

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: P389045

Luminaire Tested: **24CZ2-90VHE-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: P389045  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-5)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-90VHE-UNV-L940-CD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND RIBBED LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

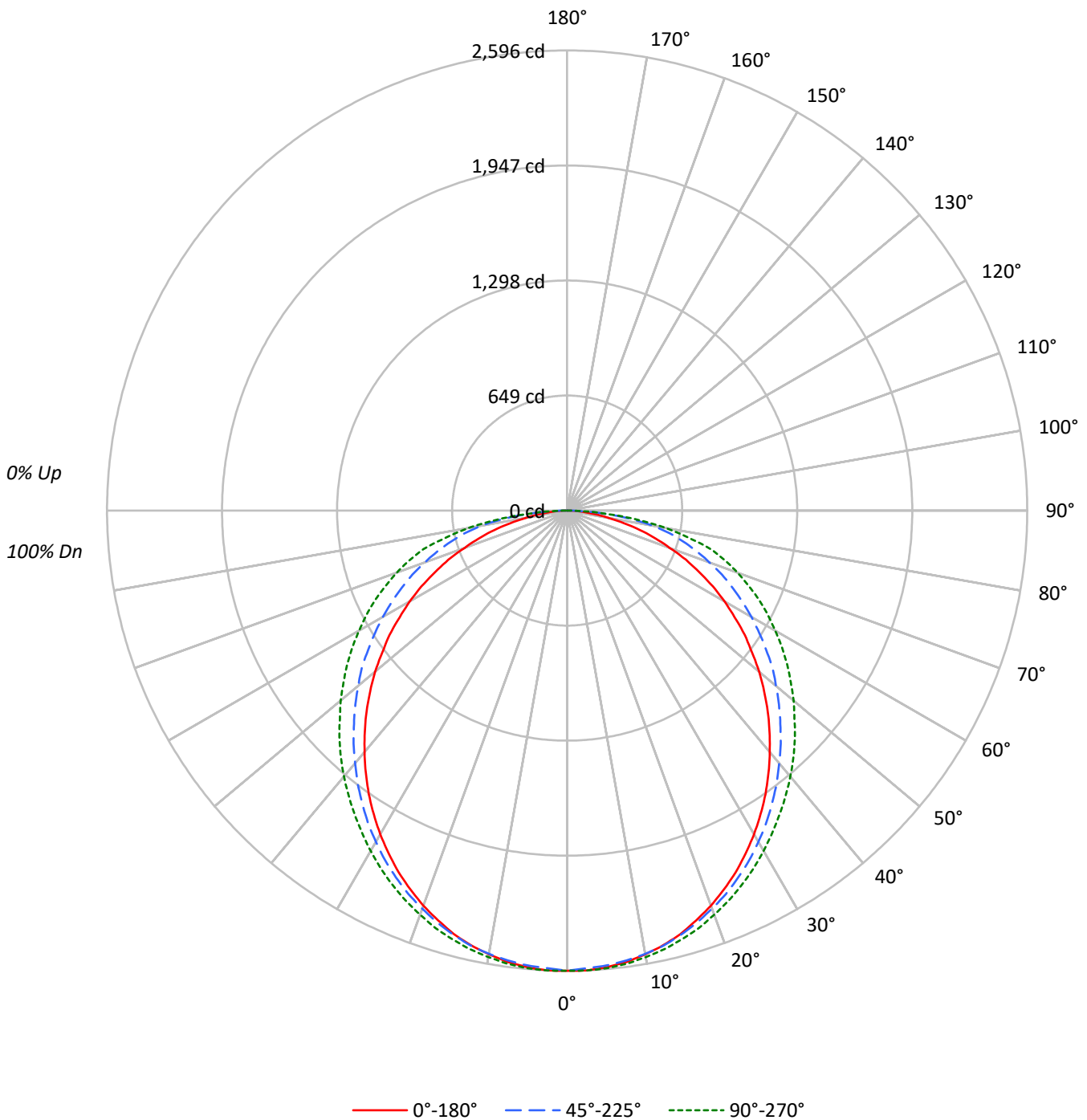
Lumens per Lamp: N/A  
Luminaire Lumens: 7733.3 lumens  
Efficiency: N/A  
Efficacy: 125.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.27 / 1.37  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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	98	94	105	100	96	92	96	93	89	92	89	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	60	68	63	58	56
4	81	69	59	52	79	67	59	52	65	57	51	62	56	51	60	55	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	39	50	44	38	49	43	38	36
7	64	50	41	35	62	49	40	34	47	40	34	46	39	34	45	38	34	32
8	59	45	37	31	58	45	36	31	43	36	30	42	35	30	41	35	30	28
9	55	42	33	28	54	41	33	28	40	33	27	39	32	27	38	32	27	25
10	52	38	30	25	51	38	30	25	37	30	25	36	29	25	35	29	25	23

