

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: P916891

Luminaire Tested: DFN2DIP-PN4F0-060D120US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916891
REPORT IS A COMBINATION OF REPORTS P901278 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D120US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

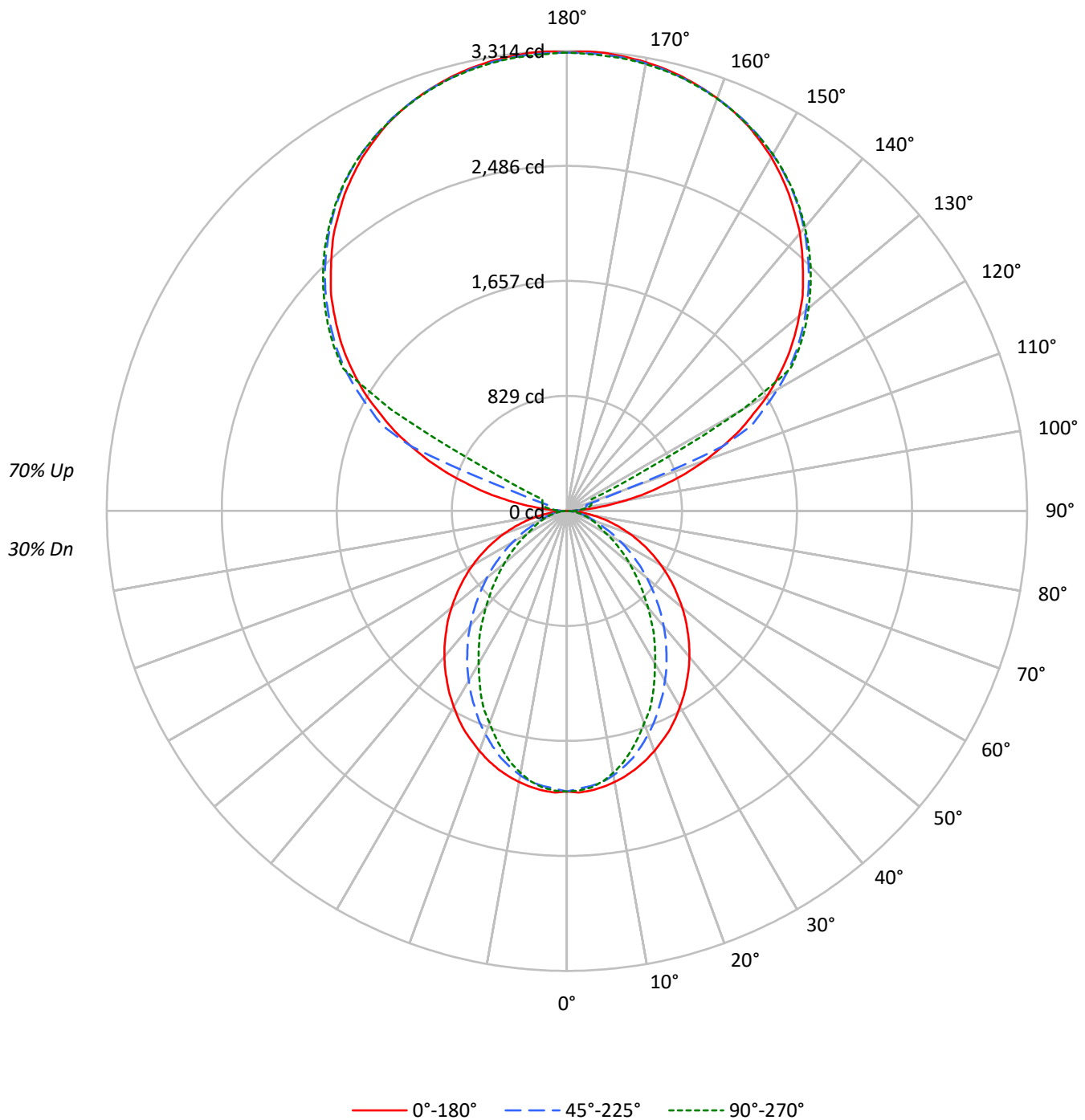
Lumens per Lamp: N/A
Luminaire Lumens: 13843.7 lumens
Efficiency: N/A
Efficacy: 87.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 158.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1476	1476	1476
5°	1478	1453	1462
10°	1464	1424	1415
15°	1443	1377	1341
20°	1417	1313	1251
25°	1389	1240	1164
30°	1353	1166	1054
35°	1317	1086	957
40°	1280	1003	846
45°	1238	911	745
50°	1194	818	646
55°	1148	719	552
60°	1095	615	454
65°	1034	510	409
70°	960	411	371
75°	867	363	338
80°	732	305	294
85°	510	205	223

