	636.5	643.7
80°	217.7	332.6	447.5	469.0	466.6
82.5°	146.0	248.9	308.7	311.1	318.2
85°	83.7	155.5	169.9	167.5	169.9
87.5°	33.5	55.0	47.9	35.9	35.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)