

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: P930378

Luminaire Tested: DFN2DS-HX4F0-100DS940-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930378
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-HX4F0-100DS940-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

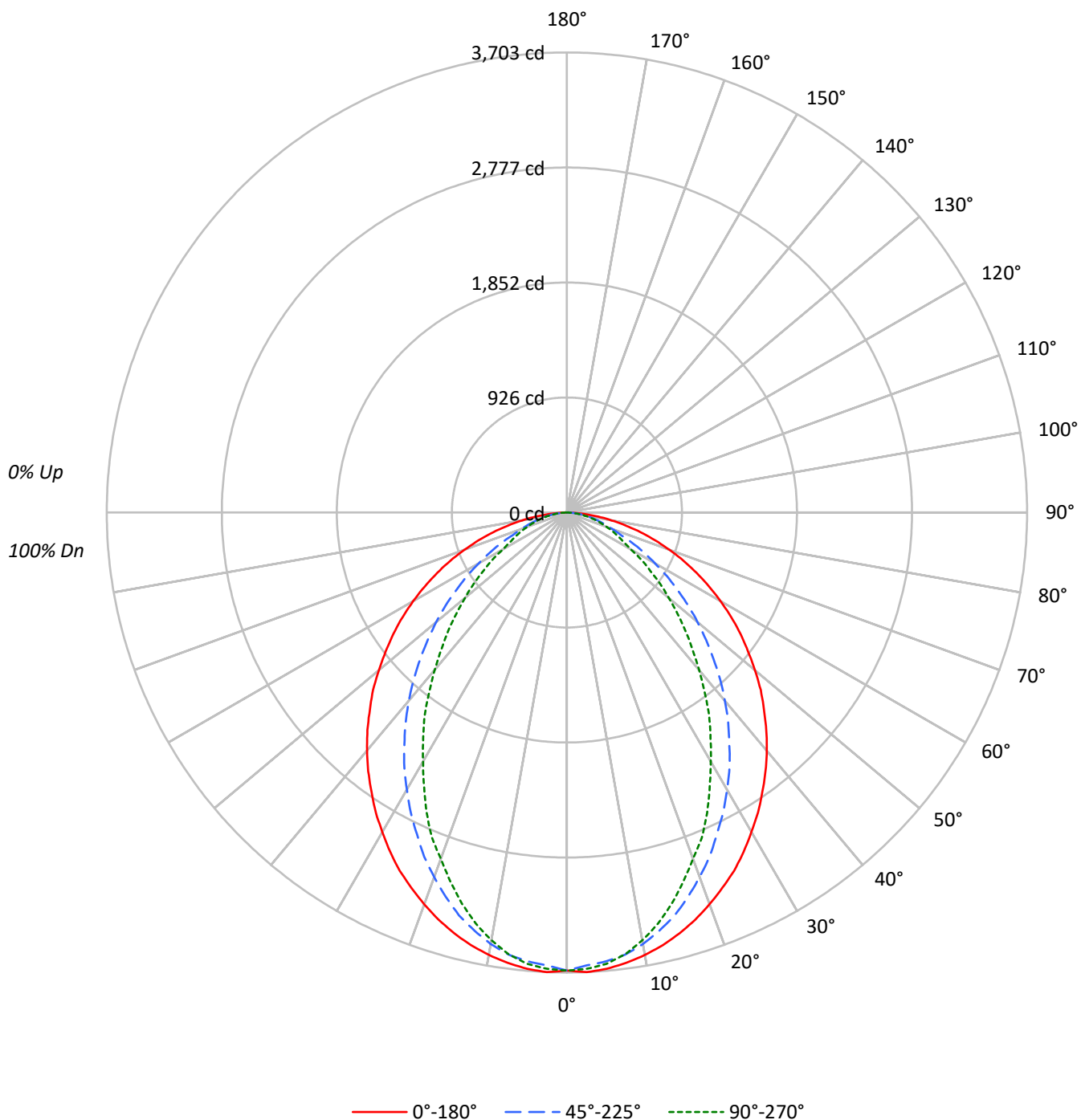
Lumens per Lamp: N/A
Luminaire Lumens: 7582.0 lumens
Efficiency: N/A
Efficacy: 72.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 104.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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				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	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92	90	88		86
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82	79	76		74
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74	69	66		64
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66	62	57		55
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60	55	51		49
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55	50	45		43
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51	45	41		39
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47	41	37		35
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44	38	34		32
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41	35	31		29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2741	2741	2741
5°	2752	2707	2722
10°	2731	2663	2640
15°	2699	2584	2509
20°	2656	2471	2347
25°	2611	2343	2190
30°	2550	2211	1988
35°	2489	2069	1811
40°	2429	1920	1606
45°	2358	1754	1421
50°	2285	1586	1239
55°	2210	1406	1064
60°	2123	1215	883
65°	2025	1021	804
70°	1908	841	740
75°	1763	767	690
80°	1557	685	629
85°	1223	540	540

