

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: P902481

Luminaire Tested: DFN2DIP-HX2F0-050D020US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902481
REPORT IS A COMBINATION OF REPORTS P900678 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D020US830-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

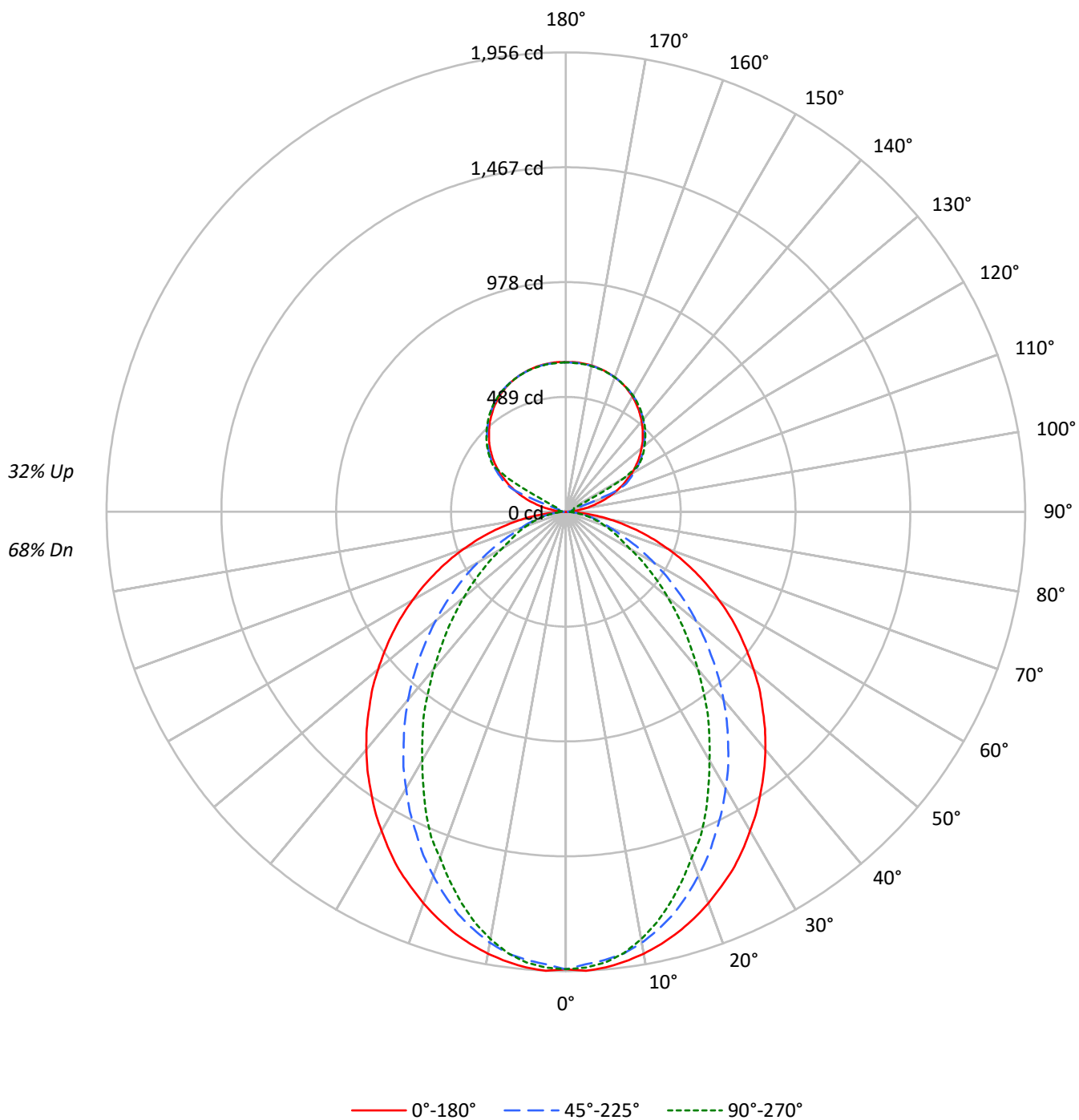
Lumens per Lamp: N/A
Luminaire Lumens: 5872.0 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 62.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73	65	65	65
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63	59	58	57
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54	50	49	48
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47	43	42	41
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41	38	37	36
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36	33	32	31
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32	30	29	28
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26	25	24
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24	23	22
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24	22	21	20
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4589	4589	4589
5°	4589	4505	4537
10°	4536	4406	4381
15°	4467	4250	4145
20°	4377	4039	3858
25°	4285	3805	3582
30°	4164	3565	3234
35°	4044	3309	2929
40°	3923	3045	2580
45°	3782	2754	2265
50°	3637	2461	1957
55°	3483	2149	1662
60°	3306	1825	1360
65°	3101	1497	1215
70°	2852	1191	1088
75°	2540	1029	973
80°	2090	833	819
85°	1368	515	575

