

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: P242169

Luminaire Tested: **S121DR-S880D930-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242169  
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-S880D930-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2841.0 lumens  
Efficiency: N/A  
Efficacy: 81.6 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

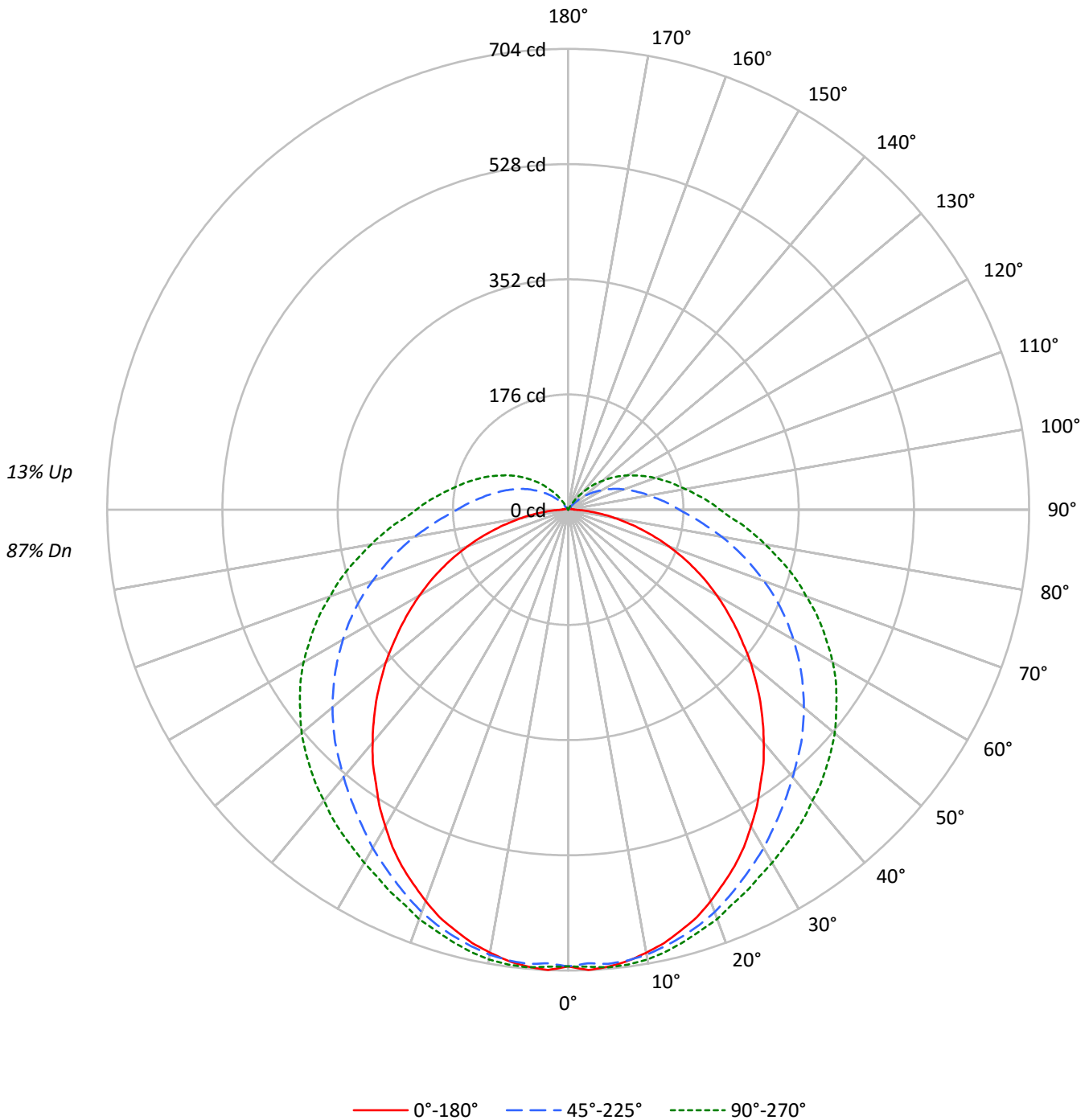
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	20670	20670	20670
5°	20805	19614	19367
10°	20598	18655	18145
15°	20294	17654	16923
20°	19908	16707	15852
25°	19450	15738	14875
30°	18867	14886	14082
35°	18227	14077	13444
40°	17655	13396	12854
45°	17015	12828	12363
50°	16355	12257	11893
55°	15632	11697	11384
60°	14968	11129	10893
65°	14282	10565	10335
70°	13350	9954	9735
75°	12230	9340	9209
80°	10904	8736	8635
85°	9360	8164	8140



