

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: P199446

Luminaire Tested: **S123-DIW-U1-LO-40-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199446  
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-U1-LO-40-0048-1D-UDD-1-NA-W  
Description: DEFINE 3-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LL1-4000K, NO LENS  
DOWNLIGHT LLO-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

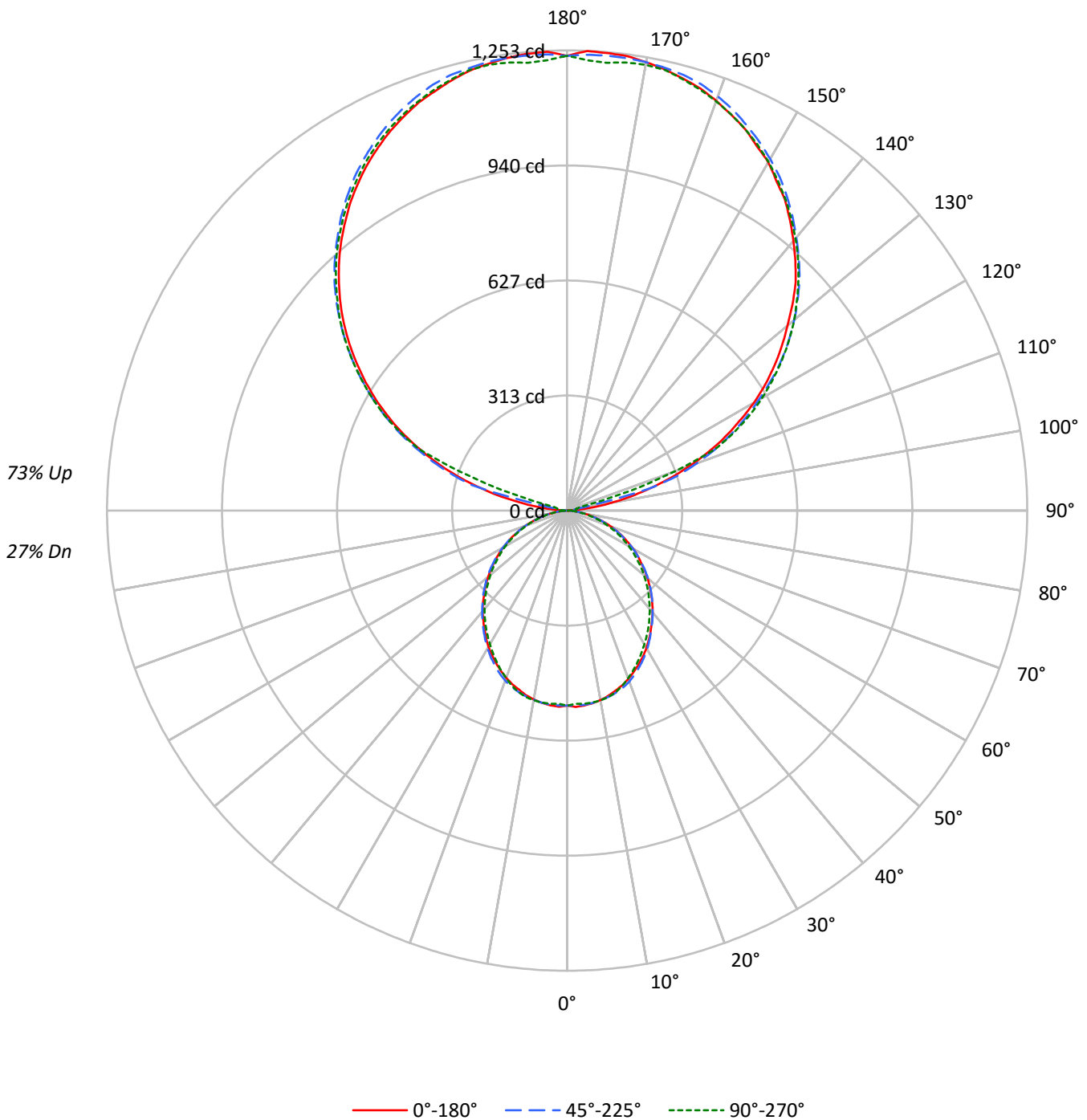
Lumens per Lamp: N/A  
Luminaire Lumens: 5068.0 lumens  
Efficiency: N/A  
Efficacy: 130.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.32  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Indirect

Input Watts (W): 38.8  
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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35	27
1	93	89	85	81	83	79	76	73	62	60	58	46	45	43	31	31	30	23
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	55	68	61	55	50	48	44	40	36	33	31	24	23	21	16
4	70	60	52	47	63	54	47	42	42	38	34	32	29	26	22	20	18	14
5	64	53	45	40	57	48	41	36	38	33	29	28	25	23	20	18	16	12
6	59	48	40	34	53	43	36	31	34	29	25	26	22	20	18	16	14	11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12	10
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11	9
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	12	10	8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	11	9	7

