

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: P903214

Luminaire Tested: DFN2DIP-PN4F0-050D120US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903214
REPORT IS A COMBINATION OF REPORTS P899756 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D120US830-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

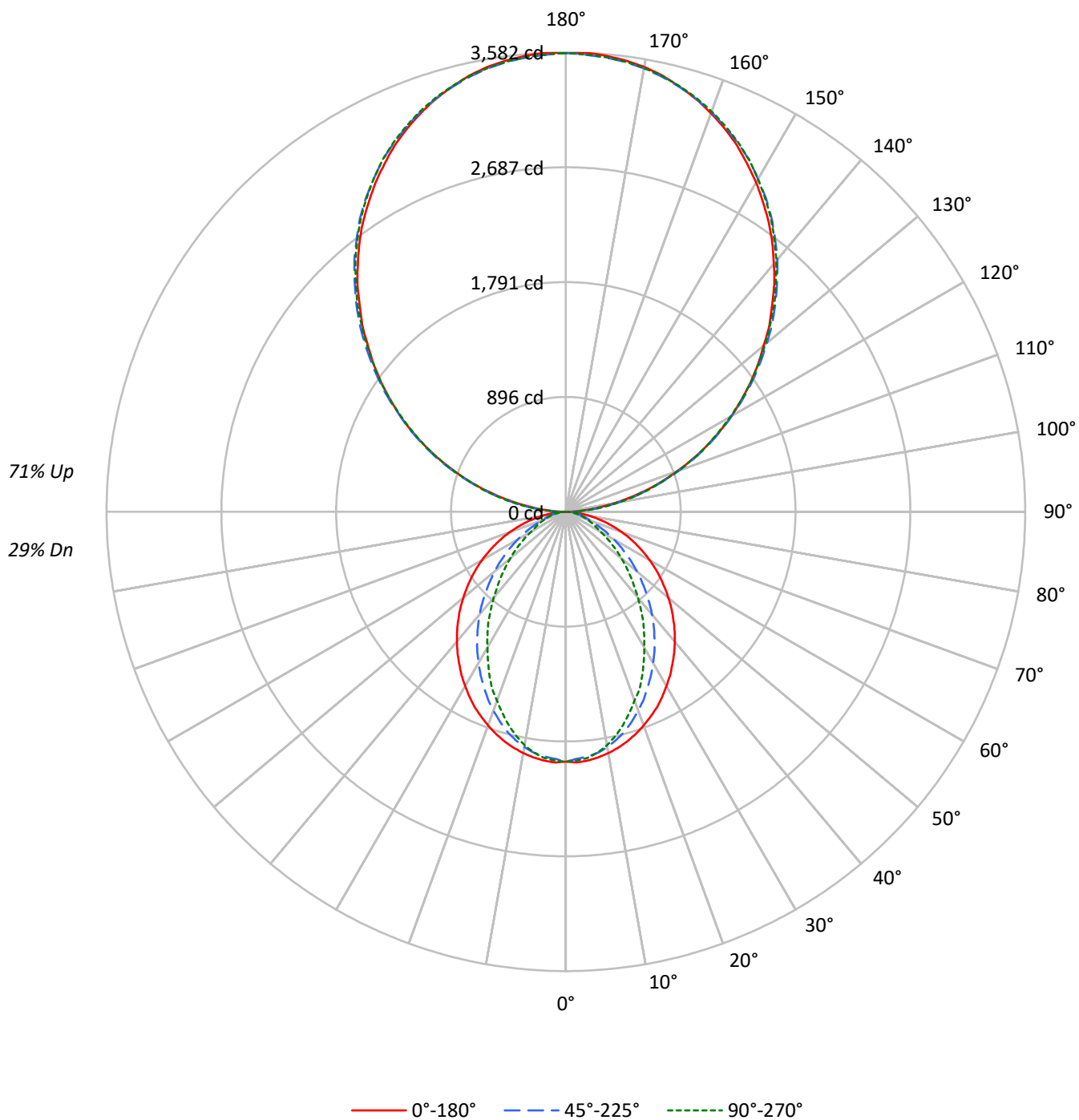
Lumens per Lamp: N/A
Luminaire Lumens: 14015.6 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 147.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	91	91	91	91	71	71	71	53	53	53	37	37	37
1	93	89	86	82	83	80	77	74	63	61	59	47	46	45	33	32	31
2	85	78	72	68	76	70	65	61	55	52	49	42	40	38	29	28	27
3	78	69	62	56	69	62	56	51	49	45	42	37	34	32	26	24	23
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	23	22	20
5	65	54	47	41	58	49	42	38	39	34	31	30	27	24	21	19	18
6	60	49	41	36	54	44	37	33	35	30	27	27	24	21	19	17	16
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14
8	52	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	13
9	48	36	29	24	43	33	27	22	27	22	19	21	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	14	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1422	1422	1422
5°	1424	1399	1408
10°	1410	1372	1363
15°	1391	1327	1292
20°	1365	1265	1206
25°	1339	1195	1122
30°	1303	1123	1015
35°	1269	1046	922
40°	1233	966	815
45°	1193	878	718
50°	1150	788	623
55°	1106	693	532
60°	1055	593	438
65°	996	491	395
70°	925	396	357
75°	835	350	326
80°	706	294	283
85°	492	197	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2802 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.3
10°-20°	501.1	3.6
20°-30°	703.6	5.0
30°-40°	766.9	5.5
40°-50°	704.9	5.0
50°-60°	553.6	3.9
60°-70°	360.3	2.6
70°-80°	185.5	1.3
80°-90°	57.5	0.4
90°-100°	221.3	1.6
100°-110°	703.3	5.0
110°-120°	1203.6	8.6
120°-130°	1582.9	11.3
130°-140°	1776.7	12.7
140°-150°	1742.3	12.4
150°-160°	1461.5	10.4
160°-170°	969.3	6.9
170°-180°	338.8	2.4
0°-30°	1387.2	9.9
0°-40°	2154.2	15.4
0°-60°	3412.7	24.3
0°-90°	4016.0	28.7
90°-120°	2128.2	15.2
90°-150°	7230.1	51.6
90°-180°	10000.0	71.3
0°-180°	14015.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	3	39	106	99	102	14
95°	157	188	193	193	188	175
105°	649	658	664	670	670	685
115°	1208	1225	1220	1216	1208	1195
125°	1757	1784	1775	1765	1762	1570
135°	2272	2306	2312	2309	2300	1756
145°	2758	2780	2797	2801	2789	1724
155°	3154	3163	3173	3188	3178	1452
165°	3432	3428	3428	3450	3435	968
175°	3571	3562	3556	3577	3559	339
180°	3577	3577	3577	3577	3577	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	3.2	38.8	105.7	99.2	102.5
92.5°	66.8	90.6	93.8	97.1	97.1
95°	157.4	187.7	193.0	193.0	187.7
97.5°	262.0	290.1	302.0	302.0	302.0
100°	382.9	407.6	416.2	416.2	413.0
102.5°	510.1	528.4	540.3	543.6	540.3
105°	649.2	657.8	664.3	669.7	669.7
107.5°	787.2	800.2	800.2	802.3	787.2
110°	921.0	938.2	938.2	938.2	929.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1065.4	1083.8	1080.5	1072.0	1065.4
115°	1207.8	1225.1	1219.6	1216.4	1207.8
117.5°	1349.1	1372.8	1357.7	1349.1	1340.5
120°	1491.5	1515.1	1491.5	1491.5	1481.8
122.5°	1620.9	1651.1	1636.0	1627.3	1620.9
125°	1756.7	1783.7	1775.1	1765.4	1762.1
127.5°	1889.4	1922.8	1910.9	1898.0	1889.4
130°	2013.4	2052.2	2046.8	2040.3	2028.4
132.5°	2152.5	2182.7	2184.8	2169.7	2161.2
135°	2272.2	2305.6	2312.2	2308.9	2300.3
137.5°	2405.9	2432.9	2438.3	2436.1	2423.2
140°	2523.5	2550.4	2565.5	2565.5	2553.6
142.5°	2644.3	2671.3	2679.8	2683.0	2671.3
145°	2758.5	2780.1	2797.4	2800.7	2788.8
147.5°	2861.0	2887.9	2901.0	2906.3	2894.5
150°	2966.7	2985.0	2996.9	3006.6	2996.9
152.5°	3060.5	3078.8	3094.0	3105.9	3094.0
155°	3154.3	3163.0	3172.7	3187.8	3178.1
157.5°	3235.3	3241.7	3247.1	3268.6	3253.6
160°	3307.5	3314.0	3317.2	3335.6	3322.6
162.5°	3374.3	3374.3	3377.6	3398.1	3383.0
165°	3431.5	3428.3	3428.3	3449.8	3434.7
167.5°	3483.3	3473.6	3473.6	3495.1	3480.1
170°	3522.1	3513.4	3510.2	3531.8	3513.4
172.5°	3549.0	3540.4	3537.2	3558.8	3540.4
175°	3570.6	3562.0	3555.6	3577.0	3558.8
177.5°	3582.5	3573.8	3567.3	3585.7	3567.3
180°	3577.0	3577.0	3577.0	3577.0	3577.0

