

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: P905948

Luminaire Tested: DFN2DIP-PN4F0-060D050US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905948
REPORT IS A COMBINATION OF REPORTS P899631 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D050US835-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

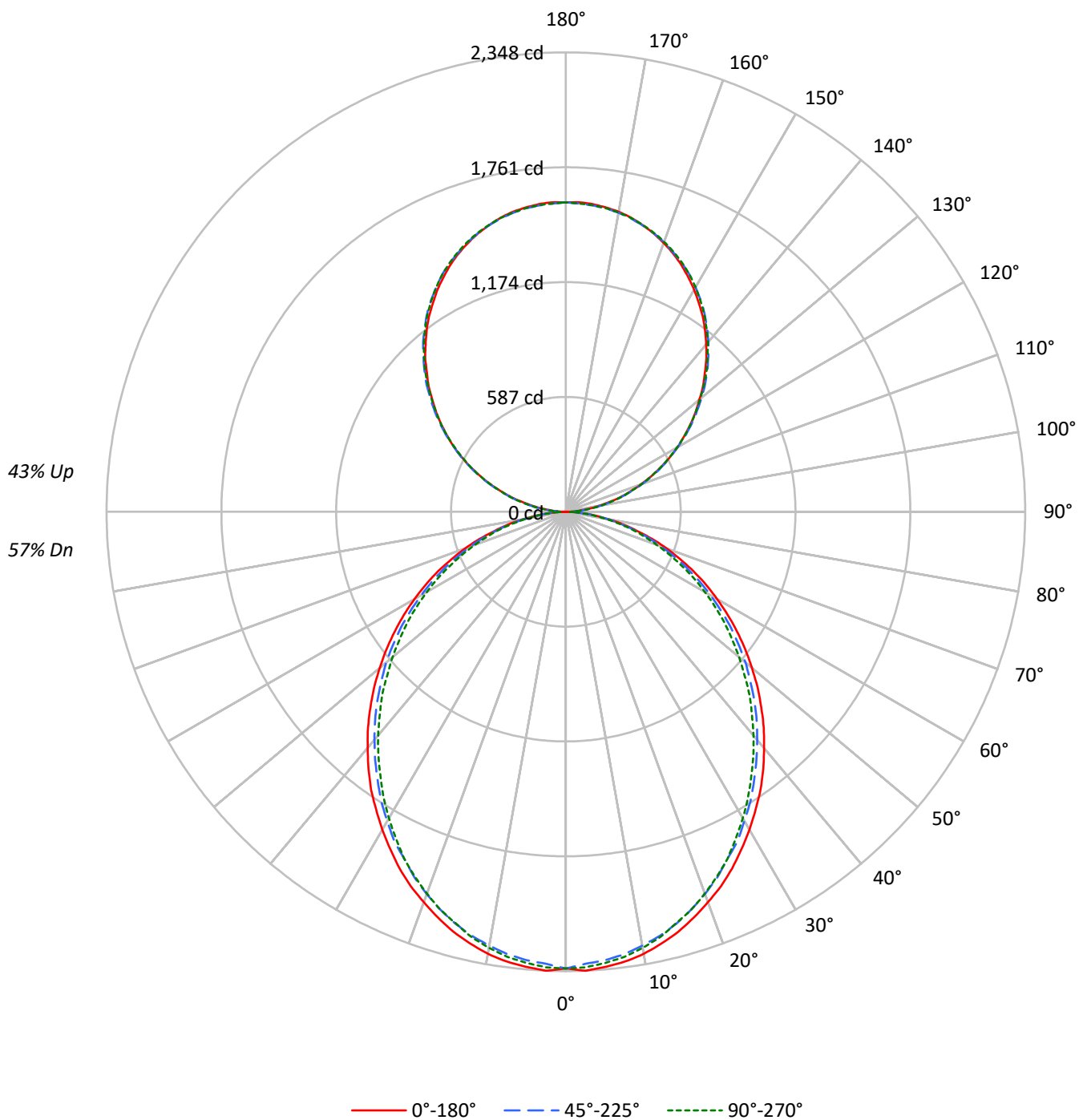
Lumens per Lamp: N/A
Luminaire Lumens: 10365.0 lumens
Efficiency: N/A
Efficacy: 112.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 92.2
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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	56	54	53
2	91	83	77	72	84	78	72	67	67	63	60	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	41	38
4	76	65	57	51	70	61	53	48	53	47	43	46	41	38	39	36	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	32	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	23	30	24	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1704	1704	1704
5°	1707	1681	1692
10°	1693	1658	1669
15°	1668	1631	1634
20°	1635	1593	1598
25°	1601	1548	1556
30°	1559	1506	1502
35°	1519	1457	1445
40°	1470	1407	1391
45°	1422	1357	1336
50°	1368	1304	1272
55°	1312	1243	1214
60°	1249	1171	1147
65°	1181	1096	1067
70°	1093	1005	982
75°	971	896	904
80°	825	757	754
85°	597	516	504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1422 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.7	2.1
10°-20°	618.3	6.0
20°-30°	908.6	8.8
30°-40°	1055.3	10.2
40°-50°	1054.0	10.2
50°-60°	919.0	8.9
60°-70°	679.4	6.6
70°-80°	384.4	3.7
80°-90°	105.9	1.0
90°-100°	97.8	0.9
100°-110°	310.9	3.0
110°-120°	532.1	5.1
120°-130°	699.7	6.8
130°-140°	785.4	7.6
140°-150°	770.2	7.4
150°-160°	646.1	6.2
160°-170°	428.5	4.1
170°-180°	149.8	1.4
0°-30°	1746.6	16.9
0°-40°	2801.8	27.0
0°-60°	4774.8	46.1
0°-90°	5944.5	57.4
90°-120°	940.8	9.1
90°-150°	3196.2	30.8
90°-180°	4421.0	42.7
0°-180°	10365.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2335	2335	2335	2335	2335	
5°	2335	2326	2301	2319	2315	222
15°	2222	2209	2180	2189	2178	626
25°	2011	1994	1955	1960	1955	926
35°	1735	1713	1677	1663	1652	1084
45°	1412	1396	1363	1338	1329	1090
55°	1069	1055	1028	1001	990	955
65°	721	707	685	664	653	713
75°	377	373	361	348	352	402
85°	92	90	88	81	79	103
90°	1	17	47	44	45	10