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

	0°	45°	90°
0°	3493	3493	3493
5°	3493	3479	3500
10°	3473	3470	3494
15°	3444	3451	3487
20°	3396	3422	3474
25°	3341	3391	3460
30°	3276	3352	3444
35°	3205	3311	3434
40°	3123	3269	3441
45°	3045	3236	3457
50°	2961	3220	3490
55°	2870	3215	3554
60°	2757	3229	3646
65°	2613	3279	3805
70°	2426	3361	4021
75°	2214	3529	4361
80°	1820	3800	4359
85°	1394	3506	3745



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.6	3.2
10°-20°	701.0	9.1
20°-30°	1055.0	13.6
30°-40°	1264.3	16.3
40°-50°	1317.5	17.0
50°-60°	1225.8	15.9
60°-70°	1009.6	13.1
70°-80°	687.6	8.9
80°-90°	227.0	2.9
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°	2001.6	25.9
0°-40°	3265.8	42.2
0°-60°	5809.1	75.1
0°-90°	7733.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7733.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2596	2596	2596	2596	2596	
5°	2586	2586	2576	2589	2591	245
15°	2472	2475	2478	2501	2504	697
25°	2251	2261	2284	2323	2331	1036
35°	1951	1974	2016	2070	2091	1220
45°	1600	1634	1701	1786	1817	1234
55°	1223	1265	1370	1479	1515	1090
65°	821	890	1030	1151	1195	815
75°	426	521	679	800	839	449
85°	90	176	227	243	243	112
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2596.4	2596.4	2596.4	2596.4	2596.4
2.5°	2596.4	2596.4	2583.5	2596.4	2596.4
5°	2586.1	2586.1	2575.8	2588.7	2591.3
7.5°	2568.0	2570.6	2560.3	2575.8	2578.4
10°	2542.2	2544.8	2539.6	2555.1	2557.7
12.5°	2511.3	2513.8	2513.8	2531.9	2534.5
15°	2472.5	2475.1	2477.7	2500.9	2503.5
17.5°	2423.5	2431.2	2436.4	2464.8	2470.0
20°	2371.9	2379.6	2390.0	2420.9	2426.1
22.5°	2312.5	2322.8	2340.9	2374.5	2382.2
25°	2250.6	2260.9	2284.1	2322.8	2330.6
27.5°	2180.9	2196.4	2224.8	2266.1	2276.4
30°	2108.6	2124.1	2157.7	2201.5	2217.0
32.5°	2031.2	2051.8	2090.6	2139.6	2155.1
35°	1951.2	1974.4	2015.7	2069.9	2090.6
37.5°	1866.0	1891.8	1940.9	2000.2	2026.0
40°	1778.3	1809.2	1860.9	1930.5	1958.9
42.5°	1690.5	1718.9	1783.4	1858.3	1889.3
45°	1600.2	1633.7	1700.8	1786.0	1817.0
47.5°	1507.3	1540.8	1620.8	1711.2	1739.6
50°	1414.4	1447.9	1538.2	1633.7	1667.3
52.5°	1313.7	1357.6	1460.8	1556.3	1589.9
55°	1223.4	1264.7	1370.5	1478.9	1515.0
57.5°	1120.1	1169.2	1285.3	1398.9	1437.6
60°	1024.6	1076.3	1200.1	1316.3	1355.0
62.5°	926.6	983.3	1115.0	1233.7	1277.6
65°	820.7	890.4	1029.8	1151.1	1195.0
67.5°	725.2	797.5	944.6	1068.5	1107.2
70°	616.8	704.6	854.3	978.2	1022.1
72.5°	523.9	611.7	769.1	890.4	934.3
75°	425.9	521.4	678.8	800.1	838.8
77.5°	327.8	433.6	591.0	683.9	696.9
80°	234.9	345.8	490.4	544.6	562.6
82.5°	165.2	265.8	361.3	397.5	407.8
85°	90.3	175.5	227.1	242.6	242.6
87.5°	38.7	74.8	90.3	92.9	95.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)