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

	0°	90°	180°
0°	5598	5598	5598
5°	5593	4943	5586
10°	5520	4439	5501
15°	5409	3984	5381
20°	5292	3525	5264
25°	5147	3110	5113
30°	4993	2740	4950
35°	4808	2424	4749
40°	4624	2131	4571
45°	4428	1859	4362
50°	4217	1604	4156
55°	3982	1362	3915
60°	3768	1138	3653
65°	3479	914	3341
70°	3119	697	2957
75°	2615	480	2424
80°	1956	287	1749
85°	1110	123	980



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	50.3	1.0
10°-20°	143.7	2.8
20°-30°	212.4	4.2
30°-40°	247.2	4.9
40°-50°	248.0	4.9
50°-60°	217.1	4.3
60°-70°	160.4	3.2
70°-80°	87.6	1.7
80°-90°	22.6	0.4
90°-100°	28.6	0.6
100°-110°	203.9	4.0
110°-120°	487.9	9.6
120°-130°	631.5	12.5
130°-140°	685.4	13.5
140°-150°	648.9	12.8
150°-160°	530.0	10.5
160°-170°	344.3	6.8
170°-180°	118.1	2.3
0°-30°	406.4	8.0
0°-40°	653.6	12.9
0°-60°	1118.7	22.1
0°-90°	1389.3	27.4
90°-120°	720.4	14.2
90°-150°	2686.2	53.0
90°-180°	3679.0	72.6
0°-180°	5068.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	531	531	531	531	531	
5°	533	531	528	530	532	51
15°	508	514	512	512	505	143
25°	461	468	454	465	458	213
35°	398	399	386	397	393	249
45°	324	325	312	323	319	250
55°	245	246	233	244	241	220
65°	167	165	154	161	160	165
75°	86	84	78	80	80	92
85°	19	20	18	18	17	22
90°	1	2	2	2	1	3
95°	37	16	18	17	44	48
105°	234	230	35	270	254	249
115°	475	493	499	506	490	468
125°	690	711	714	713	700	616
135°	880	895	890	896	879	676
145°	1034	1044	1036	1045	1027	645
155°	1146	1157	1146	1159	1140	528
165°	1218	1228	1216	1228	1213	344
175°	1250	1243	1224	1244	1248	119
180°	1238	1238	1238	1238	1238	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	530.9	530.9	530.9	530.9	530.9	530.9	530.9	530.9	530.9
2.5°	535.3	529.8	531.3	530.5	526.5	530.5	530.9	529.4	534.6
5°	532.7	527.9	530.9	529.8	528.3	529.8	530.2	527.2	532.0
7.5°	529.1	525.0	528.3	527.9	527.2	527.9	527.6	523.5	527.9
10°	523.9	520.2	524.6	525.4	524.3	525.0	523.2	519.1	522.1
12.5°	516.9	513.9	519.5	520.9	520.2	520.6	518.0	512.1	515.1
15°	507.7	506.2	513.6	514.7	511.7	513.6	511.7	504.4	505.1
17.5°	498.8	497.4	505.5	504.0	499.9	502.9	503.3	495.2	495.9
20°	487.4	486.7	495.2	490.7	485.6	489.3	492.6	484.5	484.8
22.5°	474.9	475.6	481.9	475.6	470.5	474.2	480.4	472.7	471.9
25°	461.3	463.5	467.5	460.2	454.3	458.3	464.9	460.5	458.3
27.5°	447.3	450.6	452.1	443.6	437.7	441.7	450.2	447.3	443.6
30°	431.8	435.8	435.5	426.6	420.0	424.4	433.3	432.9	428.1
32.5°	414.8	420.4	417.4	408.9	403.4	406.7	415.6	416.7	411.2
35°	397.5	403.4	399.0	390.9	386.1	389.4	396.8	400.1	392.7
37.5°	379.8	385.7	380.6	372.8	368.1	371.4	378.4	382.4	375.4
40°	361.8	367.3	362.2	355.5	349.6	353.3	359.6	364.0	357.7
42.5°	343.4	349.3	343.7	337.1	330.8	335.6	341.2	345.6	338.9
45°	324.2	330.5	325.3	317.6	311.7	316.5	322.7	326.4	319.4
47.5°	304.7	312.1	306.2	298.1	292.2	296.9	303.6	307.3	300.6
50°	285.2	291.4	287.0	278.5	272.6	277.1	284.4	287.4	281.1
52.5°	265.3	272.6	267.5	259.0	253.5	257.2	264.2	267.5	260.8
55°	245.0	250.9	246.1	239.1	232.8	237.3	243.9	246.1	240.9
57.5°	227.3	231.7	227.3	219.6	213.7	217.0	223.3	226.2	221.1
