

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: P199462

Luminaire Tested: **S123-DIW-ULO-LO-30-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199462  
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-LO-30-0048-1D-UDD-1-NA-W  
Description: DEFINE 3-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LLO-3000K, NO LENS  
DOWNLIGHT LLO-3000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

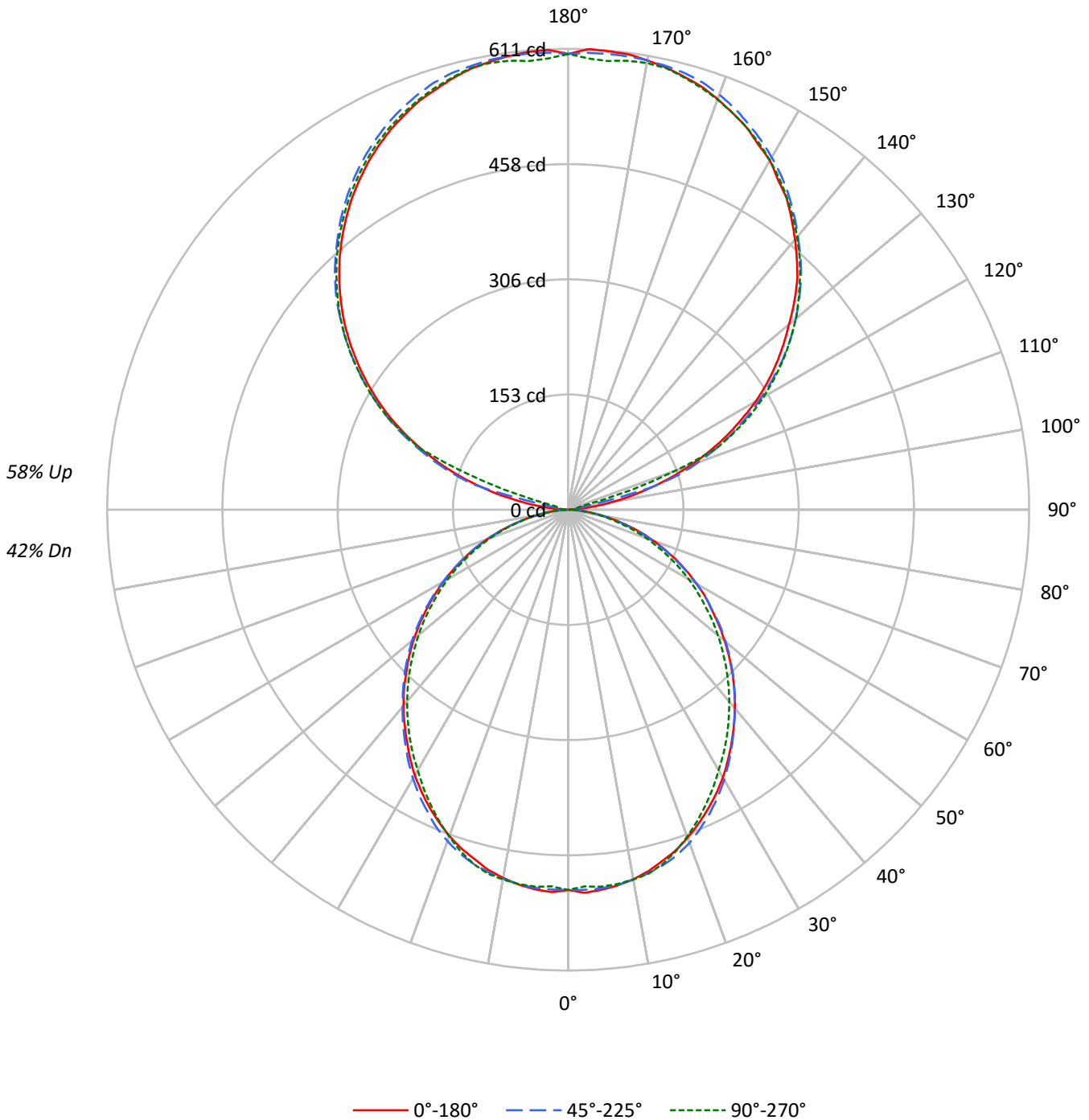
Lumens per Lamp: N/A  
Luminaire Lumens: 3114.2 lumens  
Efficiency: N/A  
Efficacy: 115.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.32  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4.08' x H: 0.38')  
CIE Type: General Diffuse

Input Watts (W): 26.9  
Input Voltage (V): NR  
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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	43	42	42	36
2	87	80	74	69	80	73	68	64	61	57	54	49	46	44	38	36	35	30
3	80	70	63	57	73	65	58	53	54	49	45	43	40	37	34	32	30	25
4	73	62	55	49	66	57	50	45	48	42	38	39	35	32	30	28	26	22
5	67	55	47	42	61	51	44	39	42	37	33	35	31	28	27	24	22	19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	28	24	21	23	20	17	15
8	53	41	33	28	48	37	31	26	32	26	22	26	22	19	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13	11

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

	0°	90°	180°
0°	5315	5315	5315
5°	5312	4694	5305
10°	5242	4215	5223
15°	5136	3784	5110
20°	5025	3347	4999
25°	4887	2953	4855
30°	4741	2602	4700
35°	4566	2302	4510
40°	4390	2023	4341
45°	4205	1766	4142
50°	4004	1524	3946
55°	3780	1294	3718
60°	3577	1081	3470
65°	3304	867	3173
70°	2962	662	2806
75°	2485	456	2303
80°	1857	273	1661
85°	1051	117	927



