

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: P930305

Luminaire Tested: DFN2DS-HX4F0-060DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930305
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-HX4F0-060DS940-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

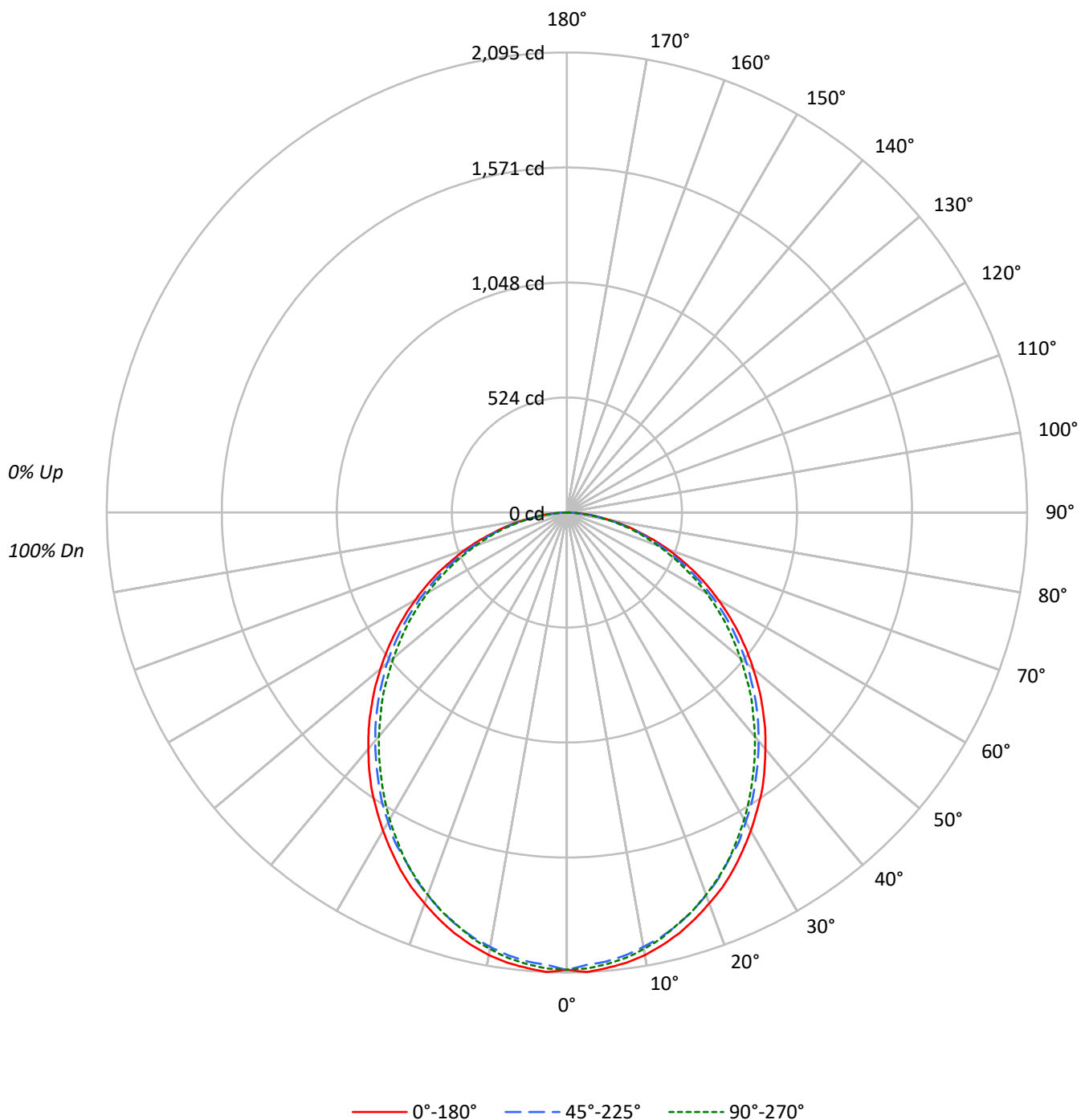
Lumens per Lamp: N/A
Luminaire Lumens: 5298.4 lumens
Efficiency: N/A
Efficacy: 89.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 59
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90	88	86	84
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63	58	54	51
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57	51	47	45
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52	46	41	39
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47	41	37	35
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44	38	33	31
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40	34	30	28
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37	32	27	26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1548	1548	1548
5°	1554	1532	1541
10°	1545	1516	1524
15°	1526	1497	1495
20°	1499	1467	1466
25°	1472	1431	1431
30°	1437	1398	1386
35°	1405	1358	1338
40°	1365	1318	1293
45°	1325	1278	1247
50°	1281	1237	1193
55°	1236	1189	1145
60°	1185	1132	1090
65°	1131	1075	1025
70°	1062	1005	958
75°	966	926	903
80°	858	832	789
85°	700	666	598

