

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: P902437

Luminaire Tested: DFN2DIP-HX2F0-020D060US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902437
REPORT IS A COMBINATION OF REPORTS P900712 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D060US830-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

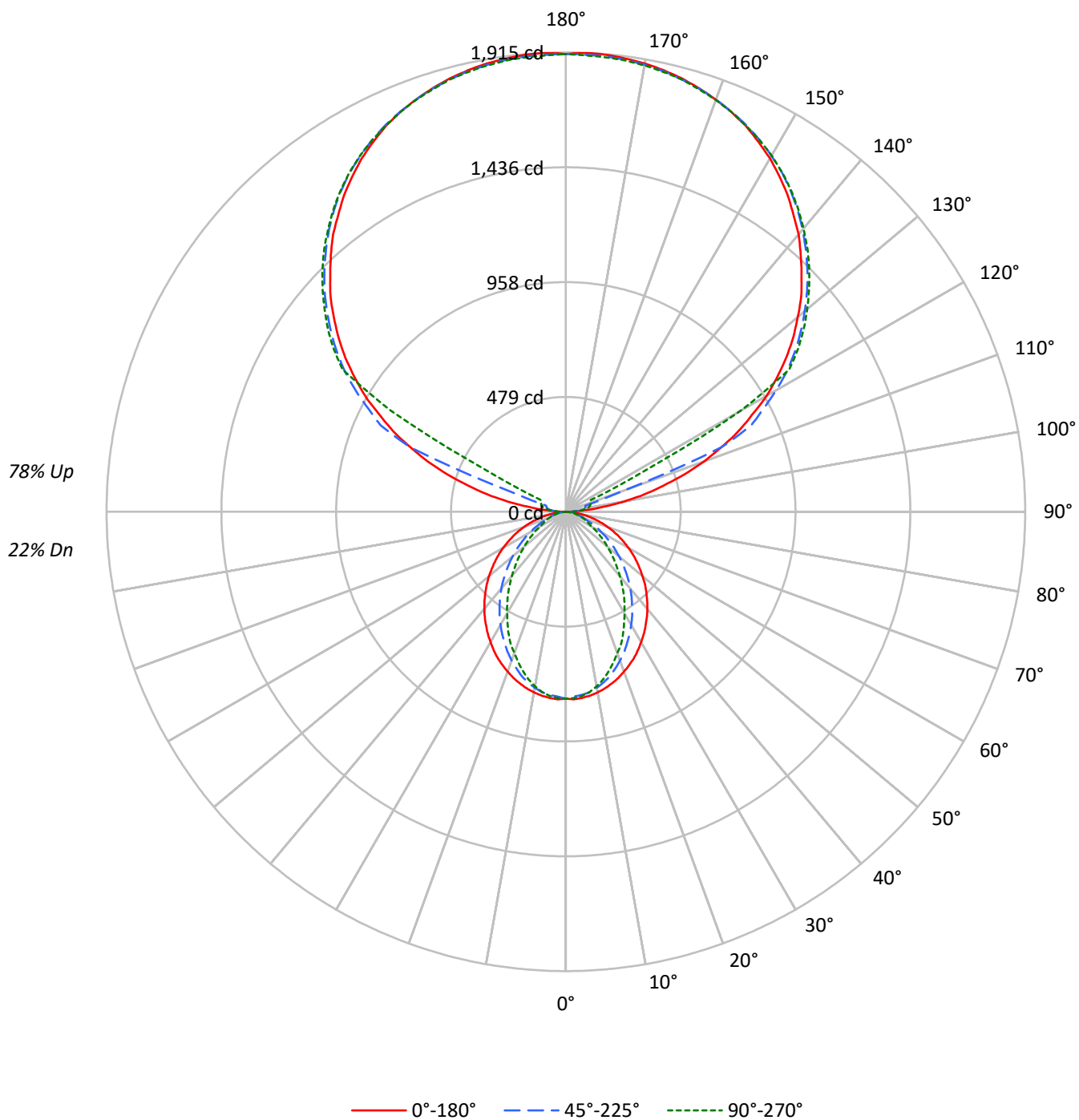
Lumens per Lamp: N/A
Luminaire Lumens: 7201.0 lumens
Efficiency: N/A
Efficacy: 113.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 63.6
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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1836	1836	1836
5°	1836	1802	1815
10°	1815	1763	1753
15°	1787	1700	1658
20°	1751	1616	1543
25°	1714	1522	1433
30°	1665	1426	1294
35°	1618	1324	1171
40°	1569	1218	1032
45°	1513	1102	906
50°	1455	984	783
55°	1393	860	665
60°	1322	730	544
65°	1241	599	486
70°	1141	476	435
75°	1016	412	389
80°	836	333	327
85°	547	206	230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1743 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	1.0
10°-20°	200.4	2.8
20°-30°	281.4	3.9
30°-40°	306.8	4.3
40°-50°	282.0	3.9
50°-60°	221.4	3.1
60°-70°	144.1	2.0
70°-80°	74.2	1.0
80°-90°	22.3	0.3
90°-100°	62.9	0.9
100°-110°	234.6	3.3
110°-120°	622.2	8.6
120°-130°	1032.0	14.3
130°-140°	1096.2	15.2
140°-150°	1018.8	14.1
150°-160°	819.1	11.4
160°-170°	527.8	7.3
170°-180°	181.7	2.5
0°-30°	554.9	7.7
0°-40°	861.7	12.0
0°-60°	1365.1	19.0
0°-90°	1605.7	22.3
90°-120°	919.8	12.8
90°-150°	4066.8	56.5
90°-180°	5595.0	77.7
0°-180°	7201.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	766	773	771	74
15°	741	733	709	696	689	209
25°	673	650	604	575	564	309
35°	580	544	482	437	422	363
45°	474	426	353	302	286	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	52	51	137
85°	30	16	13	13	13	35
90°	1	17	28	35	37	7
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°	779.1	779.1	779.1	779.1	779.1
2.5°	782.6	779.1	771.3	778.4	777.0
5°	779.1	775.6	766.4	772.8	770.6
7.5°	772.8	768.5	758.7	761.5	757.9
10°	764.3	759.3	745.3	743.1	739.0
12.5°	753.8	747.3	728.3	724.2	716.3
15°	741.0	733.2	709.3	695.9	688.9
