

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: P243014

Luminaire Tested: **S121DR-H685D830-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243014  
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-H685D830-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2436.1 lumens  
Efficiency: N/A  
Efficacy: 103.2 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

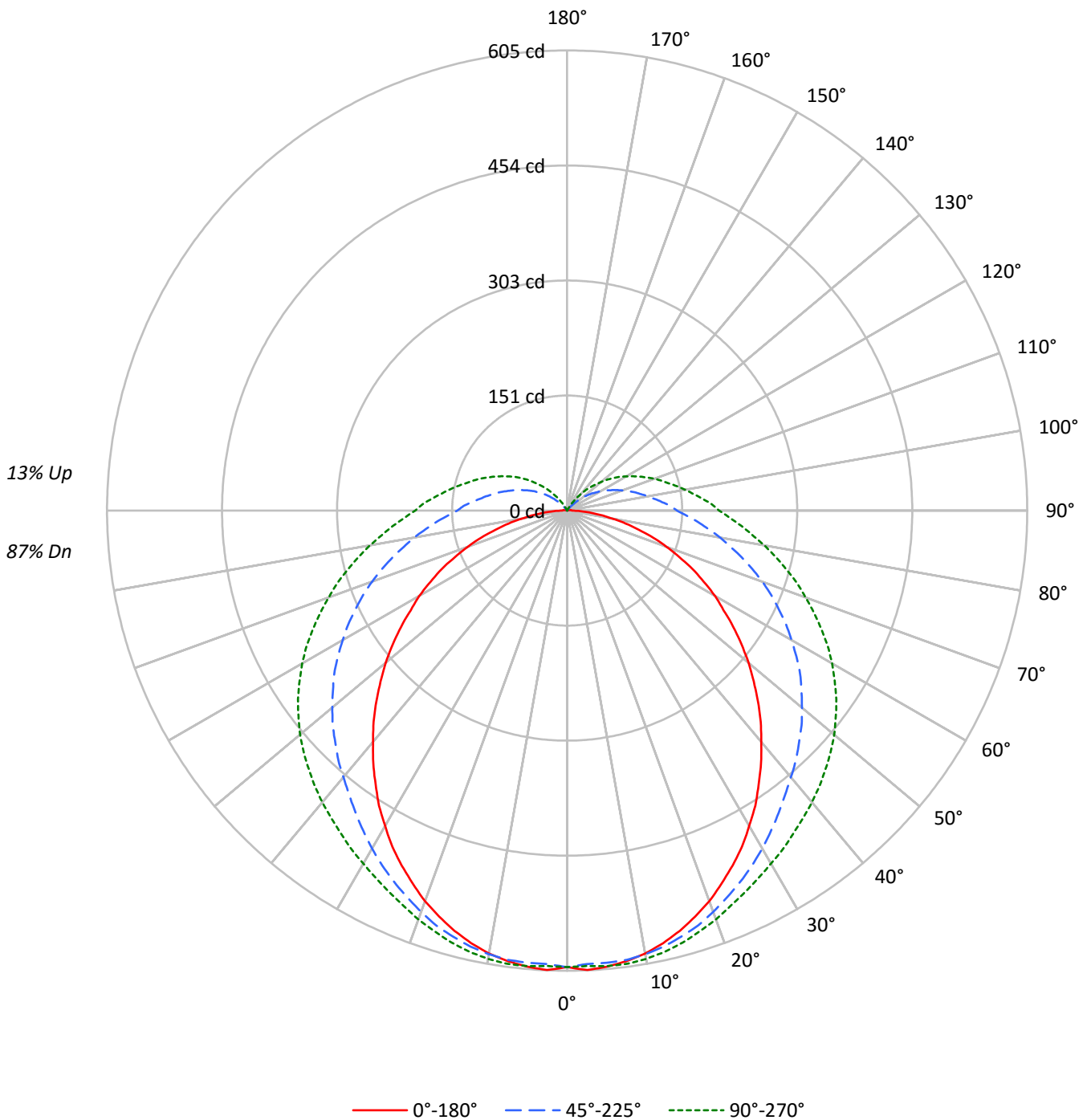
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	17784	17784	17784
5°	17869	16801	16588
10°	17726	16004	15565
15°	17446	15172	14565
20°	17098	14344	13627
25°	16663	13543	12793
30°	16177	12798	12117
35°	15647	12090	11556
40°	15080	11492	11093
45°	14550	10992	10660
50°	14000	10515	10263
55°	13367	10066	9836
60°	12820	9543	9385
65°	12211	9045	8895
70°	11370	8536	8394
75°	10354	7995	7910
80°	9095	7492	7431
85°	7914	7017	6997



