

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: P916335

Luminaire Tested: DFN2DIP-HX4F0-040D080US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916335
REPORT IS A COMBINATION OF REPORTS P899372 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D080US930-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

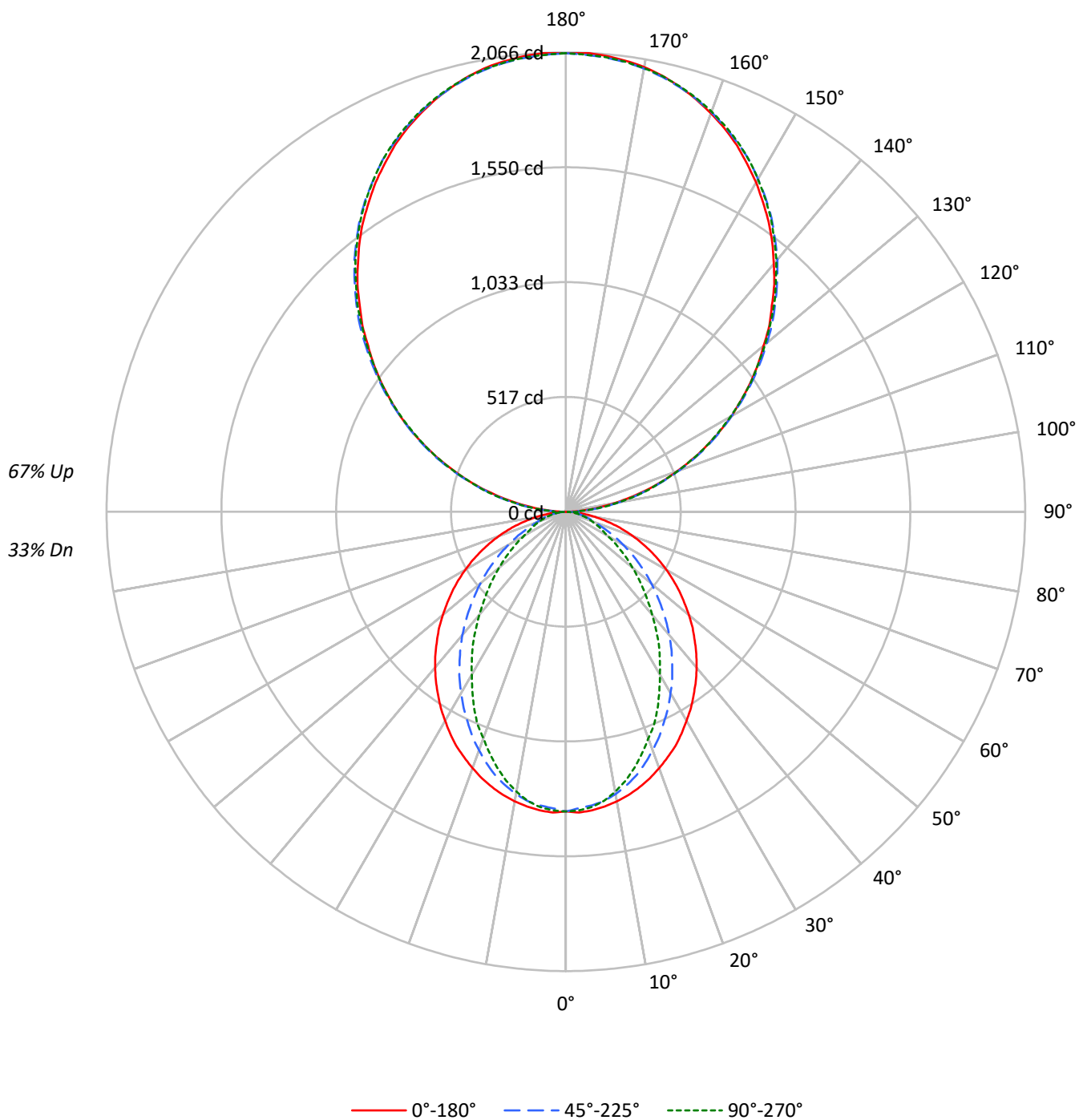
Lumens per Lamp: N/A
Luminaire Lumens: 8544.3 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 78.6
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1002	1002	1002
5°	1004	986	993
10°	994	967	960
15°	980	935	911
20°	962	891	849
25°	944	842	790
30°	919	791	715
35°	895	737	649
40°	870	681	574
45°	841	618	505
50°	812	555	438
55°	781	488	374
60°	745	417	308
65°	704	346	277
70°	654	279	251
75°	591	246	228
80°	500	207	198
85°	349	139	150

