

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: P926882

Luminaire Tested: DFN2DIP-HX4F0-040D060US830-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926882
REPORT IS A COMBINATION OF REPORTS P900856 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D060US830-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

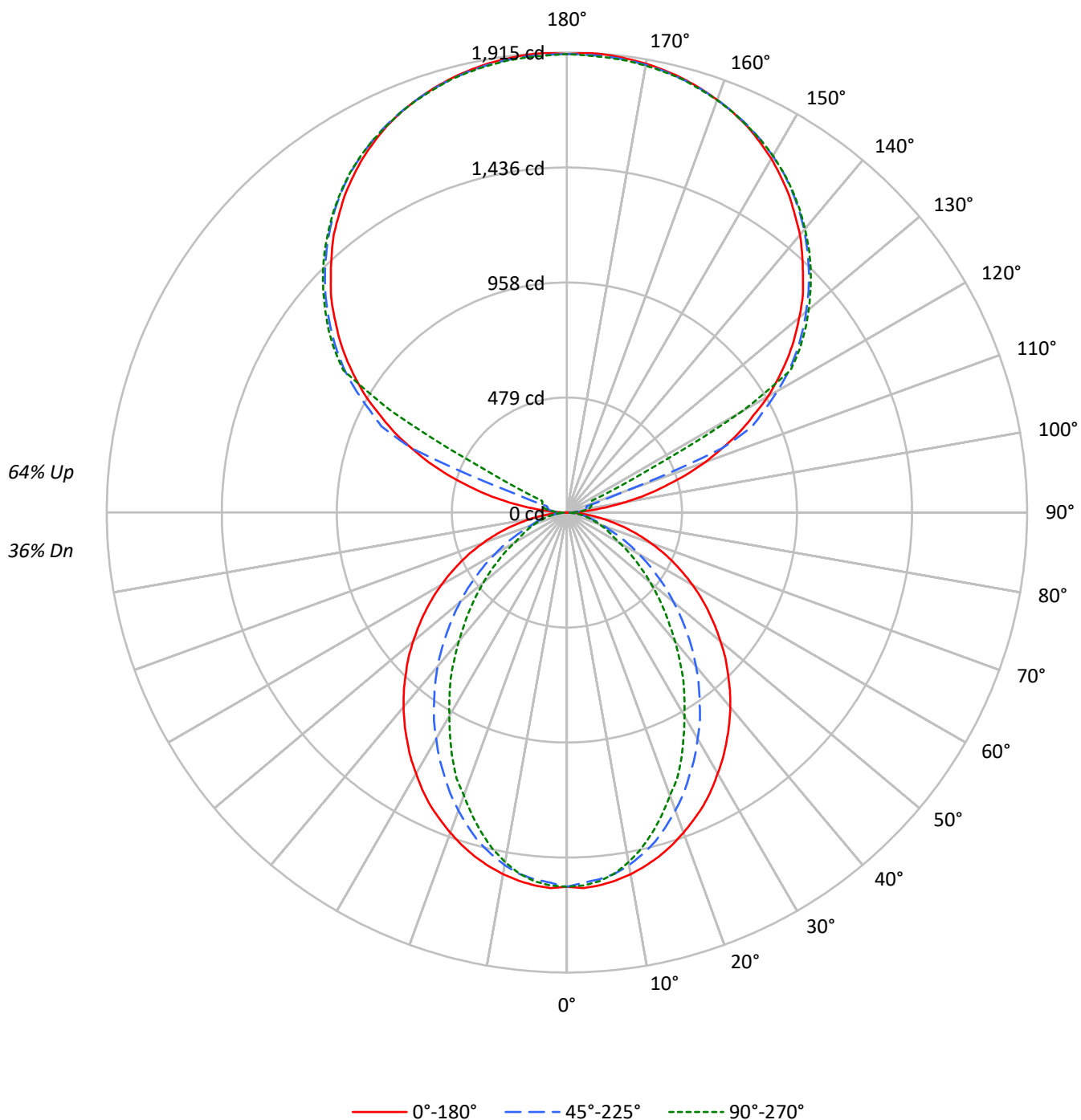
Lumens per Lamp: N/A
Luminaire Lumens: 8802.9 lumens
Efficiency: N/A
Efficacy: 113.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.3
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

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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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1159	1159	1159
5°	1160	1140	1148
10°	1149	1118	1110
15°	1133	1081	1053
20°	1113	1030	982
25°	1091	973	913
30°	1063	915	827
35°	1035	852	751
40°	1006	787	663
45°	973	715	584
50°	938	642	507
55°	903	564	432
60°	861	483	356
65°	813	400	320
70°	756	322	290
75°	683	284	264
80°	578	239	229
85°	404	160	173

