

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: P243032

Luminaire Tested: **S121DR-H490D935-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243032  
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-H490D935-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1589.0 lumens  
Efficiency: N/A  
Efficacy: 92.4 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

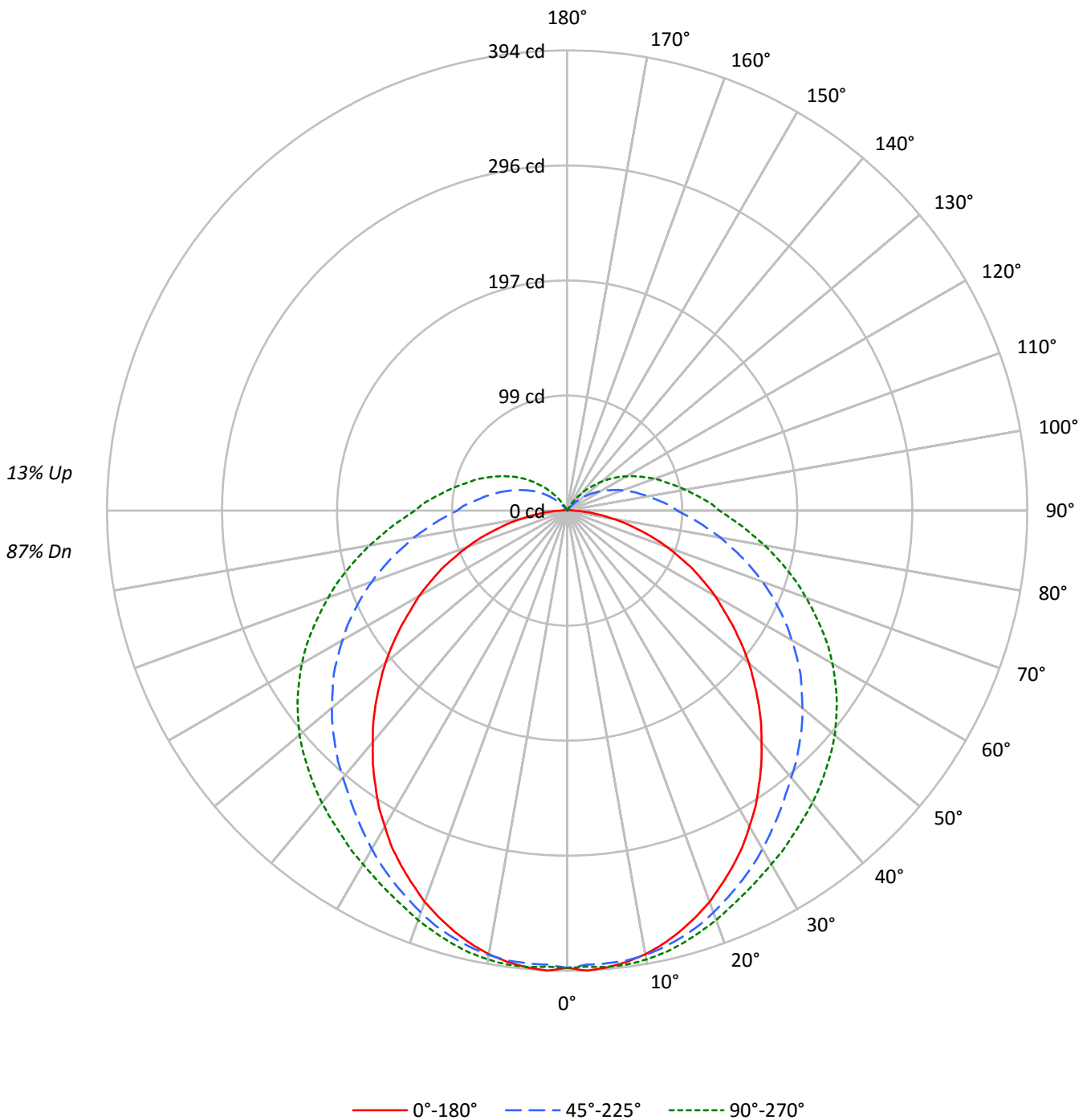
Input Watts (W): 17.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	11600	11600	11600
5°	11655	10959	10821
10°	11561	10438	10152
15°	11379	9897	9499
20°	11154	9355	8889
25°	10869	8833	8346
30°	10554	8346	7905
35°	10206	7886	7538
40°	9836	7496	7236
45°	9488	7171	6953
50°	9133	6858	6695
55°	8716	6567	6415
60°	8364	6223	6121
65°	7962	5899	5802
70°	7419	5567	5477
75°	6751	5215	5160
80°	5931	4887	4847
85°	5158	4576	4563



