

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: P930161

Luminaire Tested: DFN2DS-HX3F0-040DS940-FLL

Issue Date: 11/20/2024

**Test Information**

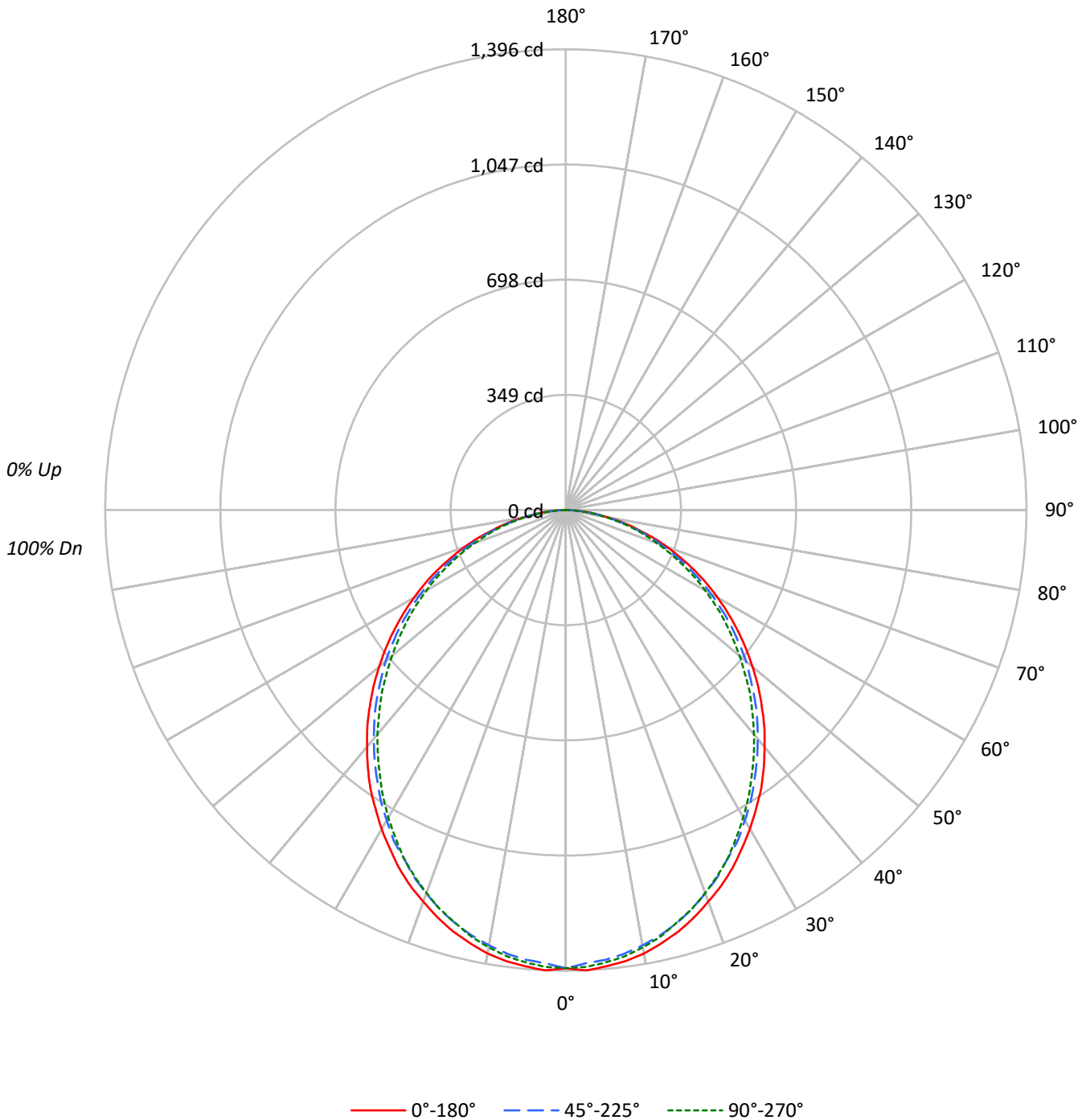
Test Method: LM-79-2019  
Report Number: P930161  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-HX3F0-040DS940-FLL  
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3532.3 lumens  
Efficiency: N/A  
Efficacy: 90.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 3.28' x L: 2.84' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 38.9  
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: P930161  
CATALOG NUMBER: DFN2DS-HX3F0-040DS940-FLL

### Luminous Intensity Polar Plot





TEST NUMBER: P930161

CATALOG NUMBER: DFN2DS-HX3F0-040DS940-FLL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	73	73	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	62	62	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	54	54	54	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	47	47	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	41	41	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	37	37	37	35
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	33	33	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	30	30	30	28
10	54	41	33	28	53	40	33	28	39	32	27	38	32	27	37	32	27	27	27	27	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1608	1608	1608
5°	1614	1591	1600
10°	1605	1575	1583
15°	1585	1555	1553
20°	1557	1524	1522
25°	1529	1486	1486
30°	1493	1452	1439
35°	1459	1410	1389
40°	1417	1368	1342
45°	1376	1327	1295
50°	1330	1285	1239
55°	1284	1235	1189
60°	1231	1175	1132
65°	1175	1116	1065
70°	1103	1044	995
75°	1003	962	938
80°	891	863	819
85°	727	692	621