95°	70	83	85	85	83	77
105°	287	291	294	296	296	303
115°	534	542	539	538	534	528
125°	777	788	785	780	779	694
135°	1004	1019	1022	1021	1017	776
145°	1220	1229	1237	1238	1233	762
155°	1394	1398	1402	1409	1405	642
165°	1517	1516	1516	1525	1518	428
175°	1578	1575	1572	1581	1573	150
180°	1581	1581	1581	1581	1581	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2334.6	2334.6	2334.6	2334.6	2334.6
2.5°	2348.2	2337.0	2312.2	2334.6	2330.3
5°	2334.6	2325.8	2301.0	2318.9	2314.6
7.5°	2318.9	2305.6	2280.8	2298.9	2294.4
10°	2294.4	2278.7	2251.7	2269.6	2262.9
12.5°	2260.6	2247.2	2220.3	2231.5	2227.0
15°	2222.4	2209.1	2179.8	2188.9	2177.7
17.5°	2175.3	2162.0	2132.7	2143.8	2132.7
20°	2123.6	2110.3	2078.8	2085.5	2076.7
22.5°	2072.2	2051.9	2022.6	2022.6	2018.1
25°	2011.4	1993.6	1955.4	1959.7	1955.4
27.5°	1944.0	1928.3	1899.2	1892.6	1881.4
30°	1876.9	1858.7	1825.2	1818.5	1809.4
32.5°	1804.9	1791.6	1755.6	1742.0	1733.0
35°	1735.4	1713.0	1677.0	1663.4	1652.2
37.5°	1656.8	1636.5	1600.6	1584.8	1573.6
40°	1576.0	1557.9	1522.0	1502.0	1492.9
42.5°	1497.4	1479.3	1443.6	1421.0	1407.6
45°	1412.2	1396.4	1362.6	1338.1	1329.0
47.5°	1329.0	1313.3	1277.4	1252.6	1239.2
50°	1241.4	1230.2	1198.8	1167.3	1156.1
52.5°	1156.1	1140.4	1111.3	1086.6	1070.9
55°	1068.7	1055.1	1028.2	1001.3	990.1
57.5°	981.1	969.9	940.6	913.7	904.6
60°	893.4	884.6	853.2	828.4	821.7
62.5°	808.1	792.4	770.0	747.6	738.6
65°	720.7	707.2	684.8	664.5	653.3
67.5°	630.9	619.5	599.5	583.8	574.7
70°	547.8	538.8	518.5	502.8	494.0
72.5°	462.5	453.5	442.3	426.6	419.9
75°	377.0	372.8	361.3	348.0	352.5
77.5°	300.8	291.8	287.2	280.6	273.9
80°	224.6	222.2	217.7	211.0	206.5
82.5°	152.7	152.7	150.5	141.5	141.5
85°	91.9	89.8	87.6	80.7	78.6
87.5°	40.5	36.0	31.4	24.8	22.4
90°	1.4	17.2	46.7	43.9	45.3
92.5°	29.6	40.0	41.5	42.9	42.9
95°	69.6	83.0	85.3	85.3	83.0
97.5°	115.8	128.2	133.5	133.5	133.5
100°	169.2	180.2	184.0	184.0	182.6
102.5°	225.5	233.6	238.8	240.3	238.8
105°	287.0	290.8	293.7	296.0	296.0
107.5°	348.0	353.7	353.7	354.7	348.0
110°	407.1	414.8	414.8	414.8	410.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	471.0	479.1	477.7	473.9	471.0
115°	533.9	541.6	539.2	537.8	533.9
117.5°	596.4	606.9	600.2	596.4	592.6
120°	659.3	669.8	659.3	659.3	655.0
122.5°	716.5	729.9	723.2	719.4	716.5
