

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: P902531

Luminaire Tested: DFN2DIP-HX3F0-030D060US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902531
REPORT IS A COMBINATION OF REPORTS P900763 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D060US830-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

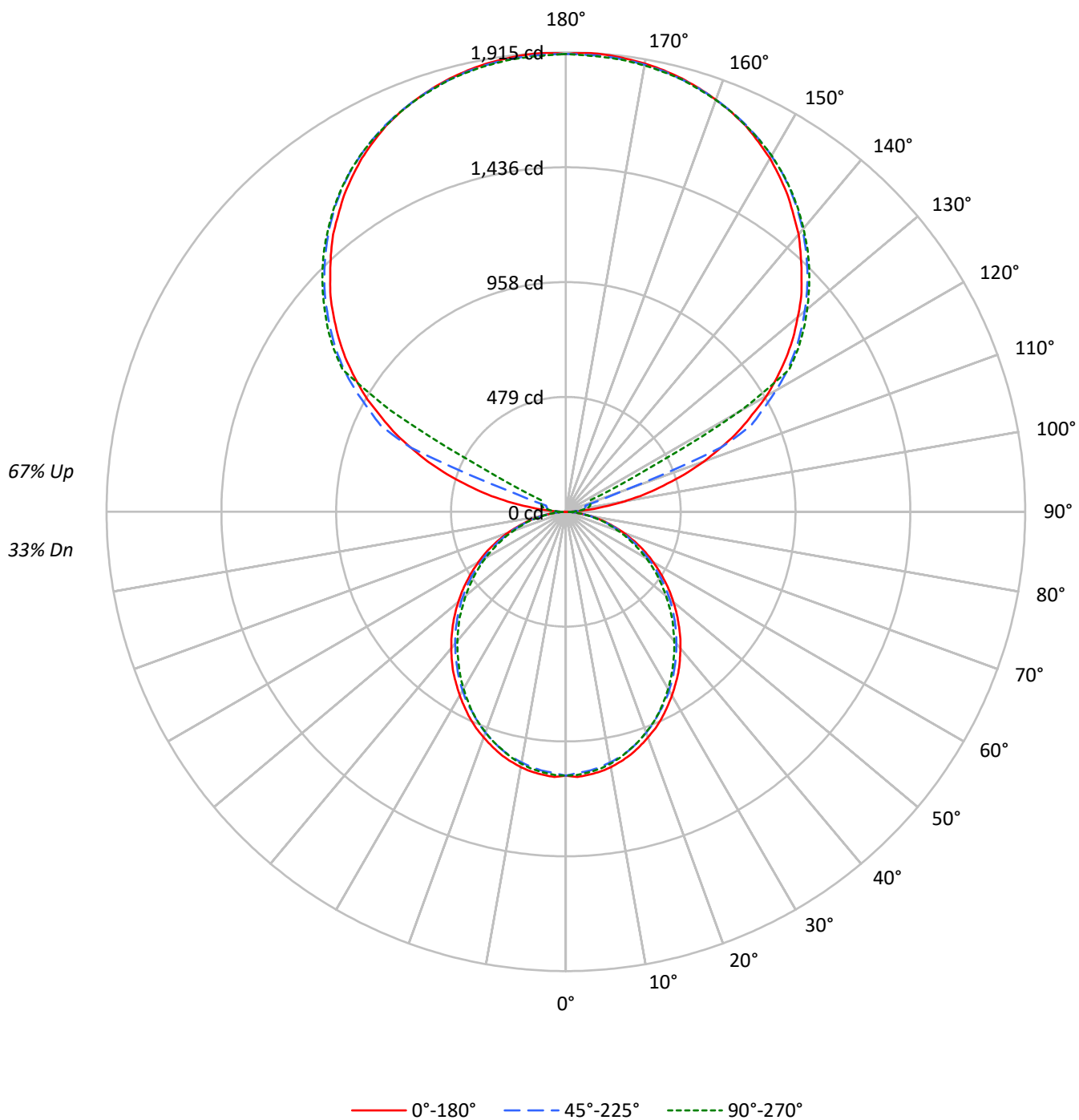
Lumens per Lamp: N/A
Luminaire Lumens: 8398.1 lumens
Efficiency: N/A
Efficacy: 121.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	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°	1274	1274	1274
5°	1276	1256	1264
10°	1265	1238	1247
15°	1246	1217	1219
20°	1220	1188	1191
25°	1195	1153	1159
30°	1163	1120	1118
35°	1132	1082	1074
40°	1095	1044	1033
45°	1058	1005	991
50°	1017	965	942
55°	975	918	897
60°	926	862	846
65°	874	804	785
70°	807	734	719
75°	714	649	657
80°	602	541	541
85°	428	358	351

