

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: P930075

Luminaire Tested: DFN2DS-HX2F0-040DS830-FLL

Issue Date: 11/20/2024

**Test Information**

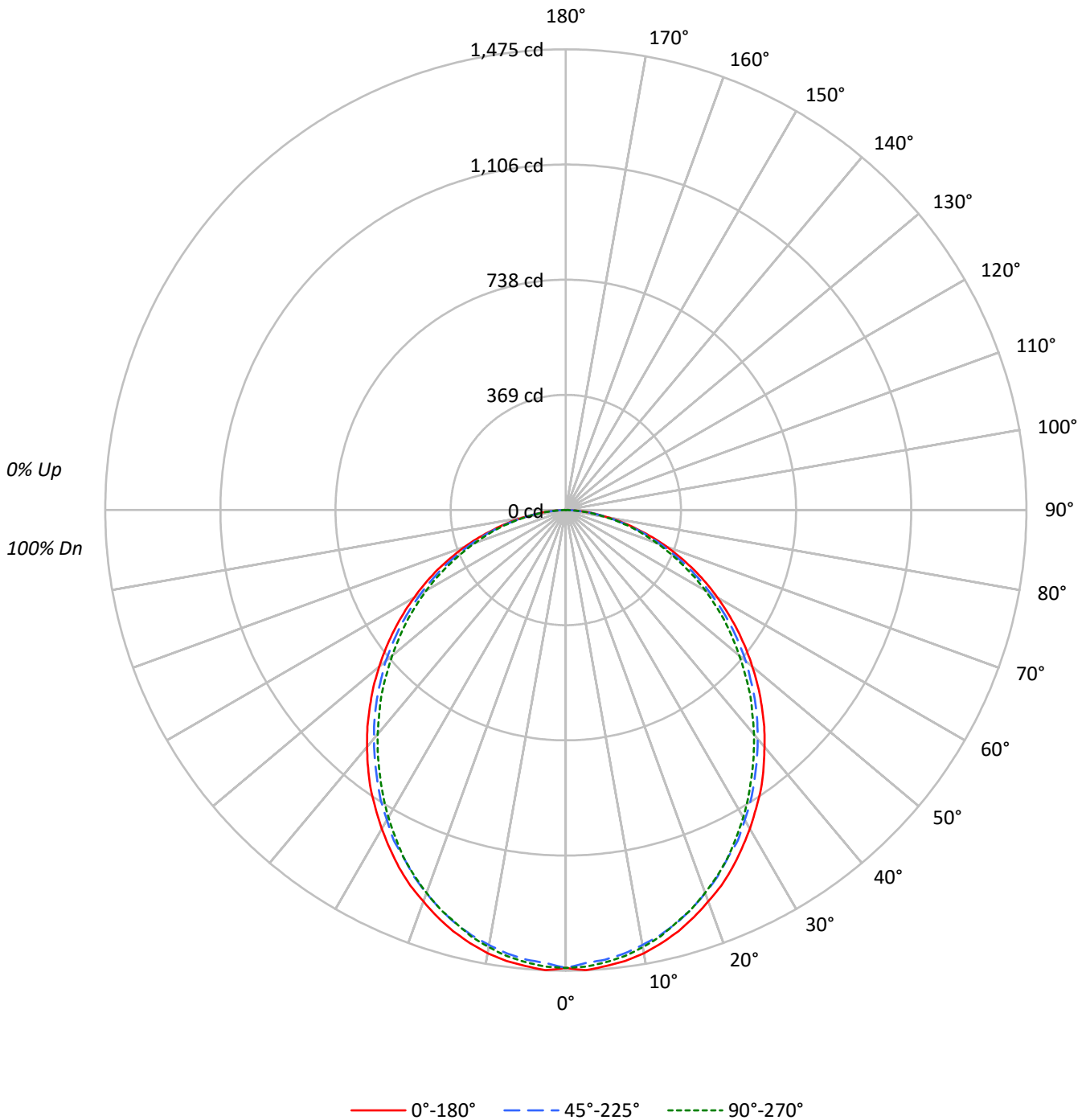
Test Method: LM-79-2019  
Report Number: P930075  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-HX2F0-040DS830-FLL  
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3730.3 lumens  
Efficiency: N/A  
Efficacy: 97.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 2.3' x L: 1.99' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 38.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9933  
Total Harmonic Distortion (THDi): 0.066  
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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	73	73	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	62	62	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	54	54	54	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	47	47	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	41	41	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	37	37	37	35
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	33	33	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	30	30	30	28
10	54	41	33	28	53	40	33	28	39	32	27	38	32	27	37	32	27	27	27	27	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3454	3454	3454
5°	3468	3418	3438
10°	3447	3383	3400
15°	3404	3339	3336
20°	3344	3273	3270
25°	3284	3192	3192
30°	3207	3118	3091
35°	3135	3029	2984
40°	3044	2940	2884
45°	2955	2851	2781
50°	2858	2759	2661
55°	2757	2652	2554
60°	2644	2525	2432
65°	2523	2397	2287
70°	2370	2243	2137
75°	2156	2066	2015
80°	1913	1855	1760
85°	1560	1487	1335

