

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: P925274

Luminaire Tested: DFN2DIP-PN4F0-120D080US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925274
REPORT IS A COMBINATION OF REPORTS P899698 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D080US950-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

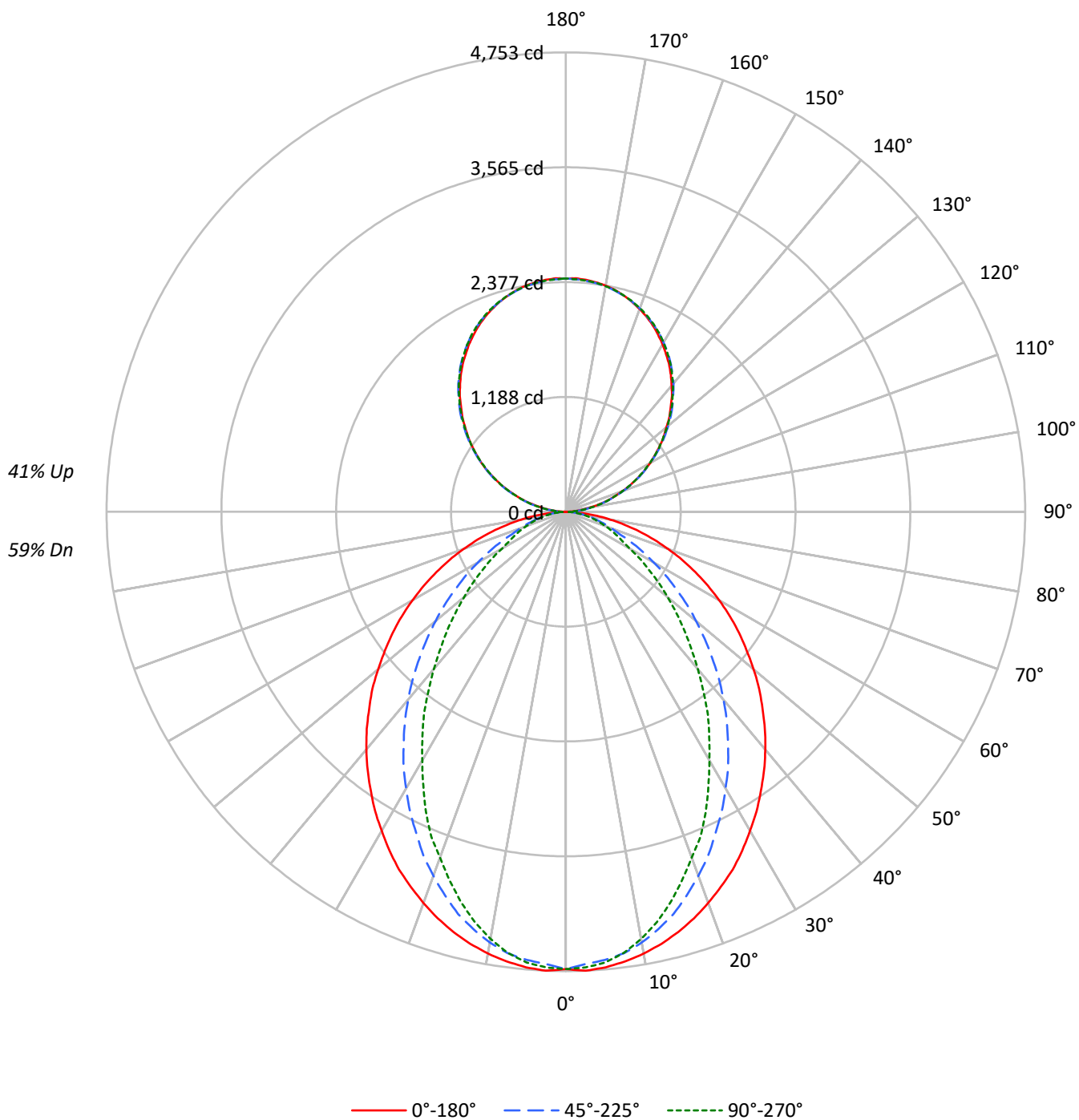
Lumens per Lamp: N/A
Luminaire Lumens: 16485.1 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 184.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3454	3454	3454
5°	3459	3399	3421
10°	3425	3333	3311
15°	3378	3223	3139
20°	3316	3072	2928
25°	3252	2902	2725
30°	3166	2728	2467
35°	3082	2541	2240
40°	2996	2347	1979
45°	2897	2132	1743
50°	2794	1915	1513
55°	2687	1682	1291
60°	2563	1439	1064
65°	2420	1193	958
70°	2247	962	868
75°	2029	849	791
80°	1714	714	688
85°	1194	479	522

