

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: P924388

Luminaire Tested: DFN2DIP-HX3F0-040D090US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924388
REPORT IS A COMBINATION OF REPORTS P899287 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D090US950-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

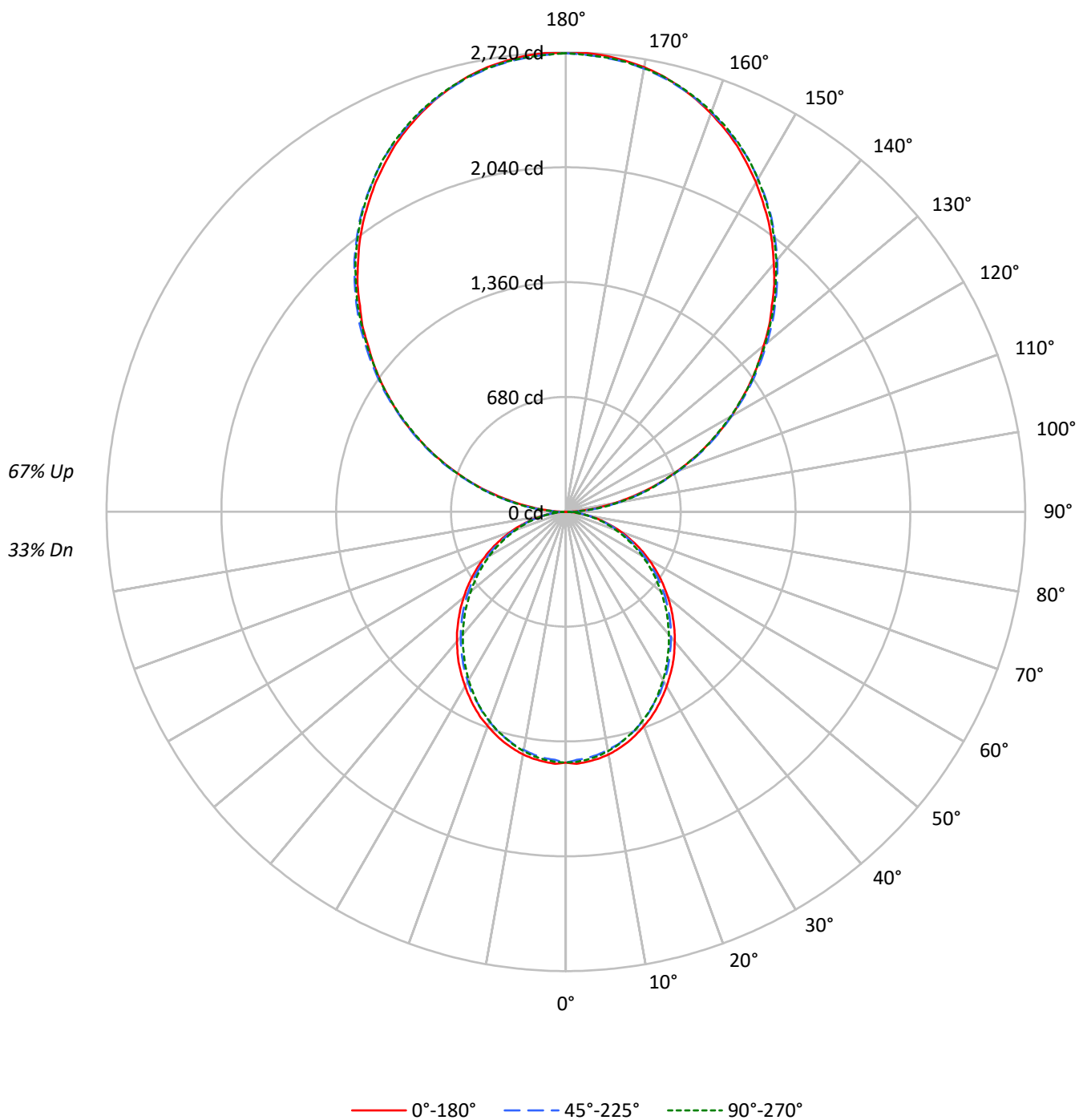
Lumens per Lamp: N/A
Luminaire Lumens: 11376.4 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 105.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924388

CATALOG NUMBER: DFN2DIP-HX3F0-040D090US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924388

CATALOG NUMBER: DFN2DIP-HX3F0-040D090US950-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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	18	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1720	1720	1720
5°	1722	1695	1706
10°	1707	1671	1682
15°	1681	1642	1645
20°	1647	1603	1608
25°	1612	1556	1564
30°	1569	1512	1509
35°	1528	1461	1450
40°	1478	1409	1395
45°	1428	1357	1337
50°	1373	1302	1271
55°	1315	1238	1211
60°	1250	1163	1141
65°	1179	1085	1059
70°	1089	990	970
75°	963	876	887
80°	812	731	730
85°	576	483	474

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2556 cd/sqm

TEST NUMBER: P924388

CATALOG NUMBER: DFN2DIP-HX3F0-040D090US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.2
10°-20°	393.2	3.5
20°-30°	577.9	5.1
30°-40°	671.2	5.9
40°-50°	670.3	5.9
50°-60°	584.5	5.1
60°-70°	432.1	3.8
70°-80°	244.5	2.1
80°-90°	72.2	0.6
90°-100°	168.0	1.5
100°-110°	533.9	4.7
110°-120°	913.7	8.0
120°-130°	1201.6	10.6
130°-140°	1348.7	11.9
140°-150°	1322.6	11.6
150°-160°	1109.5	9.8
160°-170°	735.8	6.5
170°-180°	257.2	2.3
0°-30°	1110.8	9.8
0°-40°	1782.0	15.7
0°-60°	3036.8	26.7
0°-90°	3785.5	33.3
90°-120°	1615.6	14.2
90°-150°	5488.5	48.2
90°-180°	7591.0	66.7
0°-180°	11376.4	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°	2	30	80	75	78	11
95°	120	142	146	146	142	133
105°	493	499	504	508	508	520
115°	917	930	926	924	917	907
125°	1334	1354	1348	1340	1338	1192
135°	1725	1750	1755	1753	1746	1333
145°	2094	2110	2124	2126	2117	1308
155°	2394	2401	2408	2420	2413	1102
165°	2605	2602	2602	2619	2607	735
175°	2710	2704	2699	2716	2702	258
180°	2716	2716	2716	2716	2716	

