

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: P928832

Luminaire Tested: DFN2DIP-HX4F0-040D080US935-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928832
REPORT IS A COMBINATION OF REPORTS P900891 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D080US935-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

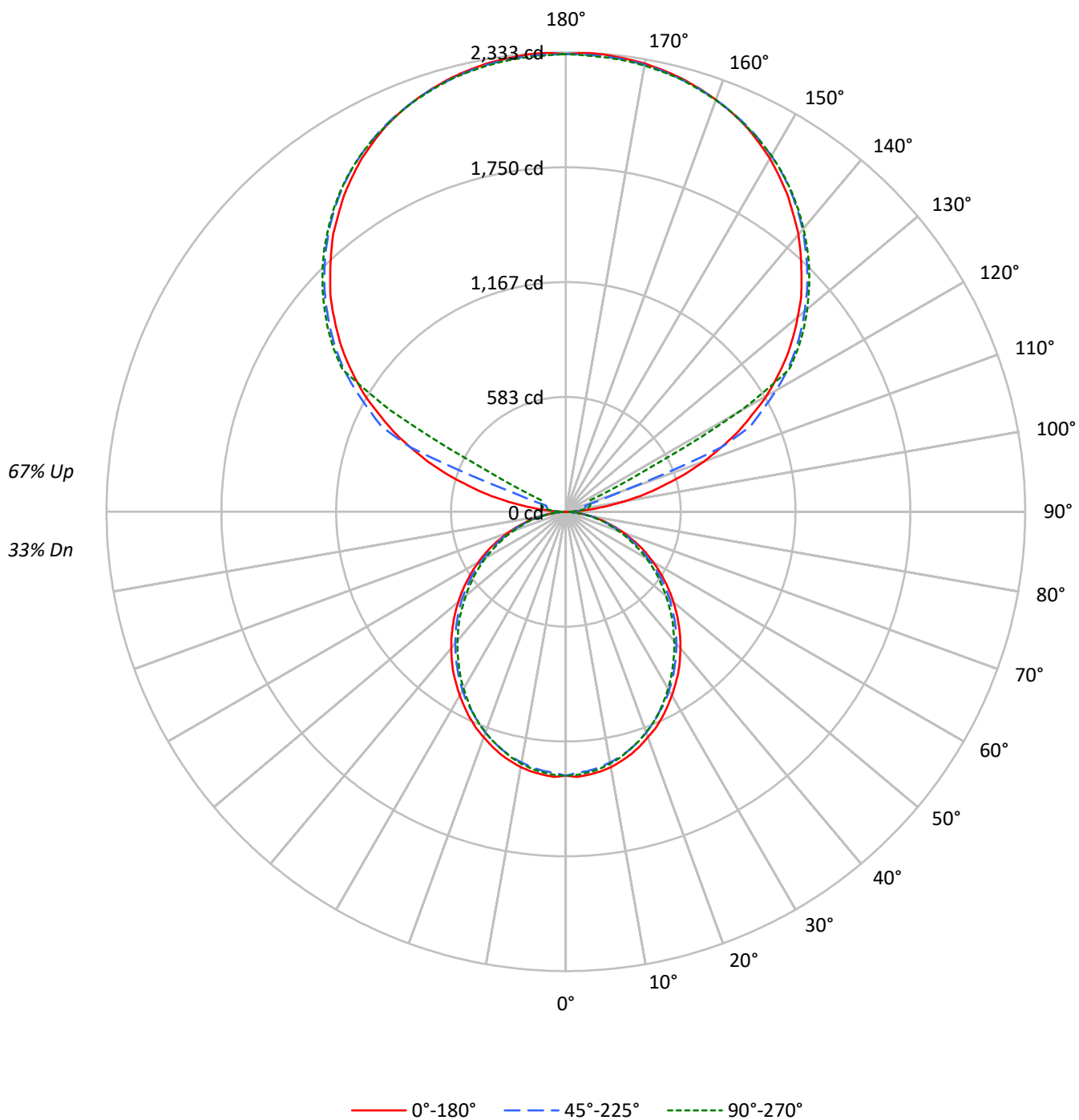
Lumens per Lamp: N/A
Luminaire Lumens: 10228.7 lumens
Efficiency: N/A
Efficacy: 111.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928832

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P928832

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US935-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	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	19	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°	996	996	996
5°	998	983	989
10°	990	970	976
15°	976	954	955
20°	956	932	934
25°	937	905	909
30°	912	881	877
35°	889	852	844
40°	860	822	813
45°	832	793	780
50°	801	762	743
55°	768	726	708
60°	732	684	669
65°	692	640	622
70°	640	587	572
75°	570	523	526
80°	485	442	438
85°	352	301	291

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1195 cd/sqm

TEST NUMBER: P928832

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	1.2
10°-20°	354.9	3.5
20°-30°	521.5	5.1
30°-40°	605.7	5.9
40°-50°	605.0	5.9
50°-60°	527.5	5.2
60°-70°	389.9	3.8
70°-80°	220.6	2.2
80°-90°	62.3	0.6
90°-100°	76.7	0.7
100°-110°	285.7	2.8
110°-120°	757.9	7.4
120°-130°	1256.9	12.3
130°-140°	1335.2	13.1
140°-150°	1240.9	12.1
150°-160°	997.6	9.8
160°-170°	642.8	6.3
170°-180°	221.3	2.2
0°-30°	1002.5	9.8
0°-40°	1608.3	15.7
0°-60°	2740.7	26.8
0°-90°	3413.6	33.4
90°-120°	1120.2	11.0
90°-150°	4953.3	48.4
90°-180°	6815.0	66.6
0°-180°	10228.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	2	20	34	42	45	9
95°	109	54	66	74	72	129
105°	511	562	103	121	128	546
115°	967	996	1038	259	138	952
125°	1367	1389	1421	1433	1438	1220
135°	1692	1719	1734	1751	1748	1307
145°	1963	1961	1990	2002	1993	1228
155°	2162	2146	2167	2177	2163	996
165°	2278	2268	2272	2284	2272	643
175°	2330	2318	2321	2333	2316	222
180°	2325	2325	2325	2325	2325	