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2897 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	443.4	2.7
10°-20°	1217.3	7.4
20°-30°	1709.1	10.4
30°-40°	1863.0	11.3
40°-50°	1712.3	10.4
50°-60°	1344.7	8.2
60°-70°	875.3	5.3
70°-80°	450.6	2.7
80°-90°	121.9	0.7
90°-100°	149.4	0.9
100°-110°	474.6	2.9
110°-120°	812.1	4.9
120°-130°	1068.1	6.5
130°-140°	1198.9	7.3
140°-150°	1175.6	7.1
150°-160°	986.2	6.0
160°-170°	654.0	4.0
170°-180°	228.6	1.4
0°-30°	3369.8	20.4
0°-40°	5232.8	31.7
0°-60°	8289.9	50.3
0°-90°	9737.7	59.1
90°-120°	1436.1	8.7
90°-150°	4878.6	29.6
90°-180°	6747.0	40.9
0°-180°	16485.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4732	4732	4732	4732	4732	
5°	4732	4710	4654	4693	4680	449
15°	4500	4453	4308	4226	4184	1268
25°	4085	3948	3665	3490	3425	1879
35°	3520	3301	2925	2655	2560	2203
45°	2878	2590	2141	1837	1734	2222
55°	2188	1854	1392	1135	1054	1955
65°	1477	1130	745	600	586	1465
75°	788	488	343	312	308	833
85°	184	94	81	81	81	211
90°	2	26	71	67	69	16
95°	106	127	130	130	127	118
105°	438	444	448	452	452	462
115°	815	827	823	821	815	806
125°	1185	1204	1198	1191	1189	1059
135°	1533	1556	1560	1558	1552	1185
145°	1861	1876	1888	1890	1882	1163
155°	2128	2134	2141	2151	2144	980
165°	2316	2313	2313	2328	2318	653
175°	2409	2404	2399	2414	2401	229
180°	2414	2414	2414	2414	2414	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4731.5	4731.5	4731.5	4731.5	4731.5
2.5°	4752.8	4731.5	4684.2	4727.4	4718.7
5°	4731.5	4710.1	4654.2	4692.8	4680.1
7.5°	4692.8	4667.3	4607.4	4624.2	4602.9
10°	4641.5	4611.5	4526.1	4512.9	4487.5
12.5°	4577.4	4538.8	4422.9	4397.6	4350.3
15°	4500.2	4453.0	4307.6	4226.2	4183.6
17.5°	4410.2	4341.7	4161.7	4067.8	3999.2
20°	4307.6	4221.7	4007.8	3901.0	3806.5
22.5°	4196.3	4097.7	3849.2	3703.8	3639.8
25°	4085.0	3947.7	3665.2	3489.8	3425.3
27.5°	3952.3	3806.5	3493.9	3292.7	3194.1
30°	3811.0	3648.0	3305.4	3087.3	2971.5
32.5°	3673.9	3476.7	3126.0	2868.9	2761.6
35°	3519.9	3301.3	2924.7	2654.9	2560.3
37.5°	3369.9	3134.2	2736.2	2440.4	2333.7
40°	3211.4	2954.7	2539.1	2235.1	2123.8
42.5°	3048.7	2774.8	2342.4	2025.2	1918.5
45°	2877.5	2590.4	2141.1	1836.7	1734.0
47.5°	2714.8	2410.9	1948.4	1644.1	1550.1
50°	2535.0	2231.0	1759.9	1464.2	1374.7
52.5°	2359.1	2037.9	1580.0	1297.4	1216.2
55°	2187.9	1854.0	1391.5	1134.8	1053.5
57.5°	2012.5	1670.0	1224.7	984.9	916.3
60°	1832.6	1490.1	1048.9	830.9	762.3
62.5°	1657.3	1314.7	899.0	693.7	659.6
65°	1477.4	1130.3	745.1	599.7	586.5
67.5°	1306.1	959.0	599.7	526.5	513.8
70°	1126.2	792.3	496.6	453.8	436.6
72.5°	955.0	637.8	415.2	381.1	372.5
75°	787.7	487.9	342.6	312.5	308.4
77.5°	621.1	346.6	269.9	252.6	243.9
80°	466.6	248.5	205.3	188.5	188.5
82.5°	325.3	167.1	141.3	132.6	132.6
85°	184.0	94.1	81.3	81.3	81.3
87.5°	68.6	34.1	34.1	30.0	30.0
90°	2.2	26.2	71.4	67.0	69.2
92.5°	45.1	61.2	63.3	65.4	65.4
95°	106.3	126.6	130.2	130.2	126.6
97.5°	176.9	195.8	203.8	203.8	203.8
100°	258.3	275.0	280.9	280.9	278.7
102.5°	344.2	356.6	364.5	366.7	364.5
105°	438.1	443.9	448.3	451.9	451.9
107.5°	531.2	540.0	540.0	541.4	531.2
110°	621.4	633.1	633.1	633.1	627.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	718.9	731.3	729.1	723.3	718.9
115°	815.0	826.6	823.0	820.8	815.0
117.5°	910.3	926.3	916.1	910.3	904.5
120°	1006.4	1022.4	1006.4	1006.4	999.8
122.5°	1093.7	1114.1	1103.9	1098.1	1093.7
125°	1185.3	1203.6	1197.7	1191.2	1189.1
127.5°	1274.9	1297.4	1289.4	1280.7	1274.9
130°	1358.6	1384.7	1381.1	1376.8	1368.8
132.5°	1452.5	1472.8	1474.3	1464.1	1458.3
135°	1533.2	1555.8	1560.2	1558.0	1552.2
137.5°	1623.4	1641.6	1645.3	1643.8	1635.1
140°	1702.8	1720.9	1731.1	1731.1	1723.1
142.5°	1784.3	1802.5	1808.3	1810.5	1802.5
145°	1861.4	1875.9	1887.6	1889.8	1881.8
147.5°	1930.5	1948.7	1957.4	1961.1	1953.1
150°	2001.9	2014.2	2022.2	2028.8	2022.2
152.5°	2065.1	2077.5	2087.7	2095.7	2087.7
155°	2128.5	2134.3	2140.9	2151.0	2144.5
157.5°	2183.0	2187.4	2191.1	2205.6	2195.4
160°	2231.8	2236.2	2238.4	2250.7	2242.0
162.5°	2276.9	2276.9	2279.1	2292.9	2282.7
165°	2315.5	2313.3	2313.3	2327.9	2317.6
167.5°	2350.4	2343.9	2343.9	2358.4	2348.2
170°	2376.6	2370.8	2368.6	2383.2	2370.8
172.5°	2394.8	2389.0	2386.8	2401.3	2389.0
175°	2409.3	2403.5	2399.1	2413.7	2401.3
177.5°	2417.3	2411.5	2407.1	2419.5	2407.1
180°	2413.7	2413.7	2413.7	2413.7	2413.7

