

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: P916819

Luminaire Tested: DFN2DIP-PN4F0-040D120US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916819
REPORT IS A COMBINATION OF REPORTS P901274 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D120US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

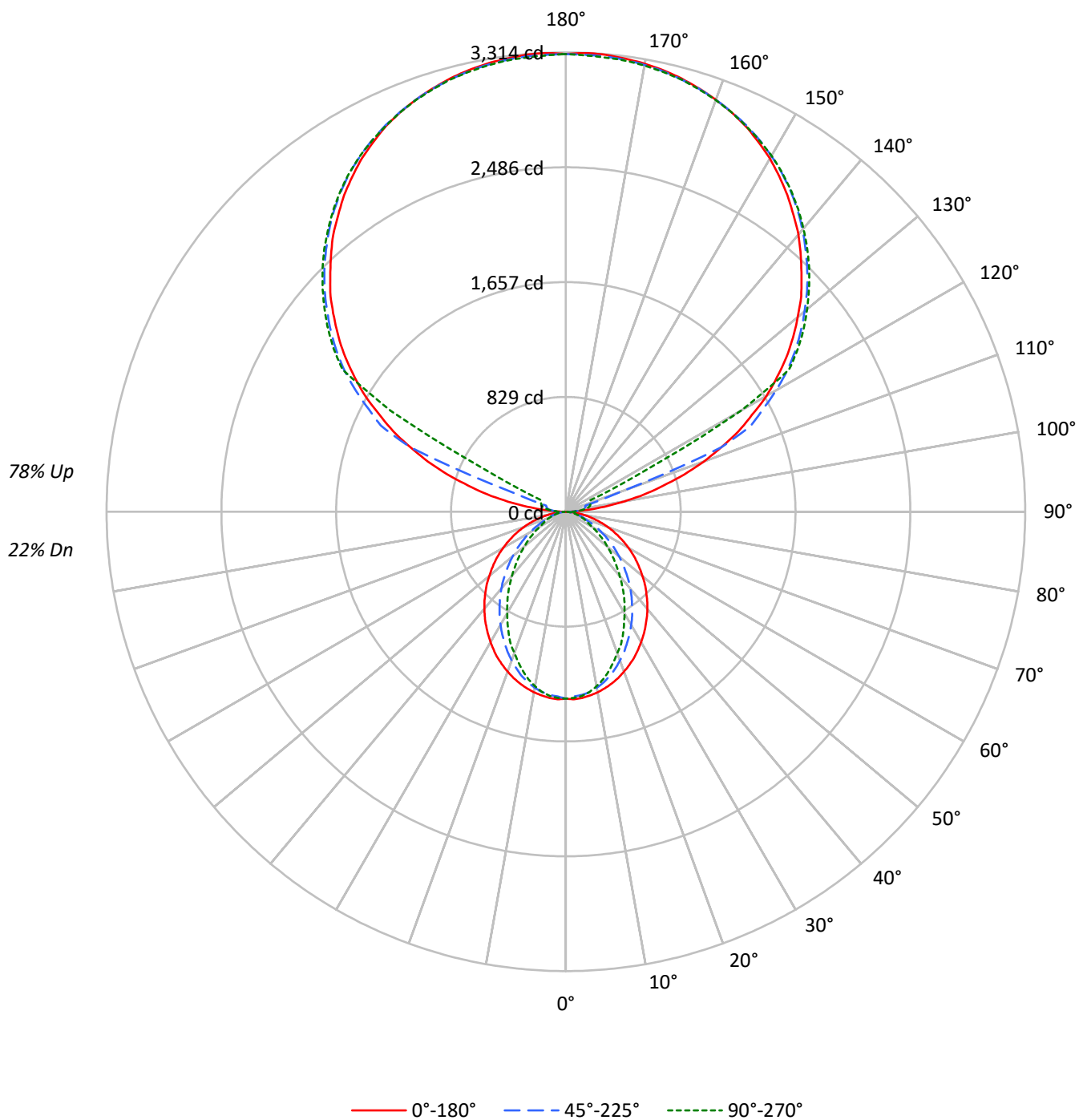
Lumens per Lamp: N/A
Luminaire Lumens: 12457.7 lumens
Efficiency: N/A
Efficacy: 91.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 136.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	984	984	984
5°	985	968	975
10°	976	949	943
15°	962	918	894
20°	944	875	834
25°	926	827	776
30°	902	777	703
35°	878	724	638
40°	854	669	564
45°	825	607	497
50°	796	545	431
55°	765	479	368
60°	730	410	303
65°	689	340	273
70°	640	274	247
75°	578	242	225
80°	488	203	196
85°	340	137	149