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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	5.95	6.64	7.08	7.75	9.30	1.92	2.60	3.04	3.72	5.26
	3H	7.62	8.23	8.76	9.35	10.92	3.10	3.71	4.23	4.83	6.39
	4H	8.23	8.80	9.37	9.93	11.50	3.54	4.12	4.68	5.24	6.81
	6H	8.64	9.17	9.79	10.30	11.88	3.85	4.39	5.01	5.51	7.09
	8H	8.77	9.27	9.92	10.41	11.99	3.94	4.45	5.09	5.59	7.16
	12H	8.82	9.30	9.98	10.44	12.03	3.98	4.46	5.14	5.60	7.19
4H	2H	5.95	6.53	7.10	7.66	9.23	2.50	3.08	3.65	4.20	5.77
	3H	7.77	8.25	8.93	9.40	10.98	3.83	4.32	4.99	5.47	7.05
	4H	8.46	8.90	9.62	10.04	11.64	4.38	4.82	5.54	5.96	7.56
	6H	8.97	9.35	10.13	10.51	12.10	4.79	5.17	5.95	6.33	7.92
	8H	9.14	9.50	10.31	10.65	12.26	4.92	5.27	6.08	6.42	8.03
	12H	9.23	9.55	10.41	10.72	12.33	4.97	5.29	6.15	6.46	8.07
8H	4H	8.42	8.77	9.58	9.92	11.53	4.65	5.00	5.81	6.15	7.76
	6H	8.98	9.27	10.16	10.47	12.07	5.16	5.45	6.34	6.65	8.25
	8H	9.20	9.45	10.39	10.63	12.25	5.35	5.61	6.54	6.78	8.41
	12H	9.33	9.56	10.52	10.73	12.39	5.47	5.69	6.66	6.86	8.52
12H	4H	8.36	8.68	9.54	9.85	11.46	4.65	4.97	5.82	6.13	7.74
	6H	8.96	9.21	10.14	10.38	12.01	5.21	5.47	6.40	6.64	8.26
	8H	9.17	9.39	10.36	10.57	12.22	5.42	5.64	6.61	6.81	8.47

END OF REPORT