

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: P242153

Luminaire Tested: **S121DR-S490D830-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242153  
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-S490D830-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1849.3 lumens  
Efficiency: N/A  
Efficacy: 98.4 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

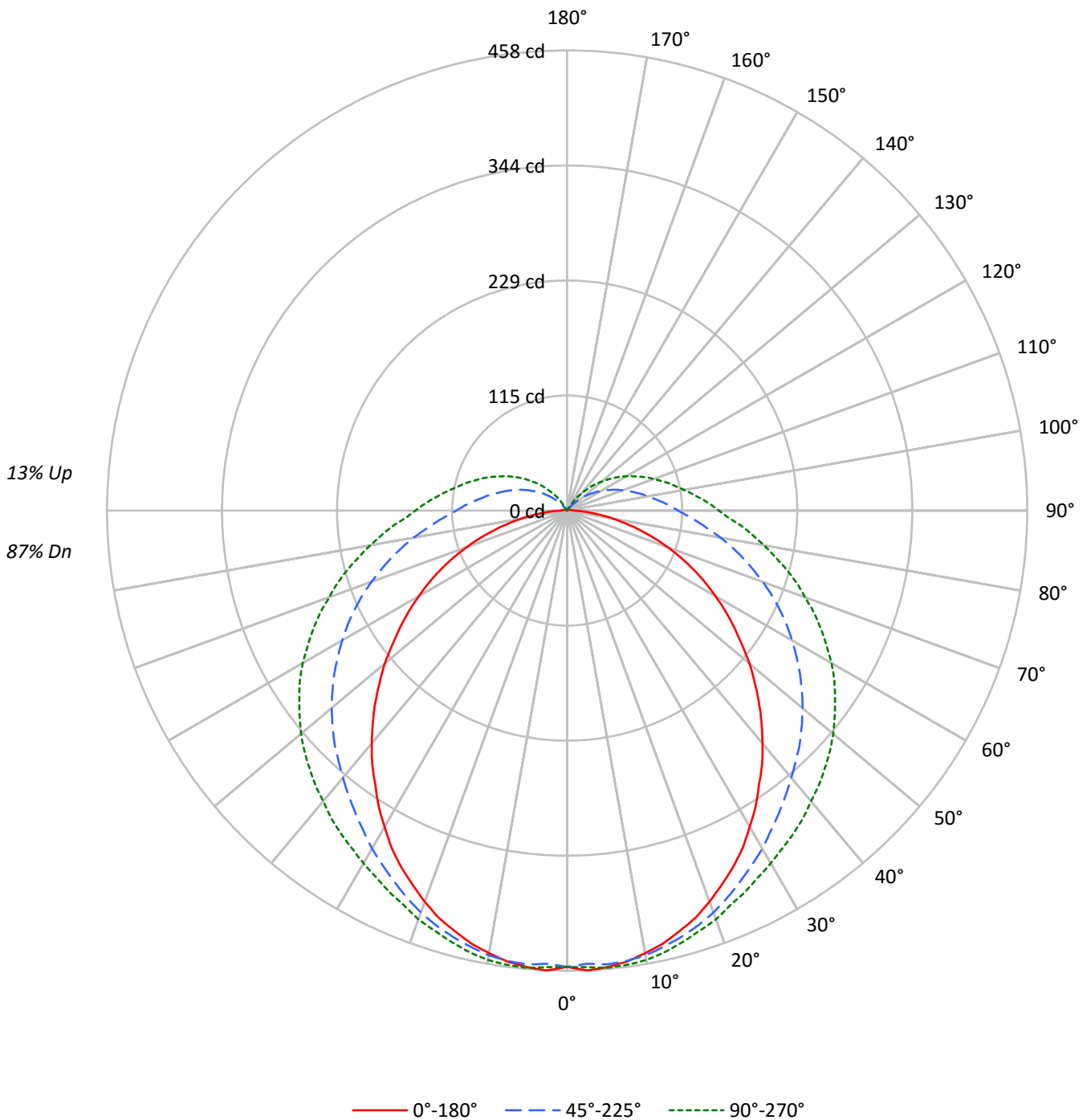
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	13455	13455	13455
5°	13540	12766	12606
10°	13407	12143	11811
15°	13209	11490	11015
20°	12959	10875	10318
25°	12662	10244	9682
30°	12281	9690	9166
35°	11866	9163	8751
40°	11493	8719	8366
45°	11076	8351	8046
50°	10647	7979	7740
55°	10174	7614	7409
60°	9741	7243	7091
65°	9296	6877	6726
70°	8695	6480	6337
75°	7959	6080	5993
80°	7102	5687	5621
85°	6085	5312	5298



