

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: NEO-RAY

Report Number: P199456

Luminaire Tested: **S123-DIP-ULO-1-30-X-X0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199456  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P27889 P27889)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123-DIP-ULO-1-30-X-X0048-1D-UDD-1-NA-W  
Description: DEFINE 3-INCH DIRECT/INDIRECT PENDANT LED LUMINAIRE  
UPLIGHT LLO-3000K, NO LENS  
DOWNLIGHT LL1-3000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4362.6 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.32  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4.08' x H: 0.38')  
CIE Type: General Diffuse

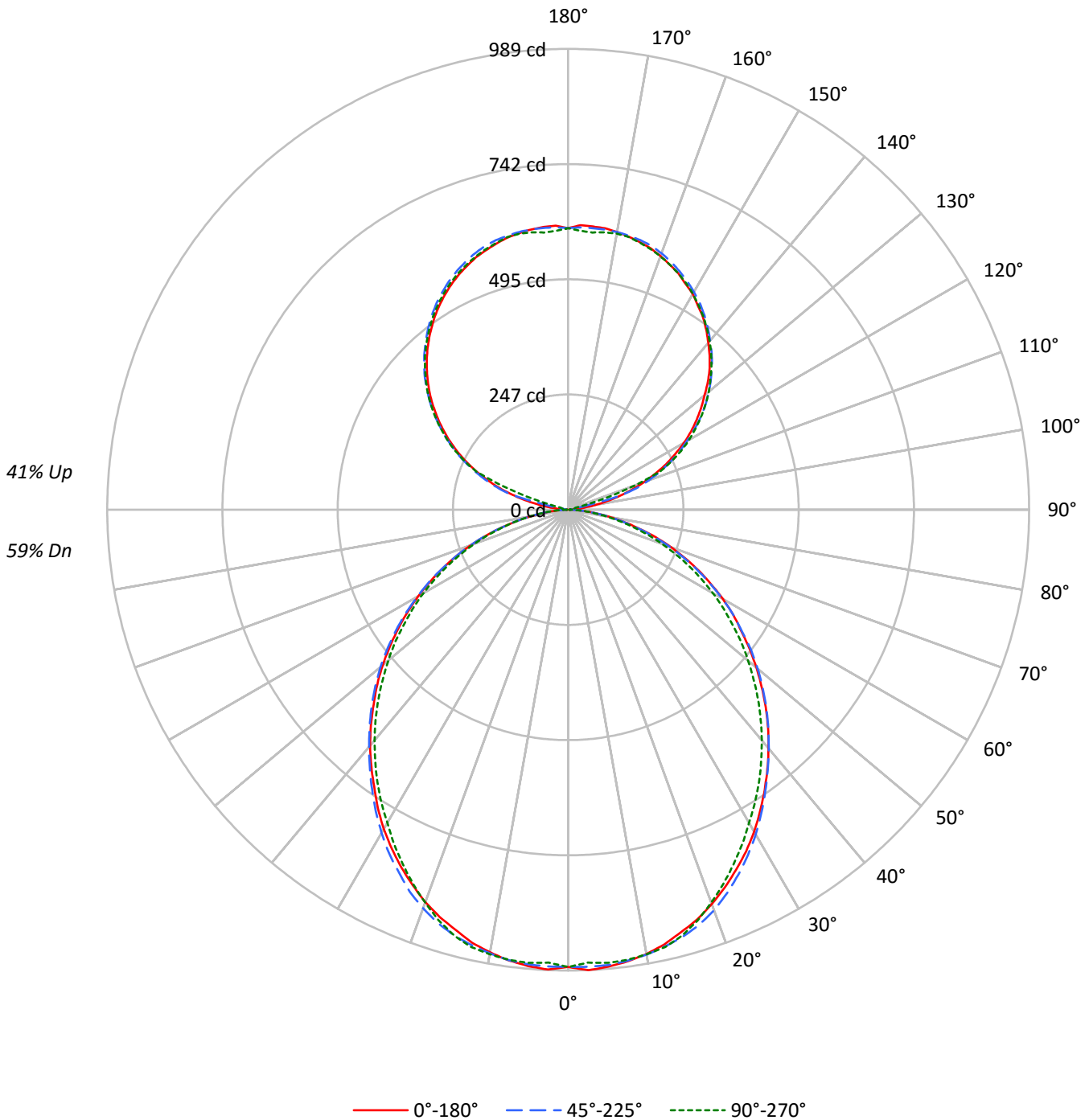
Input Watts (W): 40.1  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59
1	100	95	91	88	93	89	86	83	77	75	73	67	65	63	57	56	54	50
2	91	83	77	72	85	78	73	68	68	64	60	59	56	53	50	48	46	42
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	44	41	39	35
4	76	65	57	51	71	61	54	48	53	48	43	46	42	38	40	36	34	30
5	70	58	50	44	65	54	47	41	48	42	37	42	37	33	36	32	29	26
6	64	52	44	38	60	49	41	36	43	37	33	38	33	29	32	29	26	23
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	30	26	23	20
8	55	43	35	29	51	40	33	28	36	30	26	31	27	23	27	23	21	18
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	19	16
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	23	20	17	15

