

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: P910616

Luminaire Tested: DFN2DIP-HX2F0-020D050US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910616
REPORT IS A COMBINATION OF REPORTS P899182 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D050US850-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

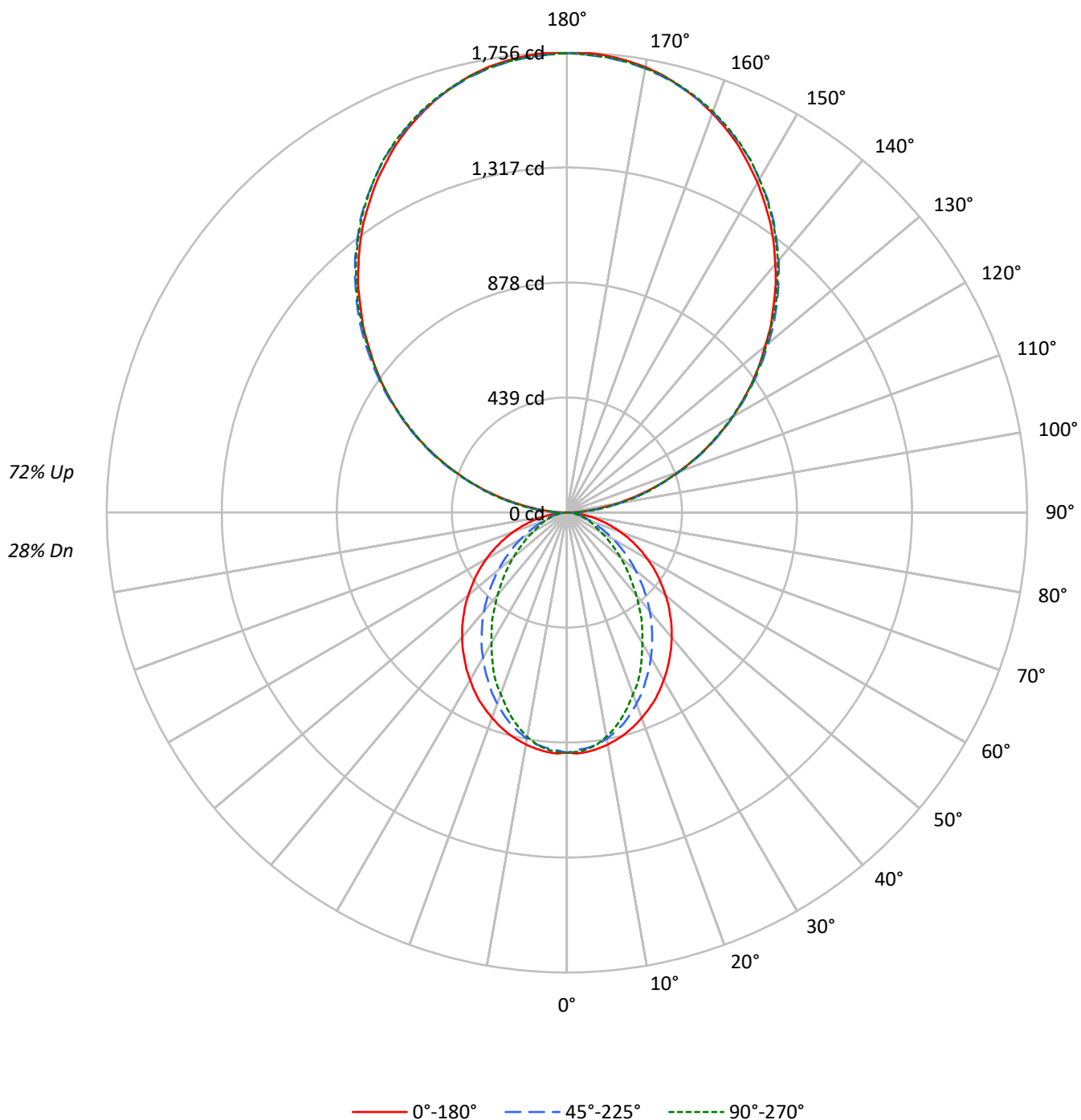
Lumens per Lamp: N/A
Luminaire Lumens: 6792.7 lumens
Efficiency: N/A
Efficacy: 126.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.7
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

