

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: P242179

Luminaire Tested: **S121DR-S880D940-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242179  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-13)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-S880D940-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3107.3 lumens  
Efficiency: N/A  
Efficacy: 89.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.34 / 1.44  
Luminous Opening: Rectangular w/ Sides (W: 0.09' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

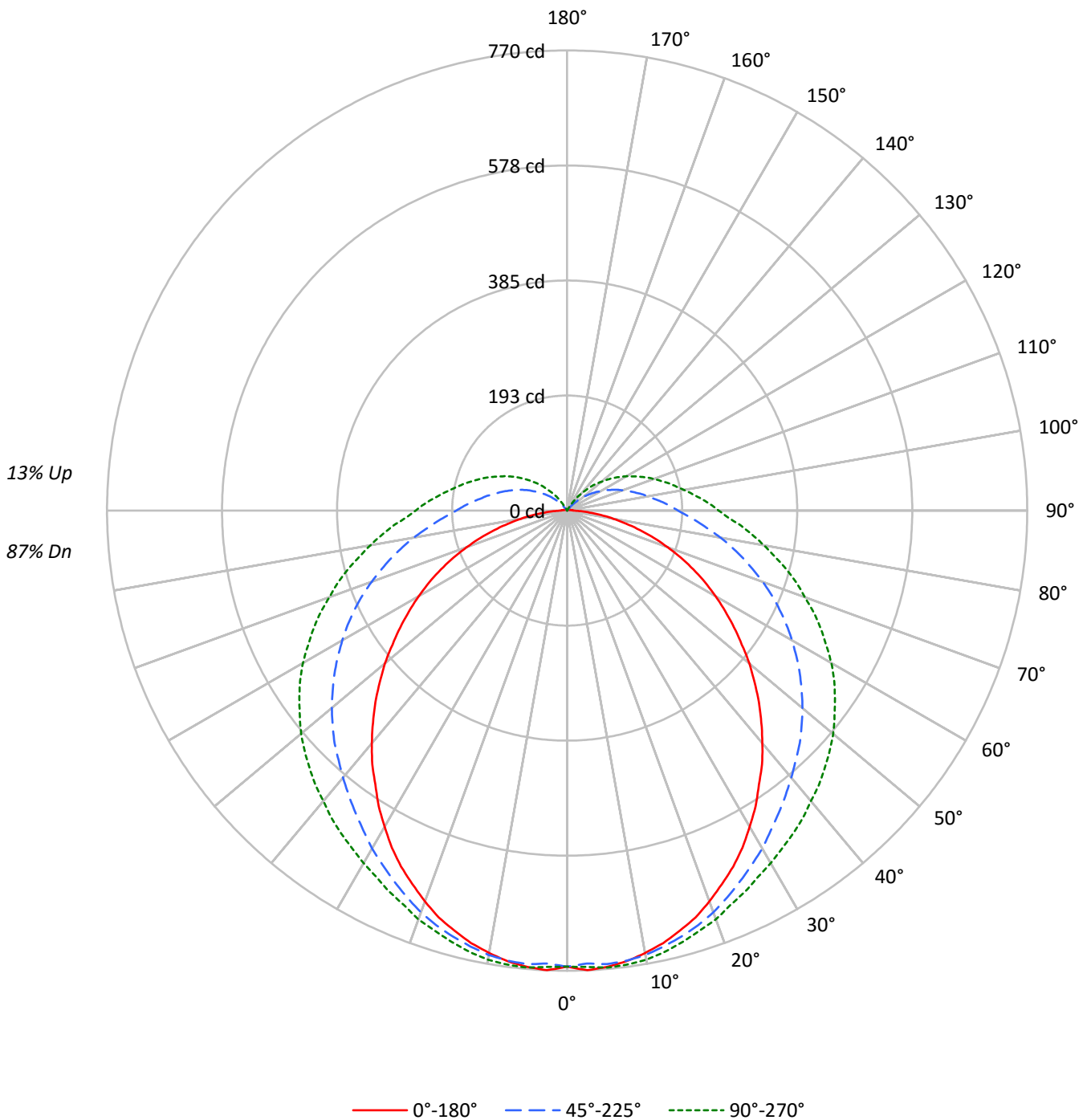
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	90	90	90	87
1	103	97	92	87	99	94	89	84	87	83	79	81	77	75	75	72	70	67
2	93	83	75	69	89	80	73	67	74	68	63	69	64	60	64	60	57	54
3	84	72	63	56	80	70	61	55	65	58	52	60	54	49	56	51	47	44
4	76	63	54	47	73	61	53	46	57	50	44	53	47	42	49	44	40	37
5	70	56	47	40	67	54	46	39	51	43	37	47	41	36	44	39	34	32
6	65	51	41	34	62	49	40	34	46	38	32	43	36	31	40	34	30	27
7	60	46	37	30	57	44	36	30	41	34	28	39	32	27	36	31	26	24
8	55	42	33	27	53	40	32	26	38	31	25	36	29	24	33	28	23	21
9	52	38	30	24	50	37	29	23	35	28	23	33	26	22	31	25	21	19
10	48	35	27	22	47	34	26	21	32	25	20	30	24	20	29	23	19	17