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1325 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.0	3.7
10°-20°	551.5	10.4
20°-30°	810.5	15.3
30°-40°	941.3	17.8
40°-50°	940.1	17.7
50°-60°	819.8	15.5
60°-70°	606.0	11.4
70°-80°	342.9	6.5
80°-90°	90.5	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1558.0	29.4
0°-40°	2499.3	47.2
0°-60°	4259.1	80.4
0°-90°	5298.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5298.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2082	2082	2082	2082	2082	
5°	2082	2075	2052	2068	2065	198
15°	1982	1970	1944	1952	1942	558
25°	1794	1778	1744	1748	1744	826
35°	1548	1528	1496	1484	1474	967
45°	1260	1246	1215	1194	1186	972
55°	953	941	917	893	883	852
65°	643	631	611	593	583	636
75°	336	332	322	310	314	359
85°	82	80	78	72	70	96
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2082.5	2082.5	2082.5	2082.5	2082.5
2.5°	2094.6	2084.6	2062.5	2082.5	2078.6
5°	2082.5	2074.6	2052.5	2068.5	2064.6
7.5°	2068.5	2056.6	2034.5	2050.6	2046.6
10°	2046.6	2032.6	2008.5	2024.5	2018.5
12.5°	2016.5	2004.5	1980.5	1990.5	1986.5
15°	1982.4	1970.5	1944.4	1952.5	1942.5
17.5°	1940.4	1928.5	1902.4	1912.3	1902.4
20°	1894.3	1882.4	1854.3	1860.3	1852.4
22.5°	1848.4	1830.3	1804.2	1804.2	1800.1
25°	1794.2	1778.3	1744.2	1748.1	1744.2
27.5°	1734.0	1720.0	1694.1	1688.2	1678.2
30°	1674.2	1658.0	1628.1	1622.1	1614.0
32.5°	1610.0	1598.1	1566.0	1553.9	1545.8
35°	1548.0	1528.0	1495.9	1483.8	1473.8
37.5°	1477.9	1459.8	1427.7	1413.6	1403.7
40°	1405.8	1389.6	1357.6	1339.8	1331.7
42.5°	1335.7	1319.5	1287.7	1267.5	1255.6
45°	1259.7	1245.6	1215.4	1193.6	1185.5
47.5°	1185.5	1171.5	1139.4	1117.3	1105.4
50°	1107.3	1097.3	1069.3	1041.2	1031.2
52.5°	1031.2	1017.2	991.3	969.2	955.2
55°	953.3	941.1	917.2	893.2	883.2
57.5°	875.1	865.2	839.0	815.0	806.9
60°	796.9	789.1	761.1	738.9	733.0
62.5°	720.8	706.8	686.8	666.9	658.8
65°	642.9	630.8	610.8	592.7	582.7
67.5°	562.8	552.6	534.8	520.7	512.6
70°	488.6	480.6	462.5	448.5	440.6
72.5°	412.6	404.5	394.5	380.5	374.6
75°	336.3	332.5	322.3	310.4	314.4
77.5°	268.3	260.3	256.2	250.3	244.3
80°	200.3	198.2	194.2	188.2	184.2
82.5°	136.2	136.2	134.2	126.2	126.2
85°	82.0	80.1	78.1	72.0	70.1
87.5°	36.1	32.1	28.0	22.1	20.0
90°	0.0	0.0	0.0	0.0	0.0

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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	12.80	14.41	13.17	14.73	15.04	12.36	13.97	12.72	14.28	14.60
	3H	14.55	16.01	14.93	16.33	16.69	14.06	15.52	14.44	15.84	16.20
	4H	15.20	16.57	15.60	16.92	17.29	14.70	16.07	15.10	16.42	16.80
	6H	15.67	16.94	16.08	17.30	17.69	15.17	16.43	15.58	16.80	17.19
	8H	15.81	17.02	16.24	17.41	17.81	15.31	16.52	15.73	16.91	17.31
	12H	15.90	17.06	16.33	17.44	17.87	15.39	16.55	15.82	16.93	17.36
4H	2H	13.36	14.73	13.76	15.08	15.46	13.01	14.38	13.41	14.73	15.10
	3H	15.34	16.48	15.75	16.88	17.28	14.93	16.08	15.34	16.47	16.87
	4H	16.11	17.15	16.55	17.56	18.00	15.69	16.73	16.12	17.14	17.58
	6H	16.71	17.62	17.16	18.06	18.51	16.28	17.18	16.73	17.62	18.08
	8H	16.90	17.75	17.36	18.19	18.65	16.46	17.31	16.92	17.75	18.22
	12H	17.03	17.79	17.51	18.27	18.74	16.58	17.34	17.06	17.82	18.28
8H	4H	16.39	17.23	16.85	17.68	18.14	16.01	16.86	16.47	17.30	17.77
	6H	17.10	17.80	17.60	18.29	18.77	16.72	17.42	17.21	17.91	18.39
	8H	17.36	17.99	17.87	18.50	18.98	16.97	17.60	17.48	18.11	18.59
	12H	17.56	18.12	18.07	18.61	19.17	17.15	17.71	17.65	18.20	18.76
12H	4H	16.41	17.17	16.89	17.65	18.12	16.05	16.81	16.53	17.28	17.75
	6H	17.15	17.78	17.66	18.29	18.77	16.78	17.41	17.29	17.92	18.40
	8H	17.46	18.02	17.97	18.51	19.07	17.08	17.64	17.59	18.13	18.69