

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: P474101

Luminaire Tested: **24CZ2-135VHE-S-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474101  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-135VHE-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**

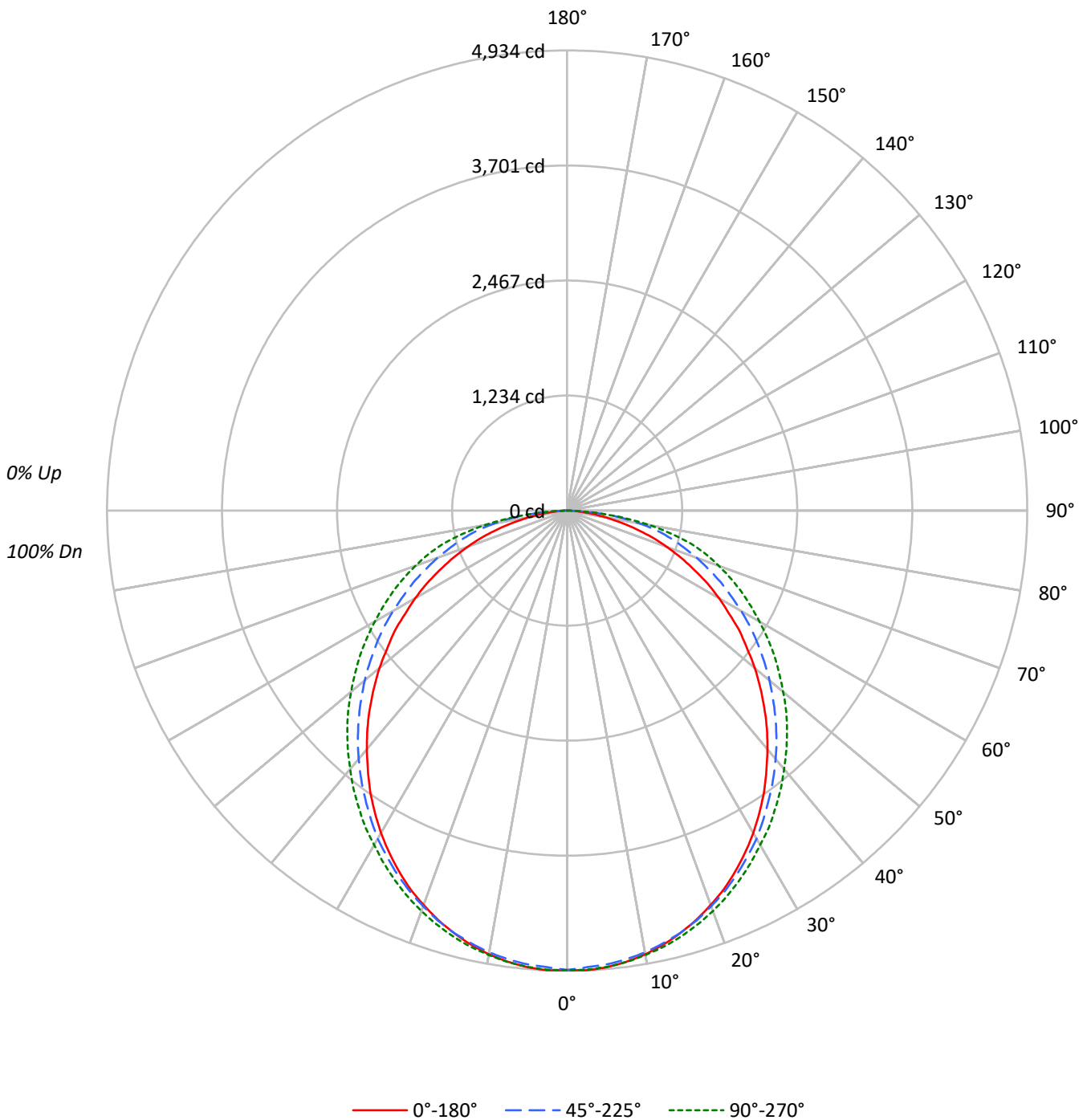
Lumens per Lamp: N/A  
Luminaire Lumens: 14114.9 lumens  
Efficiency: N/A  
Efficacy: 145.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 96.8  
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



