

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: P914306

Luminaire Tested: DFN2DIP-PN4F0-100D120US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914306
REPORT IS A COMBINATION OF REPORTS P899766 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D120US927-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

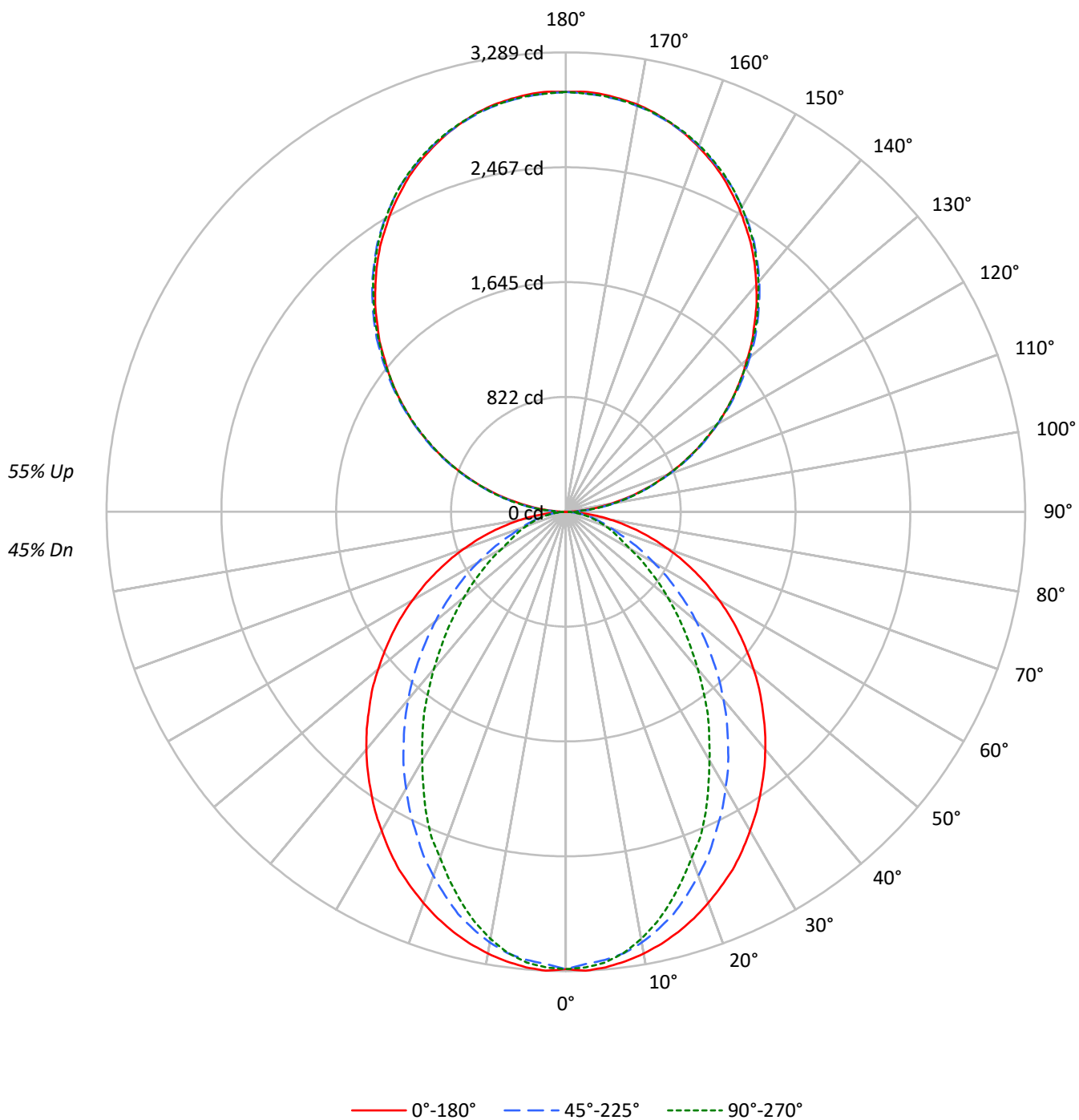
Lumens per Lamp: N/A
Luminaire Lumens: 15146.4 lumens
Efficiency: N/A
Efficacy: 74.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 204.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	106	106	106	106	97	97	97	97		80	80	80		65	65	65		51	51	51
1	97	93	89	86	89	85	82	79		71	69	67		58	56	55		46	45	44
2	89	82	76	71	81	75	70	66		63	59	56		51	49	47		41	39	38
3	81	72	65	59	74	66	60	55		56	51	47		46	43	40		37	34	33
4	74	64	56	51	68	59	52	47		50	45	41		41	37	35		33	30	28
5	68	57	49	44	63	53	46	41		45	39	35		37	33	30		30	27	25
6	63	51	44	38	58	48	41	36		40	35	31		34	30	27		27	24	22
7	58	47	39	33	54	43	36	31		37	31	28		31	27	24		25	22	20
8	54	42	35	30	50	39	33	28		34	28	25		28	24	21		23	20	18
9	51	39	31	27	46	36	29	25		31	26	22		26	22	19		21	18	16
10	47	36	29	24	43	33	27	23		28	23	20		24	20	17		20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2390	2390	2390
5°	2394	2352	2367
10°	2370	2307	2291
15°	2337	2231	2172
20°	2294	2126	2026
25°	2250	2008	1886
30°	2191	1888	1707
35°	2132	1758	1550
40°	2073	1624	1370
45°	2005	1475	1206
50°	1933	1325	1047
55°	1859	1164	894
60°	1773	996	736
65°	1675	825	663
70°	1555	666	601
75°	1404	588	547
80°	1186	494	476
85°	826	331	361