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1760 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	1.4
10°-20°	520.2	3.8
20°-30°	730.3	5.3
30°-40°	796.1	5.8
40°-50°	731.7	5.3
50°-60°	574.6	4.2
60°-70°	374.0	2.7
70°-80°	192.5	1.4
80°-90°	55.0	0.4
90°-100°	108.9	0.8
100°-110°	405.9	2.9
110°-120°	1076.4	7.8
120°-130°	1785.3	12.9
130°-140°	1896.5	13.7
140°-150°	1762.5	12.7
150°-160°	1417.0	10.2
160°-170°	913.1	6.6
170°-180°	314.3	2.3
0°-30°	1439.9	10.4
0°-40°	2236.0	16.2
0°-60°	3542.3	25.6
0°-90°	4163.8	30.1
90°-120°	1591.2	11.5
90°-150°	7035.5	50.8
90°-180°	9680.0	69.9
0°-180°	13843.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	2	29	48	60	64	13
95°	155	76	93	105	103	184
105°	726	798	146	172	182	776
115°	1374	1414	1474	368	196	1352
125°	1942	1974	2019	2036	2043	1732
135°	2404	2442	2463	2487	2482	1857
145°	2788	2786	2826	2843	2831	1744
155°	3070	3049	3077	3092	3073	1415
165°	3235	3221	3228	3245	3228	914
175°	3309	3292	3297	3314	3290	315
180°	3302	3302	3302	3302	3302	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	2.3	28.6	47.7	59.8	64.4
92.5°	59.8	50.2	57.3	62.1	64.4
95°	155.2	76.3	93.0	105.3	102.7
97.5°	279.5	83.7	121.7	129.1	131.3
100°	423.0	95.6	136.2	155.2	160.0
102.5°	580.5	575.9	141.0	167.1	174.5
105°	726.3	798.1	145.9	171.9	181.6
107.5°	895.9	955.5	150.7	176.8	186.4
110°	1058.5	1108.5	418.2	179.3	188.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1211.5	1254.3	1213.7	183.8	191.2
115°	1373.7	1414.3	1474.1	367.9	196.1
117.5°	1514.7	1562.4	1603.3	1261.3	635.5
120°	1672.5	1708.2	1751.3	1780.0	1457.4
122.5°	1806.1	1844.4	1892.4	1906.6	1909.1
125°	1942.3	1973.5	2018.9	2035.6	2042.7
127.5°	2066.5	2100.0	2136.1	2159.9	2162.2
130°	2183.7	2222.0	2248.1	2274.5	2272.2
132.5°	2303.1	2334.4	2360.5	2382.1	2379.8
135°	2403.6	2441.9	2463.2	2487.3	2482.5
137.5°	2508.6	2537.2	2561.3	2585.1	2578.1
140°	2611.3	2630.6	2656.6	2678.3	2666.4
142.5°	2697.5	2714.3	2745.2	2764.2	2752.3
145°	2788.3	2785.8	2826.3	2843.1	2831.1
147.5°	2866.9	2859.8	2900.4	2912.3	2903.0
150°	2943.5	2926.8	2965.1	2979.3	2967.4
152.5°	3007.9	2988.9	3024.7	3039.1	3022.4
155°	3070.0	3048.7	3077.4	3091.6	3072.6
157.5°	3120.2	3101.2	3122.8	3139.6	3120.2
160°	3163.4	3148.9	3163.4	3177.5	3160.8
162.5°	3201.4	3187.2	3199.1	3215.9	3194.3
165°	3234.9	3220.7	3227.8	3244.6	3227.8
167.5°	3261.3	3246.8	3254.2	3270.9	3249.4
170°	3282.8	3268.4	3273.2	3289.9	3268.4
172.5°	3297.0	3282.8	3287.7	3304.4	3282.8
175°	3308.9	3292.2	3297.0	3313.8	3289.9
177.5°	3313.8	3297.0	3299.6	3316.3	3294.8
180°	3301.9	3301.9	3301.9	3301.9	3301.9

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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	6.28	6.98	7.40	8.08	9.61	2.25	2.94	3.37	4.05	5.58
	3H	7.95	8.57	9.08	9.69	11.24	3.43	4.05	4.55	5.16	6.71
	4H	8.56	9.14	9.69	10.26	11.81	3.87	4.46	5.01	5.58	7.13
	6H	8.98	9.51	10.12	10.63	12.20	4.19	4.73	5.33	5.85	7.41
	8H	9.10	9.61	10.24	10.75	12.30	4.28	4.79	5.42	5.92	7.48
	12H	9.16	9.64	10.31	10.77	12.35	4.31	4.80	5.46	5.93	7.51
4H	2H	6.29	6.87	7.43	7.99	9.54	2.83	3.42	3.97	4.53	6.09
	3H	8.11	8.59	9.25	9.73	11.30	4.17	4.66	5.32	5.80	7.36
	4H	8.79	9.24	9.94	10.37	11.96	4.71	5.16	5.86	6.29	7.88
	6H	9.30	9.69	10.46	10.84	12.42	5.12	5.51	6.28	6.66	8.24
	8H	9.48	9.84	10.63	10.98	12.57	5.25	5.61	6.41	6.75	8.35
	12H	9.57	9.89	10.74	11.05	12.65	5.31	5.63	6.48	6.79	8.39
8H	4H	8.75	9.11	9.91	10.26	11.85	4.98	5.34	6.14	6.49	8.08
	6H	9.32	9.61	10.49	10.80	12.39	5.50	5.79	6.67	6.98	8.57
	8H	9.53	9.79	10.71	10.96	12.57	5.69	5.95	6.87	7.11	8.72
	12H	9.67	9.89	10.85	11.06	12.70	5.80	6.03	6.99	7.19	8.84
12H	4H	8.70	9.02	9.87	10.18	11.78	4.98	5.31	6.15	6.46	8.06
	6H	9.29	9.55	10.47	10.71	12.32	5.55	5.80	6.73	6.97	8.58
	8H	9.51	9.73	10.69	10.90	12.54	5.75	5.98	6.94	7.14	8.79

END OF REPORT