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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	12.27	13.18	13.15	14.07	15.21	8.23	9.14	9.11	10.04	11.18
	3H	13.95	14.77	14.85	15.67	16.84	9.43	10.24	10.32	11.15	12.31
	4H	14.57	15.34	15.48	16.25	17.42	9.88	10.65	10.79	11.56	12.74
	6H	15.00	15.70	15.92	16.62	17.81	10.21	10.91	11.13	11.83	13.02
	8H	15.13	15.80	16.05	16.74	17.92	10.30	10.97	11.23	11.91	13.10
	12H	15.19	15.83	16.13	16.76	17.97	10.35	10.99	11.28	11.92	13.13
4H	2H	12.29	13.06	13.21	13.98	15.15	8.84	9.61	9.75	10.52	11.69
	3H	14.13	14.77	15.06	15.72	16.91	10.20	10.83	11.12	11.78	12.97
	4H	14.83	15.41	15.77	16.35	17.57	10.75	11.33	11.68	12.27	13.48
	6H	15.35	15.85	16.30	16.82	18.03	11.17	11.67	12.12	12.64	13.85
	8H	15.53	16.00	16.48	16.96	18.18	11.30	11.77	12.26	12.73	13.96
	12H	15.63	16.05	16.60	17.03	18.26	11.37	11.79	12.34	12.77	14.00
8H	4H	14.81	15.27	15.76	16.23	17.46	11.04	11.50	11.99	12.46	13.69
	6H	15.38	15.76	16.35	16.76	17.99	11.56	11.94	12.54	12.94	14.17
	8H	15.60	15.94	16.58	16.93	18.17	11.75	12.09	12.74	13.08	14.32
	12H	15.74	16.04	16.73	17.02	18.31	11.87	12.17	12.86	13.16	14.45
12H	4H	14.76	15.18	15.73	16.16	17.39	11.05	11.47	12.02	12.44	13.67
	6H	15.35	15.69	16.34	16.68	17.93	11.61	11.95	12.59	12.94	14.18
	8H	15.58	15.88	16.57	16.86	18.15	11.82	12.12	12.81	13.10	14.40