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.6	2.3
10°-20°	191.0	6.7
20°-30°	288.9	10.2
30°-40°	353.2	12.4
40°-50°	383.4	13.5
50°-60°	378.3	13.3
60°-70°	339.5	12.0
70°-80°	273.2	9.6
80°-90°	197.4	6.9
90°-100°	141.1	5.0
100°-110°	101.0	3.6
110°-120°	67.4	2.4
120°-130°	38.7	1.4
130°-140°	17.5	0.6
140°-150°	3.8	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	546.5	19.2
0°-40°	899.7	31.7
0°-60°	1661.4	58.5
0°-90°	2471.6	87.0
90°-120°	309.4	10.9
90°-150°	369.4	13.0
90°-180°	369.0	13.0
0°-180°	2841.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	698	698	698	698	698	
5°	701	700	697	703	702	66
15°	665	675	675	684	683	188
25°	601	616	626	640	644	276
35°	512	540	565	593	603	321
45°	415	452	503	544	557	320
55°	312	366	435	484	500	279
65°	213	281	359	412	428	211
75°	115	193	278	331	347	123
85°	34	116	201	252	267	36
90°	9	87	170	217	232	7
95°	7	70	147	193	206	6
105°	4	42	107	149	161	5
115°	3	21	75	111	123	3
125°	2	3	46	77	87	2
135°	1	1	18	44	52	1
145°	0	0	0	12	18	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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CATALOG NUMBER: S121DR-S880D930-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	697.6	697.6	697.6	697.6	697.6
2.5°	703.9	700.8	693.5	700.8	698.7
5°	700.8	699.7	696.6	702.8	701.8
7.5°	695.6	697.6	694.5	702.8	700.8
10°	687.2	692.4	690.4	698.7	697.6
12.5°	677.9	684.1	683.1	692.4	691.4
15°	665.4	674.8	674.8	684.1	683.1
17.5°	652.9	662.3	665.4	675.8	673.7
20°	636.3	648.8	654.0	663.3	665.4
22.5°	618.6	634.2	640.5	651.9	652.9
25°	600.9	616.5	625.9	640.5	643.6
27.5°	581.2	598.9	611.3	628.0	632.1
30°	558.3	580.2	596.8	615.5	622.8
32.5°	536.5	560.4	580.2	605.1	612.4
35°	511.5	539.6	564.6	592.6	603.0
37.5°	489.7	518.8	549.0	581.2	592.6
40°	464.7	495.9	533.4	568.7	580.2
42.5°	439.8	475.1	517.8	557.3	569.8
45°	414.8	452.3	503.2	543.8	557.3
47.5°	388.8	431.5	486.6	530.2	544.8
50°	363.9	409.6	469.9	515.7	531.3
52.5°	336.9	387.8	452.3	500.1	515.7
55°	311.9	366.0	434.6	484.5	500.1
57.5°	287.0	344.1	415.9	466.8	484.5
60°	262.0	322.3	397.2	449.2	466.8
62.5°	238.1	301.5	378.5	431.5	447.1
65°	213.1	280.7	358.7	411.7	428.4
67.5°	188.2	258.9	338.9	392.0	408.6
70°	163.2	236.0	318.1	372.2	386.8
72.5°	139.3	215.2	297.4	352.5	368.1
75°	115.4	193.4	277.6	330.6	347.3
77.5°	92.5	172.6	257.8	310.9	325.4
80°	71.7	151.8	238.1	291.1	305.7
82.5°	52.0	134.1	218.3	270.3	285.9
85°	34.3	116.4	200.7	251.6	267.2
87.5°	20.8	100.9	184.0	233.9	246.4
90°	9.4	87.3	169.5	217.3	231.9
92.5°	8.3	78.0	158.0	205.9	219.4
95°	7.3	69.7	146.6	193.4	205.9
97.5°	6.2	61.3	135.2	180.9	193.4
100°	5.2	54.1	125.8	169.5	181.9
102.5°	5.2	47.8	116.4	158.0	170.5
105°	4.2	41.6	107.1	148.7	161.2
107.5°	4.2	36.4	98.8	139.3	150.8
110°	4.2	31.2	90.5	130.0	141.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	3.1	26.0	83.2	120.6	132.0
115°	3.1	20.8	74.9	111.2	122.7
117.5°	3.1	15.6	67.6	102.9	113.3
120°	2.1	11.4	59.3	94.6	105.0
122.5°	2.1	7.3	53.0	85.3	95.7
125°	2.1	3.1	45.7	76.9	87.3
127.5°	2.1	1.0	38.5	68.6	78.0
130°	1.0	1.0	32.2	60.3	68.6
132.5°	1.0	1.0	25.0	52.0	61.3
135°	1.0	1.0	17.7	43.7	52.0
137.5°	1.0	0.0	11.4	35.3	42.6
140°	1.0	0.0	6.2	28.1	34.3
142.5°	1.0	0.0	1.0	19.8	27.0
145°	0.0	0.0	0.0	12.5	17.7
147.5°	0.0	0.0	0.0	5.2	10.4
150°	0.0	0.0	0.0	0.0	3.1
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)