60°	207.1	211.1	206.7	199.3	194.2	197.1	202.3	205.9	200.8
62.5°	186.8	190.8	185.7	179.1	174.3	177.6	182.0	185.3	180.5
65°	166.9	170.6	165.1	159.2	154.4	157.7	161.0	164.7	160.3
67.5°	146.6	149.9	144.8	138.9	134.8	137.4	140.4	144.1	140.4
70°	126.7	129.3	124.9	119.4	115.7	117.9	120.5	123.4	120.1
72.5°	106.8	110.2	104.6	100.2	96.9	97.6	100.6	102.8	100.2
75°	86.2	88.4	84.4	80.7	77.7	78.5	79.6	82.9	79.9
77.5°	67.1	69.6	66.3	63.0	60.8	61.5	61.9	64.1	61.2
80°	49.0	51.2	49.0	46.4	44.9	45.3	45.3	46.8	43.8
82.5°	32.8	35.0	33.5	31.7	31.3	30.6	30.6	31.7	28.7
85°	18.8	21.4	20.3	18.8	18.4	18.1	18.1	18.8	16.6
87.5°	8.5	10.3	9.2	8.1	7.4	7.0	7.0	8.1	6.3
90°	1.1	2.6	2.2	1.5	1.5	1.5	1.8	2.2	0.7
92.5°	7.9	9.3	9.3	9.3	9.3	10.8	11.5	11.5	13.6
95°	36.6	13.6	15.8	17.2	17.9	17.9	17.2	15.1	44.5
97.5°	76.0	60.2	19.4	21.5	22.9	22.2	20.8	76.7	86.0
100°	123.3	139.8	21.5	24.4	25.8	25.1	23.7	157.0	136.2
102.5°	175.7	195.0	77.4	27.2	28.0	27.2	118.3	211.5	194.3
105°	234.5	250.9	230.2	45.9	35.1	55.9	269.6	267.4	253.8
107.5°	294.0	310.5	314.0	203.6	184.3	213.7	329.8	325.5	315.5
110°	354.9	367.1	375.0	378.6	309.0	383.6	388.6	382.9	374.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	415.9	428.8	435.9	440.9	435.2	444.5	446.0	440.2	432.3
115°	474.6	486.1	493.3	501.2	499.0	502.6	505.5	497.6	490.4
117.5°	529.9	544.2	548.5	556.4	559.2	556.4	559.2	552.8	546.3
120°	587.9	599.4	602.3	609.4	613.0	608.7	612.3	606.6	599.4
122.5°	640.3	650.3	657.5	660.3	663.9	658.9	663.2	656.8	650.3
125°	689.7	700.5	711.2	710.5	714.1	708.4	713.4	705.5	699.8
127.5°	737.1	747.8	760.7	758.6	761.4	755.7	762.2	752.8	747.8
130°	782.9	795.9	807.3	804.5	807.3	802.3	808.0	799.4	794.4
132.5°	832.4	844.6	851.8	848.9	848.9	846.0	853.9	844.6	837.4
135°	879.7	887.6	894.8	890.5	890.5	887.6	896.2	887.6	879.0
137.5°	919.9	928.5	933.5	930.6	930.6	927.1	935.7	927.8	919.2
140°	958.6	966.5	970.8	967.2	967.2	964.3	972.9	966.5	957.2
142.5°	996.6	1003.8	1008.1	1002.3	1002.3	999.5	1010.2	1003.1	992.3
145°	1033.9	1038.9	1043.9	1035.3	1036.0	1031.7	1044.6	1037.5	1027.4
147.5°	1061.9	1071.2	1076.9	1066.9	1066.9	1063.3	1076.9	1069.7	1058.3
150°	1095.6	1099.1	1105.6	1097.0	1096.3	1093.4	1106.3	1098.4	1088.4
152.5°	1118.5	1127.1	1132.8	1123.5	1122.8	1119.2	1133.6	1124.9	1114.9
155°	1146.5	1150.0	1157.2	1148.6	1146.5	1145.0	1158.6	1147.9	1140.0
157.5°	1166.5	1170.8	1180.9	1173.0	1167.3	1169.4	1180.2	1168.0	1161.5
160°	1187.3	1188.8	1200.2	1192.3	1185.9	1188.8	1199.5	1184.5	1182.3
162.5°	1205.3	1206.0	1216.7	1207.4	1202.4	1203.1	1216.0	1201.0	1197.4
165°	1218.2	1216.7	1227.5	1219.6	1216.0	1216.0	1227.5	1213.9	1213.1
167.5°	1230.3	1229.6	1234.6	1229.6	1228.9	1225.3	1233.9	1224.6	1226.8
170°	1239.7	1236.8	1239.7	1232.5	1232.5	1228.9	1240.4	1232.5	1235.4
172.5°	1248.3	1242.5	1242.5	1232.5	1230.3	1229.6	1243.3	1239.0	1243.3
175°	1250.4	1245.4	1243.3	1232.5	1223.9	1230.3	1244.0	1241.1	1248.3
177.5°	1252.6	1244.7	1242.5	1229.6	1227.5	1228.2	1243.3	1241.8	1250.4
180°	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2

(END OF REPORT)