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.8	1.5
10°-20°	136.4	4.4
20°-30°	201.6	6.5
30°-40°	234.7	7.5
40°-50°	235.5	7.6
50°-60°	206.1	6.6
60°-70°	152.3	4.9
70°-80°	83.2	2.7
80°-90°	21.5	0.7
90°-100°	14.1	0.5
100°-110°	99.5	3.2
110°-120°	238.1	7.6
120°-130°	308.1	9.9
130°-140°	334.4	10.7
140°-150°	316.6	10.2
150°-160°	258.6	8.3
160°-170°	168.0	5.4
170°-180°	57.6	1.9
0°-30°	385.9	12.4
0°-40°	620.6	19.9
0°-60°	1062.3	34.1
0°-90°	1319.2	42.4
90°-120°	351.6	11.3
90°-150°	1310.8	42.1
90°-180°	1795.0	57.6
0°-180°	3114.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	504	504	504	504	504	
5°	506	504	502	503	505	48
15°	482	488	486	486	480	136
25°	438	444	431	442	435	202
35°	378	379	367	377	373	236
45°	308	309	296	306	303	237
55°	233	234	221	232	229	209
65°	158	157	147	153	152	157
75°	82	80	74	76	76	87
85°	18	19	18	17	16	21
90°	1	2	1	2	1	2
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: P199462

CATALOG NUMBER: S123-DIW-ULO-LO-30-0048-1D-UDD-1-NA-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	504.1	504.1	504.1	504.1	504.1	504.1	504.1	504.1	504.1
2.5°	508.3	503.1	504.5	503.8	499.9	503.8	504.1	502.7	507.6
5°	505.9	501.3	504.1	503.1	501.7	503.1	503.4	500.6	505.2
7.5°	502.4	498.5	501.7	501.3	500.6	501.3	501.0	497.1	501.3
10°	497.5	494.0	498.2	498.9	497.8	498.5	496.8	492.9	495.7
12.5°	490.8	488.0	493.3	494.7	494.0	494.3	491.9	486.3	489.1
15°	482.1	480.7	487.7	488.7	485.9	487.7	485.9	478.9	479.6
17.5°	473.7	472.3	480.0	478.6	474.7	477.5	477.9	470.2	470.9
20°	462.8	462.1	470.2	466.0	461.1	464.6	467.7	460.0	460.4
22.5°	450.9	451.6	457.6	451.6	446.7	450.2	456.2	448.8	448.1
25°	438.0	440.1	444.0	437.0	431.4	435.2	441.5	437.3	435.2
27.5°	424.7	427.9	429.3	421.2	415.6	419.5	427.5	424.7	421.2
30°	410.0	413.9	413.5	405.1	398.8	403.0	411.4	411.1	406.5
32.5°	393.9	399.2	396.4	388.3	383.1	386.2	394.6	395.7	390.4
35°	377.5	383.1	378.9	371.2	366.6	369.8	376.8	379.9	372.9
37.5°	360.7	366.3	361.4	354.0	349.5	352.6	359.3	363.1	356.5
40°	343.5	348.8	343.9	337.6	332.0	335.5	341.4	345.6	339.7
42.5°	326.1	331.7	326.4	320.1	314.2	318.7	324.0	328.2	321.9
45°	307.9	313.8	308.9	301.6	296.0	300.5	306.5	310.0	303.3
47.5°	289.3	296.3	290.7	283.0	277.4	282.0	288.3	291.8	285.5
50°	270.8	276.7	272.5	264.5	258.9	263.1	270.1	272.9	266.9
52.5°	251.9	258.9	254.0	245.9	240.7	244.2	250.8	254.0	247.7
55°	232.6	238.2	233.7	227.0	221.1	225.3	231.6	233.7	228.8
57.5°	215.9	220.1	215.9	208.5	202.9	206.1	212.0	214.8	209.9
60°	196.6	200.5	196.3	189.3	184.4	187.2	192.1	195.6	190.7
62.5°	177.4	181.2	176.3	170.0	165.5	168.6	172.8	176.0	171.4
65°	158.5	162.0	156.7	151.1	146.6	149.7	152.9	156.4	152.2
67.5°	139.2	142.4	137.5	131.9	128.0	130.5	133.3	136.8	133.3
70°	120.3	122.8	118.6	113.3	109.9	111.9	114.4	117.2	114.0
72.5°	101.5	104.6	99.4	95.2	92.0	92.7	95.5	97.6	95.2
75°	81.9	84.0	80.1	76.6	73.8	74.5	75.6	78.7	75.9
77.5°	63.7	66.1	63.0	59.8	57.7	58.4	58.8	60.9	58.1
80°	46.5	48.6	46.5	44.1	42.7	43.0	43.0	44.4	41.6
82.5°	31.1	33.2	31.8	30.1	29.7	29.0	29.0	30.1	27.3
85°	17.8	20.3	19.2	17.8	17.5	17.1	17.1	17.8	15.7
87.5°	8.0	9.8	8.7	7.7	7.0	6.6	6.6	7.7	5.9
90°	1.0	2.4	2.1	1.4	1.4	1.4	1.7	2.1	0.7
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)