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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2160	2160	2160
5°	2160	2120	2135
10°	2135	2074	2062
15°	2102	2000	1951
20°	2060	1901	1816
25°	2017	1791	1686
30°	1960	1678	1522
35°	1903	1558	1378
40°	1846	1433	1214
45°	1780	1296	1066
50°	1712	1158	921
55°	1639	1012	782
60°	1556	859	640
65°	1459	705	572
70°	1342	561	512
75°	1195	484	458
80°	984	392	385
85°	643	241	270

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2353 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.9	1.3
10°-20°	235.8	3.5
20°-30°	331.1	4.9
30°-40°	361.0	5.3
40°-50°	331.8	4.9
50°-60°	260.6	3.8
60°-70°	169.6	2.5
70°-80°	87.3	1.3
80°-90°	27.3	0.4
90°-100°	108.5	1.6
100°-110°	344.8	5.1
110°-120°	590.1	8.7
120°-130°	776.0	11.4
130°-140°	871.0	12.8
140°-150°	854.2	12.6
150°-160°	716.5	10.5
160°-170°	475.2	7.0
170°-180°	166.1	2.4
0°-30°	652.9	9.6
0°-40°	1013.8	14.9
0°-60°	1606.2	23.6
0°-90°	1890.3	27.8
90°-120°	1043.4	15.4
90°-150°	3544.6	52.2
90°-180°	4902.0	72.2
0°-180°	6792.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	917	917	917	917	917	
5°	917	913	902	909	907	87
15°	872	863	834	819	811	246
25°	792	765	710	676	664	364
35°	682	640	567	514	496	427
45°	558	502	415	356	336	431
55°	424	359	270	220	204	379
65°	286	219	144	116	114	284
75°	153	94	66	61	60	161
85°	36	18	16	16	16	41
90°	2	19	52	49	50	7
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1371	1373	1367	845
155°	1546	1551	1555	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	916.7	916.7	916.7	916.7	916.7
2.5°	920.8	916.7	907.5	915.9	914.3
5°	916.7	912.6	901.7	909.3	906.7
7.5°	909.3	904.3	892.6	896.0	891.7
10°	899.3	893.4	876.9	874.3	869.5
12.5°	886.9	879.3	856.9	852.0	842.8
15°	871.9	862.7	834.5	818.8	810.6
17.5°	854.5	841.2	806.4	788.1	774.9
20°	834.5	817.9	776.5	755.8	737.5
22.5°	813.0	793.9	745.8	717.6	705.2
25°	791.5	764.9	710.1	676.2	663.6
27.5°	765.8	737.5	676.9	637.9	618.8
30°	738.4	706.8	640.4	598.2	575.7
32.5°	711.8	673.6	605.6	555.8	535.1
35°	681.9	639.7	566.7	514.4	496.1
37.5°	652.9	607.2	530.1	472.9	452.1
40°	622.1	572.5	492.0	433.1	411.4
42.5°	590.7	537.6	453.8	392.4	371.7
45°	557.5	501.8	414.9	355.9	335.9
47.5°	526.0	467.1	377.5	318.5	300.3
50°	491.2	432.3	341.0	283.7	266.4
52.5°	457.0	394.8	306.1	251.4	235.7
55°	423.9	359.2	269.6	219.9	204.1
57.5°	389.9	323.5	237.3	190.9	177.6
60°	355.1	288.7	203.3	161.0	147.7
62.5°	321.1	254.7	174.2	134.4	127.8
65°	286.2	219.0	144.4	116.2	113.7
67.5°	253.1	185.8	116.2	102.0	99.6
70°	218.1	153.5	96.2	87.9	84.6
72.5°	185.0	123.5	80.4	73.9	72.2
75°	152.6	94.5	66.3	60.6	59.8
77.5°	120.3	67.2	52.2	48.9	47.2
80°	90.4	48.1	39.8	36.5	36.5
82.5°	63.0	32.4	27.4	25.7	25.7
85°	35.6	18.2	15.7	15.7	15.7
87.5°	13.3	6.7	6.7	5.8	5.8
90°	1.6	19.1	51.8	48.7	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.6	94.6	92.0
97.5°	128.4	142.2	148.1	148.1	148.1
100°	187.6	199.8	204.1	204.1	202.5
102.5°	250.1	259.1	264.8	266.5	264.8
105°	318.3	322.5	325.7	328.3	328.3
107.5°	385.9	392.3	392.3	393.4	385.9
110°	451.5	460.0	460.0	460.0	455.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	522.3	531.3	529.8	525.6	522.3
115°	592.1	600.6	598.0	596.4	592.1
117.5°	661.4	673.1	665.6	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.0	797.8	794.6
125°	861.2	874.4	870.2	865.5	863.9
127.5°	926.2	942.6	936.9	930.5	926.2
130°	987.1	1006.1	1003.4	1000.3	994.4
132.5°	1055.3	1070.1	1071.2	1063.8	1059.5
135°	1114.0	1130.3	1133.5	1132.0	1127.7
137.5°	1179.5	1192.7	1195.4	1194.3	1188.0
140°	1237.1	1250.4	1257.7	1257.7	1252.0
142.5°	1296.3	1309.6	1313.8	1315.4	1309.6
145°	1352.4	1363.0	1371.4	1373.1	1367.2
147.5°	1402.7	1415.9	1422.2	1424.8	1419.0
150°	1454.5	1463.4	1469.2	1474.0	1469.2
152.5°	1500.5	1509.5	1516.8	1522.7	1516.8
155°	1546.4	1550.6	1555.4	1562.8	1558.0
157.5°	1586.1	1589.2	1591.9	1602.5	1595.1
160°	1621.5	1624.7	1626.2	1635.2	1628.9
162.5°	1654.3	1654.3	1655.8	1665.9	1658.5
165°	1682.4	1680.7	1680.7	1691.3	1683.9
167.5°	1707.6	1702.9	1702.9	1713.5	1706.1
170°	1726.7	1722.5	1720.9	1731.5	1722.5
172.5°	1739.9	1735.7	1734.1	1744.7	1735.7
175°	1750.6	1746.2	1743.1	1753.7	1744.7
177.5°	1756.3	1752.1	1748.9	1757.9	1748.9
180°	1753.7	1753.7	1753.7	1753.7	1753.7

