

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: P907930

Luminaire Tested: DFN2DIP-HX2F0-040D060US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907930
REPORT IS A COMBINATION OF REPORTS P899195 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D060US840-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

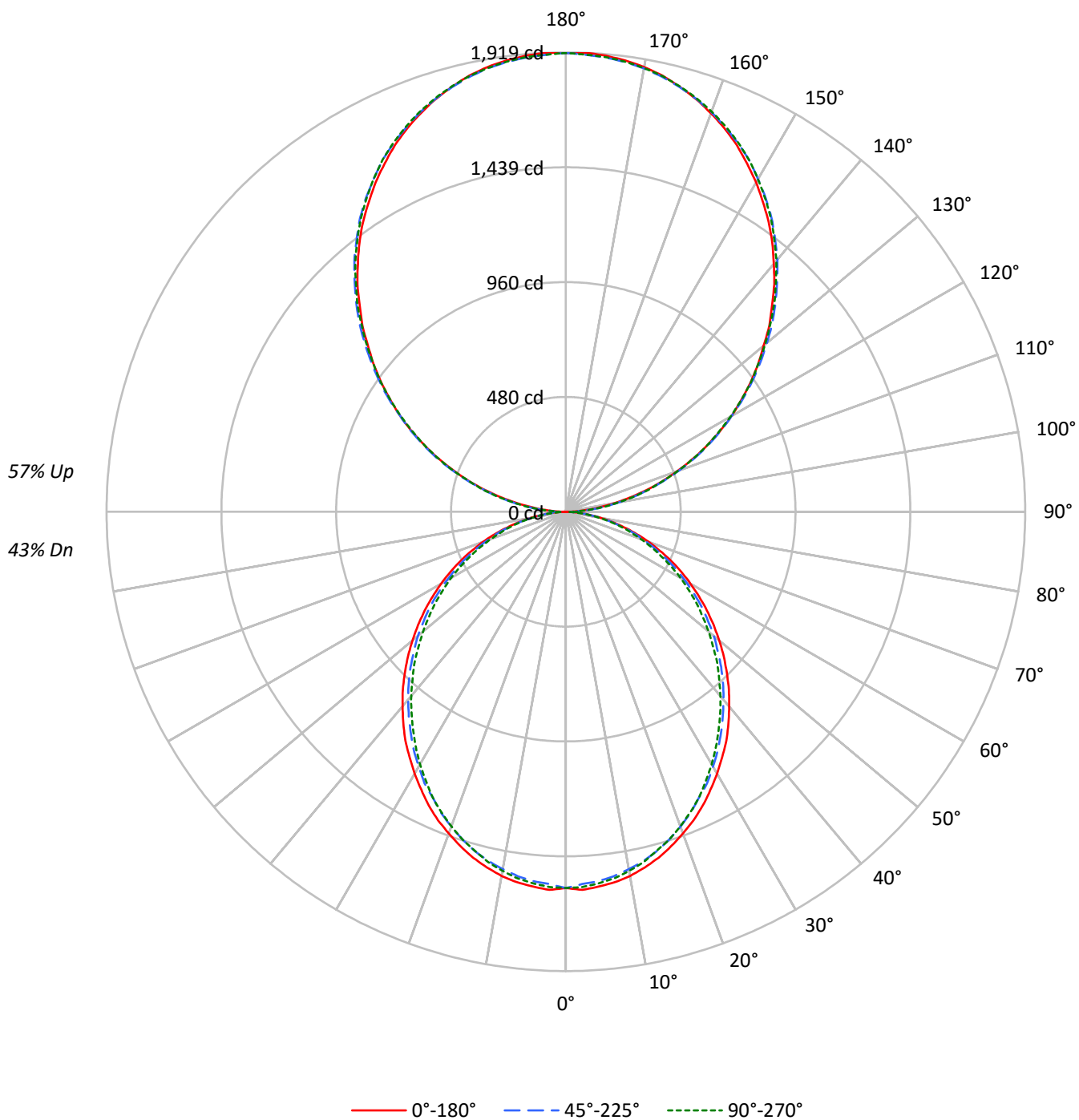
Lumens per Lamp: N/A
Luminaire Lumens: 9361.4 lumens
Efficiency: N/A
Efficacy: 110.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

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: P907930

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P907930

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-FLLFL

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	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3703	3703	3703
5°	3703	3643	3669
10°	3668	3585	3613
15°	3608	3517	3529
20°	3529	3427	3443
25°	3450	3320	3344
30°	3353	3220	3221
35°	3261	3103	3091
40°	3149	2985	2966
45°	3036	2867	2839
50°	2912	2742	2692
55°	2783	2598	2555
60°	2636	2428	2398
65°	2474	2250	2214
70°	2269	2034	2013
75°	1988	1775	1819
80°	1645	1444	1469
85°	1117	907	908

