

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: P199458

Luminaire Tested: **S123-DIW-ULO-1-40-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199458  
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-DIW-ULO-1-40-0048-1D-UDD-1-NA-W  
Description: DEFINE 3-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LLO-4000K, NO LENS  
DOWNLIGHT LL1-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

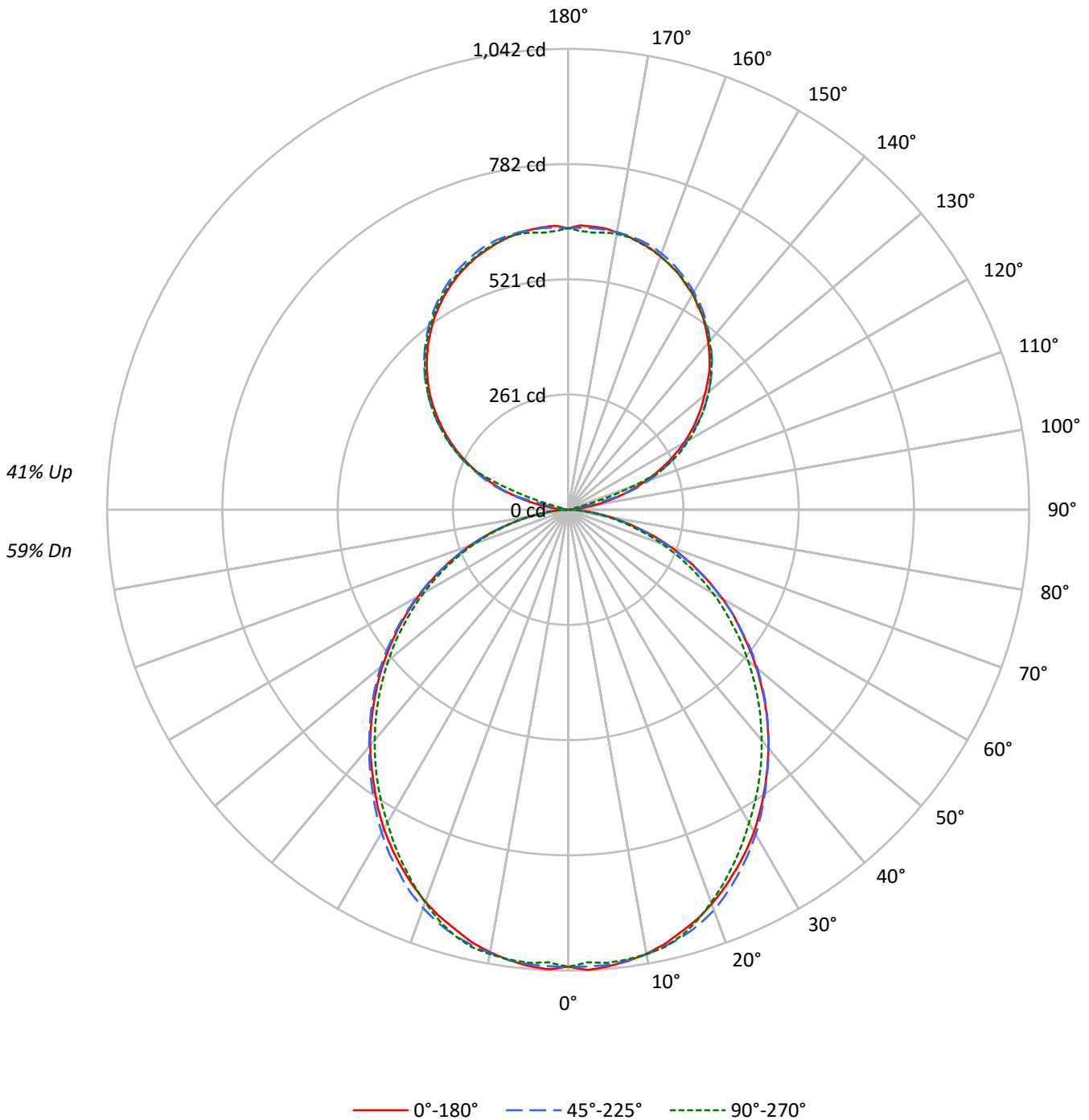
Lumens per Lamp: N/A  
Luminaire Lumens: 4594.3 lumens  
Efficiency: N/A  
Efficacy: 114.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.32  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4.08' x H: 0.38')  
CIE Type: General Diffuse

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°	10894	10894	10894
5°	10887	9620	10871
10°	10743	8639	10705
15°	10526	7755	10473
20°	10300	6859	10246
25°	10015	6052	9951
30°	9716	5333	9633
35°	9356	4717	9244
40°	8998	4146	8897
45°	8617	3618	8490
50°	8205	3122	8089
55°	7749	2651	7620
60°	7331	2215	7110
65°	6770	1777	6501
70°	6071	1355	5753
75°	5091	934	4721
80°	3809	559	3406
85°	2160	239	1906