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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	7.14	7.82	8.27	8.94	10.50	3.13	3.80	4.26	4.92	6.48
	3H	8.78	9.39	9.92	10.52	12.09	4.29	4.89	5.43	6.02	7.59
	4H	9.37	9.94	10.51	11.07	12.65	4.72	5.29	5.87	6.42	8.00
	6H	9.76	10.29	10.92	11.42	13.01	5.02	5.54	6.17	6.68	8.27
	8H	9.87	10.37	11.03	11.52	13.10	5.09	5.60	6.25	6.74	8.33
	12H	9.92	10.39	11.08	11.53	13.14	5.12	5.60	6.29	6.74	8.35
4H	2H	7.14	7.71	8.29	8.84	10.42	3.69	4.26	4.85	5.39	6.97
	3H	8.92	9.40	10.08	10.56	12.15	5.00	5.48	6.17	6.64	8.23
	4H	9.59	10.03	10.75	11.17	12.78	5.53	5.97	6.70	7.12	8.73
	6H	10.07	10.45	11.24	11.61	13.22	5.92	6.30	7.09	7.47	9.07
	8H	10.23	10.58	11.40	11.74	13.36	6.04	6.39	7.21	7.55	9.17
	12H	10.30	10.62	11.49	11.79	13.41	6.09	6.41	7.27	7.58	9.20
8H	4H	9.54	9.89	10.71	11.05	12.67	5.79	6.14	6.95	7.29	8.91
	6H	10.08	10.36	11.26	11.56	13.18	6.27	6.56	7.46	7.76	9.38
	8H	10.27	10.53	11.47	11.70	13.34	6.45	6.70	7.64	7.88	9.52
	12H	10.39	10.61	11.58	11.79	13.45	6.55	6.77	7.74	7.95	9.61
12H	4H	9.49	9.80	10.67	10.97	12.59	5.78	6.10	6.96	7.27	8.89
	6H	10.05	10.30	11.24	11.48	13.11	6.32	6.57	7.51	7.75	9.38
	8H	10.24	10.47	11.44	11.64	13.31	6.50	6.73	7.70	7.90	9.57