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

	0°	45°	90°
0°	22607	22607	22607
5°	22752	21453	21183
10°	22531	20403	19846
15°	22197	19308	18509
20°	21772	18273	17339
25°	21276	17214	16269
30°	20635	16280	15402
35°	19938	15396	14704
40°	19312	14651	14057
45°	18611	14031	13521
50°	17888	13408	13007
55°	17095	12792	12451
60°	16374	12172	11915
65°	15622	11554	11302
70°	14601	10889	10646
75°	13374	10215	10071
80°	11939	9554	9443
85°	10233	8928	8901



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.8	2.3
10°-20°	208.9	6.7
20°-30°	315.9	10.2
30°-40°	386.3	12.4
40°-50°	419.4	13.5
50°-60°	413.7	13.3
60°-70°	371.3	12.0
70°-80°	298.9	9.6
80°-90°	215.9	6.9
90°-100°	154.3	5.0
100°-110°	110.5	3.6
110°-120°	73.7	2.4
120°-130°	42.3	1.4
130°-140°	19.1	0.6
140°-150°	4.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	597.7	19.2
0°-40°	984.0	31.7
0°-60°	1817.1	58.5
0°-90°	2703.2	87.0
90°-120°	338.4	10.9
90°-150°	404.0	13.0
90°-180°	404.0	13.0
0°-180°	3107.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	763	763	763	763	763	
5°	766	765	762	769	768	73
15°	728	738	738	748	747	205
25°	657	674	685	700	704	302
35°	560	590	618	648	660	351
45°	454	495	550	595	610	350
55°	341	400	475	530	547	305
65°	233	307	392	450	468	231
75°	126	212	304	362	380	134
85°	38	127	220	275	292	39
90°	10	96	185	238	254	7
95°	8	76	160	212	225	6
105°	4	46	117	163	176	5
115°	3	23	82	122	134	3
125°	2	3	50	84	96	2
135°	1	1	19	48	57	1
145°	0	0	0	14	19	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	763.0	763.0	763.0	763.0	763.0
2.5°	769.8	766.4	758.5	766.4	764.2
5°	766.4	765.3	761.9	768.7	767.6
7.5°	760.8	763.0	759.6	768.7	766.4
10°	751.7	757.3	755.1	764.2	763.0
12.5°	741.4	748.2	747.1	757.3	756.2
15°	727.8	738.0	738.0	748.2	747.1
17.5°	714.1	724.4	727.8	739.1	736.9
20°	695.9	709.6	715.3	725.5	727.8
22.5°	676.6	693.7	700.5	713.0	714.1
25°	657.3	674.3	684.6	700.5	703.9
27.5°	635.7	655.0	668.6	686.8	691.4
30°	610.6	634.5	652.7	673.2	681.2
32.5°	586.8	612.9	634.5	661.8	669.8
35°	559.5	590.2	617.5	648.2	659.5
37.5°	535.6	567.4	600.4	635.7	648.2
40°	508.3	542.4	583.4	622.0	634.5
42.5°	481.0	519.7	566.3	609.5	623.2
45°	453.7	494.7	550.4	594.7	609.5
47.5°	425.3	471.9	532.2	579.9	595.9
50°	398.0	448.0	514.0	564.0	581.1
52.5°	368.4	424.2	494.7	547.0	564.0
55°	341.1	400.3	475.3	529.9	547.0
57.5°	313.9	376.4	454.9	510.6	529.9
60°	286.6	352.5	434.4	491.2	510.6
62.5°	260.4	329.8	413.9	471.9	489.0
65°	233.1	307.0	392.3	450.3	468.5
67.5°	205.8	283.2	370.7	428.7	446.9
70°	178.5	258.1	348.0	407.1	423.0
72.5°	152.4	235.4	325.2	385.5	402.6
75°	126.2	211.5	303.6	361.6	379.8
77.5°	101.2	188.8	282.0	340.0	355.9
80°	78.5	166.0	260.4	318.4	334.3
82.5°	56.9	146.7	238.8	295.7	312.7
85°	37.5	127.4	219.5	275.2	292.2
87.5°	22.7	110.3	201.3	255.9	269.5
90°	10.2	95.5	185.4	237.7	253.6
92.5°	9.1	85.3	172.8	225.2	239.9
95°	8.0	76.2	160.3	211.5	225.2
97.5°	6.8	67.1	147.8	197.9	211.5
100°	5.7	59.1	137.6	185.4	199.0
102.5°	5.7	52.3	127.4	172.8	186.5
105°	4.5	45.5	117.1	162.6	176.3
107.5°	4.5	39.8	108.0	152.4	164.9
110°	4.5	34.1	98.9	142.1	154.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	3.4	28.4	91.0	131.9	144.4
115°	3.4	22.7	81.9	121.7	134.2
117.5°	3.4	17.1	73.9	112.6	123.9
120°	2.3	12.5	64.8	103.5	114.9
122.5°	2.3	8.0	58.0	93.2	104.6
125°	2.3	3.4	50.0	84.1	95.5
127.5°	2.3	1.1	42.1	75.1	85.3
130°	1.1	1.1	35.3	66.0	75.1
132.5°	1.1	1.1	27.3	56.9	67.1
135°	1.1	1.1	19.3	47.8	56.9
137.5°	1.1	0.0	12.5	38.7	46.6
140°	1.1	0.0	6.8	30.7	37.5
142.5°	1.1	0.0	1.1	21.6	29.6
145°	0.0	0.0	0.0	13.6	19.3
147.5°	0.0	0.0	0.0	5.7	11.4
150°	0.0	0.0	0.0	0.0	3.4
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)