

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: P924299

Luminaire Tested: DFN2DIP-HX2F0-040D060US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924299
REPORT IS A COMBINATION OF REPORTS P900715 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D060US950-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

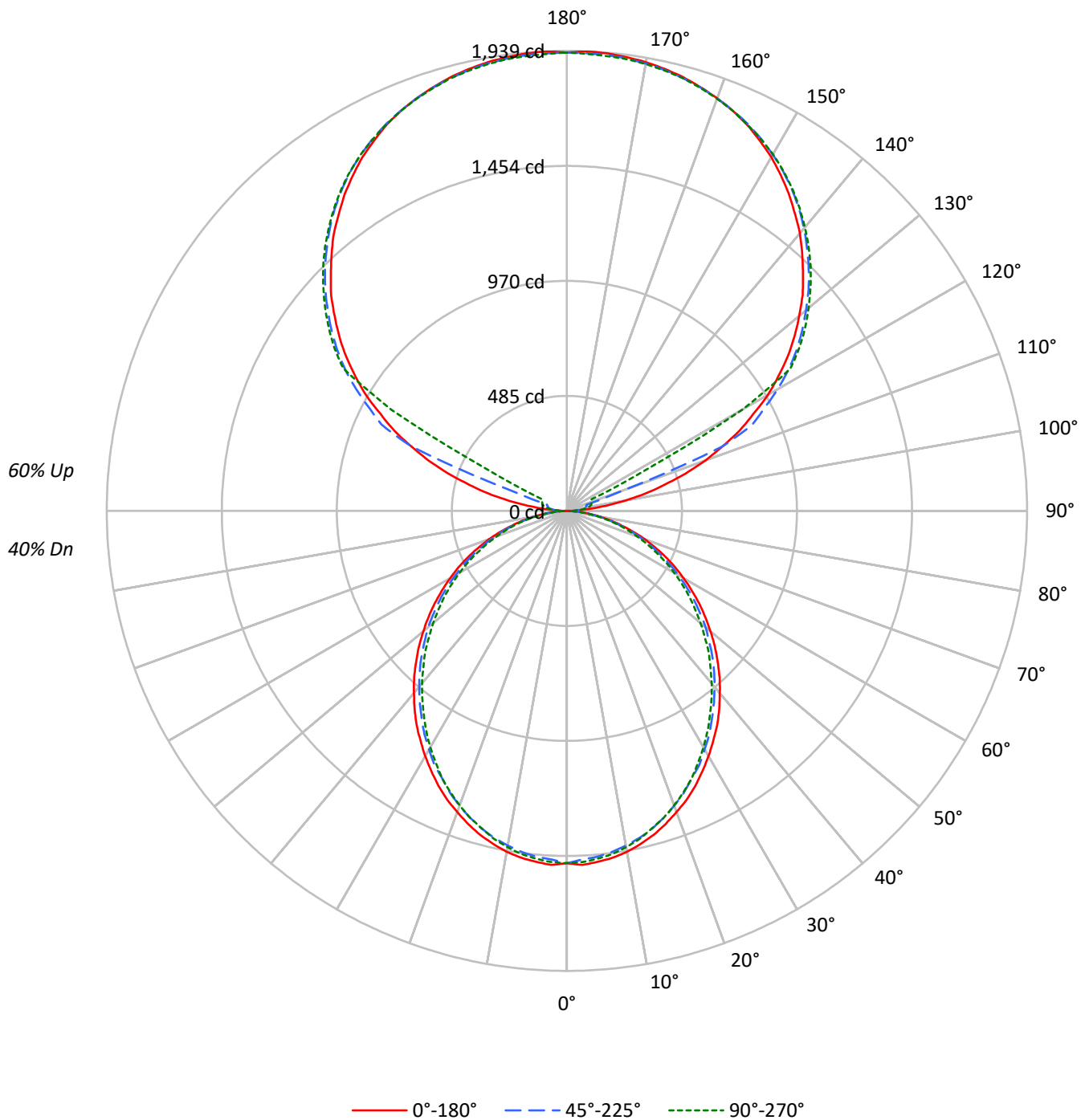
Lumens per Lamp: N/A
Luminaire Lumens: 9444.6 lumens
Efficiency: N/A
Efficacy: 111.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 84.4
Input Voltage (V): 120
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

TEST NUMBER: P924299

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US950-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P924299

