

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: P199516

Luminaire Tested: **S124-DIW-ULO-LO-35-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199516  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P28062 P28061)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124-DIW-ULO-LO-35-0048-1D-UDD-1-NA-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LLO-3500K, NO LENS  
DOWNLIGHT LLO-3500K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

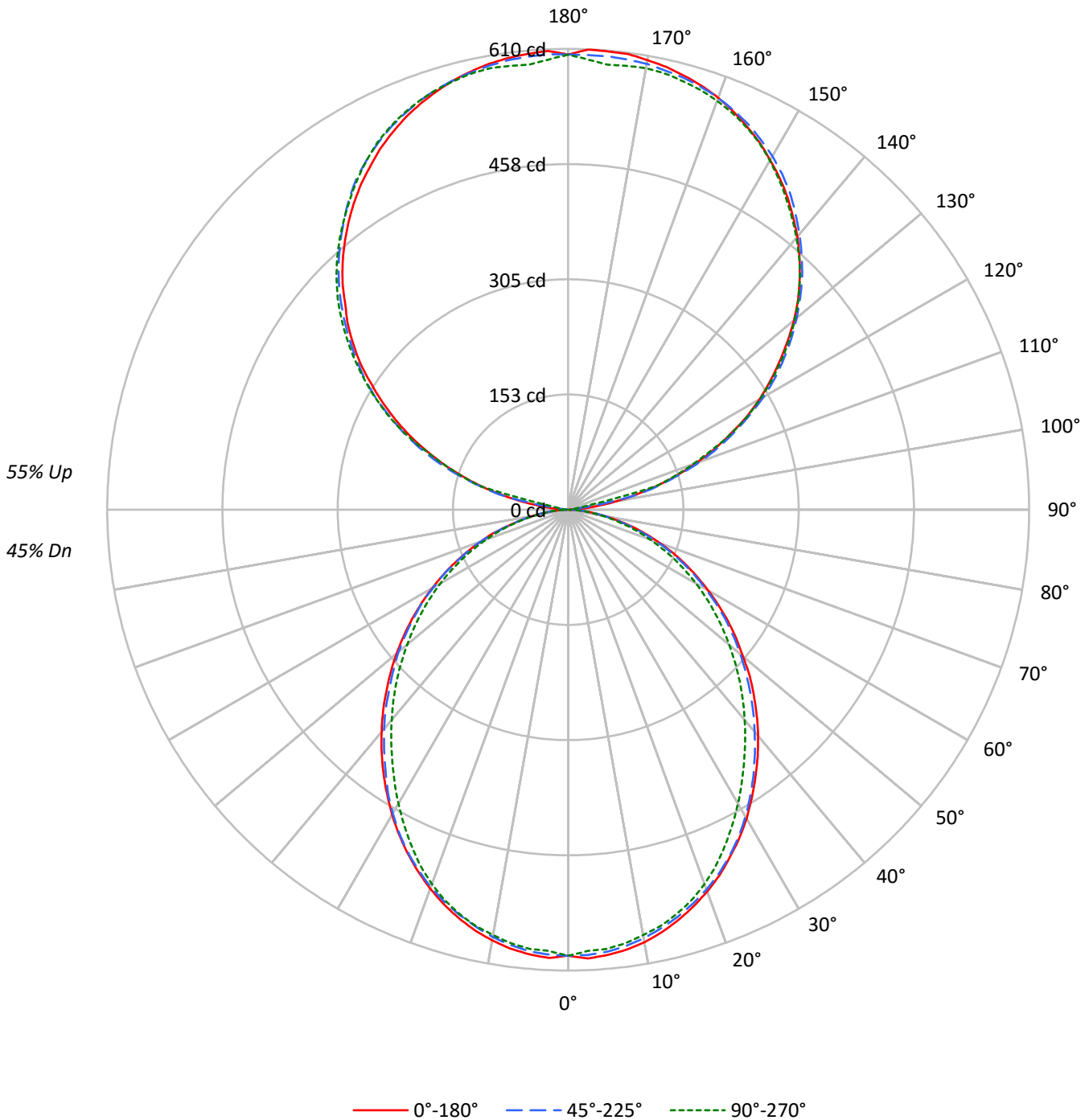
Lumens per Lamp: N/A  
Luminaire Lumens: 3269.8 lumens  
Efficiency: N/A  
Efficacy: 121.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: General Diffuse

Input Watts (W): 26.9  
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45
1	97	92	89	85	88	85	82	79	71	68	66	58	56	54	45	44	43	38
2	88	81	75	70	80	74	69	65	62	58	55	51	48	46	40	38	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	41	39	36	33	31	27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23
5	68	56	48	42	62	52	45	39	43	38	34	36	32	29	29	26	24	20
6	62	50	42	37	57	46	39	34	39	34	30	32	28	25	26	23	21	18
7	57	45	37	32	53	42	35	30	36	30	26	29	25	22	24	21	19	16
8	53	41	34	28	49	38	31	27	32	27	23	27	23	20	22	19	17	14
9	50	38	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13
10	46	34	27	23	43	32	26	21	27	22	19	23	19	16	19	16	14	12