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2354 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.9	2.0
10°-20°	842.4	5.6
20°-30°	1182.6	7.8
30°-40°	1289.2	8.5
40°-50°	1184.9	7.8
50°-60°	930.5	6.1
60°-70°	605.7	4.0
70°-80°	311.8	2.1
80°-90°	88.1	0.6
90°-100°	186.0	1.2
100°-110°	591.1	3.9
110°-120°	1011.6	6.7
120°-130°	1330.4	8.8
130°-140°	1493.3	9.9
140°-150°	1464.3	9.7
150°-160°	1228.4	8.1
160°-170°	814.6	5.4
170°-180°	284.7	1.9
0°-30°	2331.9	15.4
0°-40°	3621.0	23.9
0°-60°	5736.5	37.9
0°-90°	6742.1	44.5
90°-120°	1788.7	11.8
90°-150°	6076.6	40.1
90°-180°	8404.0	55.5
0°-180°	15146.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3274	3274	3274	3274	3274	
5°	3274	3259	3221	3247	3238	310
15°	3114	3081	2981	2924	2895	878
25°	2827	2732	2536	2415	2370	1300
35°	2436	2284	2024	1837	1772	1524
45°	1991	1792	1482	1271	1200	1538
55°	1514	1283	963	785	729	1353
65°	1022	782	516	415	406	1014
75°	545	338	237	216	213	577
85°	127	65	56	56	56	146
90°	3	33	89	83	86	15
95°	132	158	162	162	158	147
105°	546	553	558	563	563	576
115°	1015	1030	1025	1022	1015	1004
125°	1476	1499	1492	1484	1481	1319
135°	1910	1938	1943	1940	1933	1476
145°	2318	2337	2351	2354	2344	1449
155°	2651	2658	2667	2679	2671	1220
165°	2884	2881	2881	2900	2887	814
175°	3001	2994	2988	3006	2991	285
180°	3006	3006	3006	3006	3006	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3274.1	3274.1	3274.1	3274.1	3274.1
2.5°	3288.8	3274.1	3241.4	3271.2	3265.3
5°	3274.1	3259.3	3220.6	3247.4	3238.5
7.5°	3247.4	3229.7	3188.2	3199.9	3185.1
10°	3211.8	3191.1	3132.0	3122.9	3105.3
12.5°	3167.5	3140.8	3060.6	3043.0	3010.3
15°	3114.1	3081.3	2980.7	2924.5	2894.9
17.5°	3051.8	3004.3	2879.9	2814.8	2767.3
20°	2980.7	2921.3	2773.3	2699.4	2634.0
22.5°	2903.7	2835.5	2663.6	2563.0	2518.7
25°	2826.7	2731.8	2536.2	2414.9	2370.3
27.5°	2734.9	2634.0	2417.7	2278.5	2210.3
30°	2637.2	2524.3	2287.3	2136.4	2056.3
32.5°	2542.3	2405.8	2163.1	1985.2	1911.0
35°	2435.6	2284.5	2023.9	1837.1	1771.7
37.5°	2331.9	2168.8	1893.4	1688.8	1614.9
40°	2222.2	2044.6	1757.0	1546.7	1469.7
42.5°	2109.7	1920.1	1620.9	1401.4	1327.5
45°	1991.1	1792.5	1481.6	1271.0	1199.9
47.5°	1878.7	1668.3	1348.3	1137.7	1072.6
50°	1754.1	1543.8	1217.8	1013.2	951.3
52.5°	1632.4	1410.2	1093.4	897.8	841.5
55°	1513.9	1282.9	962.9	785.3	729.0
57.5°	1392.7	1155.6	847.6	681.5	634.1
60°	1268.1	1031.1	725.9	575.0	527.5
62.5°	1146.8	909.7	622.1	480.1	456.5
65°	1022.3	782.1	515.6	414.9	405.8
67.5°	903.8	663.6	414.9	364.3	355.5
70°	779.3	548.3	343.6	314.0	302.1
72.5°	660.8	441.3	287.3	263.7	257.8
75°	545.1	337.6	237.0	216.3	213.4
77.5°	429.8	239.9	186.7	174.8	168.8
80°	322.8	172.0	142.1	130.5	130.5
82.5°	225.1	115.7	97.8	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.5	23.6	23.6	20.8	20.8
90°	2.7	32.6	88.8	83.4	86.1
92.5°	56.2	76.1	78.8	81.6	81.6
95°	132.3	157.7	162.2	162.2	157.7
97.5°	220.2	243.8	253.8	253.8	253.8
100°	321.8	342.6	349.8	349.8	347.1
102.5°	428.7	444.1	454.1	456.9	454.1
105°	545.7	552.9	558.3	562.8	562.8
107.5°	661.6	672.6	672.6	674.3	661.6
110°	774.0	788.5	788.5	788.5	781.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	895.5	910.9	908.2	900.9	895.5
115°	1015.1	1029.7	1025.1	1022.4	1015.1
117.5°	1133.8	1153.8	1141.1	1133.8	1126.6
120°	1253.5	1273.4	1253.5	1253.5	1245.4
122.5°	1362.3	1387.7	1375.0	1367.7	1362.3
125°	1476.5	1499.1	1491.9	1483.8	1481.0
127.5°	1588.0	1616.0	1606.1	1595.2	1588.0
130°	1692.2	1724.8	1720.3	1714.8	1704.9
132.5°	1809.1	1834.5	1836.3	1823.6	1816.4
135°	1909.7	1937.8	1943.3	1940.5	1933.3
137.5°	2022.1	2044.8	2049.3	2047.5	2036.6
140°	2120.9	2143.6	2156.2	2156.2	2146.3
142.5°	2222.5	2245.1	2252.3	2255.0	2245.1
145°	2318.5	2336.6	2351.1	2353.9	2343.9
147.5°	2404.6	2427.2	2438.2	2442.7	2432.7
150°	2493.5	2508.8	2518.8	2527.0	2518.8
152.5°	2572.3	2587.7	2600.4	2610.4	2600.4
155°	2651.1	2658.4	2666.6	2679.2	2671.1
157.5°	2719.2	2724.5	2729.1	2747.2	2734.5
160°	2779.8	2785.3	2788.0	2803.4	2792.5
162.5°	2836.0	2836.0	2838.8	2856.0	2843.3
165°	2884.1	2881.4	2881.4	2899.5	2886.8
167.5°	2927.6	2919.4	2919.4	2937.6	2924.9
170°	2960.2	2952.9	2950.2	2968.4	2952.9
172.5°	2982.9	2975.6	2972.9	2991.0	2975.6
175°	3001.0	2993.7	2988.3	3006.4	2991.0
177.5°	3011.0	3003.7	2998.2	3013.7	2998.2
180°	3006.4	3006.4	3006.4	3006.4	3006.4