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US950-FLLONL

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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	41	41	40
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28
4	73	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24
5	67	55	47	41	60	50	44	38	42	37	33	34	30	27	26	23	21
6	61	49	41	36	56	45	38	33	38	32	28	30	26	23	24	21	19
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	15	13
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3498	3498	3498
5°	3498	3441	3466
10°	3465	3387	3413
15°	3408	3323	3333
20°	3334	3237	3252
25°	3259	3136	3159
30°	3168	3042	3043
35°	3081	2932	2920
40°	2974	2820	2802
45°	2868	2708	2681
50°	2751	2590	2543
55°	2629	2454	2413
60°	2490	2293	2265
65°	2337	2126	2092
70°	2144	1922	1902
75°	1878	1677	1719
80°	1554	1365	1387
85°	1056	856	858

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2868 cd/sqm

TEST NUMBER: P924299

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US950-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.5
10°-20°	393.2	4.2
20°-30°	577.9	6.1
30°-40°	671.2	7.1
40°-50°	670.3	7.1
50°-60°	584.5	6.2
60°-70°	432.1	4.6
70°-80°	244.5	2.6
80°-90°	67.9	0.7
90°-100°	63.7	0.7
100°-110°	237.5	2.5
110°-120°	629.8	6.7
120°-130°	1044.5	11.1
130°-140°	1109.5	11.7
140°-150°	1031.2	10.9
150°-160°	829.1	8.8
160°-170°	534.2	5.7
170°-180°	183.9	1.9
0°-30°	1110.8	11.8
0°-40°	1782.0	18.9
0°-60°	3036.8	32.2
0°-90°	3781.2	40.0
90°-120°	930.9	9.9
90°-150°	4116.2	43.6
90°-180°	5663.0	60.0
0°-180°	9444.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1485	1485	1485	1485	1485	
5°	1485	1479	1463	1475	1472	141
15°	1413	1405	1386	1392	1385	398
25°	1279	1268	1244	1246	1244	589
35°	1104	1090	1067	1058	1051	689
45°	898	888	867	851	845	693
55°	680	671	654	637	630	608
65°	458	450	436	423	416	453
75°	240	237	230	221	224	256
85°	58	57	56	51	50	65
90°	1	17	28	35	38	9
95°	91	45	54	62	60	108
105°	425	467	85	101	106	454
115°	804	828	862	215	115	791
125°	1136	1155	1181	1191	1195	1014
135°	1406	1429	1441	1455	1452	1086
145°	1631	1630	1654	1663	1656	1020
155°	1796	1784	1800	1809	1798	828
165°	1893	1884	1888	1898	1888	535
175°	1936	1926	1929	1939	1925	184
180°	1932	1932	1932	1932	1932	

TEST NUMBER: P924299

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1484.8	1484.8	1484.8	1484.8	1484.8
2.5°	1493.5	1486.3	1470.6	1484.8	1482.1
5°	1484.8	1479.2	1463.4	1474.8	1472.1
7.5°	1474.8	1466.3	1450.6	1462.1	1459.2
10°	1459.2	1449.2	1432.1	1443.5	1439.2
12.5°	1437.7	1429.2	1412.1	1419.3	1416.3
15°	1413.4	1405.0	1386.4	1392.1	1385.0
17.5°	1383.5	1375.0	1356.4	1363.5	1356.4
20°	1350.6	1342.1	1322.1	1326.3	1320.8
22.5°	1317.9	1305.0	1286.4	1286.4	1283.5
25°	1279.2	1267.9	1243.6	1246.4	1243.6
27.5°	1236.4	1226.4	1208.0	1203.7	1196.6
30°	1193.6	1182.2	1160.8	1156.5	1150.8
32.5°	1147.9	1139.5	1116.6	1108.0	1102.2
35°	1103.7	1089.5	1066.6	1058.0	1050.8
37.5°	1053.7	1040.8	1017.9	1008.0	1000.8
40°	1002.4	990.8	967.9	955.2	949.5
42.5°	952.4	940.8	918.1	903.7	895.2
45°	898.1	888.2	866.6	851.1	845.2
47.5°	845.2	835.2	812.4	796.7	788.2
50°	789.5	782.4	762.4	742.4	735.2
52.5°	735.2	725.3	706.8	691.1	681.1
55°	679.7	671.0	654.0	636.8	629.7
57.5°	623.9	616.9	598.2	581.1	575.4
60°	568.2	562.6	542.6	526.9	522.6
62.5°	514.0	504.0	489.8	475.5	469.7
65°	458.4	449.7	435.5	422.6	415.6
67.5°	401.3	394.0	381.3	371.3	365.6
70°	348.4	342.7	329.8	319.8	314.2
72.5°	294.2	288.4	281.3	271.3	267.0
75°	239.8	237.1	229.8	221.3	224.2
77.5°	191.3	185.6	182.7	178.4	174.2
80°	142.8	141.3	138.4	134.2	131.4
82.5°	97.1	97.1	95.8	90.0	90.0
85°	58.5	57.1	55.7	51.3	50.0
87.5°	25.8	22.9	20.0	15.7	14.2
90°	1.3	16.8	27.9	35.0	37.7
92.5°	35.0	29.4	33.5	36.3	37.7
95°	90.8	44.6	54.5	61.6	60.1
97.5°	163.5	48.9	71.2	75.6	76.9
100°	247.5	55.9	79.7	90.8	93.6
102.5°	339.6	337.0	82.5	97.8	102.1
105°	424.9	466.9	85.3	100.6	106.3
107.5°	524.2	559.0	88.1	103.4	109.0
110°	619.3	648.5	244.7	104.9	110.4