TEST NUMBER: P928832

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.2	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.5	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1080.0
30°	1077.3	1067.0	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.4	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	1.6	20.1	33.6	42.1	45.4
92.5°	42.1	35.4	40.4	43.7	45.4
95°	109.3	53.7	65.5	74.1	72.3
97.5°	196.7	58.9	85.7	90.9	92.5
100°	297.8	67.3	95.9	109.3	112.6
102.5°	408.7	405.4	99.3	117.6	122.9
105°	511.3	561.9	102.6	121.1	127.9
107.5°	630.8	672.7	106.1	124.4	131.2
110°	745.3	780.4	294.5	126.2	132.9

TEST NUMBER: P928832

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	852.9	883.0	854.5	129.4	134.7
115°	967.2	995.7	1037.8	259.1	138.0
117.5°	1066.4	1100.0	1128.8	888.0	447.5
120°	1177.5	1202.6	1233.0	1253.2	1026.1
122.5°	1271.5	1298.6	1332.3	1342.3	1344.1
125°	1367.4	1389.4	1421.3	1433.1	1438.1
127.5°	1454.9	1478.5	1503.9	1520.6	1522.2
130°	1537.4	1564.4	1582.8	1601.4	1599.7
132.5°	1621.5	1643.5	1661.9	1677.1	1675.4
135°	1692.2	1719.2	1734.1	1751.2	1747.7
137.5°	1766.2	1786.3	1803.3	1820.1	1815.1
140°	1838.4	1852.0	1870.4	1885.6	1877.2
142.5°	1899.2	1910.9	1932.7	1946.1	1937.7
145°	1963.1	1961.3	1989.9	2001.7	1993.2
147.5°	2018.4	2013.4	2041.9	2050.4	2043.8
150°	2072.3	2060.5	2087.5	2097.5	2089.1
152.5°	2117.7	2104.3	2129.4	2139.7	2127.9
155°	2161.5	2146.5	2166.6	2176.6	2163.3
157.5°	2196.8	2183.4	2198.6	2210.4	2196.8
160°	2227.1	2217.0	2227.1	2237.1	2225.3
162.5°	2253.9	2243.9	2252.3	2264.1	2248.9
165°	2277.5	2267.5	2272.5	2284.2	2272.5
167.5°	2296.0	2285.9	2291.0	2302.8	2287.7
170°	2311.3	2301.0	2304.5	2316.3	2301.0
172.5°	2321.3	2311.3	2314.6	2326.4	2311.3
175°	2329.6	2317.8	2321.3	2333.0	2316.3
177.5°	2333.0	2321.3	2323.0	2334.8	2319.6
180°	2324.6	2324.6	2324.6	2324.6	2324.6

TEST NUMBER: P928832

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US935-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	5.49	6.22	6.58	7.30	8.79	5.06	5.78	6.14	6.87	8.36
	3H	7.14	7.79	8.24	8.89	10.39	6.67	7.32	7.76	8.41	9.92
	4H	7.72	8.34	8.83	9.44	10.95	7.25	7.87	8.35	8.96	10.48
	6H	8.11	8.69	9.23	9.78	11.31	7.64	8.21	8.75	9.31	10.83
	8H	8.22	8.76	9.34	9.87	11.39	7.74	8.28	8.86	9.40	10.92
	12H	8.26	8.78	9.38	9.88	11.43	7.78	8.29	8.90	9.40	10.95
4H	2H	5.93	6.55	7.05	7.65	9.16	5.59	6.21	6.70	7.31	8.82
	3H	7.79	8.31	8.91	9.43	10.96	7.40	7.91	8.52	9.04	10.56
	4H	8.50	8.97	9.62	10.09	11.63	8.09	8.57	9.22	9.68	11.23
	6H	9.01	9.41	10.14	10.55	12.09	8.60	9.00	9.73	10.14	11.68
	8H	9.15	9.53	10.28	10.66	12.22	8.74	9.12	9.87	10.25	11.80
	12H	9.22	9.57	10.37	10.71	12.26	8.80	9.14	9.95	10.28	11.84
8H	4H	8.68	9.07	9.82	10.19	11.75	8.32	8.70	9.46	9.83	11.39
	6H	9.31	9.63	10.46	10.80	12.35	8.95	9.26	10.10	10.43	11.98
	8H	9.53	9.81	10.69	10.96	12.53	9.16	9.44	10.32	10.59	12.16
	12H	9.66	9.90	10.82	11.05	12.65	9.27	9.51	10.44	10.66	12.27
12H	4H	8.66	9.01	9.81	10.15	11.71	8.31	8.66	9.46	9.80	11.36
	6H	9.34	9.62	10.50	10.76	12.34	8.99	9.26	10.15	10.41	11.98
	8H	9.58	9.82	10.74	10.96	12.57	9.22	9.46	10.38	10.61	12.21

END OF REPORT