

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: P243029

Luminaire Tested: **S121DR-H880D930-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243029  
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-H880D930-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2717.5 lumens  
Efficiency: N/A  
Efficacy: 86.3 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

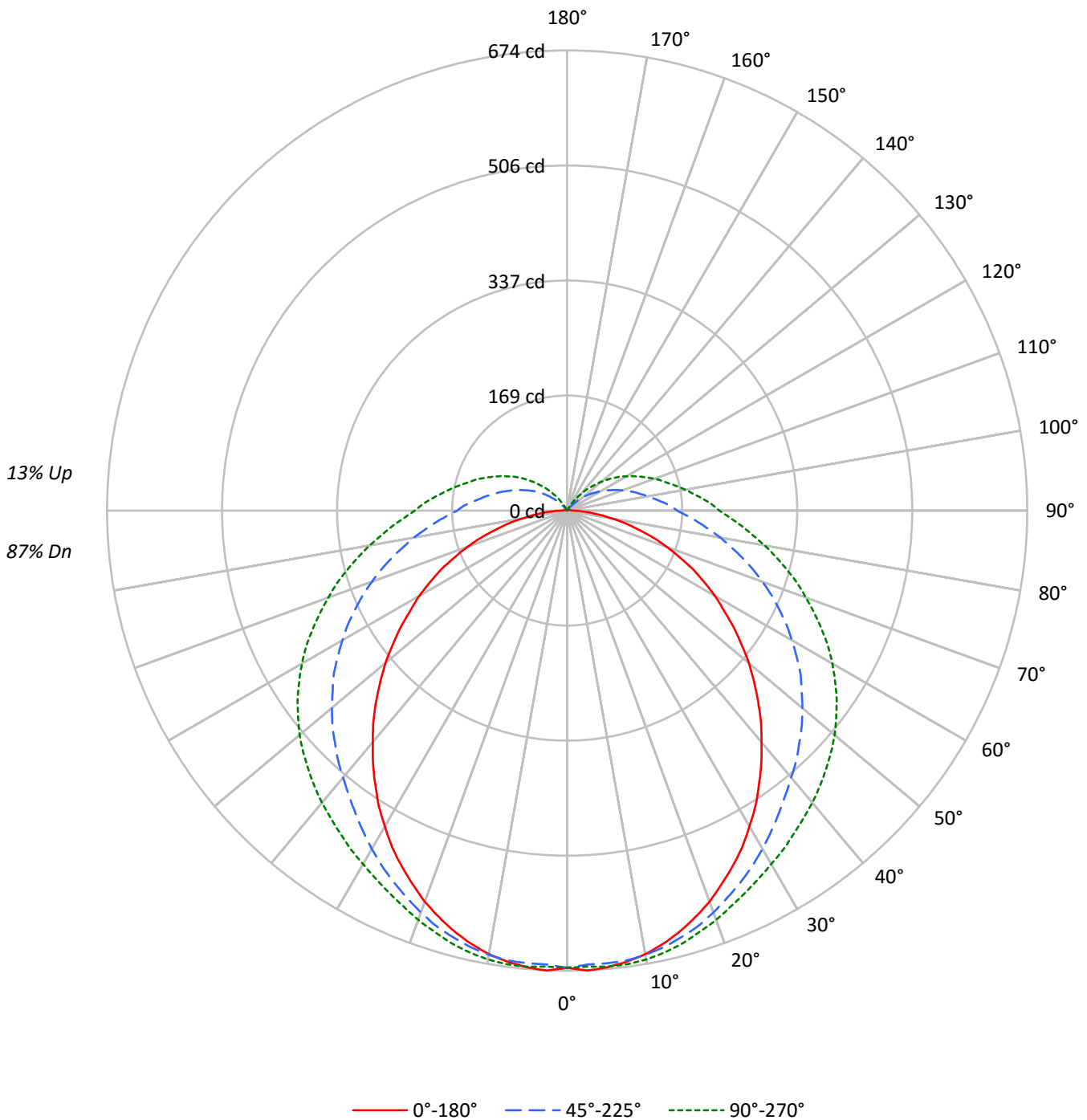
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	19837	19837	19837
5°	19935	18741	18504
10°	19773	17852	17364
15°	19462	16924	16247
20°	19072	15999	15202
25°	18589	15107	14272
30°	18046	14275	13519
35°	17457	13486	12891
40°	16820	12821	12376
45°	16228	12262	11891
50°	15618	11728	11450
55°	14910	11229	10972
60°	14300	10644	10468
65°	13618	10090	9922
70°	12687	9522	9365
75°	11551	8920	8825
80°	10159	8358	8290
85°	8842	7826	7805