TEST NUMBER: P924299

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	708.7	733.8	710.1	107.5	111.9
115°	803.7	827.5	862.5	215.3	114.7
117.5°	886.2	914.1	938.0	738.0	371.8
120°	978.5	999.4	1024.7	1041.4	852.7
122.5°	1056.7	1079.1	1107.1	1115.4	1116.9
125°	1136.4	1154.6	1181.1	1191.0	1195.1
127.5°	1209.1	1228.7	1249.7	1263.7	1265.0
130°	1277.6	1300.0	1315.3	1330.7	1329.4
132.5°	1347.5	1365.7	1381.0	1393.6	1392.3
135°	1406.3	1428.7	1441.1	1455.2	1452.4
137.5°	1467.6	1484.4	1498.5	1512.5	1508.4
140°	1527.7	1539.1	1554.4	1566.9	1560.0
142.5°	1578.2	1588.0	1606.2	1617.2	1610.3
145°	1631.3	1629.8	1653.6	1663.4	1656.4
147.5°	1677.3	1673.1	1696.9	1703.8	1698.4
150°	1722.2	1712.3	1734.8	1743.1	1736.1
152.5°	1759.8	1748.7	1769.6	1778.1	1768.2
155°	1796.2	1783.7	1800.5	1808.8	1797.6
157.5°	1825.6	1814.4	1827.0	1836.8	1825.6
160°	1850.8	1842.3	1850.8	1859.1	1849.3
162.5°	1873.0	1864.7	1871.7	1881.5	1868.9
165°	1892.6	1884.3	1888.4	1898.3	1888.4
167.5°	1908.0	1899.6	1903.9	1913.7	1901.0
170°	1920.7	1912.2	1915.1	1924.8	1912.2
172.5°	1929.0	1920.7	1923.5	1933.3	1920.7
175°	1936.0	1926.1	1929.0	1938.7	1924.8
177.5°	1938.7	1929.0	1930.4	1940.2	1927.7
180°	1931.8	1931.8	1931.8	1931.8	1931.8

TEST NUMBER: P924299

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US950-FLLONL

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	10.49	11.27	11.53	12.31	13.72	10.07	10.84	11.10	11.89	13.30
	3H	12.12	12.82	13.17	13.87	15.29	11.66	12.36	12.71	13.41	14.83
	4H	12.69	13.35	13.75	14.40	15.83	12.23	12.89	13.29	13.94	15.38
	6H	13.06	13.67	14.13	14.73	16.17	12.60	13.21	13.67	14.27	15.72
	8H	13.15	13.73	14.23	14.81	16.25	12.70	13.28	13.77	14.35	15.79
	12H	13.19	13.74	14.27	14.81	16.27	12.73	13.28	13.81	14.35	15.81
4H	2H	10.93	11.59	12.00	12.65	14.08	10.59	11.25	11.66	12.31	13.74
	3H	12.76	13.31	13.83	14.39	15.84	12.38	12.93	13.45	14.01	15.46
	4H	13.45	13.96	14.53	15.03	16.50	13.06	13.56	14.14	14.64	16.10
	6H	13.94	14.37	15.03	15.47	16.93	13.54	13.98	14.63	15.07	16.53
	8H	14.07	14.48	15.16	15.57	17.05	13.68	14.08	14.77	15.17	16.65
	12H	14.13	14.50	15.24	15.60	17.08	13.73	14.09	14.83	15.20	16.68
8H	4H	13.63	14.04	14.72	15.12	16.60	13.28	13.68	14.37	14.77	16.25
	6H	14.23	14.56	15.34	15.69	17.17	13.88	14.21	14.99	15.34	16.82
	8H	14.43	14.73	15.55	15.84	17.33	14.08	14.37	15.19	15.48	16.98
	12H	14.54	14.80	15.66	15.91	17.44	14.17	14.43	15.30	15.54	17.07
12H	4H	13.61	13.98	14.72	15.08	16.56	13.27	13.63	14.37	14.73	16.22
	6H	14.25	14.55	15.37	15.66	17.15	13.91	14.21	15.03	15.32	16.81
	8H	14.47	14.73	15.59	15.84	17.37	14.13	14.39	15.25	15.49	17.03