

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: P913513

Luminaire Tested: DFN2DIP-HX3F0-060D050US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913513
REPORT IS A COMBINATION OF REPORTS P900756 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D050US927-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

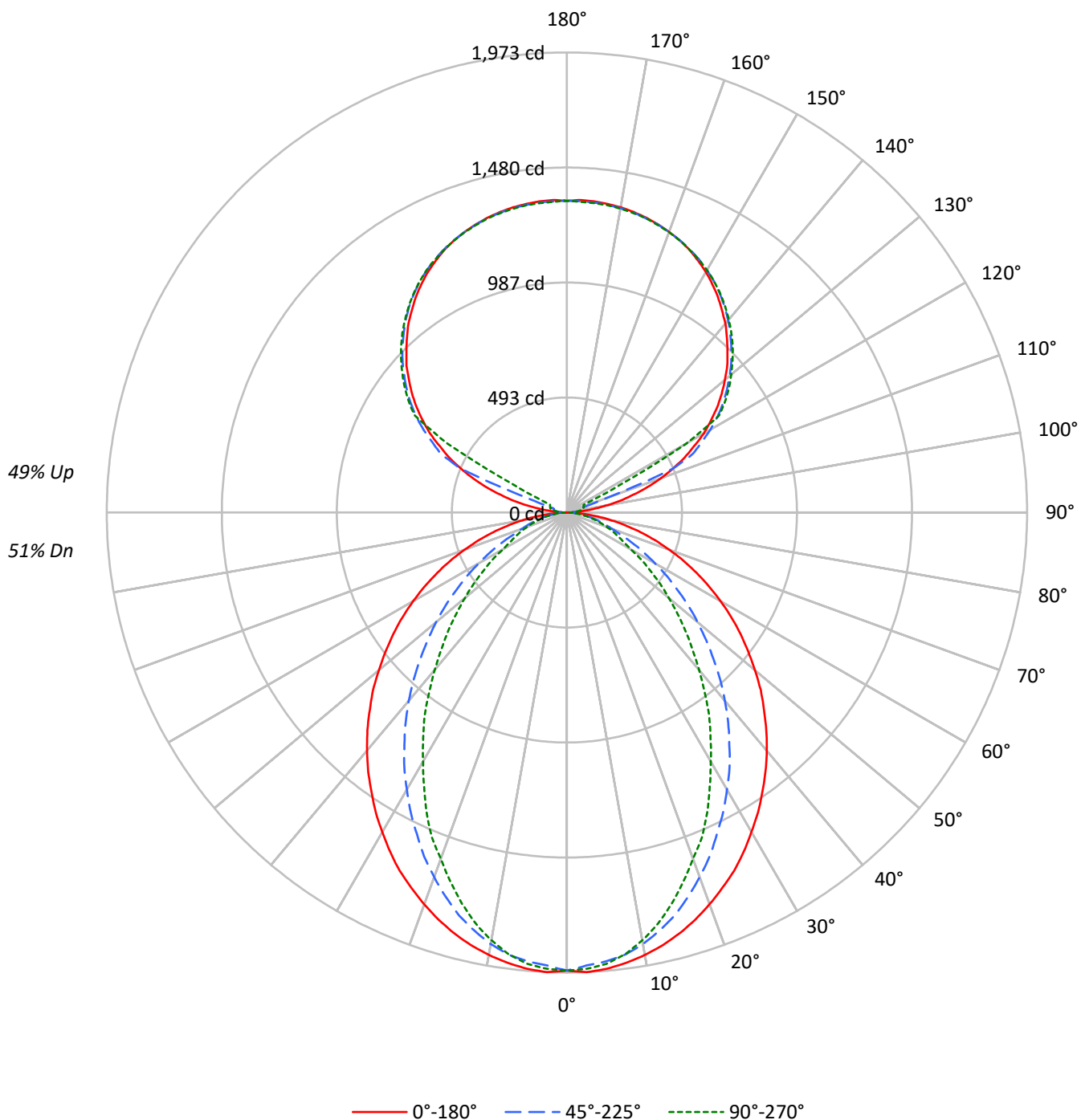
Lumens per Lamp: N/A
Luminaire Lumens: 7961.4 lumens
Efficiency: N/A
Efficacy: 85.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 93.3
Input Voltage (V):
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

