

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: P905523

Luminaire Tested: DFN2DIP-HX4F0-100D040US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905523
REPORT IS A COMBINATION OF REPORTS P899312 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D040US835-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

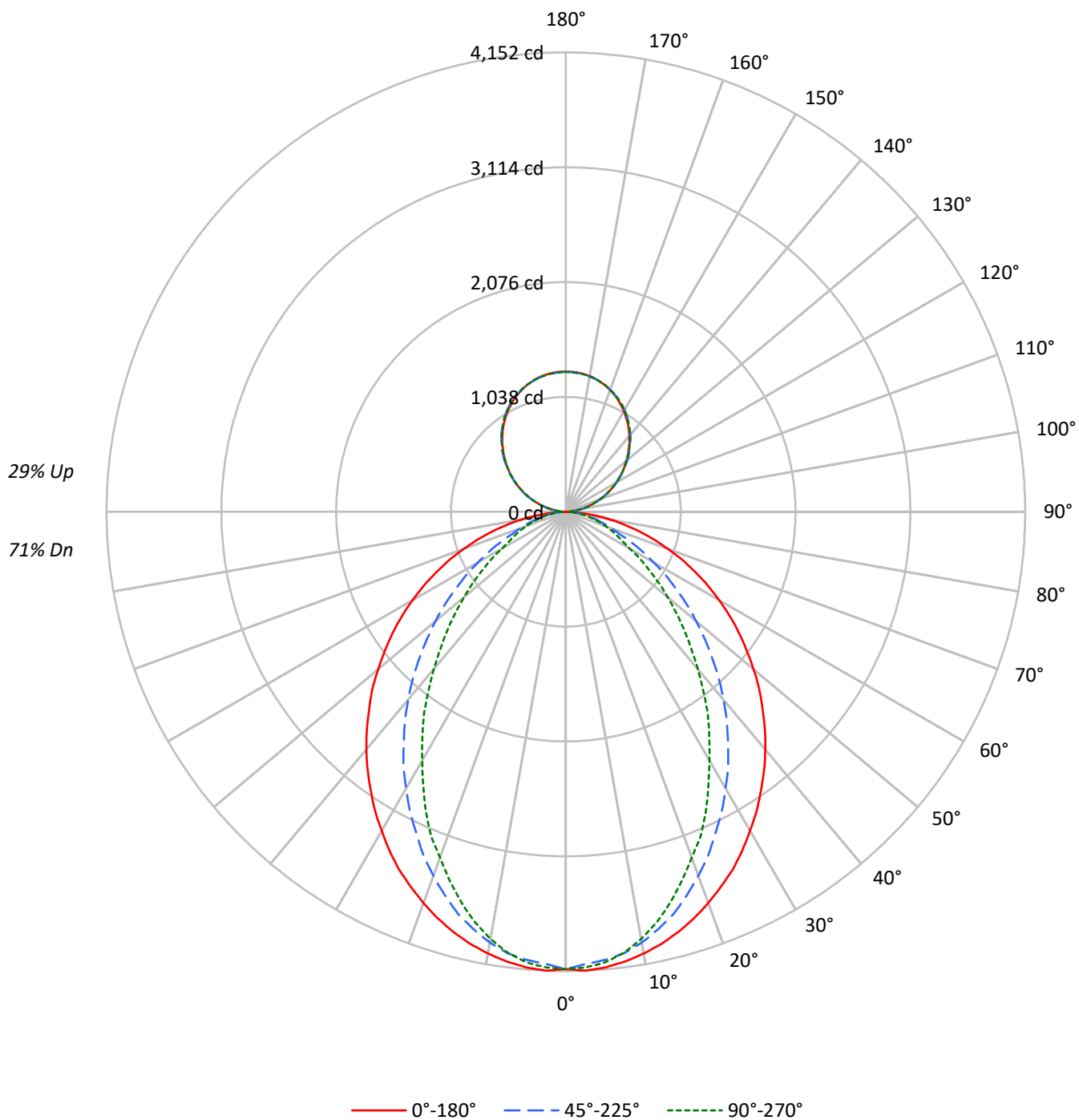
Lumens per Lamp: N/A
Luminaire Lumens: 12040.0 lumens
Efficiency: N/A
Efficacy: 97.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 123.1
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
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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75
1	103	99	95	92	97	94	90	88	84	82	79	76	74	72	67	66	65
2	94	87	81	76	89	83	78	73	75	71	67	67	64	61	60	58	56
3	87	77	70	64	82	74	67	62	67	61	57	60	56	53	54	51	48
4	80	69	61	55	75	66	59	53	60	54	49	54	49	46	49	45	42
5	74	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37
6	68	56	48	42	64	54	46	41	49	43	38	44	39	36	40	36	33
7	63	51	43	37	60	49	41	36	45	38	34	41	36	32	37	33	30
8	59	47	39	33	56	45	37	32	41	35	31	37	32	29	34	30	27
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	28	24
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3073	3073	3073
5°	3078	3025	3044
10°	3048	2966	2945
15°	3006	2868	2792
20°	2951	2733	2604
25°	2895	2582	2423
30°	2818	2427	2193
35°	2744	2260	1991
40°	2668	2088	1759
45°	2580	1896	1549
50°	2489	1703	1344
55°	2394	1496	1147
60°	2284	1280	944
65°	2157	1060	850
70°	2004	855	769
75°	1811	755	700
80°	1532	634	608
85°	1071	425	458