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1376 cd/sqm



TEST NUMBER: P930161

CATALOG NUMBER: DFN2DS-HX3F0-040DS940-FLL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.7	3.7
10°-20°	367.6	10.4
20°-30°	540.3	15.3
30°-40°	627.5	17.8
40°-50°	626.8	17.7
50°-60°	546.5	15.5
60°-70°	404.0	11.4
70°-80°	228.6	6.5
80°-90°	60.3	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1038.6	29.4
0°-40°	1666.2	47.2
0°-60°	2839.4	80.4
0°-90°	3532.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3532.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1379	1376	132
15°	1322	1314	1296	1302	1295	372
25°	1196	1186	1163	1165	1163	550
35°	1032	1019	997	989	982	644
45°	840	830	810	796	790	648
55°	636	627	612	595	589	568
65°	429	420	407	395	389	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	64
90°	0	0	0	0	0	



TEST NUMBER: P930161

CATALOG NUMBER: DFN2DS-HX3F0-040DS940-FLL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1388.3	1388.3	1388.3	1388.3	1388.3
2.5°	1396.4	1389.7	1375.0	1388.3	1385.8
5°	1388.3	1383.0	1368.3	1378.9	1376.4
7.5°	1378.9	1371.0	1356.3	1367.1	1364.4
10°	1364.4	1355.0	1339.1	1349.7	1345.7
12.5°	1344.2	1336.3	1320.3	1327.0	1324.3
15°	1321.6	1313.6	1296.3	1301.6	1295.0
17.5°	1293.6	1285.6	1268.2	1274.8	1268.2
20°	1262.8	1254.9	1236.2	1240.1	1235.0
22.5°	1232.2	1220.2	1202.8	1202.8	1200.1
25°	1196.1	1185.5	1162.8	1165.4	1162.8
27.5°	1156.0	1146.7	1129.5	1125.4	1118.8
30°	1116.1	1105.4	1085.4	1081.4	1076.0
32.5°	1073.3	1065.4	1044.0	1036.0	1030.5
35°	1032.0	1018.7	997.3	989.2	982.5
37.5°	985.2	973.2	951.8	942.5	935.8
40°	937.2	926.4	905.0	893.2	887.8
42.5°	890.5	879.7	858.5	845.0	837.1
45°	839.7	830.5	810.3	795.8	790.3
47.5°	790.3	780.9	759.6	744.9	737.0
50°	738.2	731.5	712.9	694.2	687.5
52.5°	687.5	678.2	660.9	646.2	636.8
55°	635.6	627.4	611.5	595.4	588.8
57.5°	583.4	576.8	559.3	543.3	538.0
60°	531.3	526.0	507.4	492.7	488.6
62.5°	480.6	471.2	458.0	444.6	439.2
65°	428.6	420.5	407.2	395.2	388.6
67.5°	375.2	368.4	356.5	347.2	341.8
70°	325.8	320.4	308.4	299.0	293.7
72.5°	275.1	269.7	263.1	253.7	249.7
75°	224.2	221.7	214.9	206.9	209.6
77.5°	178.8	173.5	170.8	166.8	162.9
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.6	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P930161  
 CATALOG NUMBER: DFN2DS-HX3F0-040DS940-FLL

**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	12.93	14.54	13.30	14.86	15.17	12.49	14.10	12.85	14.41	14.73
	3H	14.68	16.14	15.06	16.46	16.83	14.19	15.65	14.57	15.97	16.33
	4H	15.33	16.70	15.73	17.05	17.42	14.83	16.20	15.23	16.55	16.93
	6H	15.80	17.07	16.21	17.43	17.82	15.30	16.57	15.71	16.93	17.32
	8H	15.94	17.15	16.37	17.54	17.94	15.44	16.65	15.86	17.04	17.44
	12H	16.03	17.19	16.46	17.57	18.00	15.52	16.68	15.95	17.06	17.49
4H	2H	13.49	14.86	13.89	15.21	15.59	13.14	14.51	13.54	14.86	15.23
	3H	15.47	16.62	15.88	17.01	17.41	15.06	16.21	15.47	16.61	17.01
	4H	16.25	17.28	16.68	17.70	18.13	15.82	16.86	16.25	17.27	17.71
	6H	16.84	17.75	17.30	18.19	18.64	16.41	17.31	16.86	17.75	18.21
	8H	17.03	17.88	17.49	18.32	18.79	16.59	17.44	17.05	17.88	18.35
	12H	17.16	17.92	17.64	18.40	18.87	16.71	17.47	17.19	17.95	18.42
8H	4H	16.52	17.37	16.98	17.81	18.27	16.14	16.99	16.61	17.43	17.90
	6H	17.23	17.94	17.73	18.42	18.90	16.85	17.55	17.35	18.04	18.52
	8H	17.49	18.12	18.00	18.63	19.12	17.10	17.73	17.61	18.24	18.72
	12H	17.69	18.25	18.20	18.74	19.30	17.28	17.84	17.79	18.33	18.89
12H	4H	16.54	17.30	17.03	17.78	18.25	16.18	16.94	16.66	17.42	17.89
	6H	17.28	17.91	17.79	18.42	18.90	16.91	17.54	17.42	18.05	18.53
	8H	17.59	18.15	18.10	18.64	19.20	17.21	17.77	17.72	18.26	18.82