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	63.7	2.3
10°-20°	183.0	6.7
20°-30°	276.8	10.2
30°-40°	338.3	12.4
40°-50°	367.2	13.5
50°-60°	362.4	13.3
60°-70°	324.6	11.9
70°-80°	261.2	9.6
80°-90°	188.8	6.9
90°-100°	135.2	5.0
100°-110°	96.5	3.6
110°-120°	63.9	2.4
120°-130°	36.3	1.3
130°-140°	16.2	0.6
140°-150°	3.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	523.5	19.3
0°-40°	861.7	31.7
0°-60°	1591.4	58.6
0°-90°	2366.0	87.1
90°-120°	295.5	10.9
90°-150°	351.6	12.9
90°-180°	352.0	13.0
0°-180°	2717.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	670	670	670	670	670	
5°	672	670	666	672	670	64
15°	638	645	647	656	656	180
25°	574	589	601	614	618	264
35°	490	515	541	569	578	307
45°	396	433	481	522	536	305
55°	298	348	417	465	482	266
65°	203	266	343	396	411	200
75°	109	184	265	317	333	116
85°	32	110	192	242	256	34
90°	8	82	161	209	223	6
95°	6	66	140	186	199	4
105°	3	39	103	142	154	3
115°	2	19	71	107	118	2
125°	1	2	43	74	83	1
135°	0	0	17	41	49	0
145°	0	0	0	11	18	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°	669.5	669.5	669.5	669.5	669.5
2.5°	674.4	670.5	665.6	670.5	668.5
5°	671.5	669.5	665.6	672.5	670.5
7.5°	666.6	666.6	664.6	671.5	670.5
10°	659.7	661.7	660.7	668.5	667.6
12.5°	649.9	653.8	654.8	663.6	662.6
15°	638.1	645.0	646.9	655.8	655.8
17.5°	624.4	633.2	638.1	646.9	646.9
20°	609.6	619.5	626.3	637.1	638.1
22.5°	592.0	605.7	613.6	626.3	627.3
25°	574.3	589.0	600.8	614.5	617.5
27.5°	555.6	572.3	587.1	602.8	607.7
30°	534.0	552.7	572.3	591.0	597.9
32.5°	513.4	535.0	556.6	580.2	589.0
35°	489.9	515.4	540.9	569.4	578.2
37.5°	467.3	494.8	525.2	557.6	568.4
40°	442.7	474.2	510.5	546.8	558.6
42.5°	420.2	452.6	496.7	534.0	547.8
45°	395.6	432.9	481.0	522.3	536.0
47.5°	371.1	411.3	466.3	508.5	524.2
50°	347.5	389.7	449.6	495.8	511.5
52.5°	322.0	370.1	432.9	480.1	496.7
55°	297.5	347.5	417.2	465.3	482.0
57.5°	271.9	328.9	398.6	449.6	465.3
60°	250.3	307.3	379.9	431.9	448.6
62.5°	225.8	286.7	362.2	413.3	431.0
65°	203.2	266.0	342.6	395.6	411.3
67.5°	177.7	245.4	324.0	376.0	391.7
70°	155.1	224.8	304.3	356.4	372.1
72.5°	132.5	205.2	284.7	337.7	353.4
75°	109.0	183.6	265.1	317.1	332.8
77.5°	88.4	163.9	245.4	297.5	313.2
80°	66.8	144.3	227.8	278.8	293.5
82.5°	49.1	126.6	209.1	260.2	273.9
85°	32.4	110.0	192.4	241.5	256.2
87.5°	18.7	95.2	175.7	224.8	238.6
90°	7.9	82.5	161.0	209.1	222.8
92.5°	5.9	74.6	152.2	198.3	212.0
95°	5.9	65.8	140.4	185.5	199.3
97.5°	4.9	57.9	129.6	173.8	186.5
100°	3.9	51.0	120.7	163.0	175.7
102.5°	3.9	45.2	110.9	152.2	164.9
105°	2.9	39.3	103.1	142.3	154.1
107.5°	2.9	33.4	94.2	133.5	145.3
110°	2.0	28.5	86.4	124.7	136.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.0	23.6	78.5	115.8	126.6
115°	2.0	18.7	70.7	107.0	117.8
117.5°	1.0	13.7	63.8	98.2	109.0
120°	1.0	9.8	56.9	89.3	100.1
122.5°	1.0	4.9	49.1	81.5	92.3
125°	1.0	2.0	43.2	73.6	83.4
127.5°	0.0	0.0	36.3	64.8	74.6
130°	0.0	0.0	29.5	56.9	65.8
132.5°	0.0	0.0	23.6	49.1	56.9
135°	0.0	0.0	16.7	41.2	49.1
137.5°	0.0	0.0	10.8	33.4	41.2
140°	0.0	0.0	4.9	25.5	32.4
142.5°	0.0	0.0	1.0	18.7	24.5
145°	0.0	0.0	0.0	10.8	17.7
147.5°	0.0	0.0	0.0	3.9	9.8
150°	0.0	0.0	0.0	0.0	2.9
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)