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.0	2.1
10°-20°	279.6	6.1
20°-30°	413.3	9.0
30°-40°	481.0	10.5
40°-50°	482.7	10.5
50°-60°	422.5	9.2
60°-70°	312.1	6.8
70°-80°	170.4	3.7
80°-90°	44.1	1.0
90°-100°	15.1	0.3
100°-110°	104.8	2.3
110°-120°	250.7	5.5
120°-130°	324.5	7.1
130°-140°	352.2	7.7
140°-150°	333.4	7.3
150°-160°	272.3	5.9
160°-170°	176.9	3.9
170°-180°	60.7	1.3
0°-30°	790.9	17.2
0°-40°	1271.9	27.7
0°-60°	2177.1	47.4
0°-90°	2703.6	58.8
90°-120°	370.5	8.1
90°-150°	1380.7	30.1
90°-180°	1891.0	41.2
0°-180°	4594.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1033	1033	1033	1033	1033	
5°	1037	1033	1028	1032	1035	98
15°	988	1000	996	996	983	279
25°	898	910	884	905	892	414
35°	774	776	751	772	764	484
45°	631	633	607	628	622	487
55°	477	479	453	475	469	428
65°	325	321	300	313	312	321
75°	168	164	151	155	156	179
85°	37	39	36	35	32	43
90°	2	4	3	4	1	3
95°	19	8	9	9	23	25
105°	120	118	18	138	130	128
115°	244	254	256	260	252	240
125°	354	366	367	367	360	316
135°	452	460	458	460	452	348
145°	531	536	532	537	528	332
155°	589	595	589	595	586	271
165°	626	631	625	631	623	177
175°	642	639	629	639	641	61
180°	636	636	636	636	636	