TEST NUMBER: P924388

CATALOG NUMBER: DFN2DIP-HX3F0-040D090US950-FLLFLL

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°	2.5	29.5	80.2	75.3	77.8
92.5°	50.8	68.8	71.3	73.6	73.6
95°	119.5	142.4	146.5	146.5	142.4
97.5°	198.9	220.2	229.2	229.2	229.2
100°	290.6	309.5	316.0	316.0	313.6
102.5°	387.2	401.2	410.1	412.6	410.1
105°	492.8	499.3	504.3	508.4	508.4
107.5°	597.6	607.4	607.4	609.0	597.6
110°	699.1	712.3	712.3	712.3	705.7

TEST NUMBER: P924388

CATALOG NUMBER: DFN2DIP-HX3F0-040D090US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	808.8	822.7	820.2	813.8	808.8
115°	916.9	930.0	925.9	923.5	916.9
117.5°	1024.1	1042.1	1030.7	1024.1	1017.5
120°	1132.2	1150.1	1132.2	1132.2	1124.8
122.5°	1230.4	1253.4	1241.9	1235.3	1230.4
125°	1333.6	1354.0	1347.5	1340.1	1337.7
127.5°	1434.2	1459.6	1450.7	1440.8	1434.2
130°	1528.4	1557.9	1553.8	1548.8	1539.9
132.5°	1634.0	1656.9	1658.5	1647.1	1640.6
135°	1724.8	1750.2	1755.2	1752.7	1746.2
137.5°	1826.3	1846.8	1851.0	1849.3	1839.5
140°	1915.6	1936.0	1947.5	1947.5	1938.5
142.5°	2007.3	2027.7	2034.3	2036.8	2027.7
145°	2094.1	2110.4	2123.5	2126.0	2117.0
147.5°	2171.9	2192.3	2202.1	2206.2	2197.3
150°	2252.1	2266.0	2275.0	2282.3	2275.0
152.5°	2323.3	2337.2	2348.7	2357.7	2348.7
155°	2394.5	2401.0	2408.5	2419.9	2412.6
157.5°	2455.9	2460.8	2464.9	2481.3	2469.8
160°	2510.7	2515.7	2518.2	2532.0	2522.2
162.5°	2561.5	2561.5	2564.0	2579.5	2568.1
165°	2604.9	2602.4	2602.4	2618.8	2607.4
167.5°	2644.2	2636.9	2636.9	2653.2	2641.7
170°	2673.7	2667.1	2664.7	2681.0	2667.1
172.5°	2694.1	2687.6	2685.1	2701.5	2687.6
175°	2710.5	2703.9	2699.1	2715.5	2701.5
177.5°	2719.5	2713.0	2708.0	2722.0	2708.0
180°	2715.5	2715.5	2715.5	2715.5	2715.5

TEST NUMBER: P924388

CATALOG NUMBER: DFN2DIP-HX3F0-040D090US950-FLLFLL

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	7.32	8.05	8.41	9.14	10.63	6.90	7.62	7.98	8.71	10.20
	3H	8.97	9.62	10.06	10.72	12.22	8.50	9.15	9.60	10.25	11.76
	4H	9.54	10.16	10.65	11.26	12.78	9.07	9.69	10.18	10.79	12.31
	6H	9.93	10.50	11.05	11.60	13.13	9.46	10.03	10.58	11.13	12.66
	8H	10.03	10.57	11.15	11.69	13.21	9.56	10.10	10.68	11.22	12.74
	12H	10.07	10.58	11.19	11.69	13.24	9.59	10.11	10.72	11.22	12.76
4H	2H	7.77	8.39	8.88	9.48	11.00	7.42	8.04	8.54	9.14	10.66
	3H	9.61	10.13	10.73	11.25	12.78	9.22	9.74	10.34	10.86	12.39
	4H	10.31	10.79	11.44	11.90	13.45	9.91	10.39	11.04	11.50	13.05
	6H	10.81	11.22	11.95	12.36	13.90	10.41	10.82	11.54	11.95	13.49
	8H	10.96	11.34	12.09	12.47	14.02	10.55	10.93	11.68	12.06	13.61
	12H	11.02	11.37	12.17	12.51	14.07	10.60	10.95	11.75	12.09	13.65
8H	4H	10.50	10.88	11.63	12.01	13.56	10.14	10.52	11.27	11.65	13.20
	6H	11.11	11.43	12.27	12.60	14.15	10.75	11.07	11.91	12.24	13.79
	8H	11.33	11.60	12.49	12.75	14.32	10.96	11.24	12.12	12.39	13.96
	12H	11.45	11.69	12.61	12.84	14.44	11.07	11.31	12.23	12.46	14.06
12H	4H	10.48	10.82	11.62	11.96	13.52	10.13	10.47	11.27	11.61	13.17
	6H	11.14	11.42	12.30	12.57	14.14	10.79	11.07	11.95	12.22	13.79
	8H	11.37	11.61	12.53	12.76	14.37	11.02	11.26	12.18	12.41	14.01