

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: P930350

Luminaire Tested: DFN2DS-HX4F0-090DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930350
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-HX4F0-090DS840-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

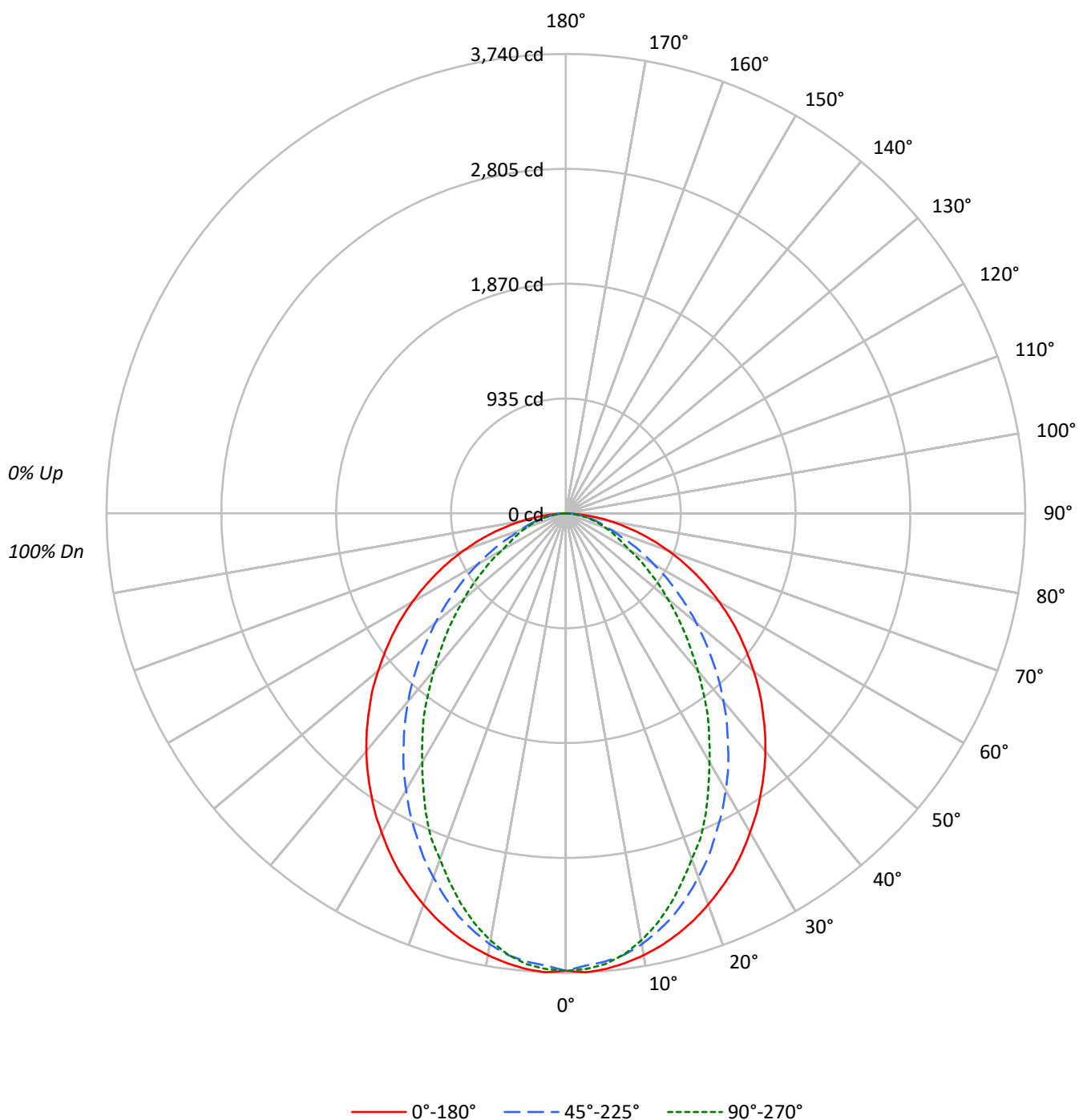
Lumens per Lamp: N/A
Luminaire Lumens: 7657.7 lumens
Efficiency: N/A
Efficacy: 81.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 93.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2769	2769	2769
5°	2779	2734	2749
10°	2758	2689	2666
15°	2726	2610	2534
20°	2682	2496	2370
25°	2637	2366	2212
30°	2575	2233	2008
35°	2514	2089	1829
40°	2453	1939	1622
45°	2381	1772	1435
50°	2308	1602	1251
55°	2232	1420	1075
60°	2145	1228	892
65°	2046	1032	812
70°	1927	850	747
75°	1781	775	697
80°	1572	692	635
85°	1234	546	546