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	57.1	2.3
10°-20°	164.0	6.7
20°-30°	248.1	10.2
30°-40°	303.2	12.4
40°-50°	329.2	13.5
50°-60°	324.9	13.3
60°-70°	291.0	11.9
70°-80°	234.1	9.6
80°-90°	169.2	6.9
90°-100°	121.2	5.0
100°-110°	86.5	3.6
110°-120°	57.2	2.3
120°-130°	32.6	1.3
130°-140°	14.5	0.6
140°-150°	3.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	469.3	19.3
0°-40°	772.5	31.7
0°-60°	1426.6	58.6
0°-90°	2120.9	87.1
90°-120°	264.9	10.9
90°-150°	315.1	12.9
90°-180°	315.0	12.9
0°-180°	2436.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	600	600	600	600	600	
5°	602	600	597	603	601	57
15°	572	578	580	588	588	161
25°	515	528	539	551	554	237
35°	439	462	485	510	518	275
45°	355	388	431	468	480	274
55°	267	312	374	417	432	239
65°	182	238	307	355	369	180
75°	98	165	238	284	298	104
85°	29	99	172	216	230	30
90°	7	74	144	187	200	5
95°	5	59	126	166	179	4
105°	3	35	92	128	138	3
115°	2	17	63	96	106	1
125°	1	2	39	66	75	1
135°	0	0	15	37	44	0
145°	0	0	0	10	16	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°	600.2	600.2	600.2	600.2	600.2
2.5°	604.6	601.1	596.7	601.1	599.3
5°	601.9	600.2	596.7	602.8	601.1
7.5°	597.5	597.5	595.8	601.9	601.1
10°	591.4	593.1	592.3	599.3	598.4
12.5°	582.6	586.1	587.0	594.9	594.0
15°	572.0	578.2	579.9	587.9	587.9
17.5°	559.7	567.6	572.0	579.9	579.9
20°	546.5	555.3	561.5	571.1	572.0
22.5°	530.7	543.0	550.0	561.5	562.3
25°	514.8	528.0	538.6	550.9	553.5
27.5°	498.1	513.1	526.3	540.3	544.7
30°	478.7	495.5	513.1	529.8	535.9
32.5°	460.3	479.6	499.0	520.1	528.0
35°	439.1	462.0	484.9	510.4	518.3
37.5°	418.9	443.5	470.8	499.9	509.5
40°	396.9	425.1	457.6	490.2	500.7
42.5°	376.7	405.7	445.3	478.7	491.1
45°	354.7	388.1	431.2	468.2	480.5
47.5°	332.7	368.7	418.0	455.9	469.9
50°	311.5	349.4	403.1	444.4	458.5
52.5°	288.7	331.8	388.1	430.3	445.3
55°	266.7	311.5	374.0	417.1	432.1
57.5°	243.8	294.8	357.3	403.1	417.1
60°	224.4	275.5	340.6	387.2	402.2
62.5°	202.4	257.0	324.7	370.5	386.3
65°	182.2	238.5	307.1	354.7	368.7
67.5°	159.3	220.0	290.4	337.1	351.1
70°	139.0	201.5	272.8	319.5	333.5
72.5°	118.8	183.9	255.2	302.7	316.8
75°	97.7	164.6	237.6	284.3	298.3
77.5°	79.2	147.0	220.0	266.7	280.7
80°	59.8	129.4	204.2	249.9	263.1
82.5°	44.0	113.5	187.4	233.2	245.5
85°	29.0	98.6	172.5	216.5	229.7
87.5°	16.7	85.4	157.5	201.5	213.8
90°	7.0	73.9	144.3	187.4	199.8
92.5°	5.3	66.9	136.4	177.8	190.1
95°	5.3	59.0	125.8	166.3	178.6
97.5°	4.4	51.9	116.2	155.8	167.2
100°	3.5	45.8	108.2	146.1	157.5
102.5°	3.5	40.5	99.4	136.4	147.8
105°	2.6	35.2	92.4	127.6	138.2
107.5°	2.6	29.9	84.5	119.7	130.2
110°	1.8	25.5	77.4	111.8	122.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.8	21.1	70.4	103.8	113.5
115°	1.8	16.7	63.4	95.9	105.6
117.5°	0.9	12.3	57.2	88.0	97.7
120°	0.9	8.8	51.0	80.1	89.8
122.5°	0.9	4.4	44.0	73.0	82.7
125°	0.9	1.8	38.7	66.0	74.8
127.5°	0.0	0.0	32.6	58.1	66.9
130°	0.0	0.0	26.4	51.0	59.0
132.5°	0.0	0.0	21.1	44.0	51.0
135°	0.0	0.0	15.0	37.0	44.0
137.5°	0.0	0.0	9.7	29.9	37.0
140°	0.0	0.0	4.4	22.9	29.0
142.5°	0.0	0.0	0.9	16.7	22.0
145°	0.0	0.0	0.0	9.7	15.8
147.5°	0.0	0.0	0.0	3.5	8.8
150°	0.0	0.0	0.0	0.0	2.6
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)