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.4	2.3
10°-20°	124.3	6.7
20°-30°	188.0	10.2
30°-40°	229.9	12.4
40°-50°	249.6	13.5
50°-60°	246.2	13.3
60°-70°	221.0	12.0
70°-80°	177.9	9.6
80°-90°	128.5	6.9
90°-100°	91.8	5.0
100°-110°	65.7	3.6
110°-120°	43.8	2.4
120°-130°	25.2	1.4
130°-140°	11.4	0.6
140°-150°	2.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	355.7	19.2
0°-40°	585.6	31.7
0°-60°	1081.4	58.5
0°-90°	1608.8	87.0
90°-120°	201.4	10.9
90°-150°	240.5	13.0
90°-180°	240.0	13.0
0°-180°	1849.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	454	454	454	454	454	
5°	456	456	453	458	457	43
15°	433	439	439	445	445	122
25°	391	401	407	417	419	180
35°	333	351	368	386	392	209
45°	270	294	328	354	363	208
55°	203	238	283	315	326	182
65°	139	183	234	268	279	137
75°	75	126	181	215	226	80
85°	22	76	131	164	174	23
90°	6	57	110	141	151	4
95°	5	45	95	126	134	4
105°	3	27	70	97	105	3
115°	2	14	49	72	80	2
125°	1	2	30	50	57	1
135°	1	1	12	28	34	1
145°	0	0	0	8	12	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°	454.1	454.1	454.1	454.1	454.1
2.5°	458.2	456.1	451.4	456.1	454.8
5°	456.1	455.5	453.4	457.5	456.8
7.5°	452.8	454.1	452.1	457.5	456.1
10°	447.3	450.7	449.4	454.8	454.1
12.5°	441.3	445.3	444.6	450.7	450.1
15°	433.1	439.2	439.2	445.3	444.6
17.5°	425.0	431.1	433.1	439.9	438.5
20°	414.2	422.3	425.7	431.8	433.1
22.5°	402.7	412.8	416.9	424.3	425.0
25°	391.2	401.3	407.4	416.9	418.9
27.5°	378.3	389.8	397.9	408.8	411.5
30°	363.4	377.6	388.5	400.6	405.4
32.5°	349.2	364.8	377.6	393.9	398.6
35°	333.0	351.2	367.5	385.8	392.5
37.5°	318.8	337.7	357.3	378.3	385.8
40°	302.5	322.8	347.2	370.2	377.6
42.5°	286.3	309.3	337.0	362.7	370.9
45°	270.0	294.4	327.6	354.0	362.7
47.5°	253.1	280.9	316.7	345.2	354.6
50°	236.9	266.6	305.9	335.7	345.8
52.5°	219.3	252.4	294.4	325.5	335.7
55°	203.0	238.2	282.9	315.4	325.5
57.5°	186.8	224.0	270.7	303.9	315.4
60°	170.5	209.8	258.5	292.4	303.9
62.5°	155.0	196.3	246.3	280.9	291.0
65°	138.7	182.7	233.5	268.0	278.8
67.5°	122.5	168.5	220.6	255.1	266.0
70°	106.3	153.6	207.1	242.3	251.8
72.5°	90.7	140.1	193.6	229.4	239.6
75°	75.1	125.9	180.7	215.2	226.0
77.5°	60.2	112.3	167.8	202.4	211.8
80°	46.7	98.8	155.0	189.5	199.0
82.5°	33.8	87.3	142.1	176.0	186.1
85°	22.3	75.8	130.6	163.8	173.9
87.5°	13.5	65.6	119.8	152.3	160.4
90°	6.1	56.8	110.3	141.4	150.9
92.5°	5.4	50.8	102.9	134.0	142.8
95°	4.7	45.3	95.4	125.9	134.0
97.5°	4.1	39.9	88.0	117.8	125.9
100°	3.4	35.2	81.9	110.3	118.4
102.5°	3.4	31.1	75.8	102.9	111.0
105°	2.7	27.1	69.7	96.8	104.9
107.5°	2.7	23.7	64.3	90.7	98.1
110°	2.7	20.3	58.9	84.6	92.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.0	16.9	54.1	78.5	85.9
115°	2.0	13.5	48.7	72.4	79.9
117.5°	2.0	10.2	44.0	67.0	73.8
120°	1.4	7.4	38.6	61.6	68.4
122.5°	1.4	4.7	34.5	55.5	62.3
125°	1.4	2.0	29.8	50.1	56.8
127.5°	1.4	0.7	25.0	44.7	50.8
130°	0.7	0.7	21.0	39.3	44.7
132.5°	0.7	0.7	16.2	33.8	39.9
135°	0.7	0.7	11.5	28.4	33.8
137.5°	0.7	0.0	7.4	23.0	27.7
140°	0.7	0.0	4.1	18.3	22.3
142.5°	0.7	0.0	0.7	12.9	17.6
145°	0.0	0.0	0.0	8.1	11.5
147.5°	0.0	0.0	0.0	3.4	6.8
150°	0.0	0.0	0.0	0.0	2.0
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)