17.5°	726.2	714.9	685.3	669.8	658.6
20°	709.3	695.1	660.0	642.3	626.8
22.5°	691.0	674.8	633.9	609.9	599.4
25°	672.7	650.1	603.5	574.7	564.0
27.5°	650.8	626.8	575.3	542.2	525.9
30°	627.5	600.7	544.3	508.4	489.3
32.5°	604.9	572.5	514.7	472.4	454.8
35°	579.6	543.7	481.6	437.2	421.6
37.5°	554.9	516.0	450.5	401.9	384.3
40°	528.8	486.5	418.1	368.1	349.7
42.5°	502.0	456.9	385.7	333.5	315.9
45°	473.8	426.5	352.6	302.5	285.5
47.5°	447.0	397.0	320.8	270.7	255.2
50°	417.5	367.4	289.8	241.1	226.4
52.5°	388.4	335.5	260.1	213.7	200.3
55°	360.2	305.3	229.1	186.9	173.4
57.5°	331.4	274.9	201.7	162.2	150.9
60°	301.8	245.3	172.8	136.9	125.5
62.5°	272.9	216.5	148.1	114.2	108.6
65°	243.3	186.2	122.7	98.8	96.6
67.5°	215.1	157.9	98.8	86.7	84.6
70°	185.4	130.4	81.7	74.7	71.9
72.5°	157.2	105.0	68.3	62.8	61.4
75°	129.7	80.3	56.4	51.5	50.8
77.5°	102.3	57.1	44.4	41.6	40.2
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
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°	161.6	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	5.69	6.34	6.86	7.49	9.11	1.68	2.32	2.85	3.47	5.09
	3H	7.33	7.91	8.51	9.07	10.70	2.84	3.41	4.01	4.57	6.21
	4H	7.91	8.46	9.10	9.62	11.26	3.27	3.81	4.45	4.97	6.61
	6H	8.31	8.81	9.50	9.97	11.62	3.56	4.07	4.75	5.23	6.88
	8H	8.42	8.90	9.61	10.07	11.71	3.64	4.12	4.83	5.29	6.94
	12H	8.46	8.92	9.66	10.08	11.75	3.67	4.13	4.87	5.29	6.96
4H	2H	5.68	6.23	6.88	7.39	9.03	2.24	2.79	3.43	3.94	5.58
	3H	7.47	7.93	8.66	9.11	10.76	3.55	4.01	4.74	5.19	6.84
	4H	8.13	8.55	9.33	9.73	11.39	4.08	4.50	5.27	5.67	7.34
	6H	8.62	8.97	9.81	10.17	11.83	4.47	4.83	5.67	6.02	7.68
	8H	8.77	9.11	9.97	10.29	11.97	4.58	4.92	5.78	6.10	7.78
	12H	8.85	9.15	10.06	10.34	12.02	4.63	4.93	5.84	6.13	7.81
8H	4H	8.08	8.42	9.28	9.60	11.28	4.33	4.66	5.53	5.85	7.52
	6H	8.62	8.89	9.83	10.12	11.79	4.82	5.09	6.03	6.32	7.99
	8H	8.82	9.06	10.04	10.26	11.95	4.99	5.23	6.21	6.44	8.13
	12H	8.93	9.14	10.15	10.34	12.06	5.09	5.30	6.31	6.50	8.23
12H	4H	8.03	8.33	9.24	9.53	11.20	4.32	4.62	5.53	5.82	7.50
	6H	8.59	8.83	9.81	10.03	11.73	4.86	5.10	6.08	6.30	7.99
	8H	8.78	8.99	10.01	10.20	11.92	5.04	5.26	6.27	6.46	8.18

END OF REPORT