

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: P474691

Luminaire Tested: **24CZ2-85VHE-SQR-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474691  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-85VHE-SQR-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SQUARE LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8221.2 lumens  
Efficiency: N/A  
Efficacy: 137.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

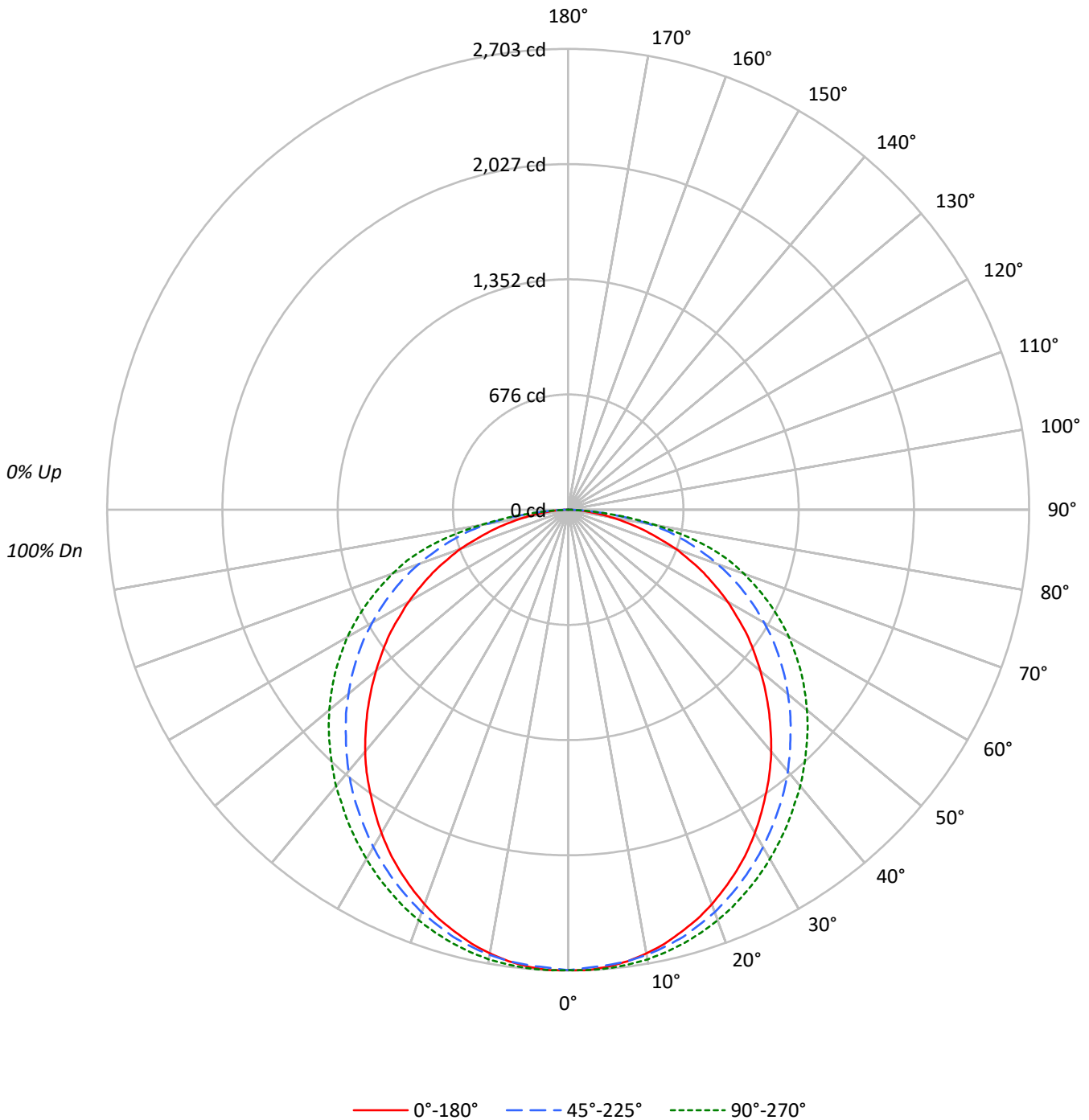
Input Watts (W): 59.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P474691

CATALOG NUMBER: 24CZ2-85VHE-SQR-UNV-L840-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P474691