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2381 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	349.0	4.6
10°-20°	958.0	12.5
20°-30°	1345.0	17.6
30°-40°	1466.1	19.1
40°-50°	1347.5	17.6
50°-60°	1058.3	13.8
60°-70°	688.8	9.0
70°-80°	354.6	4.6
80°-90°	90.5	1.2
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°	2651.9	34.6
0°-40°	4118.0	53.8
0°-60°	6523.8	85.2
0°-90°	7657.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7657.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3723	3723	3723	3723	3723	
5°	3723	3707	3663	3693	3683	353
15°	3541	3504	3390	3326	3292	998
25°	3215	3107	2884	2746	2696	1478
35°	2770	2598	2302	2089	2015	1734
45°	2264	2038	1685	1445	1365	1749
55°	1722	1459	1095	893	829	1539
65°	1163	890	586	472	462	1153
75°	620	384	270	246	243	656
85°	145	74	64	64	64	174
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3723.4	3723.4	3723.4	3723.4	3723.4
2.5°	3740.2	3723.4	3686.2	3720.2	3713.4
5°	3723.4	3706.6	3662.7	3693.0	3683.0
7.5°	3693.0	3673.0	3625.8	3639.0	3622.2
10°	3652.6	3629.0	3561.9	3551.4	3531.4
12.5°	3602.2	3571.9	3480.7	3460.7	3423.4
15°	3541.4	3504.3	3389.9	3325.8	3292.3
17.5°	3470.7	3416.7	3275.1	3201.1	3147.1
20°	3389.9	3322.3	3153.9	3069.9	2995.5
22.5°	3302.3	3224.7	3029.1	2914.7	2864.4
25°	3214.7	3106.7	2884.4	2746.3	2695.6
27.5°	3110.3	2995.5	2749.5	2591.2	2513.6
30°	2999.1	2870.8	2601.2	2429.6	2338.4
32.5°	2891.1	2735.9	2460.0	2257.7	2173.3
35°	2770.0	2598.0	2301.6	2089.3	2014.9
37.5°	2651.9	2466.5	2153.3	1920.5	1836.5
40°	2527.2	2325.2	1998.1	1759.0	1671.4
42.5°	2399.2	2183.7	1843.2	1593.8	1509.7
45°	2264.5	2038.5	1684.9	1445.3	1364.6
47.5°	2136.4	1897.3	1533.3	1293.8	1219.8
50°	1994.9	1755.7	1385.0	1152.3	1081.8
52.5°	1856.6	1603.8	1243.4	1021.0	957.1
55°	1721.7	1459.0	1095.0	893.1	829.0
57.5°	1583.8	1314.2	963.9	775.1	721.1
60°	1442.1	1172.6	825.5	653.9	599.9
62.5°	1304.2	1034.6	707.5	545.9	519.1
65°	1162.6	889.5	586.3	471.9	461.6
67.5°	1027.8	754.7	471.9	414.3	404.3
70°	886.3	623.5	390.8	357.2	343.5
72.5°	751.5	501.9	326.7	299.9	293.2
75°	619.9	384.0	269.6	245.9	242.7
77.5°	488.7	272.8	212.3	198.8	192.0
80°	367.2	195.6	161.6	148.3	148.3
82.5°	256.0	131.5	111.2	104.4	104.4
85°	144.7	74.0	64.0	64.0	64.0
87.5°	54.0	26.8	26.8	23.6	23.6
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	14.77	16.29	15.14	16.61	16.92	10.73	12.26	11.10	12.57	12.88
	3H	16.54	17.90	16.92	18.23	18.59	12.00	13.36	12.38	13.69	14.05
	4H	17.20	18.49	17.60	18.83	19.21	12.50	13.78	12.90	14.13	14.51
	6H	17.69	18.88	18.11	19.24	19.63	12.88	14.06	13.29	14.43	14.82
	8H	17.86	18.99	18.29	19.37	19.78	13.01	14.13	13.43	14.52	14.92
	12H	17.96	19.04	18.39	19.42	19.85	13.09	14.16	13.52	14.55	14.98
4H	2H	14.88	16.16	15.28	16.51	16.88	11.43	12.71	11.83	13.06	13.44
	3H	16.81	17.87	17.22	18.27	18.67	12.87	13.93	13.28	14.33	14.74
	4H	17.56	18.52	17.99	18.93	19.37	13.47	14.43	13.90	14.84	15.28
	6H	18.15	18.98	18.61	19.43	19.89	13.96	14.79	14.42	15.23	15.69
	8H	18.37	19.14	18.83	19.59	20.05	14.12	14.90	14.58	15.34	15.81
	12H	18.52	19.21	19.00	19.69	20.16	14.24	14.93	14.72	15.41	15.88
8H	4H	17.58	18.36	18.05	18.81	19.27	13.82	14.60	14.29	15.05	15.51
	6H	18.22	18.86	18.72	19.36	19.83	14.41	15.05	14.91	15.55	16.02
	8H	18.47	19.05	18.99	19.56	20.05	14.63	15.21	15.15	15.72	16.21
	12H	18.68	19.19	19.19	19.68	20.24	14.81	15.32	15.32	15.81	16.38
12H	4H	17.57	18.26	18.05	18.74	19.21	13.87	14.56	14.35	15.04	15.51
	6H	18.20	18.78	18.72	19.29	19.78	14.47	15.05	14.99	15.56	16.05
	8H	18.49	19.00	19.00	19.49	20.05	14.75	15.26	15.26	15.75	16.31