

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: P910631

Luminaire Tested: DFN2DIP-HX2F0-030D040US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910631
REPORT IS A COMBINATION OF REPORTS P900693 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-030D040US850-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

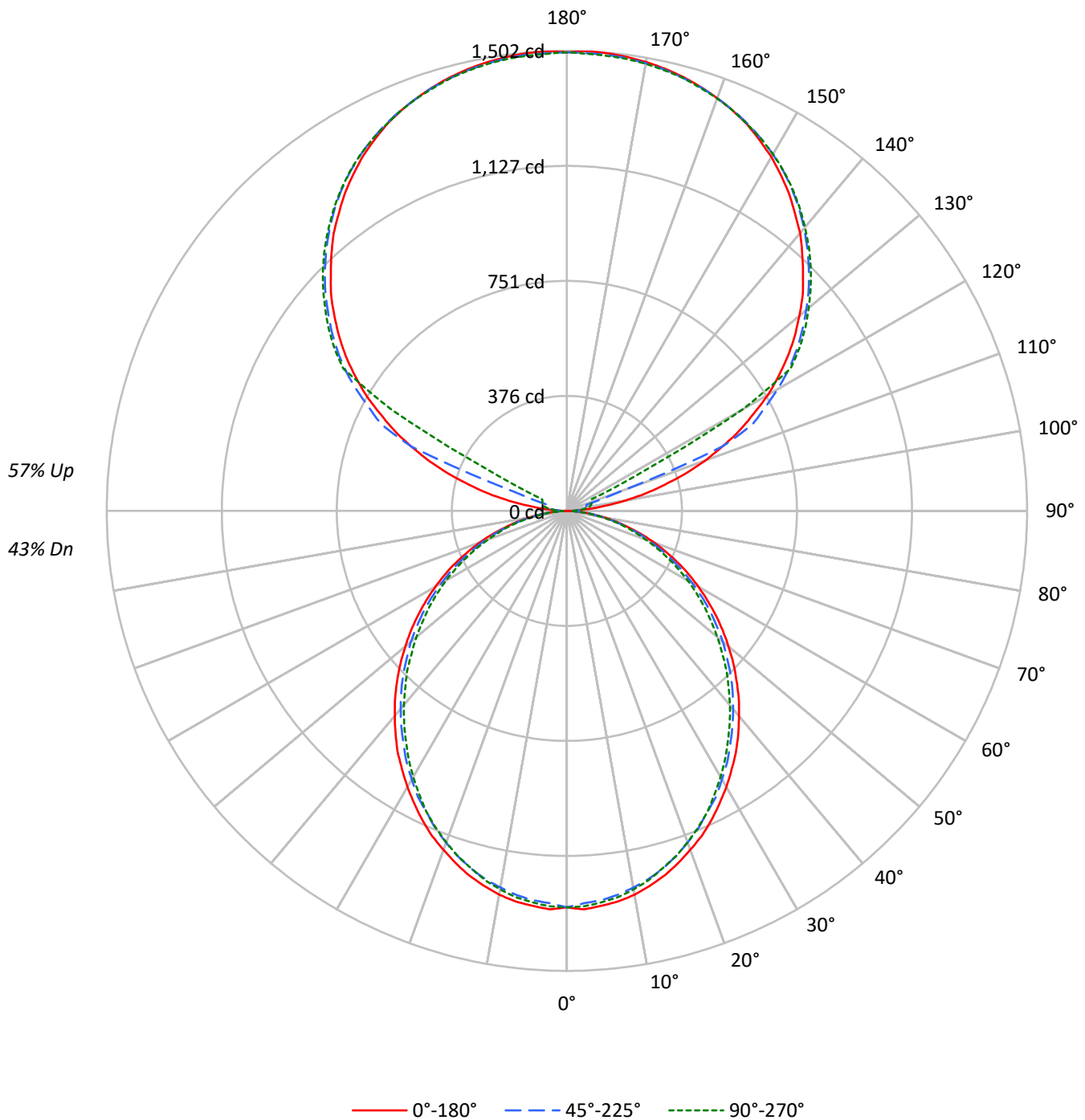
Lumens per Lamp: N/A
Luminaire Lumens: 7685.4 lumens
Efficiency: N/A
Efficacy: 140.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 54.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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				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	50	50	50
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	80	74	69	80	74	68	64	61	57	54	49	47	44	39	37	35
3	80	71	63	58	73	65	58	53	54	49	45	44	40	38	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	31	28	26
5	67	56	48	42	61	51	44	39	43	37	33	35	31	28	28	25	23
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	32	52	41	34	29	35	29	25	29	25	22	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	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3050	3050	3050
5°	3050	3000	3022
10°	3021	2953	2976
15°	2971	2897	2906
20°	2906	2822	2835
25°	2842	2734	2754
30°	2762	2652	2653
35°	2686	2556	2545
40°	2593	2459	2443
45°	2500	2361	2338
50°	2399	2258	2217
55°	2292	2139	2105
60°	2171	2000	1975
65°	2038	1853	1823
70°	1869	1676	1658
75°	1637	1462	1499
80°	1355	1190	1210
85°	921	747	749

