

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: P243009

Luminaire Tested: **S121DR-H685D927-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243009  
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-H685D927-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2047.5 lumens  
Efficiency: N/A  
Efficacy: 86.8 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

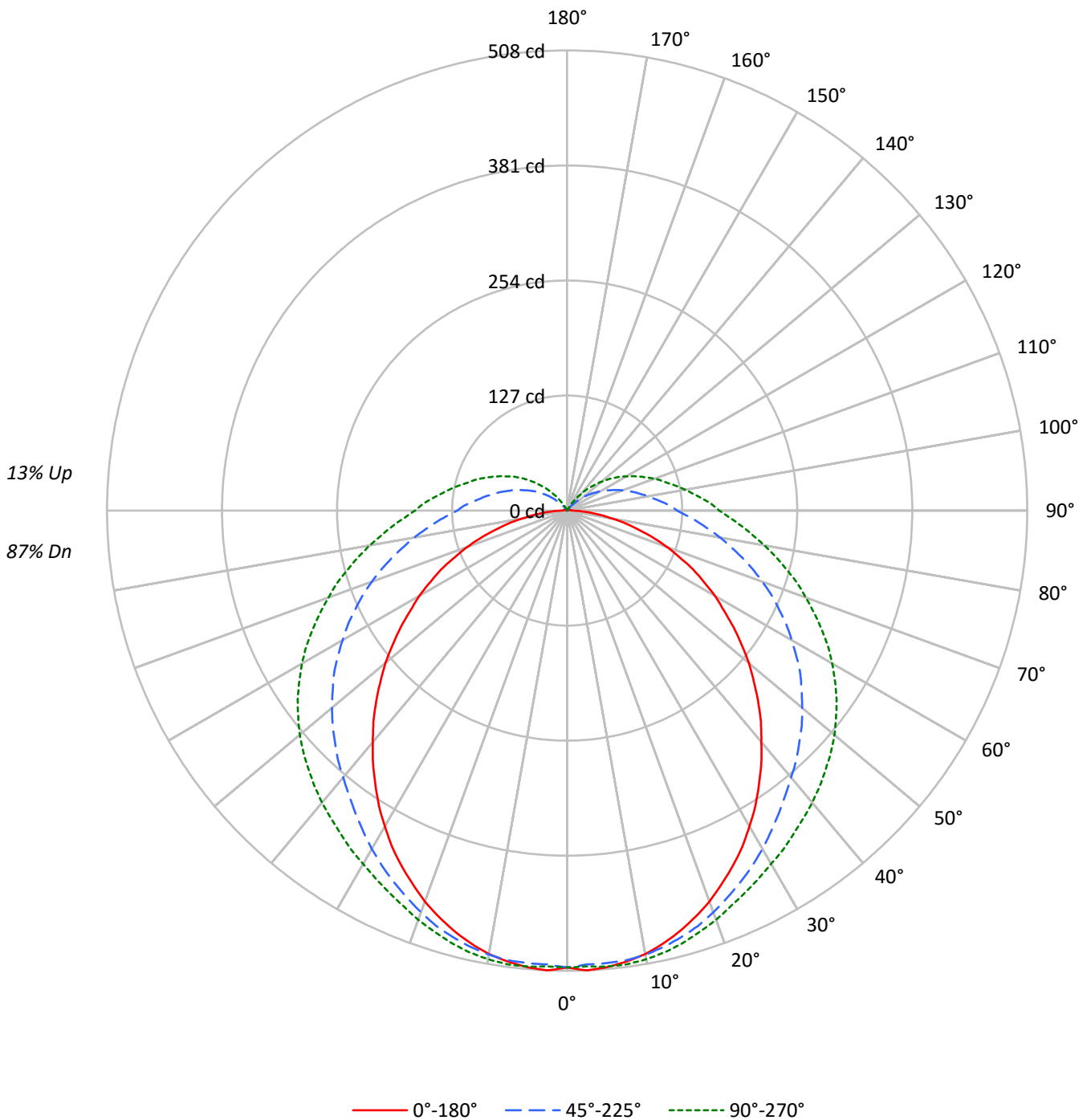
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	14945	14945	14945
5°	15019	14121	13942
10°	14897	13451	13083
15°	14664	12752	12241
20°	14370	12055	11455
25°	14006	11383	10752
30°	13599	10756	10184
35°	13153	10160	9714
40°	12675	9659	9325
45°	12228	9239	8958
50°	11766	8837	8627
55°	11232	8459	8267
60°	10775	8019	7887
65°	10261	7602	7476
70°	9562	7175	7055
75°	8701	6719	6648
80°	7650	6296	6248
85°	6658	5898	5879



