

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: P242148

Luminaire Tested: **S121DR-S490D927-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242148  
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-S490D927-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1554.3 lumens  
Efficiency: N/A  
Efficacy: 82.7 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

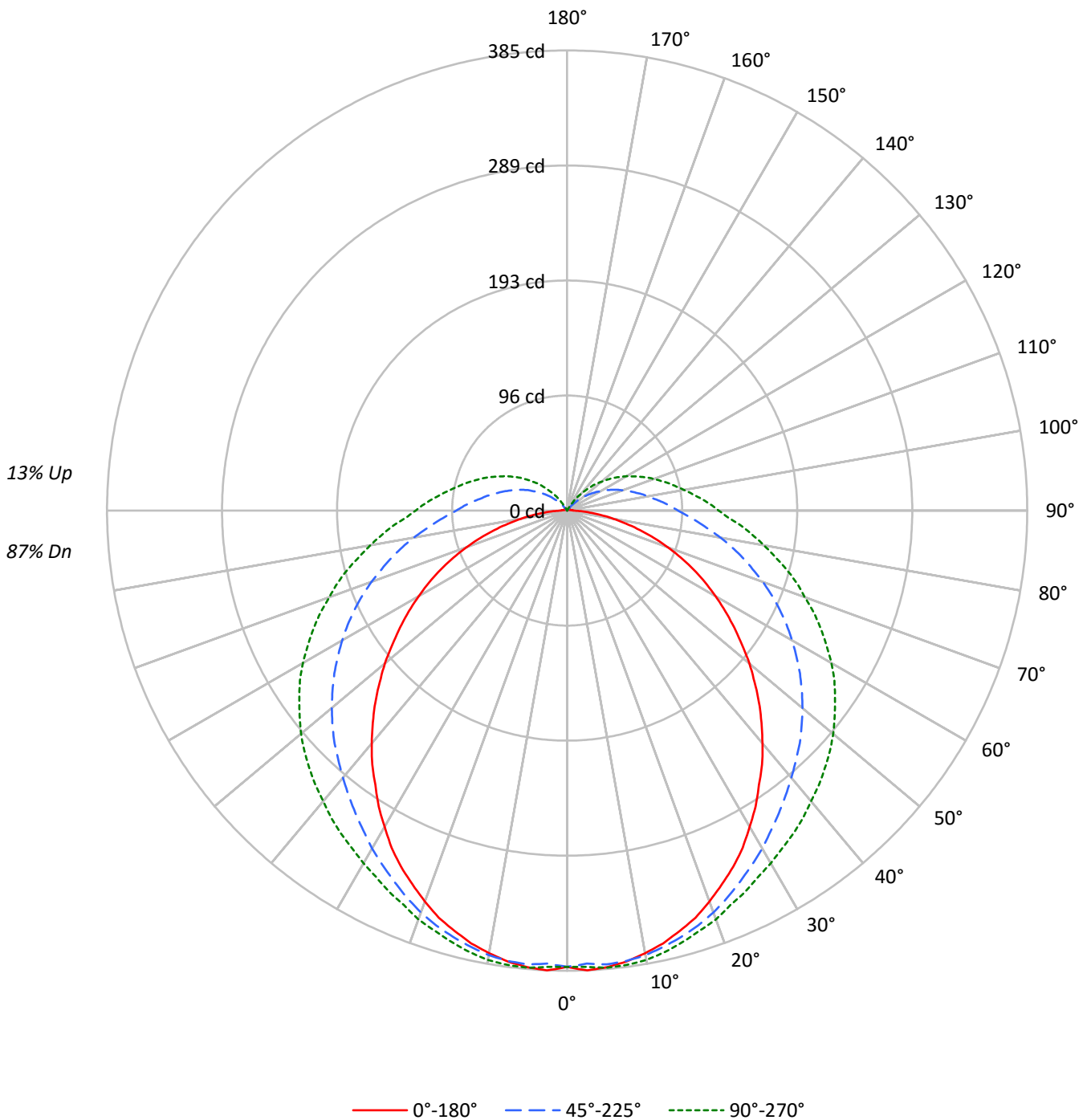
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	11310	11310	11310
5°	11382	10731	10594
10°	11270	10205	9928
15°	11102	9659	9258
20°	10891	9140	8672
25°	10643	8610	8138
30°	10321	8144	7703
35°	9974	7702	7355
40°	9662	7328	7032
45°	9312	7018	6764
50°	8948	6706	6507
55°	8550	6400	6228
60°	8187	6089	5960
65°	7814	5779	5652
70°	7305	5448	5326
75°	6687	5111	5038
80°	5962	4781	4723
85°	5130	4466	4454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.4	2.3
10°-20°	104.5	6.7
20°-30°	158.0	10.2
30°-40°	193.2	12.4
40°-50°	209.8	13.5
50°-60°	207.0	13.3
60°-70°	185.7	12.0
70°-80°	149.5	9.6
80°-90°	108.0	6.9
90°-100°	77.2	5.0
100°-110°	55.3	3.6
110°-120°	36.9	2.4
120°-130°	21.2	1.4
130°-140°	9.6	0.6
140°-150°	2.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	299.0	19.2
0°-40°	492.2	31.7
0°-60°	908.9	58.5
0°-90°	1352.2	87.0
90°-120°	169.3	10.9
90°-150°	202.1	13.0
90°-180°	202.0	13.0
0°-180°	1554.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	382	382	382	382	382	
5°	383	383	381	384	384	36
15°	364	369	369	374	374	103
25°	329	337	342	350	352	151
35°	280	295	309	324	330	175
45°	227	247	275	298	305	175
55°	171	200	238	265	274	153
65°	117	154	196	225	234	115
75°	63	106	152	181	190	67
85°	19	64	110	138	146	20
90°	5	48	93	119	127	4
95°	4	38	80	106	113	3
105°	2	23	59	81	88	3
115°	2	11	41	61	67	2
125°	1	2	25	42	48	1
135°	1	1	10	24	28	0
145°	0	0	0	7	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°	381.7	381.7	381.7	381.7	381.7
2.5°	385.1	383.4	379.4	383.4	382.2
5°	383.4	382.8	381.1	384.5	383.9
