

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: P474105

Luminaire Tested: **24CZ2-155VHE-S-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474105  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-155VHE-S-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

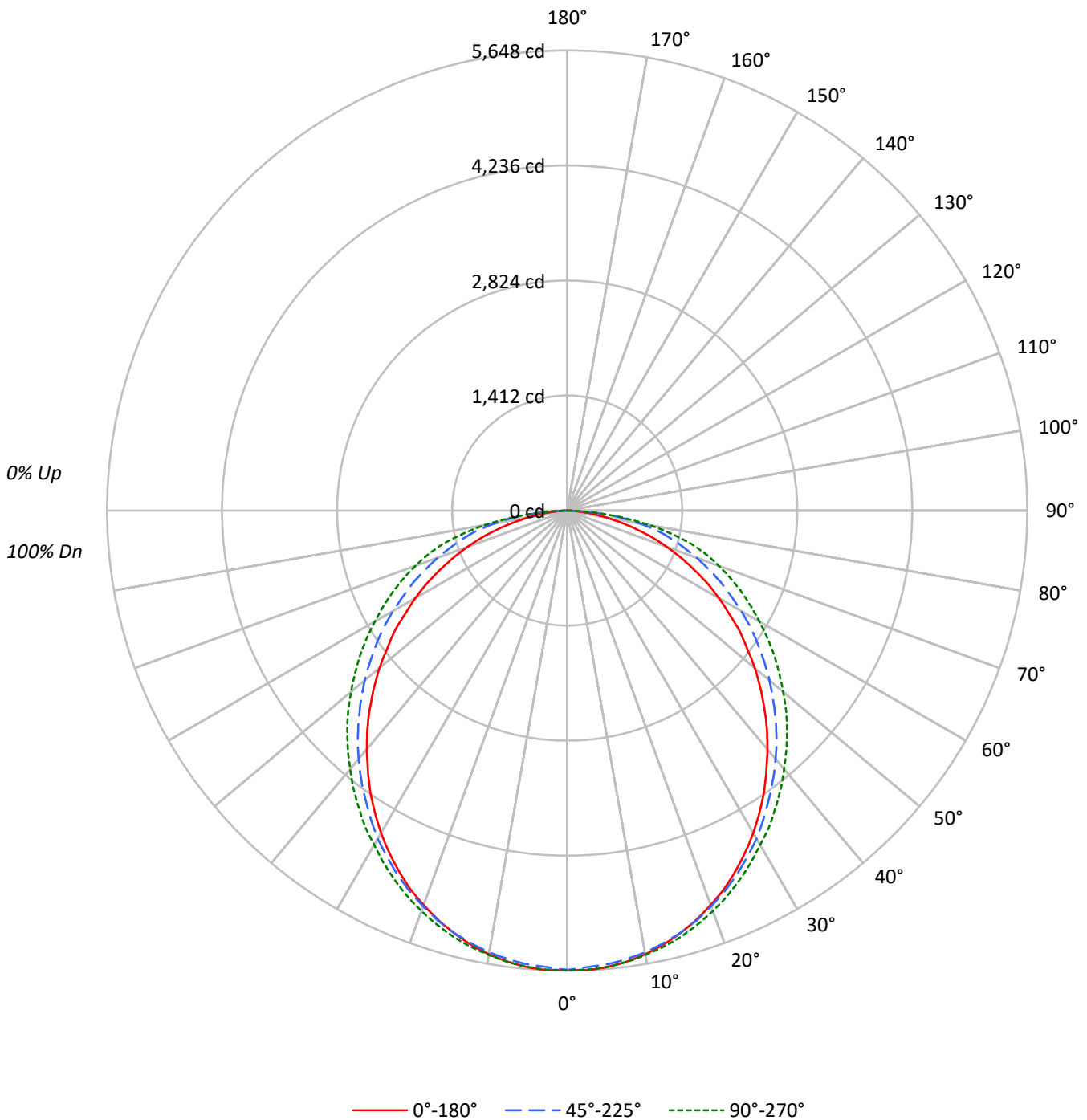
Lumens per Lamp: N/A  
Luminaire Lumens: 16157.3 lumens  
Efficiency: N/A  
Efficacy: 141.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 114  
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: P474105  
CATALOG NUMBER: 24CZ2-155VHE-S-UNV-L840-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P474105