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1556 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.5
10°-20°	346.8	4.1
20°-30°	486.9	5.7
30°-40°	530.7	6.2
40°-50°	487.8	5.7
50°-60°	383.1	4.5
60°-70°	249.3	2.9
70°-80°	128.4	1.5
80°-90°	38.6	0.5
90°-100°	127.6	1.5
100°-110°	405.6	4.7
110°-120°	694.1	8.1
120°-130°	912.8	10.7
130°-140°	1024.6	12.0
140°-150°	1004.7	11.8
150°-160°	842.8	9.9
160°-170°	558.9	6.5
170°-180°	195.4	2.3
0°-30°	960.0	11.2
0°-40°	1490.7	17.4
0°-60°	2361.5	27.6
0°-90°	2777.9	32.5
90°-120°	1227.3	14.4
90°-150°	4169.4	48.8
90°-180°	5766.0	67.5
0°-180°	8544.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	2	22	61	57	59	8
95°	91	108	111	111	108	101
105°	374	379	383	386	386	395
115°	696	706	703	702	696	689
125°	1013	1029	1024	1018	1016	905
135°	1310	1330	1333	1332	1326	1013
145°	1591	1603	1613	1615	1608	994
155°	1819	1824	1830	1838	1833	837
165°	1979	1977	1977	1989	1981	558
175°	2059	2054	2050	2063	2052	196
180°	2063	2063	2063	2063	2063	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
90°	1.9	22.4	61.0	57.2	59.1
92.5°	38.6	52.3	54.1	55.9	55.9
95°	90.8	108.2	111.3	111.3	108.2
97.5°	151.2	167.3	174.1	174.1	174.1
100°	220.8	235.1	240.0	240.0	238.1
102.5°	294.2	304.8	311.5	313.4	311.5
105°	374.4	379.4	383.1	386.2	386.2
107.5°	454.0	461.5	461.5	462.7	454.0
110°	531.1	541.0	541.0	541.0	536.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	614.4	625.0	623.1	618.2	614.4
115°	696.5	706.5	703.4	701.5	696.5
117.5°	778.0	791.7	782.9	778.0	773.0
120°	860.1	873.8	860.1	860.1	854.4
122.5°	934.7	952.1	943.4	938.4	934.7
125°	1013.0	1028.6	1023.6	1018.0	1016.2
127.5°	1089.6	1108.8	1102.0	1094.5	1089.6
130°	1161.1	1183.4	1180.3	1176.6	1169.8
132.5°	1241.3	1258.7	1260.0	1251.2	1246.3
135°	1310.3	1329.6	1333.3	1331.5	1326.5
137.5°	1387.4	1403.0	1406.1	1404.8	1397.3
140°	1455.2	1470.7	1479.4	1479.4	1472.6
142.5°	1524.9	1540.4	1545.4	1547.3	1540.4
145°	1590.8	1603.2	1613.1	1615.0	1608.2
147.5°	1649.8	1665.4	1672.8	1676.0	1669.2
150°	1710.8	1721.3	1728.2	1733.8	1728.2
152.5°	1764.9	1775.5	1784.2	1791.0	1784.2
155°	1819.0	1824.0	1829.6	1838.3	1832.7
157.5°	1865.6	1869.4	1872.5	1884.9	1876.2
160°	1907.3	1911.1	1912.9	1923.5	1916.0
162.5°	1945.9	1945.9	1947.7	1959.6	1950.8
165°	1978.8	1976.9	1976.9	1989.4	1980.7
167.5°	2008.7	2003.1	2003.1	2015.5	2006.8
170°	2031.1	2026.1	2024.2	2036.7	2026.1
172.5°	2046.6	2041.7	2039.8	2052.2	2041.7
175°	2059.0	2054.1	2050.3	2062.8	2052.2
177.5°	2065.9	2060.9	2057.2	2067.8	2057.2
180°	2062.8	2062.8	2062.8	2062.8	2062.8

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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	5.25	5.96	6.35	7.05	8.56	1.23	1.93	2.33	3.02	4.53
	3H	6.92	7.55	8.03	8.66	10.18	2.41	3.04	3.51	4.14	5.66
	4H	7.53	8.12	8.64	9.23	10.75	2.85	3.45	3.97	4.55	6.08
	6H	7.94	8.49	9.07	9.60	11.13	3.17	3.72	4.30	4.83	6.36
	8H	8.07	8.59	9.20	9.71	11.24	3.26	3.78	4.39	4.90	6.43
	12H	8.12	8.62	9.26	9.73	11.29	3.30	3.79	4.43	4.91	6.46
4H	2H	5.26	5.86	6.38	6.96	8.48	1.81	2.40	2.93	3.51	5.03
	3H	7.08	7.57	8.21	8.70	10.24	3.15	3.65	4.28	4.77	6.31
	4H	7.76	8.22	8.90	9.34	10.90	3.69	4.15	4.83	5.27	6.83
	6H	8.27	8.66	9.41	9.81	11.36	4.11	4.50	5.25	5.64	7.19
	8H	8.45	8.81	9.59	9.95	11.51	4.23	4.60	5.37	5.73	7.30
	12H	8.54	8.87	9.69	10.01	11.58	4.29	4.63	5.45	5.77	7.34
8H	4H	7.72	8.09	8.86	9.22	10.79	3.96	4.33	5.10	5.46	7.03
	6H	8.29	8.59	9.45	9.76	11.32	4.48	4.78	5.64	5.96	7.52
	8H	8.50	8.77	9.67	9.92	11.50	4.67	4.93	5.84	6.09	7.67
	12H	8.64	8.87	9.81	10.02	11.64	4.79	5.02	5.96	6.17	7.79
12H	4H	7.67	8.00	8.83	9.15	10.72	3.96	4.29	5.12	5.44	7.01
	6H	8.26	8.52	9.43	9.68	11.26	4.53	4.79	5.70	5.95	7.53
	8H	8.48	8.71	9.65	9.86	11.48	4.74	4.97	5.91	6.12	7.74

END OF REPORT