

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: P243019

Luminaire Tested: **S121DR-H880D835-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243019  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-52)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-H880D835-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3333.2 lumens  
Efficiency: N/A  
Efficacy: 105.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.34 / 1.43  
Luminous Opening: Rectangular w/ Sides (W: 0.09' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

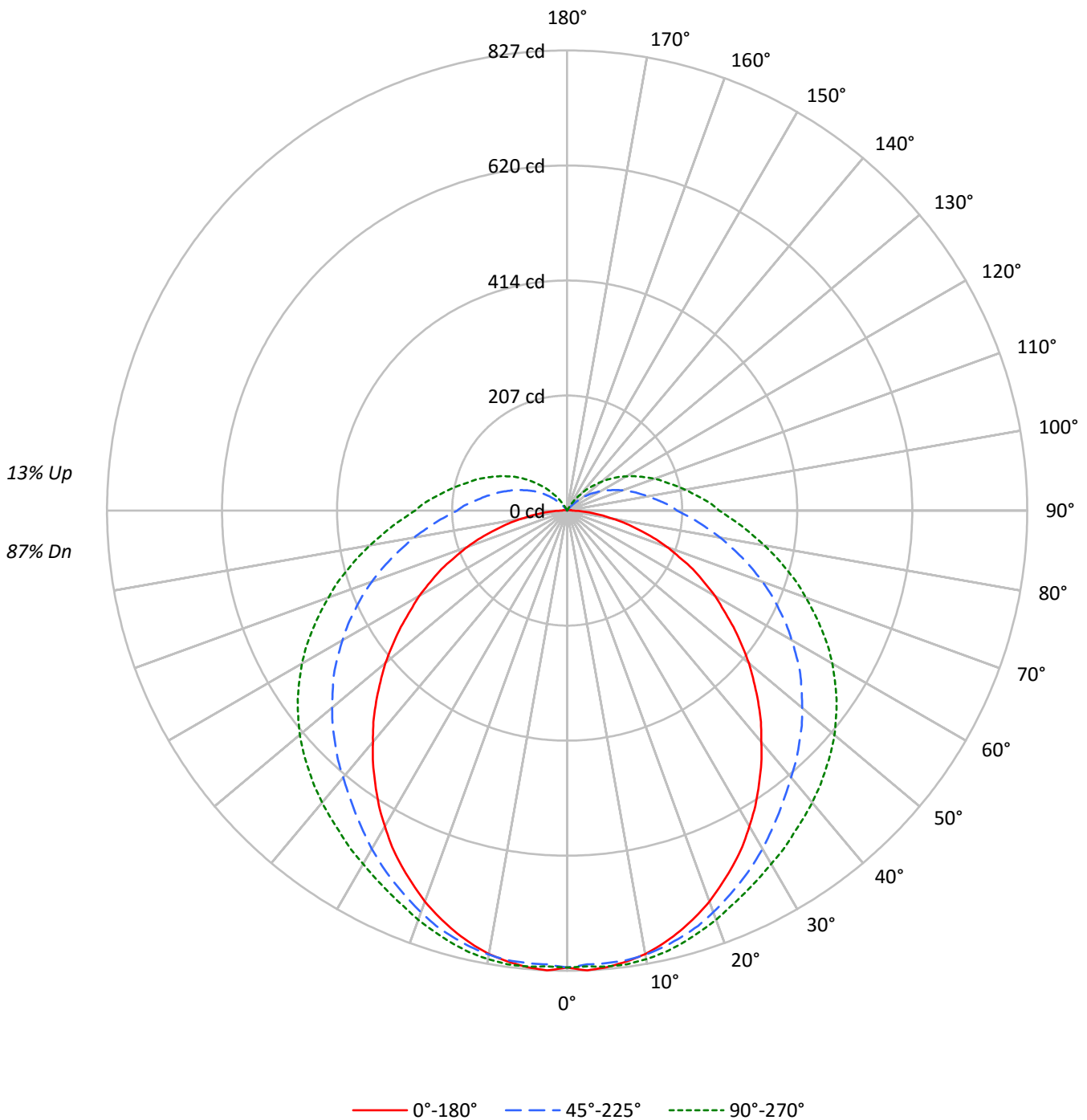
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	78	75	75	72	70	67
2	93	83	75	69	89	80	73	67	74	69	63	69	64	60	64	60	57	54
3	84	72	63	56	80	70	61	55	65	58	52	60	54	50	56	51	47	44
4	76	64	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	29	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	24	35	28	23	33	26	22	31	25	21	19
10	48	35	27	22	47	34	26	21	32	25	21	30	24	20	29	23	19	17

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

	0°	45°	90°
0°	24332	24332	24332
5°	24450	22987	22696
10°	24254	21897	21297
15°	23872	20760	19926
20°	23393	19624	18647
25°	22800	18529	17506
30°	22135	17510	16580
35°	21409	16543	15812
40°	20630	15724	15178
45°	19907	15041	14584
50°	19160	14386	14042
55°	18283	13772	13457
60°	17539	13057	12841
65°	16701	12376	12171
70°	15558	11681	11487
75°	14169	10939	10824
80°	12456	10251	10168
85°	10834	9600	9575



