

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: P473984

Luminaire Tested: **24CZ2-40VHE-S-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P473984  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-40VHE-S-UNV-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

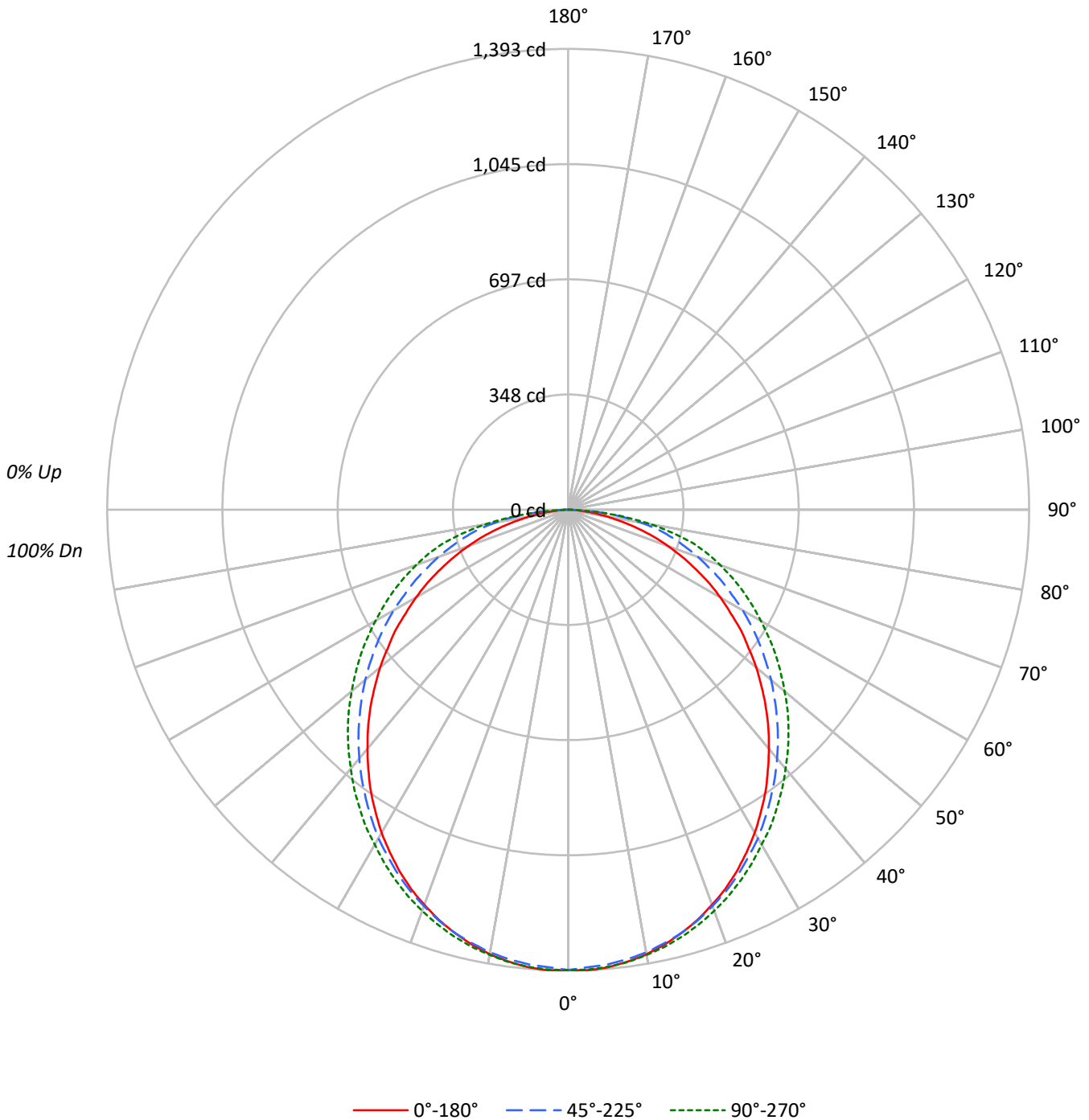
Lumens per Lamp: N/A  
Luminaire Lumens: 3986.5 lumens  
Efficiency: N/A  
Efficacy: 146.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 27.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P473984

CATALOG NUMBER: 24CZ2-40VHE-S-UNV-L830-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P473984