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.3	2.3
10°-20°	107.0	6.7
20°-30°	161.8	10.2
30°-40°	197.8	12.4
40°-50°	214.7	13.5
50°-60°	211.9	13.3
60°-70°	189.8	11.9
70°-80°	152.7	9.6
80°-90°	110.4	6.9
90°-100°	79.0	5.0
100°-110°	56.4	3.6
110°-120°	37.3	2.3
120°-130°	21.2	1.3
130°-140°	9.5	0.6
140°-150°	2.0	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	306.1	19.3
0°-40°	503.9	31.7
0°-60°	930.5	58.6
0°-90°	1383.4	87.1
90°-120°	172.8	10.9
90°-150°	205.6	12.9
90°-180°	206.0	13.0
0°-180°	1589.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	392	392	392	392	392	
5°	393	392	389	393	392	37
15°	373	377	378	383	383	105
25°	336	344	351	359	361	155
35°	286	301	316	333	338	179
45°	231	253	281	305	313	179
55°	174	203	244	272	282	156
65°	119	156	200	231	240	117
75°	64	107	155	185	195	68
85°	19	64	112	141	150	20
90°	5	48	94	122	130	3
95°	3	38	82	108	116	2
105°	2	23	60	83	90	2
115°	1	11	41	63	69	1
125°	1	1	25	43	49	0
135°	0	0	10	24	29	0
145°	0	0	0	6	10	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°	391.5	391.5	391.5	391.5	391.5
2.5°	394.3	392.1	389.2	392.1	390.9
5°	392.6	391.5	389.2	393.2	392.1
7.5°	389.8	389.8	388.6	392.6	392.1
10°	385.7	386.9	386.3	390.9	390.3
12.5°	380.0	382.3	382.9	388.0	387.5
15°	373.1	377.1	378.3	383.4	383.4
17.5°	365.1	370.2	373.1	378.3	378.3
20°	356.5	362.2	366.2	372.5	373.1
22.5°	346.1	354.2	358.8	366.2	366.8
25°	335.8	344.4	351.3	359.3	361.1
27.5°	324.9	334.6	343.3	352.4	355.3
30°	312.3	323.2	334.6	345.6	349.6
32.5°	300.2	312.8	325.5	339.2	344.4
35°	286.4	301.4	316.3	332.9	338.1
37.5°	273.2	289.3	307.1	326.0	332.4
40°	258.9	277.2	298.5	319.7	326.6
42.5°	245.7	264.6	290.5	312.3	320.3
45°	231.3	253.1	281.3	305.4	313.4
47.5°	217.0	240.5	272.7	297.3	306.5
50°	203.2	227.9	262.9	289.9	299.1
52.5°	188.3	216.4	253.1	280.7	290.5
55°	173.9	203.2	244.0	272.1	281.8
57.5°	159.0	192.3	233.0	262.9	272.1
60°	146.4	179.7	222.1	252.6	262.3
62.5°	132.0	167.6	211.8	241.7	252.0
65°	118.8	155.6	200.3	231.3	240.5
67.5°	103.9	143.5	189.4	219.8	229.0
70°	90.7	131.4	177.9	208.4	217.6
72.5°	77.5	120.0	166.5	197.5	206.6
75°	63.7	107.3	155.0	185.4	194.6
77.5°	51.7	95.9	143.5	173.9	183.1
80°	39.0	84.4	133.2	163.0	171.6
82.5°	28.7	74.0	122.3	152.1	160.1
85°	18.9	64.3	112.5	141.2	149.8
87.5°	10.9	55.7	102.7	131.4	139.5
90°	4.6	48.2	94.1	122.3	130.3
92.5°	3.4	43.6	89.0	116.0	124.0
95°	3.4	38.5	82.1	108.5	116.5
97.5°	2.9	33.9	75.8	101.6	109.1
100°	2.3	29.8	70.6	95.3	102.7
102.5°	2.3	26.4	64.9	89.0	96.4
105°	1.7	23.0	60.3	83.2	90.1
107.5°	1.7	19.5	55.1	78.1	85.0
110°	1.1	16.6	50.5	72.9	79.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	13.8	45.9	67.7	74.0
115°	1.1	10.9	41.3	62.6	68.9
117.5°	0.6	8.0	37.3	57.4	63.7
120°	0.6	5.7	33.3	52.2	58.5
122.5°	0.6	2.9	28.7	47.6	54.0
125°	0.6	1.1	25.3	43.1	48.8
127.5°	0.0	0.0	21.2	37.9	43.6
130°	0.0	0.0	17.2	33.3	38.5
132.5°	0.0	0.0	13.8	28.7	33.3
135°	0.0	0.0	9.8	24.1	28.7
137.5°	0.0	0.0	6.3	19.5	24.1
140°	0.0	0.0	2.9	14.9	18.9
142.5°	0.0	0.0	0.6	10.9	14.4
145°	0.0	0.0	0.0	6.3	10.3
147.5°	0.0	0.0	0.0	2.3	5.7
150°	0.0	0.0	0.0	0.0	1.7
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)