CATALOG NUMBER: 24CZ2-155VHE-S-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	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°	7588	7588	7588
5°	7599	7552	7592
10°	7556	7524	7567
15°	7479	7475	7538
20°	7376	7399	7490
25°	7254	7317	7431
30°	7100	7224	7360
35°	6922	7097	7319
40°	6717	6992	7276
45°	6514	6883	7262
50°	6294	6788	7244
55°	6070	6705	7284
60°	5792	6642	7335
65°	5484	6616	7511
70°	5116	6651	7778
75°	4553	6843	8195
80°	3722	6991	7999
85°	2623	6104	6228



TEST NUMBER: P474105

CATALOG NUMBER: 24CZ2-155VHE-S-UNV-L840-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	533.2	3.3
10°-20°	1518.5	9.4
20°-30°	2276.3	14.1
30°-40°	2711.1	16.8
40°-50°	2795.4	17.3
50°-60°	2550.8	15.8
60°-70°	2039.7	12.6
70°-80°	1332.3	8.2
80°-90°	400.0	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°	4328.0	26.8
0°-40°	7039.1	43.6
0°-60°	12385.2	76.7
0°-90°	16157.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16157.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5640	5640	5640	5640	5640	
5°	5626	5616	5592	5626	5621	534
15°	5369	5372	5366	5411	5411	1514
25°	4886	4894	4928	5000	5005	2249
35°	4214	4244	4321	4429	4456	2633
45°	3424	3485	3617	3769	3816	2640
55°	2588	2662	2858	3047	3105	2305
65°	1722	1839	2078	2282	2359	1708
75°	876	1022	1316	1529	1576	931
85°	170	305	395	403	403	215
90°	0	0	0	0	0	



TEST NUMBER: P474105

CATALOG NUMBER: 24CZ2-155VHE-S-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5639.6	5639.6	5639.6	5639.6	5639.6
2.5°	5647.6	5639.6	5610.4	5644.9	5639.6
5°	5626.3	5615.7	5591.8	5626.3	5621.0
7.5°	5583.9	5578.6	5554.7	5594.5	5589.2
10°	5530.8	5525.5	5506.9	5546.7	5538.8
12.5°	5456.5	5453.8	5440.6	5488.3	5483.0
15°	5368.9	5371.6	5366.3	5411.4	5411.4
17.5°	5268.1	5265.4	5276.0	5331.8	5326.4
20°	5151.3	5153.9	5167.2	5230.9	5230.9
22.5°	5029.2	5026.6	5055.7	5119.4	5124.8
25°	4885.9	4893.9	4928.4	5000.0	5005.3
27.5°	4732.0	4745.2	4787.7	4870.0	4877.9
30°	4570.1	4586.0	4649.7	4726.7	4737.3
32.5°	4392.3	4426.8	4485.2	4583.3	4609.9
35°	4214.5	4243.6	4320.6	4429.4	4456.0
37.5°	4018.1	4065.8	4153.4	4272.8	4307.3
40°	3824.3	3872.1	3980.9	4105.6	4142.8
42.5°	3627.9	3678.4	3803.1	3943.7	3983.6
45°	3423.6	3484.6	3617.3	3768.6	3816.4
47.5°	3213.9	3285.6	3428.9	3593.4	3646.5
50°	3006.9	3078.6	3243.1	3413.0	3460.7
52.5°	2784.0	2874.2	3049.4	3232.5	3280.3
55°	2587.6	2661.9	2858.3	3046.7	3105.1
57.5°	2356.7	2457.5	2667.2	2858.3	2914.0
60°	2152.3	2245.2	2468.2	2661.9	2725.6
62.5°	1945.3	2040.9	2263.8	2484.1	2542.5
65°	1722.4	1839.2	2078.0	2282.4	2359.3
67.5°	1510.1	1632.2	1876.3	2094.0	2173.6
70°	1300.4	1425.2	1690.6	1913.5	1977.2
72.5°	1093.4	1223.5	1499.5	1717.1	1791.4
75°	875.8	1021.8	1316.4	1528.7	1576.4
77.5°	671.4	833.3	1130.6	1273.9	1308.4
80°	480.4	658.2	902.3	1005.8	1032.4
82.5°	315.8	488.3	674.1	729.8	721.9
85°	169.9	305.2	395.4	403.4	403.4
87.5°	66.3	122.1	124.7	95.5	90.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)