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2500 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	1.6
10°-20°	342.8	4.5
20°-30°	503.8	6.6
30°-40°	585.2	7.6
40°-50°	584.4	7.6
50°-60°	509.6	6.6
60°-70°	376.7	4.9
70°-80°	213.1	2.8
80°-90°	58.9	0.8
90°-100°	49.4	0.6
100°-110°	184.0	2.4
110°-120°	488.1	6.4
120°-130°	809.5	10.5
130°-140°	859.9	11.2
140°-150°	799.2	10.4
150°-160°	642.5	8.4
160°-170°	414.0	5.4
170°-180°	142.5	1.9
0°-30°	968.5	12.6
0°-40°	1553.6	20.2
0°-60°	2647.7	34.5
0°-90°	3296.4	42.9
90°-120°	721.5	9.4
90°-150°	3190.0	41.5
90°-180°	4389.0	57.1
0°-180°	7685.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1294	1294	1294	1294	1294	
5°	1294	1290	1276	1286	1283	123
15°	1232	1225	1209	1214	1208	347
25°	1115	1106	1084	1087	1084	513
35°	962	950	930	922	916	601
45°	783	774	756	742	737	604
55°	593	585	570	555	549	530
65°	400	392	380	368	362	395
75°	209	207	200	193	196	223
85°	51	50	49	45	44	57
90°	1	13	22	27	29	7
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1294.5	1294.5	1294.5	1294.5	1294.5
2.5°	1302.1	1295.9	1282.1	1294.5	1292.2
5°	1294.5	1289.7	1275.9	1285.9	1283.4
7.5°	1285.9	1278.5	1264.7	1274.8	1272.2
10°	1272.2	1263.5	1248.6	1258.5	1254.8
12.5°	1253.5	1246.1	1231.2	1237.3	1234.9
15°	1232.3	1225.0	1208.7	1213.7	1207.5
17.5°	1206.1	1198.8	1182.5	1188.7	1182.5
20°	1177.5	1170.1	1152.7	1156.4	1151.5
22.5°	1149.0	1137.8	1121.5	1121.5	1119.0
25°	1115.3	1105.5	1084.3	1086.7	1084.3
27.5°	1077.9	1069.2	1053.1	1049.4	1043.2
30°	1040.7	1030.7	1012.1	1008.3	1003.3
32.5°	1000.9	993.4	973.5	965.9	960.9
35°	962.3	949.9	929.9	922.4	916.1
37.5°	918.7	907.5	887.5	878.8	872.6
40°	873.9	863.9	843.9	832.9	827.9
42.5°	830.3	820.3	800.5	787.9	780.5
45°	783.1	774.3	755.6	741.9	736.9
47.5°	736.9	728.3	708.3	694.6	687.1
50°	688.4	682.1	664.7	647.3	641.1
52.5°	641.1	632.4	616.3	602.5	593.8
55°	592.6	585.1	570.1	555.3	549.1
57.5°	544.0	537.8	521.6	506.6	501.6
60°	495.4	490.5	473.1	459.3	455.7
62.5°	448.1	439.4	427.0	414.5	409.6
65°	399.7	392.1	379.7	368.5	362.3
67.5°	349.9	343.6	332.4	323.7	318.7
70°	303.8	298.8	287.6	278.8	273.9
72.5°	256.5	251.4	245.2	236.5	232.9
75°	209.0	206.7	200.4	193.0	195.5
77.5°	166.8	161.8	159.3	155.6	151.9
80°	124.5	123.2	120.7	117.0	114.6
82.5°	84.6	84.6	83.5	78.4	78.4
85°	51.0	49.8	48.6	44.8	43.6
87.5°	22.4	20.0	17.4	13.8	12.4
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

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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	10.32	11.12	11.33	12.14	13.51	9.89	10.69	10.91	11.72	13.09
	3H	11.95	12.66	12.97	13.70	15.09	11.48	12.20	12.51	13.24	14.63
	4H	12.51	13.19	13.55	14.23	15.63	12.05	12.73	13.09	13.77	15.17
	6H	12.89	13.52	13.94	14.56	15.97	12.43	13.06	13.48	14.10	15.51
	8H	12.98	13.58	14.04	14.64	16.04	12.53	13.12	13.58	14.18	15.58
	12H	13.02	13.59	14.08	14.64	16.07	12.56	13.13	13.62	14.18	15.61
4H	2H	10.76	11.44	11.80	12.48	13.87	10.42	11.10	11.47	12.14	13.53
	3H	12.59	13.16	13.64	14.22	15.63	12.21	12.77	13.26	13.84	15.25
	4H	13.28	13.80	14.34	14.86	16.29	12.89	13.41	13.95	14.46	15.90
	6H	13.77	14.22	14.84	15.30	16.72	13.38	13.82	14.44	14.90	16.33
	8H	13.91	14.32	14.98	15.40	16.84	13.51	13.93	14.58	15.00	16.44
	12H	13.97	14.34	15.05	15.43	16.88	13.56	13.94	14.65	15.02	16.47
8H	4H	13.46	13.88	14.53	14.95	16.39	13.11	13.53	14.18	14.60	16.04
	6H	14.06	14.41	15.15	15.52	16.96	13.71	14.06	14.80	15.17	16.61
	8H	14.27	14.57	15.37	15.66	17.12	13.91	14.21	15.01	15.31	16.77
	12H	14.38	14.64	15.48	15.74	17.23	14.01	14.28	15.11	15.37	16.87
12H	4H	13.44	13.82	14.53	14.91	16.35	13.10	13.48	14.19	14.56	16.01
	6H	14.09	14.39	15.19	15.49	16.95	13.75	14.05	14.85	15.15	16.60
	8H	14.31	14.57	15.41	15.67	17.16	13.96	14.23	15.07	15.32	16.82