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	57	57	51
1	98	94	91	87	91	87	84	81	74	72	70	62	61	59	51	50	49	49	49	44
2	90	83	77	72	83	77	72	67	66	62	59	55	52	50	45	44	42	42	42	37
3	82	73	66	61	76	68	62	57	58	54	50	49	46	43	41	38	36	36	36	32
4	76	65	58	52	70	61	54	49	52	47	43	44	40	37	37	34	32	32	32	28
5	70	58	50	45	64	54	47	42	47	41	37	40	36	33	33	30	28	28	28	25
6	64	53	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25	25	25	22
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	22	22	22	20
8	55	43	36	31	51	41	34	29	35	30	26	30	26	23	26	23	20	20	20	18
9	52	40	32	27	48	37	31	26	32	27	23	28	24	21	24	21	18	18	18	16
10	48	36	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2276	2276	2276
5°	2278	2238	2252
10°	2255	2192	2178
15°	2222	2118	2063
20°	2180	2017	1923
25°	2137	1904	1788
30°	2080	1788	1617
35°	2023	1663	1467
40°	1966	1534	1295
45°	1899	1392	1139
50°	1830	1248	987
55°	1758	1094	841
60°	1674	934	691
65°	1578	771	620
70°	1461	619	560
75°	1314	542	507
80°	1101	450	435
85°	753	292	319

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1899 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	2.3
10°-20°	505.4	6.3
20°-30°	709.6	8.9
30°-40°	773.5	9.7
40°-50°	710.9	8.9
50°-60°	558.3	7.0
60°-70°	363.4	4.6
70°-80°	187.1	2.3
80°-90°	50.1	0.6
90°-100°	44.1	0.6
100°-110°	164.3	2.1
110°-120°	435.8	5.5
120°-130°	722.8	9.1
130°-140°	767.8	9.6
140°-150°	713.6	9.0
150°-160°	573.7	7.2
160°-170°	369.7	4.6
170°-180°	127.2	1.6
0°-30°	1399.1	17.6
0°-40°	2172.6	27.3
0°-60°	3441.9	43.2
0°-90°	4042.5	50.8
90°-120°	644.2	8.1
90°-150°	2848.4	35.8
90°-180°	3919.0	49.2
0°-180°	7961.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1956	1932	1948	1943	186
15°	1868	1849	1788	1755	1737	527
25°	1696	1639	1522	1449	1422	780
35°	1461	1371	1214	1102	1063	915
45°	1195	1076	889	763	720	923
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	203	142	130	128	346
85°	76	39	34	34	34	88
90°	1	12	19	24	26	7
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	573	597	149	79	548
125°	786	799	817	824	827	701
135°	973	989	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1252	1244	573
165°	1310	1304	1307	1314	1307	370
175°	1340	1333	1335	1342	1332	127
180°	1337	1337	1337	1337	1337	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.5	1964.5	1964.5	1964.5	1964.5
2.5°	1973.3	1964.5	1944.8	1962.7	1959.1
5°	1964.5	1955.6	1932.4	1948.4	1943.1
7.5°	1948.4	1937.8	1913.0	1919.9	1911.1
10°	1927.1	1914.6	1879.2	1873.7	1863.1
12.5°	1900.5	1884.4	1836.4	1825.8	1806.2
15°	1868.4	1848.8	1788.4	1754.7	1736.9
17.5°	1831.1	1802.6	1727.9	1688.9	1660.4
20°	1788.4	1752.8	1664.0	1619.6	1580.4
22.5°	1742.2	1701.3	1598.1	1537.8	1511.2
25°	1696.1	1639.1	1521.8	1449.0	1422.2
27.5°	1641.0	1580.4	1450.6	1367.1	1326.2
30°	1582.3	1514.6	1372.4	1281.8	1233.7
32.5°	1525.3	1443.5	1297.9	1191.1	1146.6
35°	1461.4	1370.7	1214.3	1102.2	1063.0
37.5°	1399.2	1301.2	1136.1	1013.3	968.9
40°	1333.3	1226.8	1054.2	928.0	881.8
42.5°	1265.8	1152.1	972.5	840.8	796.5
45°	1194.7	1075.5	889.0	762.6	719.9
47.5°	1127.2	1001.0	809.0	682.6	643.6
50°	1052.5	926.3	730.7	607.9	570.8
52.5°	979.5	846.1	656.0	538.7	504.9
55°	908.4	769.8	577.7	471.2	437.4
57.5°	835.6	693.3	508.5	408.9	380.4
60°	760.9	618.7	435.5	345.0	316.5
62.5°	688.1	545.9	373.3	288.0	273.9
65°	613.4	469.3	309.3	249.0	243.5
67.5°	542.2	398.2	249.0	218.6	213.3
70°	467.5	328.9	206.1	188.5	181.3
72.5°	396.5	264.8	172.4	158.3	154.6
75°	327.1	202.6	142.2	129.8	128.1
77.5°	257.9	143.9	112.0	104.9	101.3
80°	193.7	103.1	85.2	78.3	78.3
82.5°	135.1	69.4	58.6	55.1	55.1
85°	76.4	39.1	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.2
100°	171.3	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.7	70.7
105°	294.1	323.1	59.0	69.6	73.5
107.5°	362.7	386.8	61.0	71.5	75.5
110°	428.6	448.8	169.3	72.6	76.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.4	507.8	491.4	74.5	77.4
115°	556.2	572.6	596.8	149.0	79.4
117.5°	613.2	632.6	649.1	510.6	257.3
120°	677.1	691.6	709.0	720.6	590.0
122.5°	731.2	746.7	766.1	771.9	772.9
125°	786.3	799.0	817.4	824.1	827.0
127.5°	836.6	850.2	864.8	874.4	875.4
130°	884.1	899.6	910.1	920.8	920.0
132.5°	932.5	945.1	955.6	964.4	963.5
135°	973.1	988.6	997.2	1007.0	1005.0
137.5°	1015.6	1027.2	1037.0	1046.6	1043.8
140°	1057.2	1065.0	1075.5	1084.3	1079.5
142.5°	1092.1	1098.9	1111.4	1119.1	1114.3
145°	1128.9	1127.8	1144.2	1151.0	1146.2
147.5°	1160.7	1157.8	1174.3	1179.1	1175.3
150°	1191.7	1184.9	1200.4	1206.2	1201.3
152.5°	1217.7	1210.1	1224.6	1230.4	1223.6
155°	1242.9	1234.3	1245.9	1251.6	1244.0
157.5°	1263.2	1255.5	1264.2	1271.1	1263.2
160°	1280.7	1274.9	1280.7	1286.4	1279.7
162.5°	1296.1	1290.4	1295.1	1301.9	1293.2
165°	1309.6	1303.9	1306.8	1313.5	1306.8
167.5°	1320.3	1314.5	1317.5	1324.2	1315.5
170°	1329.0	1323.2	1325.2	1331.9	1323.2
172.5°	1334.8	1329.0	1331.0	1337.8	1329.0
175°	1339.7	1332.8	1334.8	1341.6	1331.9
177.5°	1341.6	1334.8	1335.9	1342.6	1333.9
180°	1336.7	1336.7	1336.7	1336.7	1336.7