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°	126.3	1.0
10°-20°	346.8	2.8
20°-30°	486.9	3.9
30°-40°	530.7	4.3
40°-50°	487.8	3.9
50°-60°	383.1	3.1
60°-70°	249.3	2.0
70°-80°	128.4	1.0
80°-90°	38.6	0.3
90°-100°	108.9	0.9
100°-110°	405.9	3.3
110°-120°	1076.4	8.6
120°-130°	1785.3	14.3
130°-140°	1896.5	15.2
140°-150°	1762.5	14.1
150°-160°	1417.0	11.4
160°-170°	913.1	7.3
170°-180°	314.3	2.5
0°-30°	960.0	7.7
0°-40°	1490.7	12.0
0°-60°	2361.5	19.0
0°-90°	2777.8	22.3
90°-120°	1591.2	12.8
90°-150°	7035.5	56.5
90°-180°	9680.0	77.7
0°-180°	12457.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	2	29	48	60	64	12
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°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
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	3.67	4.32	4.84	5.47	7.09	0.00	0.28	0.80	1.43	3.05
	3H	5.34	5.92	6.51	7.07	8.71	0.81	1.39	1.99	2.55	4.18
	4H	5.94	6.49	7.12	7.65	9.29	1.25	1.80	2.44	2.96	4.60
	6H	6.35	6.86	7.54	8.02	9.67	1.57	2.07	2.76	3.23	4.88
	8H	6.48	6.96	7.67	8.13	9.77	1.65	2.13	2.84	3.31	4.95
	12H	6.53	6.99	7.73	8.16	9.82	1.69	2.14	2.88	3.31	4.98
4H	2H	3.67	4.22	4.86	5.37	7.01	0.21	0.76	1.40	1.92	3.56
	3H	5.48	5.94	6.68	7.12	8.77	1.54	2.00	2.74	3.18	4.83
	4H	6.17	6.59	7.37	7.76	9.43	2.09	2.51	3.28	3.68	5.35
	6H	6.68	7.04	7.88	8.23	9.89	2.50	2.86	3.70	4.05	5.71
	8H	6.85	7.19	8.05	8.37	10.05	2.62	2.96	3.82	4.14	5.82
	12H	6.94	7.24	8.15	8.44	10.12	2.68	2.98	3.89	4.18	5.86
8H	4H	6.12	6.46	7.32	7.64	9.32	2.35	2.69	3.55	3.87	5.55
	6H	6.69	6.96	7.90	8.19	9.86	2.87	3.14	4.08	4.37	6.04
	8H	6.90	7.14	8.13	8.35	10.04	3.06	3.30	4.28	4.50	6.19
	12H	7.04	7.25	8.26	8.45	10.17	3.17	3.38	4.39	4.58	6.30
12H	4H	6.07	6.37	7.28	7.57	9.25	2.35	2.66	3.56	3.85	5.53
	6H	6.66	6.90	7.88	8.11	9.80	2.92	3.16	4.14	4.36	6.05
	8H	6.88	7.09	8.10	8.29	10.01	3.12	3.33	4.34	4.53	6.25

END OF REPORT