CATALOG NUMBER: 24CZ2-40VHE-S-UNV-L830-CD1-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	99	95	105	101	97	93	97	93	90	93	90	87	89	87	85	83
2	98	90	83	77	95	88	81	76	84	79	74	81	76	72	78	74	71	68
3	89	78	70	63	87	77	69	63	74	67	62	71	65	61	68	64	59	57
4	82	69	60	54	79	68	60	53	66	58	52	63	57	52	61	55	51	49
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42
6	69	56	47	40	67	55	46	40	53	45	40	51	44	39	50	44	39	37
7	64	51	42	35	63	50	41	35	48	41	35	47	40	35	45	39	34	32
8	60	46	38	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29
9	56	42	34	28	54	42	34	28	41	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	39	31	26	38	30	26	37	30	25	36	30	25	24

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

	0°	45°	90°
0°	1872	1872	1872
5°	1875	1863	1873
10°	1864	1856	1867
15°	1845	1844	1860
20°	1820	1825	1848
25°	1790	1805	1833
30°	1752	1782	1816
35°	1708	1751	1806
40°	1657	1725	1795
45°	1607	1698	1792
50°	1553	1675	1787
55°	1498	1654	1797
60°	1429	1639	1810
65°	1353	1632	1853
70°	1262	1641	1919
75°	1123	1688	2022
80°	918	1725	1974
85°	647	1507	1536



TEST NUMBER: P473984

CATALOG NUMBER: 24CZ2-40VHE-S-UNV-L830-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.5	3.3
10°-20°	374.7	9.4
20°-30°	561.6	14.1
30°-40°	668.9	16.8
40°-50°	689.7	17.3
50°-60°	629.4	15.8
60°-70°	503.2	12.6
70°-80°	328.7	8.2
80°-90°	98.7	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°	1067.8	26.8
0°-40°	1736.7	43.6
0°-60°	3055.8	76.7
0°-90°	3986.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3986.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1391	1391	1391	1391	1391	
5°	1388	1386	1380	1388	1387	132
15°	1325	1325	1324	1335	1335	373
25°	1206	1207	1216	1234	1235	555
35°	1040	1047	1066	1093	1099	650
45°	845	860	892	930	942	651
55°	638	657	705	752	766	569
65°	425	454	513	563	582	421
75°	216	252	325	377	389	230
85°	42	75	98	100	100	53
90°	0	0	0	0	0	



TEST NUMBER: P473984

CATALOG NUMBER: 24CZ2-40VHE-S-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1391.4	1391.4	1391.4	1391.4	1391.4
2.5°	1393.4	1391.4	1384.2	1392.8	1391.4
5°	1388.2	1385.6	1379.7	1388.2	1386.9
7.5°	1377.7	1376.4	1370.5	1380.3	1379.0
10°	1364.6	1363.3	1358.7	1368.5	1366.6
12.5°	1346.3	1345.6	1342.3	1354.1	1352.8
15°	1324.7	1325.3	1324.0	1335.1	1335.1
17.5°	1299.8	1299.1	1301.7	1315.5	1314.2
20°	1271.0	1271.6	1274.9	1290.6	1290.6
22.5°	1240.8	1240.2	1247.4	1263.1	1264.4
25°	1205.5	1207.4	1216.0	1233.6	1235.0
27.5°	1167.5	1170.8	1181.3	1201.6	1203.5
30°	1127.6	1131.5	1147.2	1166.2	1168.8
32.5°	1083.7	1092.2	1106.6	1130.8	1137.4
35°	1039.8	1047.0	1066.0	1092.9	1099.4
37.5°	991.4	1003.2	1024.8	1054.2	1062.7
40°	943.6	955.4	982.2	1013.0	1022.1
42.5°	895.1	907.6	938.3	973.0	982.9
45°	844.7	859.8	892.5	929.8	941.6
47.5°	793.0	810.6	846.0	886.6	899.7
50°	741.9	759.6	800.2	842.1	853.9
52.5°	686.9	709.1	752.4	797.5	809.3
55°	638.4	656.8	705.2	751.7	766.1
57.5°	581.5	606.3	658.1	705.2	719.0
60°	531.0	554.0	609.0	656.8	672.5
62.5°	480.0	503.5	558.5	612.9	627.3
65°	425.0	453.8	512.7	563.1	582.1
67.5°	372.6	402.7	462.9	516.6	536.3
70°	320.9	351.6	417.1	472.1	487.8
72.5°	269.8	301.9	370.0	423.7	442.0
75°	216.1	252.1	324.8	377.2	389.0
77.5°	165.7	205.6	278.9	314.3	322.8
80°	118.5	162.4	222.6	248.2	254.7
82.5°	77.9	120.5	166.3	180.1	178.1
85°	41.9	75.3	97.6	99.5	99.5
87.5°	16.4	30.1	30.8	23.6	22.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)