

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: P902510

Luminaire Tested: DFN2DIP-HX2F0-060D050US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902510
REPORT IS A COMBINATION OF REPORTS P899189 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D050US830-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

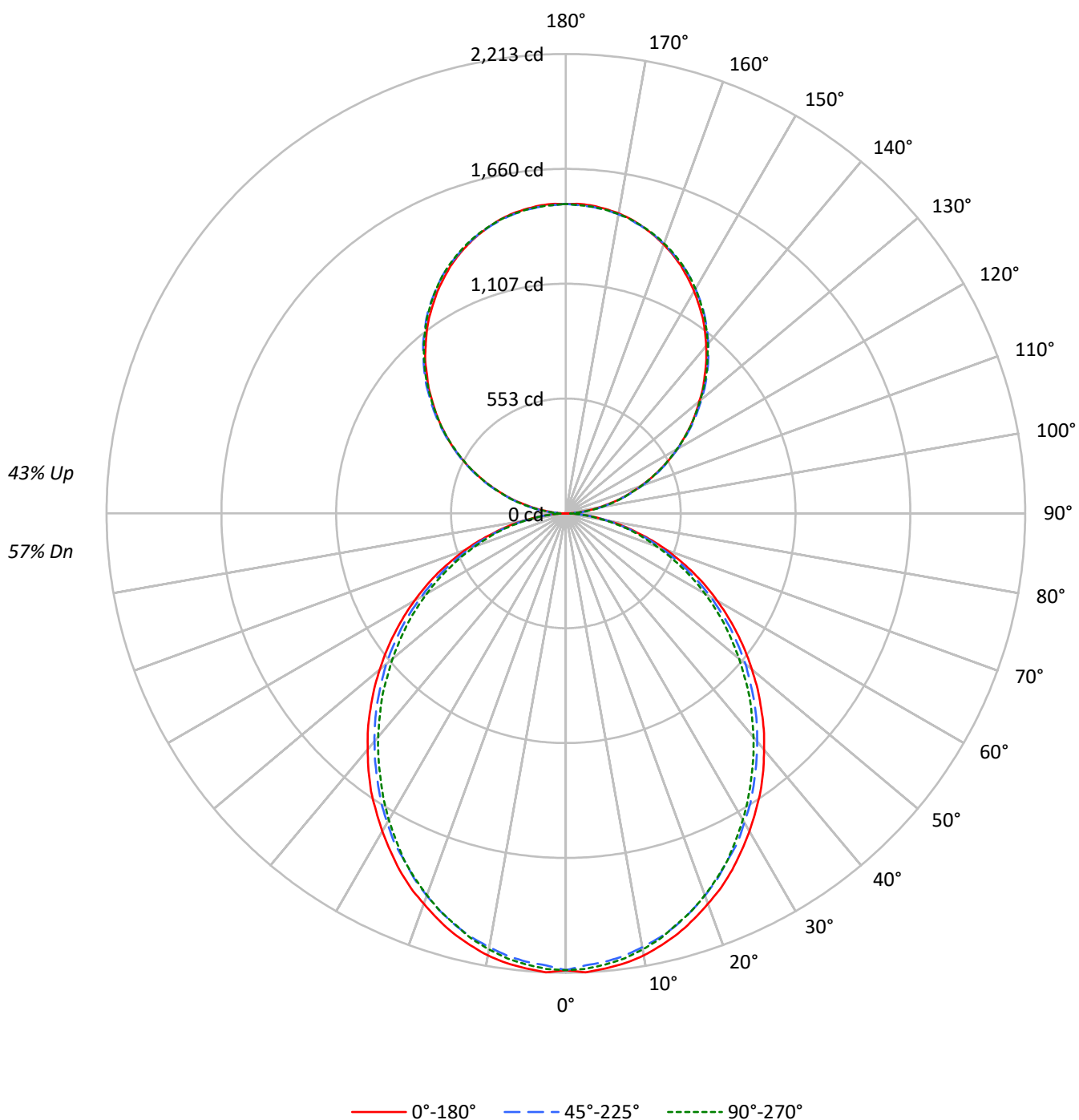
Lumens per Lamp: N/A
Luminaire Lumens: 9769.4 lumens
Efficiency: N/A
Efficacy: 99.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 97.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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	109	109	109	109		101	101	101	101		87	87	87		75	75	75		63	63	63
1	99	95	91	88		92	89	85	82		77	74	72		66	64	62		56	54	53
2	91	83	77	72		84	78	72	67		67	63	60		58	55	52		49	47	45
3	83	73	66	60		77	68	62	56		59	54	50		51	47	44		43	41	38
4	76	65	57	51		70	61	53	48		53	47	43		46	41	38		39	36	33
5	69	58	49	43		64	54	47	41		47	41	37		41	36	33		35	31	29
6	64	52	44	38		59	49	41	36		43	37	32		37	32	29		32	28	25
7	59	47	39	33		55	44	37	32		39	33	28		34	29	25		29	25	22
8	55	43	35	29		51	40	33	28		35	29	25		31	26	23		27	23	20
9	51	39	31	26		48	37	30	25		32	27	23		28	24	20		25	21	18
10	48	36	28	24		45	34	27	23		30	24	21		26	22	19		23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5185	5185	5185
5°	5185	5100	5137
10°	5135	5019	5058
15°	5051	4924	4940
20°	4940	4797	4820
25°	4830	4648	4682
30°	4695	4508	4509
35°	4566	4345	4327
40°	4408	4179	4153
45°	4250	4013	3974
50°	4077	3838	3769
55°	3896	3636	3577
60°	3690	3399	3357
65°	3464	3151	3099
70°	3177	2848	2818
75°	2782	2485	2546
80°	2304	2023	2055
85°	1563	1270	1272