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2955 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.0	3.7
10°-20°	388.3	10.4
20°-30°	570.6	15.3
30°-40°	662.7	17.8
40°-50°	661.9	17.7
50°-60°	577.1	15.5
60°-70°	426.6	11.4
70°-80°	241.4	6.5
80°-90°	63.7	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°	1096.8	29.4
0°-40°	1759.5	47.2
0°-60°	2998.6	80.4
0°-90°	3730.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3730.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1466	1466	1466	1466	1466	
5°	1466	1461	1445	1456	1454	139
15°	1396	1387	1369	1375	1368	393
25°	1263	1252	1228	1231	1228	581
35°	1090	1076	1053	1045	1038	681
45°	887	877	856	840	835	684
55°	671	663	646	629	622	600
65°	453	444	430	417	410	447
75°	237	234	227	218	221	253
85°	58	56	55	51	49	68
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1466.1	1466.1	1466.1	1466.1	1466.1
2.5°	1474.7	1467.6	1452.1	1466.1	1463.5
5°	1466.1	1460.6	1445.0	1456.2	1453.6
7.5°	1456.2	1447.9	1432.3	1443.7	1440.9
10°	1440.9	1431.0	1414.1	1425.3	1421.1
12.5°	1419.6	1411.2	1394.3	1401.4	1398.5
15°	1395.7	1387.3	1368.9	1374.6	1367.6
17.5°	1366.1	1357.7	1339.3	1346.3	1339.3
20°	1333.6	1325.2	1305.5	1309.7	1304.2
22.5°	1301.3	1288.6	1270.2	1270.2	1267.4
25°	1263.1	1251.9	1228.0	1230.7	1228.0
27.5°	1220.8	1210.9	1192.8	1188.5	1181.6
30°	1178.6	1167.3	1146.2	1142.0	1136.3
32.5°	1133.5	1125.1	1102.5	1094.0	1088.3
35°	1089.8	1075.8	1053.2	1044.7	1037.6
37.5°	1040.4	1027.7	1005.1	995.3	988.3
40°	989.8	978.4	955.8	943.2	937.6
42.5°	940.4	929.0	906.6	892.4	884.0
45°	886.8	877.0	855.7	840.4	834.6
47.5°	834.6	824.7	802.2	786.7	778.3
50°	779.6	772.5	752.8	733.1	726.0
52.5°	726.0	716.2	697.9	682.4	672.5
55°	671.2	662.6	645.7	628.8	621.8
57.5°	616.1	609.1	590.6	573.8	568.1
60°	561.1	555.5	535.8	520.3	516.0
62.5°	507.5	497.7	483.6	469.5	463.8
65°	452.6	444.1	430.0	417.3	410.3
67.5°	396.2	389.0	376.5	366.6	361.0
70°	344.0	338.4	325.6	315.8	310.2
72.5°	290.5	284.8	277.8	267.9	263.7
75°	236.8	234.1	226.9	218.5	221.4
77.5°	188.9	183.2	180.4	176.2	172.0
80°	141.0	139.5	136.7	132.5	129.7
82.5°	95.9	95.9	94.6	88.8	88.8
85°	57.7	56.4	55.0	50.7	49.4
87.5°	25.4	22.6	19.8	15.5	14.0
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	15.59	17.20	15.95	17.51	17.83	15.15	16.76	15.51	17.07	17.38
	3H	17.34	18.79	17.72	19.12	19.48	16.85	18.30	17.23	18.63	18.99
	4H	17.99	19.36	18.38	19.70	20.08	17.49	18.86	17.89	19.21	19.58
	6H	18.46	19.72	18.87	20.09	20.48	17.95	19.22	18.37	19.59	19.98
	8H	18.60	19.81	19.02	20.20	20.60	18.10	19.31	18.52	19.70	20.09
	12H	18.69	19.85	19.12	20.23	20.66	18.18	19.34	18.61	19.72	20.15
4H	2H	16.15	17.52	16.55	17.87	18.24	15.80	17.17	16.20	17.51	17.89
	3H	18.13	19.27	18.53	19.67	20.07	17.72	18.86	18.13	19.26	19.66
	4H	18.90	19.94	19.33	20.35	20.79	18.48	19.51	18.91	19.93	20.36
	6H	19.50	20.40	19.95	20.84	21.30	19.07	19.97	19.52	20.41	20.87
	8H	19.69	20.53	20.15	20.98	21.44	19.25	20.10	19.71	20.54	21.00
	12H	19.82	20.58	20.30	21.06	21.52	19.37	20.13	19.85	20.60	21.07
8H	4H	19.18	20.02	19.64	20.46	20.93	18.80	19.65	19.26	20.09	20.56
	6H	19.89	20.59	20.38	21.08	21.56	19.51	20.21	20.00	20.70	21.17
	8H	20.15	20.78	20.66	21.29	21.77	19.76	20.39	20.27	20.89	21.38
	12H	20.35	20.91	20.86	21.40	21.96	19.94	20.49	20.44	20.98	21.54
12H	4H	19.20	19.96	19.68	20.44	20.91	18.84	19.60	19.32	20.07	20.54
	6H	19.93	20.57	20.44	21.07	21.56	19.57	20.20	20.08	20.70	21.19
	8H	20.25	20.81	20.76	21.30	21.86	19.87	20.43	20.38	20.92	21.48