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

	0°	90°	180°
0°	4668	4668	4668
5°	4660	4217	4652
10°	4594	3832	4575
15°	4495	3487	4472
20°	4380	3150	4348
25°	4241	2808	4202
30°	4095	2487	4042
35°	3920	2191	3865
40°	3746	1929	3681
45°	3557	1689	3488
50°	3345	1461	3285
55°	3155	1250	3072
60°	2918	1047	2834
65°	2684	849	2578
70°	2385	653	2273
75°	2007	460	1859
80°	1506	280	1410
85°	885	124	837



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.6	1.7
10°-20°	156.7	4.8
20°-30°	229.5	7.0
30°-40°	263.1	8.0
40°-50°	259.3	7.9
50°-60°	223.5	6.8
60°-70°	163.0	5.0
70°-80°	88.9	2.7
80°-90°	23.3	0.7
90°-100°	15.4	0.5
100°-110°	121.8	3.7
110°-120°	235.7	7.2
120°-130°	306.4	9.4
130°-140°	332.6	10.2
140°-150°	314.8	9.6
150°-160°	256.8	7.9
160°-170°	166.2	5.1
170°-180°	57.2	1.7
0°-30°	441.8	13.5
0°-40°	704.8	21.6
0°-60°	1187.7	36.3
0°-90°	1463.0	44.7
90°-120°	372.8	11.4
90°-150°	1326.7	40.6
90°-180°	1807.0	55.3
0°-180°	3269.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	590	590	590	590	590	
5°	592	588	584	587	591	56
15°	562	558	554	555	560	159
25°	507	505	491	501	502	234
35°	432	428	406	422	426	270
45°	347	340	321	334	340	268
55°	259	254	236	249	252	231
65°	172	168	155	164	165	170
75°	88	85	78	81	82	94
85°	20	20	19	19	19	23
90°	1	1	1	1	1	2
95°	21	5	6	6	19	27
105°	121	125	120	122	118	128
115°	237	243	238	240	231	235
125°	341	348	344	340	335	305
135°	433	438	434	429	422	334
145°	506	512	503	504	495	316
155°	560	563	558	558	551	258
165°	595	592	587	588	588	168
175°	609	602	591	602	606	58
180°	602	602	602	602	602	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	590.3	590.3	590.3	590.3	590.3	590.3	590.3	590.3	590.3
2.5°	594.6	587.8	590.0	588.5	584.6	588.5	589.6	587.5	593.9
5°	591.7	585.3	587.5	585.3	583.5	585.0	586.7	584.2	590.7
7.5°	587.5	580.7	582.5	580.7	578.9	580.3	581.4	579.2	586.0
10°	581.4	574.3	576.0	573.9	571.8	573.2	574.3	572.1	578.9
12.5°	572.8	566.0	567.5	566.0	564.3	564.6	565.3	563.2	570.3
15°	562.5	555.7	558.2	556.8	554.3	555.7	555.3	552.8	559.6
17.5°	550.7	544.3	547.1	545.7	542.1	544.3	544.3	540.3	547.5
20°	537.8	531.1	535.0	531.4	527.5	529.6	531.4	526.8	533.9
22.5°	523.6	516.4	521.1	514.6	510.4	512.9	517.1	512.2	518.6
25°	506.8	501.1	505.4	496.4	490.7	494.3	501.1	496.1	502.2
27.5°	490.4	484.7	488.2	478.2	470.4	475.0	483.6	479.3	484.7
30°	472.2	467.5	469.3	457.5	449.3	454.3	464.3	461.8	466.1
32.5°	452.2	448.6	448.6	436.1	427.6	433.3	444.0	443.3	446.1
35°	432.2	430.1	427.6	414.0	405.8	411.1	421.5	424.4	426.1
37.5°	411.9	410.4	405.8	392.6	384.7	390.4	400.1	404.4	405.4
40°	390.8	390.1	383.7	371.2	363.3	369.0	379.0	384.4	384.0
42.5°	369.4	370.1	362.3	350.1	342.3	348.0	357.3	364.4	362.6
45°	347.3	349.4	340.1	329.1	320.9	326.9	334.4	343.3	340.5
47.5°	325.8	328.3	318.7	307.3	299.4	305.9	313.4	323.0	318.7
50°	301.6	306.6	297.3	285.9	278.0	284.1	293.0	301.2	296.2
52.5°	280.5	284.1	275.9	264.8	257.3	262.3	271.2	279.5	274.1
55°	258.8	262.7	254.5	243.4	236.3	241.3	249.1	257.3	252.0