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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	9.64	10.43	10.65	11.45	12.80	5.61	6.40	6.62	7.41	8.76
	3H	11.32	12.03	12.34	13.05	14.42	6.79	7.50	7.81	8.52	9.89
	4H	11.93	12.60	12.96	13.62	15.00	7.24	7.91	8.28	8.94	10.31
	6H	12.35	12.96	13.39	14.00	15.39	7.56	8.18	8.61	9.21	10.60
	8H	12.48	13.06	13.53	14.11	15.49	7.65	8.24	8.70	9.28	10.67
	12H	12.54	13.09	13.59	14.13	15.54	7.70	8.25	8.75	9.29	10.70
4H	2H	9.66	10.32	10.70	11.35	12.73	6.20	6.87	7.24	7.89	9.27
	3H	11.49	12.04	12.53	13.09	14.49	7.55	8.10	8.59	9.16	10.55
	4H	12.18	12.69	13.23	13.73	15.15	8.09	8.60	9.15	9.65	11.06
	6H	12.69	13.13	13.76	14.20	15.61	8.51	8.95	9.58	10.02	11.43
	8H	12.87	13.28	13.93	14.34	15.76	8.64	9.05	9.70	10.11	11.53
	12H	12.96	13.33	14.05	14.41	15.84	8.71	9.07	9.79	10.15	11.58
8H	4H	12.14	12.55	13.21	13.61	15.04	8.37	8.78	9.44	9.84	11.27
	6H	12.71	13.05	13.80	14.15	15.57	8.89	9.23	9.98	10.33	11.75
	8H	12.93	13.22	14.02	14.31	15.75	9.08	9.38	10.18	10.47	11.91
	12H	13.07	13.33	14.16	14.41	15.89	9.20	9.46	10.30	10.54	12.02
12H	4H	12.09	12.46	13.17	13.54	14.97	8.38	8.74	9.46	9.82	11.25
	6H	12.69	12.98	13.78	14.07	15.51	8.94	9.24	10.03	10.32	11.76
	8H	12.91	13.17	14.00	14.25	15.73	9.15	9.41	10.25	10.49	11.97