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4250 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.1
10°-20°	582.7	6.0
20°-30°	856.4	8.8
30°-40°	994.6	10.2
40°-50°	993.4	10.2
50°-60°	866.2	8.9
60°-70°	640.3	6.6
70°-80°	362.3	3.7
80°-90°	99.9	1.0
90°-100°	92.2	0.9
100°-110°	293.0	3.0
110°-120°	501.5	5.1
120°-130°	659.5	6.8
130°-140°	740.3	7.6
140°-150°	725.9	7.4
150°-160°	609.0	6.2
160°-170°	403.9	4.1
170°-180°	141.2	1.4
0°-30°	1646.2	16.9
0°-40°	2640.9	27.0
0°-60°	4500.5	46.1
0°-90°	5602.9	57.4
90°-120°	886.7	9.1
90°-150°	3012.5	30.8
90°-180°	4167.0	42.7
0°-180°	9769.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2055	2063	2053	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1615	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	667	646	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	1	16	44	41	43	9
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.5	2200.5	2200.5	2200.5	2200.5
2.5°	2213.3	2202.7	2179.3	2200.5	2196.4
5°	2200.5	2192.2	2168.8	2185.7	2181.6
7.5°	2185.7	2173.1	2149.8	2166.8	2162.6
10°	2162.6	2147.8	2122.3	2139.2	2132.9
12.5°	2130.7	2118.1	2092.7	2103.3	2099.0
15°	2094.7	2082.2	2054.6	2063.1	2052.6
17.5°	2050.3	2037.8	2010.2	2020.6	2010.2
20°	2001.6	1989.0	1959.4	1965.7	1957.4
22.5°	1953.1	1934.0	1906.4	1906.4	1902.1
25°	1895.8	1879.1	1843.0	1847.1	1843.0
27.5°	1832.3	1817.5	1790.1	1783.9	1773.3
30°	1769.1	1751.9	1720.3	1714.0	1705.4
32.5°	1701.2	1688.7	1654.7	1641.9	1633.4
35°	1635.7	1614.6	1580.6	1567.8	1557.3
37.5°	1561.6	1542.5	1508.6	1493.7	1483.2
40°	1485.4	1468.4	1434.5	1415.7	1407.1
42.5°	1411.4	1394.3	1360.7	1339.4	1326.7
45°	1331.1	1316.2	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1204.0	1180.6	1168.0
50°	1170.1	1159.5	1129.9	1100.2	1089.7
52.5°	1089.7	1074.9	1047.4	1024.2	1009.4
55°	1007.3	994.5	969.1	943.8	933.2
57.5°	924.7	914.2	886.6	861.2	852.6
60°	842.1	833.8	804.2	780.8	774.5
62.5°	761.7	746.9	725.8	704.6	696.2
65°	679.3	666.6	645.5	626.3	615.8
67.5°	594.6	583.9	565.1	550.3	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.9	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4

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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	13.50	14.44	14.40	15.35	16.51	13.08	14.01	13.97	14.92	16.09
	3H	15.14	15.98	16.05	16.90	18.09	14.68	15.52	15.59	16.44	17.63
	4H	15.72	16.51	16.64	17.44	18.63	15.26	16.05	16.18	16.98	18.17
	6H	16.10	16.83	17.03	17.76	18.97	15.64	16.37	16.57	17.30	18.51
	8H	16.20	16.89	17.14	17.84	19.05	15.74	16.44	16.68	17.39	18.59
	12H	16.24	16.90	17.18	17.85	19.08	15.78	16.44	16.72	17.38	18.62
4H	2H	13.96	14.76	14.89	15.68	16.88	13.63	14.42	14.55	15.34	16.54
	3H	15.81	16.47	16.74	17.42	18.64	15.42	16.08	16.36	17.04	18.25
	4H	16.50	17.11	17.45	18.06	19.30	16.11	16.71	17.06	17.67	18.90
	6H	17.00	17.52	17.96	18.50	19.73	16.61	17.13	17.56	18.10	19.34
	8H	17.14	17.63	18.10	18.59	19.84	16.74	17.23	17.70	18.20	19.45
	12H	17.20	17.64	18.18	18.63	19.88	16.80	17.24	17.78	18.22	19.48
8H	4H	16.70	17.18	17.66	18.15	19.40	16.34	16.83	17.30	17.80	19.05
	6H	17.30	17.70	18.29	18.71	19.96	16.95	17.35	17.94	18.36	19.61
	8H	17.51	17.86	18.50	18.86	20.13	17.15	17.51	18.14	18.50	19.77
	12H	17.62	17.94	18.62	18.93	20.24	17.26	17.57	18.25	18.56	19.88
12H	4H	16.68	17.12	17.66	18.11	19.36	16.34	16.78	17.32	17.76	19.02
	6H	17.33	17.68	18.32	18.68	19.95	16.99	17.34	17.98	18.34	19.61
	8H	17.55	17.87	18.55	18.86	20.17	17.21	17.52	18.21	18.51	19.83