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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	10.03	10.87	10.99	11.84	13.10	6.01	6.85	6.97	7.81	9.08
	3H	11.70	12.45	12.67	13.43	14.71	7.19	7.94	8.16	8.92	10.20
	4H	12.31	13.01	13.29	13.99	15.29	7.64	8.35	8.62	9.33	10.62
	6H	12.72	13.37	13.72	14.36	15.67	7.96	8.61	8.95	9.60	10.90
	8H	12.85	13.46	13.84	14.47	15.77	8.05	8.67	9.05	9.67	10.97
	12H	12.90	13.49	13.91	14.49	15.82	8.09	8.68	9.09	9.67	11.00
4H	2H	10.05	10.76	11.04	11.74	13.03	6.60	7.31	7.59	8.29	9.58
	3H	11.87	12.46	12.87	13.47	14.78	7.95	8.53	8.94	9.54	10.85
	4H	12.56	13.09	13.56	14.10	15.43	8.49	9.03	9.50	10.03	11.36
	6H	13.07	13.53	14.08	14.55	15.88	8.91	9.37	9.92	10.39	11.72
	8H	13.24	13.67	14.25	14.69	16.03	9.03	9.46	10.05	10.48	11.83
	12H	13.33	13.72	14.36	14.75	16.10	9.09	9.48	10.13	10.52	11.87
8H	4H	12.53	12.96	13.54	13.98	15.32	8.77	9.20	9.78	10.22	11.56
	6H	13.08	13.44	14.12	14.50	15.84	9.28	9.63	10.32	10.70	12.04
	8H	13.29	13.61	14.34	14.65	16.01	9.47	9.78	10.52	10.83	12.19
	12H	13.43	13.70	14.48	14.74	16.15	9.58	9.86	10.63	10.90	12.30
12H	4H	12.48	12.87	13.51	13.90	15.25	8.77	9.16	9.81	10.19	11.54
	6H	13.06	13.37	14.11	14.42	15.78	9.33	9.64	10.38	10.69	12.05
	8H	13.27	13.55	14.33	14.59	15.99	9.53	9.81	10.59	10.85	12.25