7.5°	380.5	381.7	380.0	384.5	383.4
10°	376.0	378.8	377.7	382.2	381.7
12.5°	370.9	374.3	373.7	378.8	378.3
15°	364.0	369.2	369.2	374.3	373.7
17.5°	357.2	362.3	364.0	369.7	368.6
20°	348.1	354.9	357.8	362.9	364.0
22.5°	338.4	347.0	350.4	356.6	357.2
25°	328.8	337.3	342.4	350.4	352.1
27.5°	318.0	327.6	334.5	343.6	345.8
30°	305.4	317.4	326.5	336.7	340.7
32.5°	293.5	306.6	317.4	331.0	335.0
35°	279.9	295.2	308.9	324.2	329.9
37.5°	267.9	283.8	300.3	318.0	324.2
40°	254.3	271.3	291.8	311.1	317.4
42.5°	240.6	259.9	283.3	304.9	311.7
45°	227.0	247.4	275.3	297.5	304.9
47.5°	212.7	236.1	266.2	290.1	298.1
50°	199.1	224.1	257.1	282.1	290.7
52.5°	184.3	212.2	247.4	273.6	282.1
55°	170.6	200.2	237.8	265.1	273.6
57.5°	157.0	188.3	227.5	255.4	265.1
60°	143.3	176.3	217.3	245.7	255.4
62.5°	130.3	165.0	207.0	236.1	244.6
65°	116.6	153.6	196.2	225.2	234.3
67.5°	103.0	141.6	185.4	214.4	223.5
70°	89.3	129.1	174.1	203.6	211.6
72.5°	76.2	117.7	162.7	192.8	201.4
75°	63.1	105.8	151.9	180.9	190.0
77.5°	50.6	94.4	141.1	170.1	178.0
80°	39.2	83.0	130.3	159.3	167.2
82.5°	28.4	73.4	119.4	147.9	156.4
85°	18.8	63.7	109.8	137.7	146.2
87.5°	11.4	55.2	100.7	128.0	134.8
90°	5.1	47.8	92.7	118.9	126.8
92.5°	4.6	42.7	86.5	112.6	120.0
95°	4.0	38.1	80.2	105.8	112.6
97.5°	3.4	33.6	73.9	99.0	105.8
100°	2.8	29.6	68.8	92.7	99.5
102.5°	2.8	26.2	63.7	86.5	93.3
105°	2.3	22.8	58.6	81.3	88.2
107.5°	2.3	19.9	54.0	76.2	82.5
110°	2.3	17.1	49.5	71.1	77.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.7	14.2	45.5	66.0	72.2
115°	1.7	11.4	41.0	60.9	67.1
117.5°	1.7	8.5	37.0	56.3	62.0
120°	1.1	6.3	32.4	51.8	57.4
122.5°	1.1	4.0	29.0	46.6	52.3
125°	1.1	1.7	25.0	42.1	47.8
127.5°	1.1	0.6	21.0	37.5	42.7
130°	0.6	0.6	17.6	33.0	37.5
132.5°	0.6	0.6	13.7	28.4	33.6
135°	0.6	0.6	9.7	23.9	28.4
137.5°	0.6	0.0	6.3	19.3	23.3
140°	0.6	0.0	3.4	15.4	18.8
142.5°	0.6	0.0	0.6	10.8	14.8
145°	0.0	0.0	0.0	6.8	9.7
147.5°	0.0	0.0	0.0	2.8	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)