57.5°	235.9	239.8	232.3	222.3	215.6	220.9	229.1	234.8	229.8
60°	213.8	218.8	210.6	200.9	195.2	199.5	205.9	212.7	207.7
62.5°	192.4	197.0	189.2	180.2	174.9	178.8	185.6	190.9	186.3
65°	171.7	174.5	167.7	159.5	154.9	157.4	163.5	169.5	164.9
67.5°	150.6	153.5	146.7	139.5	134.9	137.4	142.4	148.1	143.8
70°	129.2	131.7	126.0	119.6	115.6	118.1	122.8	127.1	123.1
72.5°	108.9	110.6	105.3	100.3	97.4	99.2	102.4	106.4	104.6
75°	88.2	90.3	84.9	80.7	78.2	78.9	81.4	84.6	81.7
77.5°	68.5	70.7	66.4	63.2	61.7	62.1	63.9	66.4	62.8
80°	50.3	52.1	49.6	46.8	45.3	46.0	47.1	48.5	47.1
82.5°	33.9	35.7	33.9	32.1	31.1	31.8	32.1	32.8	31.8
85°	20.0	21.4	20.3	19.3	18.9	18.9	19.3	20.0	18.9
87.5°	8.9	10.0	9.3	8.6	7.5	7.9	8.2	8.9	8.2
90°	0.7	1.8	1.4	1.1	1.1	1.1	1.4	1.8	0.7
92.5°	6.8	3.6	3.6	3.6	3.6	3.6	3.6	3.9	4.6
95°	21.1	13.6	5.4	5.7	5.7	5.7	5.7	9.3	18.9
97.5°	41.0	47.8	10.4	6.8	6.8	6.8	10.4	45.3	38.2
100°	65.0	71.4	52.1	16.4	12.1	15.3	45.7	67.5	61.7
102.5°	91.7	99.9	96.0	53.9	31.1	46.0	93.2	95.6	89.2
105°	121.3	128.5	124.6	126.3	119.6	121.7	121.7	123.1	117.8
107.5°	150.6	156.7	154.5	153.1	147.8	149.2	152.8	152.0	146.0
110°	179.9	185.9	185.9	181.3	174.9	177.4	183.1	179.5	174.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	209.1	213.8	214.9	212.4	204.9	208.4	211.6	205.9	202.7
115°	236.6	243.4	242.7	243.0	237.7	237.7	239.5	235.2	230.6
117.5°	266.2	271.2	270.2	270.5	267.0	265.5	265.2	262.3	257.3
120°	292.3	298.0	298.7	296.2	293.7	290.9	292.7	288.7	283.4
122.5°	316.9	323.4	324.4	321.9	319.4	316.2	317.6	313.4	308.4
125°	341.2	348.3	348.3	346.5	344.1	340.8	340.5	336.9	335.1
127.5°	365.5	373.7	372.2	370.5	368.3	364.8	363.0	360.8	358.0
130°	390.1	395.8	394.4	392.9	391.5	387.2	385.8	383.7	380.5
132.5°	412.6	415.8	416.5	413.6	413.6	408.3	407.9	405.4	399.7
135°	433.3	436.5	437.9	433.6	433.6	428.3	429.4	425.8	422.2
137.5°	452.9	455.4	457.2	452.2	452.5	447.6	449.3	443.3	441.8
140°	471.8	472.9	476.1	470.8	470.0	465.8	468.3	462.2	460.4
142.5°	488.6	490.0	493.9	488.2	486.5	483.2	486.5	479.0	477.9
145°	505.7	506.1	511.8	505.0	502.9	500.4	504.3	495.4	494.7
147.5°	520.7	520.0	526.8	521.1	518.9	516.4	520.7	510.4	510.4
150°	534.6	533.9	540.3	535.7	533.6	531.4	533.9	524.3	524.3
152.5°	548.2	545.7	552.1	548.2	547.5	544.3	546.4	537.1	538.6
155°	559.6	557.1	563.2	560.0	558.5	556.0	557.5	548.6	550.7
157.5°	570.7	566.8	572.1	570.7	568.2	566.8	566.8	559.6	562.1
160°	580.3	575.7	580.3	578.2	576.0	574.3	575.7	568.5	571.8
162.5°	588.2	583.9	586.4	583.5	582.5	579.6	582.5	576.7	580.3
165°	594.6	590.0	591.7	587.8	587.1	585.0	588.5	584.6	588.2
167.5°	600.3	596.0	595.3	591.4	591.4	588.5	592.8	590.7	594.2
170°	604.2	600.7	599.2	593.5	593.5	591.0	597.1	595.3	599.6
172.5°	608.2	603.5	601.0	595.0	592.5	592.8	600.3	598.9	603.2
175°	608.9	605.3	602.4	596.0	591.4	594.6	602.1	602.4	605.7
177.5°	609.6	606.0	602.4	597.1	596.4	595.7	603.5	603.2	607.8
180°	602.4	602.4	602.4	602.4	602.4	602.4	602.4	602.4	602.4

(END OF REPORT)