TEST NUMBER: P199458

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1033.2	1033.2	1033.2	1033.2	1033.2	1033.2	1033.2	1033.2	1033.2
2.5°	1041.8	1031.0	1033.9	1032.5	1024.6	1032.5	1033.2	1030.3	1040.3
5°	1036.8	1027.4	1033.2	1031.0	1028.2	1031.0	1031.7	1026.0	1035.3
7.5°	1029.6	1021.7	1028.2	1027.4	1026.0	1027.4	1026.7	1018.8	1027.4
10°	1019.6	1012.4	1021.0	1022.4	1020.3	1021.7	1018.1	1010.2	1016.0
12.5°	1005.9	1000.2	1010.9	1013.8	1012.4	1013.1	1008.1	996.6	1002.3
15°	988.0	985.1	999.5	1001.6	995.9	999.5	995.9	981.6	983.0
17.5°	970.8	967.9	983.7	980.8	972.9	978.7	979.4	963.6	965.1
20°	948.6	947.1	963.6	955.0	945.0	952.2	958.6	942.8	943.6
22.5°	924.2	925.6	937.8	925.6	915.6	922.8	934.9	919.9	918.5
25°	897.7	902.0	909.9	895.5	884.0	891.9	904.8	896.2	891.9
27.5°	870.4	876.9	879.7	863.3	851.8	859.7	876.2	870.4	863.3
30°	840.3	848.2	847.5	830.3	817.4	826.0	843.2	842.5	833.1
32.5°	807.3	818.1	812.3	795.9	785.1	791.6	808.8	810.9	800.2
35°	773.6	785.1	776.5	760.7	751.4	757.9	772.2	778.6	764.3
37.5°	739.2	750.7	740.6	725.6	716.3	722.7	736.3	744.2	730.6
40°	704.1	714.8	704.8	691.9	680.4	687.6	699.8	708.4	696.2
42.5°	668.2	679.7	668.9	656.0	643.9	653.2	663.9	672.5	659.6
45°	630.9	643.1	633.1	618.0	606.6	615.9	628.1	635.2	621.6
47.5°	592.9	607.3	595.8	580.0	568.6	577.9	590.8	598.0	585.1
50°	554.9	567.1	558.5	542.0	530.6	539.2	553.5	559.2	547.1
52.5°	516.2	530.6	520.5	504.0	493.3	500.5	514.1	520.5	507.6
55°	476.8	488.3	478.9	465.3	453.1	461.7	474.6	478.9	468.9
57.5°	442.4	451.0	442.4	427.3	415.9	422.3	434.5	440.2	430.2
60°	402.9	410.8	402.2	387.9	377.9	383.6	393.6	400.8	390.8
62.5°	363.5	371.4	361.4	348.5	339.1	345.6	354.2	360.6	351.3
65°	324.8	332.0	321.2	309.7	300.4	306.9	313.3	320.5	311.9
67.5°	285.4	291.8	281.8	270.3	262.4	267.4	273.2	280.3	273.2
70°	246.6	251.7	243.1	232.3	225.1	229.4	234.5	240.2	233.7
72.5°	207.9	214.4	203.6	195.0	188.6	190.0	195.7	200.0	195.0
75°	167.8	172.1	164.2	157.0	151.3	152.7	154.9	161.3	155.6
77.5°	130.5	135.5	129.1	122.6	118.3	119.7	120.5	124.8	119.0
80°	95.4	99.7	95.4	90.3	87.5	88.2	88.2	91.1	85.3
82.5°	63.8	68.1	65.2	61.7	60.9	59.5	59.5	61.7	55.9
85°	36.6	41.6	39.4	36.6	35.8	35.1	35.1	36.6	32.3
87.5°	16.5	20.1	17.9	15.8	14.3	13.6	13.6	15.8	12.2
90°	2.2	5.0	4.3	2.9	2.9	2.9	3.6	4.3	1.4
92.5°	4.1	4.8	4.8	4.8	4.8	5.5	5.9	5.9	7.0
95°	18.8	7.0	8.1	8.8	9.2	9.2	8.8	7.7	22.8
97.5°	39.1	30.9	9.9	11.1	11.8	11.4	10.7	39.4	44.2
100°	63.4	71.8	11.1	12.5	13.3	12.9	12.2	80.7	70.0
102.5°	90.3	100.2	39.8	14.0	14.4	14.0	60.8	108.7	99.8
105°	120.5	128.9	118.3	23.6	18.1	28.7	138.5	137.4	130.4
107.5°	151.1	159.5	161.4	104.6	94.7	109.8	169.5	167.3	162.1
110°	182.4	188.6	192.7	194.5	158.8	197.1	199.7	196.7	192.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	213.7	220.3	224.0	226.6	223.6	228.4	229.2	226.2	222.2
115°	243.9	249.8	253.5	257.5	256.4	258.3	259.7	255.7	252.0
117.5°	272.3	279.6	281.8	285.9	287.4	285.9	287.4	284.1	280.7
120°	302.1	308.0	309.5	313.2	315.0	312.8	314.6	311.7	308.0
122.5°	329.0	334.2	337.8	339.3	341.2	338.6	340.8	337.5	334.2
125°	354.4	359.9	365.5	365.1	366.9	364.0	366.6	362.5	359.6
127.5°	378.7	384.3	390.9	389.8	391.3	388.3	391.6	386.8	384.3
130°	402.3	408.9	414.8	413.4	414.8	412.3	415.2	410.8	408.2
132.5°	427.7	434.0	437.7	436.2	436.2	434.7	438.8	434.0	430.3
135°	452.1	456.1	459.8	457.6	457.6	456.1	460.5	456.1	451.7
137.5°	472.7	477.1	479.7	478.2	478.2	476.4	480.8	476.7	472.3
140°	492.6	496.6	498.8	497.0	497.0	495.5	499.9	496.6	491.8
142.5°	512.1	515.8	518.0	515.1	515.1	513.6	519.1	515.4	509.9
145°	531.3	533.8	536.4	532.0	532.4	530.2	536.8	533.1	527.9
147.5°	545.6	550.4	553.4	548.2	548.2	546.4	553.4	549.7	543.8
150°	562.9	564.8	568.1	563.7	563.3	561.8	568.5	564.4	559.3
152.5°	574.7	579.2	582.1	577.3	576.9	575.1	582.5	578.1	572.9
155°	589.1	590.9	594.6	590.2	589.1	588.4	595.4	589.8	585.8
157.5°	599.4	601.6	606.8	602.7	599.8	600.9	606.4	600.2	596.8
160°	610.1	610.8	616.7	612.7	609.4	610.8	616.4	608.6	607.5
162.5°	619.3	619.7	625.2	620.4	617.8	618.2	624.8	617.1	615.3
165°	625.9	625.2	630.7	626.7	624.8	624.8	630.7	623.7	623.4
167.5°	632.2	631.8	634.4	631.8	631.5	629.6	634.1	629.3	630.4
170°	637.0	635.5	637.0	633.3	633.3	631.5	637.4	633.3	634.8
172.5°	641.4	638.5	638.5	633.3	632.2	631.8	638.8	636.6	638.8
175°	642.5	639.9	638.8	633.3	628.9	632.2	639.2	637.7	641.4
177.5°	643.6	639.6	638.5	631.8	630.7	631.1	638.8	638.1	642.5
180°	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3

(END OF REPORT)