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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	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°	6629	6629	6629
5°	6638	6598	6632
10°	6601	6573	6611
15°	6533	6530	6585
20°	6443	6463	6543
25°	6337	6392	6491
30°	6203	6311	6430
35°	6047	6200	6394
40°	5868	6108	6357
45°	5691	6013	6344
50°	5498	5930	6328
55°	5303	5857	6363
60°	5060	5802	6407
65°	4791	5780	6562
70°	4469	5810	6795
75°	3977	5978	7159
80°	3251	6108	6988
85°	2291	5334	5440



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	465.8	3.3
10°-20°	1326.6	9.4
20°-30°	1988.5	14.1
30°-40°	2368.4	16.8
40°-50°	2442.0	17.3
50°-60°	2228.4	15.8
60°-70°	1781.9	12.6
70°-80°	1163.9	8.2
80°-90°	349.5	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°	3780.9	26.8
0°-40°	6149.3	43.6
0°-60°	10819.7	76.7
0°-90°	14114.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14114.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4927	4927	4927	4927	4927	
5°	4915	4906	4885	4915	4910	466
15°	4690	4693	4688	4727	4727	1322
25°	4268	4275	4305	4368	4373	1965
35°	3682	3707	3774	3870	3893	2300
45°	2991	3044	3160	3292	3334	2306
55°	2260	2325	2497	2662	2713	2013
65°	1505	1607	1815	1994	2061	1492
75°	765	893	1150	1335	1377	813
85°	148	267	346	352	352	188
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4926.7	4926.7	4926.7	4926.7	4926.7
2.5°	4933.7	4926.7	4901.2	4931.4	4926.7
5°	4915.1	4905.9	4885.0	4915.1	4910.5
7.5°	4878.0	4873.4	4852.5	4887.3	4882.7
10°	4831.7	4827.0	4810.8	4845.6	4838.6
12.5°	4766.8	4764.4	4752.8	4794.6	4789.9
15°	4690.2	4692.6	4687.9	4727.3	4727.3
17.5°	4602.1	4599.8	4609.1	4657.8	4653.1
20°	4500.1	4502.4	4514.0	4569.7	4569.7
22.5°	4393.5	4391.2	4416.7	4472.3	4476.9
25°	4268.3	4275.2	4305.4	4368.0	4372.6
27.5°	4133.8	4145.4	4182.5	4254.4	4261.3
30°	3992.4	4006.3	4061.9	4129.2	4138.4
32.5°	3837.1	3867.2	3918.2	4004.0	4027.2
35°	3681.7	3707.2	3774.5	3869.5	3892.7
37.5°	3510.1	3551.9	3628.4	3732.7	3762.9
40°	3340.9	3382.6	3477.7	3586.7	3619.1
42.5°	3169.3	3213.4	3322.4	3445.2	3480.0
45°	2990.8	3044.1	3160.1	3292.2	3333.9
47.5°	2807.7	2870.3	2995.4	3139.2	3185.6
50°	2626.8	2689.4	2833.2	2981.5	3023.3
52.5°	2432.1	2510.9	2663.9	2823.9	2865.6
55°	2260.5	2325.4	2497.0	2661.6	2712.6
57.5°	2058.8	2146.9	2330.1	2497.0	2545.7
60°	1880.3	1961.4	2156.2	2325.4	2381.1
62.5°	1699.4	1782.9	1977.6	2170.1	2221.1
65°	1504.7	1606.7	1815.4	1993.9	2061.1
67.5°	1319.2	1425.9	1639.2	1829.3	1898.8
70°	1136.0	1245.0	1476.9	1671.6	1727.3
72.5°	955.2	1068.8	1309.9	1500.0	1565.0
75°	765.1	892.6	1150.0	1335.4	1377.2
77.5°	586.6	728.0	987.7	1112.9	1143.0
80°	419.6	575.0	788.3	878.7	901.9
82.5°	275.9	426.6	588.9	637.6	630.6
85°	148.4	266.6	345.5	352.4	352.4
87.5°	58.0	106.6	109.0	83.5	78.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)