CATALOG NUMBER: 24CZ2-85VHE-SQR-UNV-L840-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	98	94	105	101	96	93	96	93	90	92	90	87	89	87	84	82
2	98	89	82	76	95	87	81	75	84	78	73	80	76	71	77	73	70	68
3	89	78	69	62	86	76	68	62	73	66	61	70	64	60	68	63	59	56
4	81	69	59	53	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	43	38	49	43	38	36
7	64	50	41	34	62	49	40	34	47	40	34	46	39	34	44	38	33	31
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	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

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

	0°	45°	90°
0°	7267	7267	7267
5°	7266	7245	7294
10°	7221	7246	7318
15°	7143	7230	7329
20°	7052	7195	7338
25°	6938	7144	7339
30°	6803	7101	7350
35°	6649	7059	7378
40°	6505	7036	7437
45°	6328	7018	7518
50°	6158	7038	7654
55°	6014	7086	7826
60°	5810	7140	8044
65°	5578	7226	8288
70°	5291	7327	8618
75°	4739	7429	8903
80°	3989	7449	8080
85°	2961	5638	5314



TEST NUMBER: P474691

CATALOG NUMBER: 24CZ2-85VHE-SQR-UNV-L840-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	255.9	3.1
10°-20°	733.4	8.9
20°-30°	1110.2	13.5
30°-40°	1343.0	16.3
40°-50°	1417.7	17.2
50°-60°	1336.9	16.3
60°-70°	1102.2	13.4
70°-80°	723.1	8.8
80°-90°	198.8	2.4
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°	2099.5	25.5
0°-40°	3442.6	41.9
0°-60°	6197.1	75.4
0°-90°	8221.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8221.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2700	2700	2700	2700	2700	
5°	2690	2690	2682	2700	2700	255
15°	2564	2578	2595	2626	2631	723
25°	2337	2366	2406	2456	2472	1076
35°	2024	2076	2149	2222	2246	1267
45°	1663	1738	1844	1942	1975	1283
55°	1282	1372	1510	1623	1668	1142
65°	876	981	1135	1256	1302	865
75°	456	573	714	828	856	482
85°	96	166	183	177	172	119
90°	0	0	0	0	0	



TEST NUMBER: P474691

CATALOG NUMBER: 24CZ2-85VHE-SQR-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2700.4	2700.4	2700.4	2700.4	2700.4
2.5°	2703.0	2700.4	2688.6	2704.3	2703.0
5°	2689.9	2689.9	2682.0	2700.4	2700.4
7.5°	2671.5	2672.8	2670.2	2691.2	2691.2
10°	2642.6	2647.8	2651.8	2675.4	2678.1
12.5°	2608.4	2617.6	2625.5	2654.4	2657.0
15°	2563.8	2578.2	2595.3	2625.5	2630.8
17.5°	2517.8	2534.9	2553.3	2592.7	2599.3
20°	2462.7	2482.4	2512.6	2552.0	2562.5
22.5°	2400.9	2428.5	2460.0	2507.3	2520.4
25°	2336.6	2365.5	2406.2	2456.1	2471.9
27.5°	2267.0	2301.1	2347.1	2404.9	2421.9
30°	2189.5	2228.9	2285.3	2347.1	2365.5
32.5°	2108.0	2154.0	2217.0	2285.3	2306.4
35°	2024.0	2076.5	2148.8	2222.3	2245.9
37.5°	1941.2	1993.8	2079.1	2156.6	2179.0
40°	1851.9	1909.7	2003.0	2085.7	2117.2
42.5°	1757.4	1825.7	1924.2	2016.1	2046.3
45°	1662.8	1737.7	1844.0	1942.5	1975.4
47.5°	1566.9	1649.7	1766.5	1866.4	1904.5
50°	1471.0	1559.0	1681.2	1788.9	1828.3
52.5°	1373.8	1465.8	1598.4	1712.7	1748.2
55°	1281.9	1372.5	1510.4	1623.4	1668.0
57.5°	1175.5	1278.0	1423.7	1538.0	1581.4
60°	1079.6	1179.4	1326.6	1447.4	1494.7
62.5°	975.9	1078.3	1233.3	1354.1	1400.1
65°	876.0	981.1	1134.8	1255.6	1301.6
67.5°	768.3	878.7	1036.3	1153.2	1197.8
70°	672.5	776.2	931.2	1050.7	1095.4
72.5°	555.6	673.8	822.2	940.4	989.0
75°	455.8	572.7	714.5	827.5	856.3
77.5°	350.7	467.6	608.1	681.7	701.4
80°	257.4	367.8	480.7	520.1	521.4
82.5°	173.4	270.6	334.9	354.6	352.0
85°	95.9	165.5	182.6	177.3	172.1
87.5°	39.4	55.2	44.7	31.5	25.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)