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2358 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	345.5	4.6
10°-20°	948.5	12.5
20°-30°	1331.7	17.6
30°-40°	1451.6	19.1
40°-50°	1334.2	17.6
50°-60°	1047.8	13.8
60°-70°	682.0	9.0
70°-80°	351.1	4.6
80°-90°	89.6	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°	2625.7	34.6
0°-40°	4077.3	53.8
0°-60°	6459.3	85.2
0°-90°	7582.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7582.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3687	3687	3687	3687	3687	
5°	3687	3670	3626	3657	3647	350
15°	3506	3470	3356	3293	3260	988
25°	3183	3076	2856	2719	2669	1464
35°	2742	2572	2279	2069	1995	1717
45°	2242	2018	1668	1431	1351	1731
55°	1705	1445	1084	884	821	1523
65°	1151	881	580	467	457	1141
75°	614	380	267	244	240	649
85°	143	73	63	63	63	172
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3686.6	3686.6	3686.6	3686.6	3686.6
2.5°	3703.2	3686.6	3649.8	3683.4	3676.7
5°	3686.6	3670.0	3626.4	3656.6	3646.6
7.5°	3656.6	3636.7	3589.9	3603.1	3586.5
10°	3616.5	3593.2	3526.6	3516.4	3496.6
12.5°	3566.7	3536.5	3446.2	3426.4	3389.6
15°	3506.5	3469.6	3356.3	3293.0	3259.7
17.5°	3436.3	3382.9	3242.8	3169.5	3116.0
20°	3356.3	3289.4	3122.7	3039.6	2965.9
22.5°	3269.6	3192.8	2999.2	2886.0	2836.0
25°	3182.9	3076.1	2855.8	2719.2	2669.0
27.5°	3079.5	2965.9	2722.4	2565.6	2488.8
30°	2969.5	2842.4	2575.5	2405.6	2315.4
32.5°	2862.6	2708.9	2435.7	2235.4	2151.8
35°	2742.5	2572.3	2278.9	2068.6	1995.0
37.5°	2625.8	2442.0	2132.0	1901.6	1818.3
40°	2502.2	2302.3	1978.4	1741.5	1654.8
42.5°	2375.5	2162.0	1825.1	1578.0	1494.8
45°	2242.0	2018.3	1668.3	1431.1	1351.1
47.5°	2115.4	1878.6	1518.2	1281.0	1207.8
50°	1975.2	1738.3	1371.3	1140.9	1071.1
52.5°	1838.1	1587.9	1231.1	1010.9	947.6
55°	1704.7	1444.6	1084.2	884.2	820.8
57.5°	1568.1	1301.2	954.4	767.4	714.0
60°	1427.9	1161.0	817.3	647.4	594.0
62.5°	1291.3	1024.4	700.5	540.6	514.0
65°	1151.1	880.7	580.5	467.2	457.0
67.5°	1017.7	747.2	467.2	410.2	400.3
70°	877.5	617.4	386.9	353.6	340.2
72.5°	744.0	496.9	323.5	296.9	290.3
75°	613.8	380.2	266.9	243.5	240.3
77.5°	483.9	270.1	210.2	196.8	190.1
80°	363.5	193.7	160.0	146.9	146.9
82.5°	253.4	130.2	110.1	103.4	103.4
85°	143.3	73.2	63.3	63.3	63.3
87.5°	53.4	26.6	26.6	23.4	23.4
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	14.74	16.26	15.10	16.57	16.89	10.70	12.22	11.06	12.53	12.85
	3H	16.50	17.87	16.88	18.20	18.56	11.96	13.33	12.34	13.66	14.02
	4H	17.17	18.45	17.57	18.80	19.18	12.47	13.75	12.87	14.09	14.47
	6H	17.66	18.84	18.07	19.21	19.60	12.85	14.03	13.26	14.40	14.79
	8H	17.82	18.95	18.25	19.34	19.74	12.97	14.10	13.40	14.49	14.89
	12H	17.93	19.01	18.36	19.39	19.82	13.05	14.13	13.48	14.51	14.94
4H	2H	14.84	16.12	15.24	16.47	16.85	11.39	12.67	11.79	13.02	13.40
	3H	16.78	17.84	17.19	18.24	18.64	12.84	13.90	13.25	14.30	14.70
	4H	17.53	18.48	17.96	18.90	19.34	13.44	14.39	13.87	14.81	15.25
	6H	18.12	18.95	18.57	19.39	19.85	13.93	14.76	14.38	15.20	15.66
	8H	18.33	19.11	18.79	19.55	20.02	14.09	14.86	14.55	15.31	15.78
	12H	18.48	19.18	18.97	19.66	20.13	14.20	14.90	14.69	15.38	15.85
8H	4H	17.55	18.33	18.01	18.77	19.24	13.79	14.57	14.25	15.01	15.48
	6H	18.19	18.83	18.68	19.32	19.80	14.38	15.02	14.87	15.51	15.99
	8H	18.44	19.01	18.95	19.52	20.01	14.60	15.17	15.11	15.68	16.17
	12H	18.64	19.15	19.15	19.64	20.21	14.78	15.29	15.29	15.78	16.34
12H	4H	17.53	18.23	18.02	18.71	19.18	13.83	14.53	14.32	15.01	15.48
	6H	18.17	18.75	18.68	19.25	19.74	14.44	15.02	14.95	15.53	16.02
	8H	18.45	18.96	18.96	19.45	20.02	14.71	15.22	15.22	15.72	16.28