

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P911095

Luminaire Tested: DFN2DIP-PN2F0-050D020US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911095
REPORT IS A COMBINATION OF REPORTS P900988 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US850-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

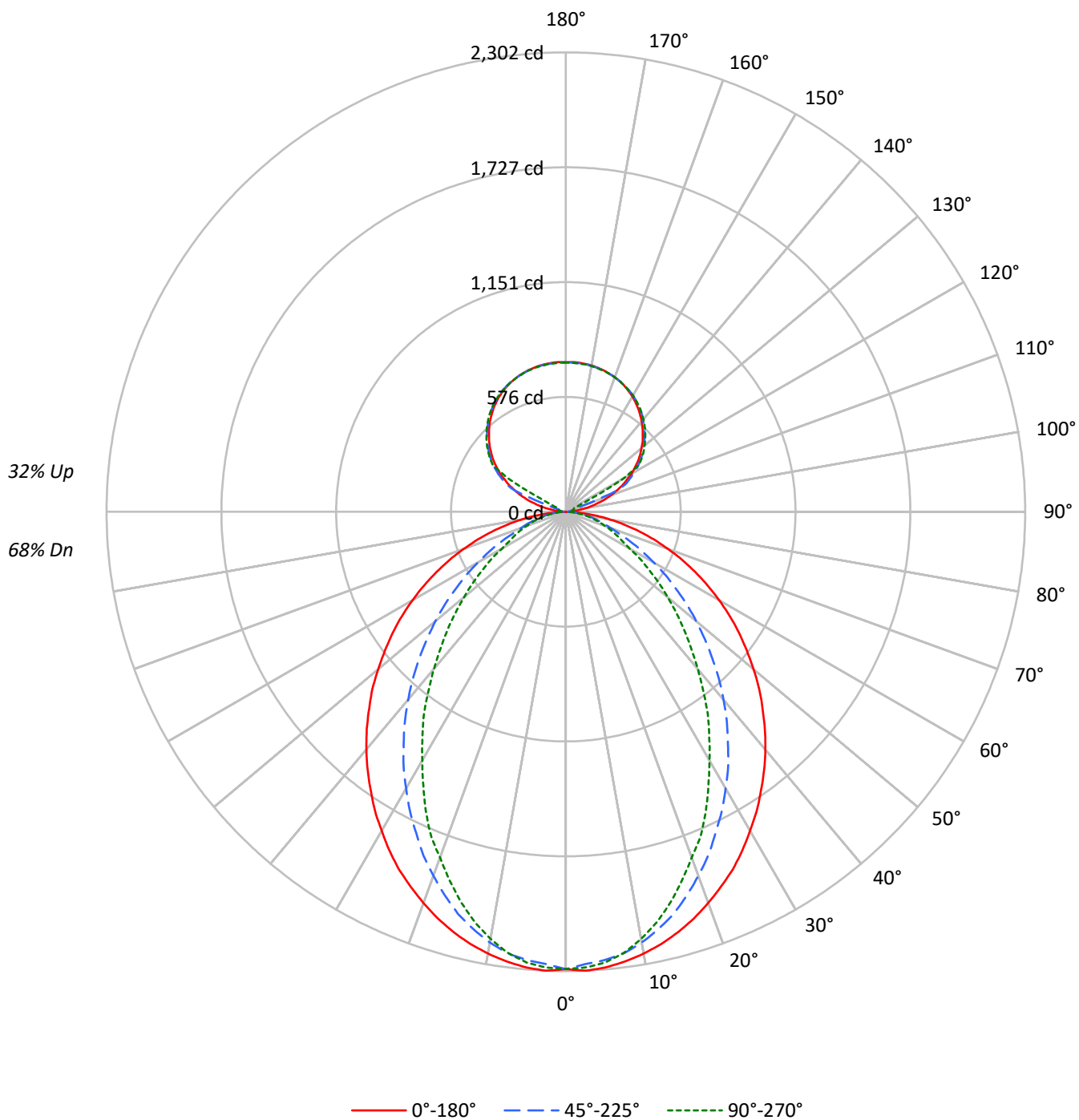
Lumens per Lamp: N/A
Luminaire Lumens: 6909.1 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4964	4964	4964
5°	4963	4874	4909
10°	4907	4768	4742
15°	4831	4600	4488
20°	4734	4373	4180
25°	4634	4121	3882
30°	4503	3863	3506
35°	4374	3586	3177
40°	4242	3301	2800
45°	4090	2987	2459
50°	3932	2671	2127
55°	3767	2333	1808
60°	3574	1983	1481
65°	3352	1628	1325
70°	3084	1297	1189
75°	2745	1122	1067
80°	2258	913	903
85°	1478	567	642