125°	776.6	788.5	784.7	780.4	779.0
127.5°	835.2	850.0	844.8	839.0	835.2
130°	890.1	907.2	904.8	902.0	896.7
132.5°	951.6	964.9	965.9	959.2	955.4
135°	1004.5	1019.2	1022.1	1020.7	1016.9
137.5°	1063.6	1075.5	1077.9	1076.9	1071.2
140°	1115.5	1127.5	1134.1	1134.1	1128.9
142.5°	1168.9	1180.9	1184.7	1186.1	1180.9
145°	1219.5	1229.0	1236.6	1238.1	1232.8
147.5°	1264.8	1276.7	1282.4	1284.8	1279.5
150°	1311.5	1319.6	1324.8	1329.1	1324.8
152.5°	1353.0	1361.1	1367.7	1373.0	1367.7
155°	1394.4	1398.2	1402.5	1409.2	1404.9
157.5°	1430.2	1433.0	1435.4	1445.0	1438.3
160°	1462.1	1465.0	1466.4	1474.5	1468.8
162.5°	1491.7	1491.7	1493.1	1502.2	1495.5
165°	1517.0	1515.5	1515.5	1525.1	1518.4
167.5°	1539.8	1535.5	1535.5	1545.1	1538.4
170°	1557.0	1553.2	1551.8	1561.3	1553.2
172.5°	1568.9	1565.1	1563.7	1573.2	1565.1
175°	1578.5	1574.6	1571.8	1581.3	1573.2
177.5°	1583.7	1579.9	1577.0	1585.1	1577.0
180°	1581.3	1581.3	1581.3	1581.3	1581.3

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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	9.78	10.71	10.67	11.63	12.79	9.34	10.27	10.23	11.19	12.35
	3H	11.45	12.29	12.35	13.21	14.39	10.97	11.80	11.87	12.72	13.91
	4H	12.04	12.83	12.96	13.76	14.96	11.56	12.35	12.48	13.27	14.47
	6H	12.45	13.18	13.38	14.11	15.32	11.96	12.69	12.89	13.62	14.83
	8H	12.56	13.25	13.49	14.20	15.41	12.06	12.76	13.00	13.71	14.92
	12H	12.61	13.27	13.55	14.21	15.45	12.11	12.77	13.05	13.71	14.95
4H	2H	10.25	11.04	11.18	11.97	13.17	9.90	10.69	10.83	11.62	12.81
	3H	12.13	12.79	13.06	13.74	14.96	11.73	12.39	12.66	13.34	14.55
	4H	12.85	13.45	13.79	14.40	15.64	12.43	13.03	13.37	13.98	15.22
	6H	13.37	13.89	14.33	14.86	16.10	12.94	13.46	13.90	14.44	15.68
	8H	13.52	14.01	14.48	14.98	16.23	13.09	13.58	14.05	14.55	15.80
	12H	13.60	14.04	14.58	15.02	16.28	13.16	13.60	14.14	14.58	15.84
8H	4H	13.05	13.54	14.01	14.50	15.76	12.68	13.16	13.64	14.13	15.38
	6H	13.69	14.09	14.67	15.10	16.35	13.31	13.71	14.30	14.72	15.97
	8H	13.91	14.27	14.91	15.27	16.53	13.53	13.88	14.52	14.88	16.15
	12H	14.05	14.36	15.05	15.35	16.67	13.65	13.96	14.64	14.95	16.26
12H	4H	13.04	13.48	14.02	14.46	15.72	12.68	13.11	13.66	14.10	15.36
	6H	13.72	14.07	14.71	15.07	16.34	13.35	13.71	14.35	14.71	15.97
	8H	13.97	14.28	14.96	15.27	16.58	13.59	13.91	14.59	14.90	16.21