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 979 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.7
10°-20°	400.9	4.6
20°-30°	562.8	6.4
30°-40°	613.5	7.0
40°-50°	563.9	6.4
50°-60°	442.8	5.0
60°-70°	288.3	3.3
70°-80°	148.4	1.7
80°-90°	41.2	0.5
90°-100°	62.9	0.7
100°-110°	234.6	2.7
110°-120°	622.2	7.1
120°-130°	1031.9	11.7
130°-140°	1096.2	12.5
140°-150°	1018.8	11.6
150°-160°	819.1	9.3
160°-170°	527.8	6.0
170°-180°	181.7	2.1
0°-30°	1109.7	12.6
0°-40°	1723.2	19.6
0°-60°	2730.0	31.0
0°-90°	3207.9	36.4
90°-120°	919.7	10.4
90°-150°	4066.6	46.2
90°-180°	5595.0	63.6
0°-180°	8802.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1545	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	720	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
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°	1774	1762	1779	1787	1776	818
165°	1870	1862	1866	1875	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1908	1908	1908	1908	1908	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.1	1558.1	1558.1	1558.1	1558.1
2.5°	1565.2	1558.1	1542.6	1556.8	1553.9
5°	1558.1	1551.1	1532.7	1545.4	1541.3
7.5°	1545.4	1537.0	1517.3	1522.8	1515.8
10°	1528.5	1518.7	1490.5	1486.1	1477.8
12.5°	1507.4	1494.7	1456.5	1448.2	1432.6
15°	1482.0	1466.4	1418.6	1391.8	1377.7
17.5°	1452.4	1429.8	1370.5	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.6	1253.5
22.5°	1381.9	1349.5	1267.6	1219.7	1198.7
25°	1345.2	1300.1	1207.0	1149.3	1128.0
27.5°	1301.6	1253.5	1150.6	1084.3	1051.8
30°	1255.0	1201.3	1088.5	1016.7	978.6
32.5°	1209.9	1144.9	1029.4	944.8	909.4
35°	1159.2	1087.2	963.1	874.3	843.2
37.5°	1109.8	1032.1	901.0	803.7	768.5
40°	1057.6	973.0	836.2	736.1	699.4
42.5°	1004.0	913.8	771.3	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.5	482.2	452.7
52.5°	776.9	671.2	520.4	427.2	400.5
55°	720.5	610.6	458.2	373.7	346.9
57.5°	662.8	549.9	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.0	228.5	217.2
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
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°	161.5	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	100.8
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	109.0

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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	817.5	852.1	212.7	113.3
117.5°	875.5	903.1	926.7	729.1	367.3
120°	966.7	987.4	1012.3	1028.8	842.4
122.5°	1043.9	1066.1	1093.8	1102.0	1103.5
125°	1122.7	1140.7	1166.9	1176.6	1180.7
127.5°	1194.5	1213.8	1234.7	1248.4	1249.8
130°	1262.2	1284.3	1299.4	1314.7	1313.4
132.5°	1331.3	1349.3	1364.4	1376.8	1375.5
135°	1389.3	1411.5	1423.7	1437.7	1434.9
137.5°	1449.9	1466.5	1480.5	1494.2	1490.2
140°	1509.3	1520.5	1535.6	1548.1	1541.2
142.5°	1559.2	1568.9	1586.8	1597.7	1590.8
145°	1611.7	1610.2	1633.6	1643.3	1636.5
147.5°	1657.1	1653.0	1676.4	1683.3	1677.9
150°	1701.4	1691.7	1713.8	1722.0	1715.2
152.5°	1738.6	1727.6	1748.2	1756.6	1746.9
155°	1774.5	1762.2	1778.8	1787.0	1776.0
157.5°	1803.6	1792.5	1805.0	1814.7	1803.6
160°	1828.4	1820.1	1828.4	1836.6	1827.0
162.5°	1850.4	1842.2	1849.1	1858.8	1846.4
165°	1869.8	1861.6	1865.7	1875.4	1865.7
167.5°	1885.0	1876.7	1880.9	1890.7	1878.1
170°	1897.5	1889.1	1892.0	1901.6	1889.1
172.5°	1905.7	1897.5	1900.3	1910.0	1897.5
175°	1912.6	1902.9	1905.7	1915.3	1901.6
177.5°	1915.3	1905.7	1907.1	1916.9	1904.4
180°	1908.5	1908.5	1908.5	1908.5	1908.5

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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	6.24	6.97	7.32	8.04	9.50	2.22	2.95	3.29	4.02	5.47
	3H	7.92	8.57	9.00	9.65	11.12	3.40	4.05	4.48	5.13	6.60
	4H	8.52	9.14	9.61	10.22	11.70	3.85	4.47	4.94	5.54	7.02
	6H	8.94	9.51	10.04	10.59	12.08	4.16	4.73	5.26	5.82	7.31
	8H	9.06	9.60	10.17	10.70	12.19	4.25	4.79	5.36	5.89	7.38
	12H	9.12	9.63	10.23	10.73	12.23	4.29	4.81	5.40	5.90	7.41
4H	2H	6.25	6.87	7.35	7.95	9.43	2.80	3.42	3.90	4.50	5.98
	3H	8.07	8.59	9.18	9.69	11.18	4.14	4.66	5.25	5.76	7.26
	4H	8.76	9.23	9.87	10.33	11.84	4.69	5.16	5.80	6.26	7.77
	6H	9.27	9.68	10.39	10.80	12.30	5.11	5.51	6.22	6.63	8.13
	8H	9.45	9.82	10.56	10.93	12.46	5.23	5.61	6.35	6.72	8.24
	12H	9.54	9.88	10.67	11.00	12.53	5.29	5.64	6.43	6.76	8.29
8H	4H	8.72	9.10	9.84	10.21	11.73	4.96	5.34	6.08	6.45	7.97
	6H	9.29	9.60	10.42	10.75	12.27	5.48	5.79	6.62	6.94	8.46
	8H	9.50	9.77	10.65	10.91	12.45	5.67	5.94	6.82	7.08	8.62
	12H	9.64	9.88	10.78	11.01	12.58	5.79	6.03	6.93	7.16	8.73
12H	4H	8.67	9.01	9.80	10.13	11.66	4.96	5.30	6.10	6.43	7.95
	6H	9.26	9.53	10.40	10.67	12.20	5.53	5.80	6.67	6.94	8.47
	8H	9.48	9.72	10.62	10.85	12.42	5.74	5.98	6.88	7.11	8.68

END OF REPORT