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3036 cd/sqm

TEST NUMBER: P907930

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.6
10°-20°	416.2	4.4
20°-30°	611.7	6.5
30°-40°	710.5	7.6
40°-50°	709.6	7.6
50°-60°	618.7	6.6
60°-70°	457.4	4.9
70°-80°	258.8	2.8
80°-90°	73.7	0.8
90°-100°	118.6	1.3
100°-110°	376.8	4.0
110°-120°	644.8	6.9
120°-130°	848.0	9.1
130°-140°	951.8	10.2
140°-150°	933.4	10.0
150°-160°	783.0	8.4
160°-170°	519.2	5.5
170°-180°	181.5	1.9
0°-30°	1175.9	12.6
0°-40°	1886.3	20.1
0°-60°	3214.6	34.3
0°-90°	4004.5	42.8
90°-120°	1140.1	12.2
90°-150°	3873.3	41.4
90°-180°	5357.0	57.2
0°-180°	9361.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	2	21	57	53	55	9
95°	84	100	103	103	100	94
105°	348	352	356	359	359	367
115°	647	656	653	652	647	640
125°	941	956	951	946	944	841
135°	1217	1235	1239	1237	1232	941
145°	1478	1489	1499	1500	1494	923
155°	1690	1694	1700	1708	1702	778
165°	1838	1836	1836	1848	1840	519
175°	1913	1908	1905	1916	1906	182
180°	1916	1916	1916	1916	1916	

TEST NUMBER: P907930

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	1.7	20.8	56.7	53.1	54.8
92.5°	35.9	48.6	50.3	52.0	52.0
95°	84.3	100.5	103.4	103.4	100.5
97.5°	140.4	155.4	161.8	161.8	161.8
100°	205.1	218.3	223.0	223.0	221.3
102.5°	273.3	283.1	289.4	291.1	289.4
105°	347.8	352.4	355.9	358.8	358.8
107.5°	421.7	428.7	428.7	429.8	421.7
110°	493.4	502.6	502.6	502.6	498.0

TEST NUMBER: P907930

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	570.8	580.6	578.9	574.2	570.8
115°	647.0	656.3	653.4	651.7	647.0
117.5°	722.8	735.5	727.3	722.8	718.1
120°	799.0	811.7	799.0	799.0	793.8
122.5°	868.3	884.4	876.4	871.8	868.3
125°	941.1	955.5	950.9	945.7	944.0
127.5°	1012.2	1030.1	1023.7	1016.8	1012.2
130°	1078.6	1099.4	1096.5	1093.1	1086.7
132.5°	1153.2	1169.3	1170.4	1162.4	1157.7
135°	1217.3	1235.2	1238.6	1236.9	1232.2
137.5°	1288.9	1303.3	1306.3	1305.0	1298.2
140°	1351.9	1366.3	1374.4	1374.4	1368.1
142.5°	1416.5	1431.0	1435.6	1437.3	1431.0
145°	1477.8	1489.3	1498.6	1500.4	1494.0
147.5°	1532.7	1547.1	1554.1	1556.9	1550.5
150°	1589.3	1599.1	1605.5	1610.6	1605.5
152.5°	1639.5	1649.4	1657.5	1663.9	1657.5
155°	1689.8	1694.5	1699.6	1707.8	1702.5
157.5°	1733.1	1736.7	1739.5	1751.1	1743.0
160°	1771.9	1775.3	1777.1	1786.9	1780.0
162.5°	1807.7	1807.7	1809.4	1820.4	1812.3
165°	1838.3	1836.5	1836.5	1848.2	1840.1
167.5°	1866.0	1860.9	1860.9	1872.4	1864.3
170°	1886.8	1882.2	1880.5	1892.0	1882.2
172.5°	1901.3	1896.6	1894.9	1906.4	1896.6
175°	1912.8	1908.2	1904.7	1916.3	1906.4
177.5°	1919.1	1914.6	1911.1	1920.9	1911.1
180°	1916.3	1916.3	1916.3	1916.3	1916.3

TEST NUMBER: P907930

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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	10.98	11.78	11.99	12.80	14.17	10.55	11.35	11.57	12.38	13.75
	3H	12.61	13.32	13.63	14.36	15.75	12.15	12.86	13.17	13.90	15.29
	4H	13.17	13.85	14.21	14.89	16.29	12.71	13.39	13.75	14.43	15.83
	6H	13.55	14.18	14.60	15.22	16.63	13.09	13.72	14.14	14.76	16.17
	8H	13.64	14.24	14.70	15.30	16.70	13.19	13.78	14.24	14.84	16.25
	12H	13.68	14.25	14.74	15.30	16.73	13.22	13.79	14.28	14.84	16.27
4H	2H	11.42	12.10	12.47	13.14	14.53	11.08	11.76	12.13	12.80	14.20
	3H	13.25	13.82	14.30	14.88	16.29	12.87	13.43	13.92	14.50	15.91
	4H	13.94	14.46	15.00	15.52	16.95	13.55	14.07	14.61	15.12	16.56
	6H	14.43	14.88	15.50	15.96	17.38	14.04	14.48	15.10	15.56	16.99
	8H	14.57	14.98	15.64	16.06	17.50	14.17	14.59	15.24	15.66	17.10
	12H	14.63	15.00	15.71	16.09	17.54	14.22	14.60	15.31	15.68	17.13
8H	4H	14.12	14.54	15.19	15.61	17.06	13.77	14.19	14.84	15.26	16.70
	6H	14.72	15.07	15.82	16.18	17.62	14.37	14.72	15.46	15.83	17.27
	8H	14.93	15.23	16.03	16.33	17.79	14.57	14.87	15.67	15.97	17.43
	12H	15.04	15.30	16.14	16.40	17.90	14.67	14.94	15.77	16.03	17.53
12H	4H	14.10	14.48	15.19	15.57	17.02	13.76	14.14	14.85	15.22	16.67
	6H	14.75	15.05	15.85	16.15	17.61	14.41	14.71	15.51	15.81	17.27
	8H	14.97	15.23	16.07	16.33	17.83	14.62	14.89	15.73	15.98	17.48

END OF REPORT