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4090 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	3.1
10°-20°	589.6	8.5
20°-30°	827.8	12.0
30°-40°	902.4	13.1
40°-50°	829.4	12.0
50°-60°	651.3	9.4
60°-70°	424.0	6.1
70°-80°	218.2	3.2
80°-90°	57.0	0.8
90°-100°	24.7	0.4
100°-110°	92.0	1.3
110°-120°	244.0	3.5
120°-130°	404.8	5.9
130°-140°	429.9	6.2
140°-150°	399.6	5.8
150°-160°	321.3	4.6
160°-170°	207.0	3.0
170°-180°	71.2	1.0
0°-30°	1632.2	23.6
0°-40°	2534.6	36.7
0°-60°	4015.3	58.1
0°-90°	4714.6	68.2
90°-120°	360.7	5.2
90°-150°	1595.0	23.1
90°-180°	2194.0	31.8
0°-180°	6909.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	6	11	14	15	7
95°	35	17	21	24	23	42
105°	165	181	33	39	41	176
115°	311	321	334	83	44	307
125°	440	447	458	462	463	393
135°	545	554	558	564	563	421
145°	632	632	641	645	642	395
155°	696	691	698	701	697	321
165°	733	730	732	736	732	207
175°	750	746	748	751	746	71
180°	749	749	749	749	749	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
90°	0.6	6.5	10.8	13.5	14.6
92.5°	13.5	11.4	13.0	14.1	14.6
95°	35.2	17.3	21.1	23.8	23.3
97.5°	63.3	19.0	27.6	29.3	29.8
100°	95.9	21.6	30.8	35.2	36.3
102.5°	131.6	130.5	31.9	37.9	39.6
105°	164.7	180.9	33.0	38.9	41.1
107.5°	203.2	216.6	34.2	40.0	42.3
110°	240.0	251.3	94.8	40.7	42.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	274.6	284.3	275.1	41.7	43.4
115°	311.4	320.6	334.3	83.4	44.5
117.5°	343.3	354.2	363.4	286.0	144.1
120°	379.2	387.3	397.0	403.6	330.4
122.5°	409.4	418.1	429.0	432.2	432.8
125°	440.4	447.4	457.7	461.5	463.1
127.5°	468.6	476.1	484.3	489.6	490.2
130°	495.1	503.7	509.7	515.7	515.1
132.5°	522.1	529.2	535.1	540.0	539.5
135°	545.0	553.6	558.4	563.9	562.8
137.5°	568.7	575.2	580.7	586.1	584.4
140°	592.0	596.4	602.3	607.2	604.5
142.5°	611.5	615.4	622.4	626.7	623.9
145°	632.1	631.6	640.8	644.6	641.9
147.5°	650.0	648.3	657.5	660.2	658.1
150°	667.3	663.5	672.2	675.4	672.7
152.5°	681.9	677.6	685.7	689.0	685.1
155°	696.0	691.1	697.7	700.9	696.6
157.5°	707.4	703.1	708.0	711.8	707.4
160°	717.2	713.9	717.2	720.4	716.6
162.5°	725.7	722.5	725.3	729.1	724.2
165°	733.4	730.2	731.7	735.6	731.7
167.5°	739.4	736.0	737.7	741.6	736.6
170°	744.2	740.9	742.0	745.8	740.9
172.5°	747.5	744.2	745.4	749.1	744.2
175°	750.1	746.4	747.5	751.2	745.8
177.5°	751.2	747.5	748.0	751.8	746.9
180°	748.6	748.6	748.6	748.6	748.6

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	14.15	15.16	14.94	15.96	16.95	10.12	11.13	10.91	11.93	12.92
	3H	15.82	16.72	16.63	17.54	18.56	11.31	12.20	12.11	13.02	14.04
	4H	16.42	17.27	17.25	18.10	19.13	11.75	12.60	12.57	13.42	14.45
	6H	16.84	17.62	17.67	18.45	19.49	12.07	12.85	12.90	13.68	14.72
	8H	16.96	17.70	17.80	18.56	19.60	12.15	12.90	13.00	13.75	14.79
	12H	17.02	17.73	17.87	18.57	19.64	12.19	12.90	13.04	13.75	14.81
4H	2H	14.19	15.03	15.01	15.86	16.89	10.73	11.57	11.55	12.40	13.43
	3H	16.01	16.71	16.85	17.57	18.62	12.07	12.78	12.91	13.63	14.68
	4H	16.69	17.33	17.54	18.19	19.26	12.61	13.25	13.46	14.11	15.18
	6H	17.20	17.75	18.06	18.63	19.70	13.02	13.57	13.89	14.45	15.53
	8H	17.36	17.88	18.23	18.75	19.84	13.14	13.66	14.01	14.53	15.62
	12H	17.46	17.92	18.34	18.81	19.91	13.21	13.67	14.10	14.57	15.66
8H	4H	16.67	17.18	17.54	18.06	19.15	12.89	13.41	13.76	14.28	15.37
	6H	17.22	17.64	18.11	18.56	19.65	13.39	13.82	14.29	14.74	15.83
	8H	17.42	17.80	18.33	18.71	19.82	13.57	13.95	14.48	14.86	15.97
	12H	17.55	17.89	18.46	18.79	19.95	13.68	14.02	14.59	14.92	16.08
12H	4H	16.63	17.09	17.51	17.99	19.08	12.90	13.36	13.79	14.26	15.35
	6H	17.19	17.57	18.10	18.48	19.59	13.44	13.82	14.34	14.73	15.83
	8H	17.41	17.74	18.31	18.64	19.80	13.64	13.97	14.55	14.88	16.03