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1222 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.2
10°-20°	291.4	3.5
20°-30°	428.2	5.1
30°-40°	497.3	5.9
40°-50°	496.7	5.9
50°-60°	433.1	5.2
60°-70°	320.2	3.8
70°-80°	181.1	2.2
80°-90°	51.2	0.6
90°-100°	62.9	0.7
100°-110°	234.6	2.8
110°-120°	622.2	7.4
120°-130°	1032.0	12.3
130°-140°	1096.2	13.1
140°-150°	1018.8	12.1
150°-160°	819.1	9.8
160°-170°	527.8	6.3
170°-180°	181.7	2.2
0°-30°	823.1	9.8
0°-40°	1320.4	15.7
0°-60°	2250.3	26.8
0°-90°	2802.7	33.4
90°-120°	919.8	11.0
90°-150°	4066.8	48.4
90°-180°	5595.0	66.6
0°-180°	8398.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	1	17	28	35	37	8
95°	90	44	54	61	59	106
105°	420	461	84	99	105	449
115°	794	818	852	213	113	782
125°	1123	1141	1167	1177	1181	1001
135°	1389	1412	1424	1438	1435	1073
145°	1612	1610	1634	1643	1636	1008
155°	1775	1762	1779	1787	1776	818
165°	1870	1862	1866	1876	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1909	1909	1909	1909	1909	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	1.3	16.6	27.5	34.6	37.2
92.5°	34.6	29.0	33.1	35.9	37.2
95°	89.7	44.1	53.8	60.9	59.4
97.5°	161.6	48.4	70.3	74.6	76.0
100°	244.5	55.2	78.7	89.7	92.5
102.5°	335.5	332.9	81.5	96.6	100.9
105°	419.8	461.3	84.3	99.3	105.0
107.5°	517.9	552.3	87.1	102.2	107.7
110°	611.9	640.7	241.8	103.7	109.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	700.2	725.0	701.5	106.2	110.6
115°	794.1	817.6	852.2	212.7	113.3
117.5°	875.5	903.1	926.7	729.2	367.3
120°	966.8	987.4	1012.4	1028.9	842.4
122.5°	1044.0	1066.1	1093.8	1102.0	1103.5
125°	1122.8	1140.8	1167.0	1176.7	1180.7
127.5°	1194.6	1213.9	1234.7	1248.5	1249.8
130°	1262.3	1284.4	1299.5	1314.8	1313.4
132.5°	1331.3	1349.3	1364.4	1376.9	1375.5
135°	1389.4	1411.6	1423.8	1437.8	1434.9
137.5°	1450.0	1466.6	1480.5	1494.3	1490.3
140°	1509.4	1520.6	1535.7	1548.1	1541.2
142.5°	1559.2	1569.0	1586.9	1597.8	1590.9
145°	1611.7	1610.2	1633.7	1643.4	1636.5
147.5°	1657.2	1653.0	1676.5	1683.4	1678.0
150°	1701.5	1691.8	1713.9	1722.1	1715.2
152.5°	1738.7	1727.7	1748.3	1756.7	1747.0
155°	1774.6	1762.3	1778.9	1787.1	1776.0
157.5°	1803.6	1792.6	1805.1	1814.8	1803.6
160°	1828.5	1820.1	1828.5	1836.7	1827.1
162.5°	1850.5	1842.3	1849.2	1858.9	1846.4
165°	1869.9	1861.7	1865.8	1875.5	1865.8
167.5°	1885.1	1876.8	1881.0	1890.7	1878.2
170°	1897.6	1889.2	1892.1	1901.7	1889.2
172.5°	1905.8	1897.6	1900.4	1910.1	1897.6
175°	1912.7	1903.0	1905.8	1915.4	1901.7
177.5°	1915.4	1905.8	1907.2	1916.9	1904.5
180°	1908.6	1908.6	1908.6	1908.6	1908.6

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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	6.30	7.03	7.39	8.11	9.60	5.87	6.60	6.96	7.69	9.18
	3H	7.94	8.59	9.04	9.69	11.20	7.47	8.13	8.57	9.22	10.73
	4H	8.52	9.14	9.62	10.23	11.75	8.05	8.67	9.16	9.77	11.28
	6H	8.90	9.47	10.02	10.57	12.10	8.43	9.01	9.55	10.10	11.63
	8H	9.00	9.54	10.12	10.66	12.18	8.53	9.08	9.65	10.19	11.71
	12H	9.04	9.56	10.17	10.67	12.21	8.57	9.08	9.69	10.19	11.74
4H	2H	6.74	7.36	7.85	8.46	9.97	6.40	7.02	7.51	8.11	9.63
	3H	8.59	9.10	9.71	10.23	11.75	8.20	8.71	9.32	9.84	11.36
	4H	9.29	9.76	10.41	10.88	12.42	8.89	9.36	10.01	10.47	12.02
	6H	9.79	10.20	10.92	11.33	12.87	9.38	9.79	10.52	10.93	12.47
	8H	9.93	10.31	11.06	11.44	12.99	9.52	9.90	10.66	11.03	12.59
	12H	9.99	10.34	11.14	11.48	13.04	9.58	9.92	10.73	11.06	12.62
8H	4H	9.47	9.85	10.60	10.98	12.53	9.11	9.49	10.25	10.62	12.18
	6H	10.09	10.40	11.24	11.57	13.12	9.73	10.04	10.88	11.21	12.76
	8H	10.30	10.58	11.46	11.73	13.30	9.94	10.21	11.10	11.36	12.93
	12H	10.42	10.66	11.58	11.81	13.42	10.04	10.28	11.20	11.43	13.04
12H	4H	9.45	9.79	10.60	10.93	12.49	9.10	9.45	10.25	10.58	12.14
	6H	10.11	10.39	11.27	11.54	13.11	9.77	10.04	10.92	11.19	12.76
	8H	10.34	10.59	11.51	11.73	13.34	9.99	10.23	11.15	11.38	12.98

END OF REPORT