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

	0°	90°	180°
0°	10345	10345	10345
5°	10337	9135	10323
10°	10200	8203	10164
15°	9996	7364	9944
20°	9780	6513	9729
25°	9510	5747	9450
30°	9226	5064	9147
35°	8885	4479	8778
40°	8545	3937	8449
45°	8182	3436	8062
50°	7792	2965	7681
55°	7359	2517	7237
60°	6961	2103	6752
65°	6428	1688	6174
70°	5765	1287	5465
75°	4833	887	4481
80°	3617	531	3234
85°	2048	227	1806



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.0	2.1
10°-20°	265.5	6.1
20°-30°	392.4	9.0
30°-40°	456.8	10.5
40°-50°	458.4	10.5
50°-60°	401.2	9.2
60°-70°	296.3	6.8
70°-80°	161.9	3.7
80°-90°	41.8	1.0
90°-100°	14.3	0.3
100°-110°	99.5	2.3
110°-120°	238.1	5.5
120°-130°	308.1	7.1
130°-140°	334.4	7.7
140°-150°	316.6	7.3
150°-160°	258.6	5.9
160°-170°	168.0	3.9
170°-180°	57.6	1.3
0°-30°	751.0	17.2
0°-40°	1207.8	27.7
0°-60°	2067.3	47.4
0°-90°	2567.3	58.8
90°-120°	351.8	8.1
90°-150°	1311.0	30.1
90°-180°	1795.0	41.1
0°-180°	4362.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	981	981	981	981	981	
5°	984	981	976	980	983	93
15°	938	949	946	946	933	265
25°	852	864	840	859	847	393
35°	735	737	714	733	726	460
45°	599	601	576	596	590	462
55°	453	455	430	451	445	407
65°	308	305	285	298	296	305
75°	159	156	144	147	148	169
85°	35	37	34	33	31	40
90°	2	4	3	3	1	3
95°	18	8	9	8	22	24
105°	114	112	17	132	124	121
115°	232	241	244	247	239	228
125°	336	347	348	348	341	300
135°	429	437	434	437	429	330
145°	504	509	506	510	501	315
155°	559	565	559	565	556	258
165°	594	599	593	599	592	168
175°	610	607	597	607	609	58
180°	604	604	604	604	604	