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.0	2.3
10°-20°	137.9	6.7
20°-30°	208.5	10.2
30°-40°	254.9	12.4
40°-50°	276.7	13.5
50°-60°	273.1	13.3
60°-70°	244.6	11.9
70°-80°	196.8	9.6
80°-90°	142.2	6.9
90°-100°	101.8	5.0
100°-110°	72.7	3.6
110°-120°	48.1	2.4
120°-130°	27.4	1.3
130°-140°	12.2	0.6
140°-150°	2.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	394.4	19.3
0°-40°	649.3	31.7
0°-60°	1199.0	58.6
0°-90°	1782.6	87.1
90°-120°	222.7	10.9
90°-150°	264.9	12.9
90°-180°	265.0	12.9
0°-180°	2047.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	504	504	504	504	504	
5°	506	504	502	507	505	48
15°	481	486	487	494	494	135
25°	433	444	453	463	465	199
35°	369	388	408	429	436	231
45°	298	326	362	394	404	230
55°	224	262	314	351	363	201
65°	153	200	258	298	310	151
75°	82	138	200	239	251	88
85°	24	83	145	182	193	25
90°	6	62	121	158	168	4
95°	4	50	106	140	150	3
105°	2	30	78	107	116	3
115°	2	14	53	81	89	1
125°	1	2	32	56	63	0
135°	0	0	13	31	37	0
145°	0	0	0	8	13	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°	504.4	504.4	504.4	504.4	504.4
2.5°	508.1	505.2	501.5	505.2	503.7
5°	505.9	504.4	501.5	506.7	505.2
7.5°	502.2	502.2	500.7	505.9	505.2
10°	497.0	498.5	497.8	503.7	503.0
12.5°	489.6	492.6	493.3	500.0	499.3
15°	480.8	485.9	487.4	494.1	494.1
17.5°	470.4	477.1	480.8	487.4	487.4
20°	459.3	466.7	471.9	480.0	480.8
22.5°	446.0	456.4	462.3	471.9	472.6
25°	432.7	443.8	452.7	463.0	465.2
27.5°	418.6	431.2	442.3	454.1	457.8
30°	402.4	416.4	431.2	445.3	450.4
32.5°	386.8	403.1	419.4	437.1	443.8
35°	369.1	388.3	407.5	429.0	435.7
37.5°	352.1	372.8	395.7	420.1	428.3
40°	333.6	357.2	384.6	412.0	420.9
42.5°	316.6	341.0	374.3	402.4	412.7
45°	298.1	326.2	362.4	393.5	403.8
47.5°	279.6	309.9	351.3	383.1	395.0
50°	261.8	293.6	338.8	373.5	385.4
52.5°	242.6	278.8	326.2	361.7	374.3
55°	224.1	261.8	314.3	350.6	363.2
57.5°	204.9	247.8	300.3	338.8	350.6
60°	188.6	231.5	286.2	325.4	338.0
62.5°	170.1	216.0	272.9	311.4	324.7
65°	153.1	200.4	258.1	298.1	309.9
67.5°	133.9	184.9	244.1	283.3	295.1
70°	116.9	169.4	229.3	268.5	280.3
72.5°	99.9	154.6	214.5	254.4	266.3
75°	82.1	138.3	199.7	238.9	250.7
77.5°	66.6	123.5	184.9	224.1	235.9
80°	50.3	108.7	171.6	210.1	221.2
82.5°	37.0	95.4	157.5	196.0	206.4
85°	24.4	82.8	145.0	182.0	193.0
87.5°	14.1	71.7	132.4	169.4	179.7
90°	5.9	62.1	121.3	157.5	167.9
92.5°	4.4	56.2	114.6	149.4	159.8
95°	4.4	49.6	105.8	139.8	150.1
97.5°	3.7	43.6	97.6	130.9	140.5
100°	3.0	38.5	91.0	122.8	132.4
102.5°	3.0	34.0	83.6	114.6	124.3
105°	2.2	29.6	77.7	107.2	116.1
107.5°	2.2	25.1	71.0	100.6	109.5
110°	1.5	21.4	65.1	93.9	102.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	17.8	59.2	87.3	95.4
115°	1.5	14.1	53.3	80.6	88.8
117.5°	0.7	10.4	48.1	74.0	82.1
120°	0.7	7.4	42.9	67.3	75.4
122.5°	0.7	3.7	37.0	61.4	69.5
125°	0.7	1.5	32.5	55.5	62.9
127.5°	0.0	0.0	27.4	48.8	56.2
130°	0.0	0.0	22.2	42.9	49.6
132.5°	0.0	0.0	17.8	37.0	42.9
135°	0.0	0.0	12.6	31.1	37.0
137.5°	0.0	0.0	8.1	25.1	31.1
140°	0.0	0.0	3.7	19.2	24.4
142.5°	0.0	0.0	0.7	14.1	18.5
145°	0.0	0.0	0.0	8.1	13.3
147.5°	0.0	0.0	0.0	3.0	7.4
150°	0.0	0.0	0.0	0.0	2.2
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)