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3782 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	3.1
10°-20°	501.1	8.5
20°-30°	703.6	12.0
30°-40°	766.9	13.1
40°-50°	704.9	12.0
50°-60°	553.6	9.4
60°-70°	360.3	6.1
70°-80°	185.5	3.2
80°-90°	48.5	0.8
90°-100°	21.0	0.4
100°-110°	78.2	1.3
110°-120°	207.4	3.5
120°-130°	344.0	5.9
130°-140°	365.4	6.2
140°-150°	339.6	5.8
150°-160°	273.0	4.6
160°-170°	175.9	3.0
170°-180°	60.6	1.0
0°-30°	1387.2	23.6
0°-40°	2154.2	36.7
0°-60°	3412.7	58.1
0°-90°	4007.0	68.2
90°-120°	306.6	5.2
90°-150°	1355.6	23.1
90°-180°	1865.0	31.8
0°-180°	5872.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	0	6	9	12	12	6
95°	30	15	18	20	20	35
105°	140	154	28	33	35	150
115°	265	272	284	71	38	261
125°	374	380	389	392	394	334
135°	463	470	475	479	478	358
145°	537	537	545	548	546	336
155°	592	587	593	596	592	273
165°	623	621	622	625	622	176
175°	638	634	635	638	634	61
180°	636	636	636	636	636	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	0.5	5.6	9.1	11.5	12.4
92.5°	11.5	9.7	11.0	12.0	12.4
95°	29.9	14.7	17.9	20.3	19.8
97.5°	53.8	16.1	23.5	24.9	25.4
100°	81.5	18.4	26.2	29.9	30.8
102.5°	111.9	110.9	27.1	32.2	33.6
105°	140.0	153.7	28.1	33.1	35.0
107.5°	172.7	184.1	29.0	34.0	35.9
110°	204.0	213.6	80.6	34.6	36.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	233.4	241.7	233.8	35.4	36.9
115°	264.7	272.5	284.1	70.9	37.8
117.5°	291.8	301.0	308.9	243.1	122.4
120°	322.3	329.1	337.4	343.0	280.8
122.5°	348.0	355.3	364.6	367.3	367.9
125°	374.3	380.2	389.0	392.2	393.6
127.5°	398.2	404.6	411.6	416.1	416.6
130°	420.8	428.1	433.2	438.3	437.8
132.5°	443.7	449.8	454.8	458.9	458.5
135°	463.2	470.5	474.6	479.3	478.3
137.5°	483.3	488.9	493.5	498.1	496.7
140°	503.1	506.9	511.9	516.0	513.8
142.5°	519.7	523.0	529.0	532.6	530.3
145°	537.2	536.8	544.6	547.8	545.5
147.5°	552.4	551.0	558.8	561.1	559.3
150°	567.1	563.9	571.3	574.0	571.7
152.5°	579.6	575.9	582.8	585.6	582.3
155°	591.5	587.4	593.0	595.7	592.0
157.5°	601.2	597.6	601.7	604.9	601.2
160°	609.5	606.7	609.5	612.3	609.1
162.5°	616.8	614.1	616.4	619.6	615.5
165°	623.3	620.6	621.9	625.2	621.9
167.5°	628.4	625.6	627.0	630.3	626.0
170°	632.5	629.7	630.7	633.9	629.7
172.5°	635.3	632.5	633.5	636.7	632.5
175°	637.5	634.3	635.3	638.5	633.9
177.5°	638.5	635.3	635.7	638.9	634.8
180°	636.2	636.2	636.2	636.2	636.2

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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	13.86	14.86	14.65	15.67	16.66	9.84	10.85	10.63	11.65	12.64
	3H	15.52	16.42	16.33	17.24	18.26	11.03	11.93	11.83	12.74	13.76
	4H	16.12	16.97	16.95	17.80	18.83	11.47	12.32	12.29	13.15	14.17
	6H	16.53	17.31	17.37	18.15	19.19	11.79	12.57	12.62	13.40	14.44
	8H	16.65	17.40	17.50	18.25	19.29	11.88	12.62	12.72	13.47	14.51
	12H	16.71	17.42	17.56	18.26	19.33	11.92	12.63	12.77	13.47	14.54
4H	2H	13.89	14.74	14.72	15.57	16.60	10.44	11.29	11.27	12.12	13.15
	3H	15.71	16.41	16.55	17.27	18.32	11.79	12.49	12.63	13.35	14.40
	4H	16.39	17.03	17.24	17.89	18.96	12.33	12.97	13.18	13.83	14.90
	6H	16.89	17.44	17.76	18.32	19.40	12.74	13.29	13.61	14.17	15.25
	8H	17.06	17.57	17.92	18.45	19.53	12.86	13.38	13.73	14.25	15.34
	12H	17.14	17.61	18.03	18.50	19.60	12.93	13.39	13.81	14.29	15.38
8H	4H	16.37	16.88	17.24	17.76	18.85	12.61	13.12	13.48	14.00	15.09
	6H	16.91	17.34	17.81	18.26	19.34	13.11	13.54	14.01	14.45	15.54
	8H	17.11	17.49	18.02	18.40	19.51	13.29	13.67	14.19	14.58	15.68
	12H	17.24	17.57	18.15	18.48	19.64	13.40	13.73	14.31	14.64	15.79
12H	4H	16.33	16.79	17.21	17.68	18.78	12.62	13.08	13.51	13.98	15.07
	6H	16.89	17.26	17.79	18.18	19.28	13.15	13.53	14.06	14.44	15.55
	8H	17.10	17.43	18.01	18.33	19.49	13.36	13.69	14.26	14.59	15.75

END OF REPORT