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.2	2.3
10°-20°	224.4	6.7
20°-30°	339.5	10.2
30°-40°	414.9	12.4
40°-50°	450.4	13.5
50°-60°	444.5	13.3
60°-70°	398.2	11.9
70°-80°	320.4	9.6
80°-90°	231.5	6.9
90°-100°	165.8	5.0
100°-110°	118.4	3.6
110°-120°	78.3	2.4
120°-130°	44.6	1.3
130°-140°	19.9	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°	642.1	19.3
0°-40°	1057.0	31.7
0°-60°	1951.9	58.6
0°-90°	2902.0	87.1
90°-120°	362.5	10.9
90°-150°	431.2	12.9
90°-180°	431.0	12.9
0°-180°	3333.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	821	821	821	821	821	
5°	824	821	816	825	822	78
15°	783	791	794	804	804	220
25°	704	722	737	754	757	324
35°	601	632	664	698	709	376
45°	485	531	590	641	657	374
55°	365	426	512	571	591	326
65°	249	326	420	485	504	246
75°	134	225	325	389	408	143
85°	40	135	236	296	314	41
90°	10	101	198	256	273	7
95°	7	81	172	228	244	5
105°	4	48	126	175	189	4
115°	2	23	87	131	144	2
125°	1	2	53	90	102	1
135°	0	0	20	51	60	0
145°	0	0	0	13	22	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°	821.2	821.2	821.2	821.2	821.2
2.5°	827.2	822.4	816.4	822.4	820.0
5°	823.6	821.2	816.4	824.8	822.4
7.5°	817.6	817.6	815.2	823.6	822.4
10°	809.2	811.6	810.4	820.0	818.8
12.5°	797.1	801.9	803.1	814.0	812.8
15°	782.7	791.1	793.5	804.3	804.3
17.5°	765.8	776.6	782.7	793.5	793.5
20°	747.7	759.8	768.2	781.5	782.7
22.5°	726.1	742.9	752.6	768.2	769.4
25°	704.4	722.5	736.9	753.8	757.4
27.5°	681.5	702.0	720.1	739.3	745.3
30°	655.0	677.9	702.0	724.9	733.3
32.5°	629.7	656.2	682.7	711.6	722.5
35°	600.8	632.2	663.5	698.4	709.2
37.5°	573.2	606.9	644.2	683.9	697.2
40°	543.0	581.6	626.1	670.7	685.1
42.5°	515.4	555.1	609.3	655.0	671.9
45°	485.3	531.0	590.0	640.6	657.4
47.5°	455.1	504.5	571.9	623.7	643.0
50°	426.3	478.0	551.5	608.1	627.3
52.5°	394.9	453.9	531.0	588.8	609.3
55°	364.8	426.3	511.7	570.7	591.2
57.5°	333.5	403.4	488.9	551.5	570.7
60°	307.0	376.9	466.0	529.8	550.3
62.5°	276.9	351.6	444.3	506.9	528.6
65°	249.2	326.3	420.2	485.3	504.5
67.5°	217.9	301.0	397.4	461.2	480.4
70°	190.2	275.7	373.3	437.1	456.4
72.5°	162.6	251.7	349.2	414.2	433.5
75°	133.7	225.2	325.1	388.9	408.2
77.5°	108.4	201.1	301.0	364.8	384.1
80°	81.9	177.0	279.4	342.0	360.0
82.5°	60.2	155.3	256.5	319.1	335.9
85°	39.7	134.9	236.0	296.2	314.3
87.5°	22.9	116.8	215.5	275.7	292.6
90°	9.6	101.1	197.5	256.5	273.3
92.5°	7.2	91.5	186.6	243.2	260.1
95°	7.2	80.7	172.2	227.6	244.4
97.5°	6.0	71.0	158.9	213.1	228.8
100°	4.8	62.6	148.1	199.9	215.5
102.5°	4.8	55.4	136.1	186.6	202.3
105°	3.6	48.2	126.4	174.6	189.0
107.5°	3.6	40.9	115.6	163.8	178.2
110°	2.4	34.9	106.0	152.9	167.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.4	28.9	96.3	142.1	155.3
115°	2.4	22.9	86.7	131.2	144.5
117.5°	1.2	16.9	78.3	120.4	133.7
120°	1.2	12.0	69.8	109.6	122.8
122.5°	1.2	6.0	60.2	99.9	113.2
125°	1.2	2.4	53.0	90.3	102.3
127.5°	0.0	0.0	44.6	79.5	91.5
130°	0.0	0.0	36.1	69.8	80.7
132.5°	0.0	0.0	28.9	60.2	69.8
135°	0.0	0.0	20.5	50.6	60.2
137.5°	0.0	0.0	13.2	40.9	50.6
140°	0.0	0.0	6.0	31.3	39.7
142.5°	0.0	0.0	1.2	22.9	30.1
145°	0.0	0.0	0.0	13.2	21.7
147.5°	0.0	0.0	0.0	4.8	12.0
150°	0.0	0.0	0.0	0.0	3.6
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)