TEST NUMBER: P199456

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	981.1	981.1	981.1	981.1	981.1	981.1	981.1	981.1	981.1
2.5°	989.2	979.0	981.8	980.4	972.9	980.4	981.1	978.4	987.9
5°	984.5	975.6	981.1	979.0	976.3	979.0	979.7	974.3	983.1
7.5°	977.7	970.2	976.3	975.6	974.3	975.6	975.0	967.5	975.6
10°	968.1	961.3	969.5	970.9	968.8	970.2	966.8	959.3	964.7
12.5°	955.2	949.8	960.0	962.7	961.3	962.0	957.2	946.4	951.8
15°	938.2	935.5	949.1	951.1	945.7	949.1	945.7	932.1	933.4
17.5°	921.8	919.1	934.1	931.4	923.9	929.3	930.0	915.0	916.4
20°	900.7	899.4	915.0	906.9	897.3	904.1	910.3	895.3	896.0
22.5°	877.6	879.0	890.5	879.0	869.4	876.2	887.8	873.5	872.1
25°	852.4	856.5	864.0	850.4	839.5	847.0	859.2	851.0	847.0
27.5°	826.5	832.7	835.4	819.7	808.8	816.3	832.0	826.5	819.7
30°	797.9	805.4	804.7	788.4	776.1	784.3	800.7	800.0	791.1
32.5°	766.6	776.8	771.4	755.7	745.5	751.6	768.0	770.0	759.8
35°	734.6	745.5	737.3	722.4	713.5	719.6	733.3	739.4	725.8
37.5°	701.9	712.8	703.3	689.0	680.2	686.3	699.2	706.7	693.8
40°	668.6	678.8	669.3	657.0	646.1	652.9	664.5	672.7	661.1
42.5°	634.5	645.4	635.2	623.0	611.4	620.2	630.4	638.6	626.4
45°	599.1	610.7	601.2	586.9	576.0	584.8	596.4	603.2	590.3
47.5°	563.0	576.7	565.8	550.8	539.9	548.8	561.0	567.8	555.6
50°	527.0	538.5	530.4	514.7	503.8	512.0	525.6	531.0	519.5
52.5°	490.2	503.8	494.3	478.6	468.4	475.2	488.2	494.3	482.0
55°	452.8	463.6	454.8	441.9	430.3	438.5	450.7	454.8	445.3
57.5°	420.1	428.2	420.1	405.8	394.9	401.0	412.6	418.0	408.5
60°	382.6	390.1	381.9	368.3	358.8	364.2	373.8	380.6	371.1
62.5°	345.2	352.7	343.1	330.9	322.0	328.2	336.3	342.5	333.6
65°	308.4	315.2	305.0	294.1	285.3	291.4	297.5	304.3	296.2
67.5°	271.0	277.1	267.6	256.7	249.2	254.0	259.4	266.2	259.4
70°	234.2	239.0	230.8	220.6	213.8	217.9	222.6	228.1	222.0
72.5°	197.4	203.6	193.4	185.2	179.1	180.4	185.9	190.0	185.2
75°	159.3	163.4	155.9	149.1	143.7	145.0	147.1	153.2	147.7
77.5°	123.9	128.7	122.5	116.4	112.3	113.7	114.4	118.5	113.0
80°	90.6	94.6	90.6	85.8	83.1	83.7	83.7	86.5	81.0
82.5°	60.6	64.7	62.0	58.6	57.9	56.5	56.5	58.6	53.1
85°	34.7	39.5	37.4	34.7	34.0	33.4	33.4	34.7	30.6
87.5°	15.7	19.1	17.0	15.0	13.6	12.9	12.9	15.0	11.6
90°	2.0	4.8	4.1	2.7	2.7	2.7	3.4	4.1	1.4
92.5°	3.8	4.5	4.5	4.5	4.5	5.2	5.6	5.6	6.6
95°	17.8	6.6	7.7	8.4	8.7	8.7	8.4	7.3	21.7
97.5°	37.1	29.4	9.4	10.5	11.2	10.8	10.1	37.4	42.0
100°	60.2	68.2	10.5	11.9	12.6	12.2	11.5	76.6	66.5
102.5°	85.7	95.2	37.8	13.3	13.6	13.3	57.7	103.2	94.8
105°	114.4	122.4	112.3	22.4	17.1	27.3	131.5	130.5	123.8
107.5°	143.4	151.5	153.2	99.4	89.9	104.3	160.9	158.8	153.9
110°	173.2	179.1	183.0	184.7	150.8	187.2	189.6	186.8	182.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	202.9	209.2	212.7	215.2	212.4	216.9	217.6	214.8	211.0
115°	231.6	237.2	240.7	244.5	243.5	245.2	246.6	242.8	239.3
117.5°	258.5	265.5	267.6	271.5	272.9	271.5	272.9	269.7	266.6
120°	286.9	292.5	293.9	297.4	299.1	297.0	298.8	296.0	292.5
122.5°	312.4	317.3	320.8	322.2	324.0	321.5	323.6	320.5	317.3
125°	336.5	341.8	347.0	346.7	348.4	345.6	348.1	344.2	341.4
127.5°	359.6	364.9	371.2	370.1	371.5	368.7	371.9	367.3	364.9
130°	382.0	388.3	393.9	392.5	393.9	391.5	394.3	390.1	387.6
132.5°	406.2	412.1	415.6	414.2	414.2	412.8	416.7	412.1	408.6
135°	429.3	433.1	436.6	434.5	434.5	433.1	437.3	433.1	428.9
137.5°	448.8	453.0	455.5	454.1	454.1	452.3	456.5	452.7	448.5
140°	467.7	471.6	473.7	471.9	471.9	470.5	474.7	471.6	467.0
142.5°	486.3	489.8	491.9	489.1	489.1	487.7	492.9	489.4	484.2
145°	504.5	506.9	509.4	505.2	505.5	503.4	509.7	506.2	501.3
147.5°	518.1	522.7	525.5	520.6	520.6	518.8	525.5	522.0	516.4
150°	534.6	536.3	539.5	535.3	534.9	533.5	539.8	536.0	531.1
152.5°	545.8	550.0	552.8	548.2	547.9	546.1	553.1	548.9	544.0
155°	559.4	561.1	564.6	560.4	559.4	558.7	565.3	560.1	556.2
157.5°	569.2	571.3	576.2	572.3	569.5	570.6	575.8	569.9	566.7
160°	579.3	580.0	585.6	581.8	578.6	580.0	585.3	577.9	576.9
162.5°	588.1	588.4	593.7	589.1	586.7	587.0	593.3	586.0	584.2
165°	594.4	593.7	598.9	595.1	593.3	593.3	598.9	592.3	591.9
167.5°	600.3	600.0	602.4	600.0	599.6	597.9	602.1	597.5	598.6
170°	604.9	603.5	604.9	601.4	601.4	599.6	605.2	601.4	602.8
172.5°	609.1	606.3	606.3	601.4	600.3	600.0	606.6	604.5	606.6
175°	610.1	607.7	606.6	601.4	597.2	600.3	607.0	605.6	609.1
177.5°	611.2	607.3	606.3	600.0	598.9	599.3	606.6	605.9	610.1
180°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2

(END OF REPORT)