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2580 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.3	3.2
10°-20°	1063.3	8.8
20°-30°	1492.9	12.4
30°-40°	1627.4	13.5
40°-50°	1495.7	12.4
50°-60°	1174.7	9.8
60°-70°	764.6	6.4
70°-80°	393.6	3.3
80°-90°	104.1	0.9
90°-100°	78.3	0.7
100°-110°	248.7	2.1
110°-120°	425.6	3.5
120°-130°	559.8	4.6
130°-140°	628.3	5.2
140°-150°	616.2	5.1
150°-160°	516.9	4.3
160°-170°	342.8	2.8
170°-180°	119.8	1.0
0°-30°	2943.6	24.4
0°-40°	4571.0	38.0
0°-60°	7241.3	60.1
0°-90°	8503.6	70.6
90°-120°	752.7	6.3
90°-150°	2556.9	21.2
90°-180°	3536.0	29.4
0°-180°	12040.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4133	4133	4133	4133	4133	
5°	4133	4114	4066	4099	4088	392
15°	3931	3890	3763	3692	3654	1108
25°	3568	3448	3202	3048	2992	1641
35°	3075	2884	2555	2319	2236	1924
45°	2514	2263	1870	1604	1515	1941
55°	1911	1620	1216	991	920	1708
65°	1290	987	651	524	512	1279
75°	688	426	299	273	269	728
85°	161	82	71	71	71	184
90°	1	14	37	35	36	12
95°	56	66	68	68	66	62
105°	230	233	235	237	237	242
115°	427	433	431	430	427	422
125°	621	631	628	624	623	555
135°	804	815	818	816	814	621
145°	976	983	989	990	986	610
155°	1116	1119	1122	1127	1124	513
165°	1214	1212	1212	1220	1215	342
175°	1263	1260	1257	1265	1259	120
180°	1265	1265	1265	1265	1265	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4133.0	4133.0	4133.0	4133.0	4133.0
2.5°	4151.6	4133.0	4091.7	4129.4	4121.9
5°	4133.0	4114.3	4065.5	4099.3	4088.1
7.5°	4099.3	4077.0	4024.6	4039.3	4020.7
10°	4054.4	4028.2	3953.6	3942.1	3919.9
12.5°	3998.5	3964.7	3863.5	3841.3	3800.0
15°	3931.0	3889.7	3762.7	3691.7	3654.4
17.5°	3852.4	3792.5	3635.4	3553.2	3493.3
20°	3762.7	3687.7	3500.8	3407.6	3325.0
22.5°	3665.5	3579.4	3362.3	3235.4	3179.4
25°	3568.3	3448.5	3201.6	3048.4	2992.1
27.5°	3452.4	3325.0	3052.0	2876.2	2790.1
30°	3329.0	3186.5	2887.3	2696.9	2595.7
32.5°	3209.2	3036.9	2730.6	2506.0	2412.3
35°	3074.6	2883.8	2554.8	2319.1	2236.5
37.5°	2943.7	2737.7	2390.1	2131.8	2038.5
40°	2805.2	2581.0	2217.9	1952.4	1855.2
42.5°	2663.1	2423.8	2046.1	1769.1	1675.8
45°	2513.5	2262.7	1870.3	1604.4	1514.7
47.5°	2371.5	2106.0	1702.0	1436.1	1354.0
50°	2214.3	1948.8	1537.3	1279.0	1200.8
52.5°	2060.7	1780.2	1380.2	1133.3	1062.3
55°	1911.1	1619.5	1215.5	991.3	920.2
57.5°	1758.0	1458.7	1069.9	860.3	800.4
60°	1600.8	1301.6	916.3	725.8	665.9
62.5°	1447.6	1148.4	785.3	606.0	576.2
65°	1290.5	987.3	650.8	523.8	512.3
67.5°	1140.9	837.7	523.8	459.9	448.8
70°	983.7	692.1	433.7	396.4	381.4
72.5°	834.1	557.1	362.7	332.9	325.4
75°	688.1	426.2	299.2	273.0	269.4
77.5°	542.5	302.8	235.7	220.6	213.1
80°	407.5	217.1	179.4	164.7	164.7
82.5°	284.1	146.0	123.4	115.9	115.9
85°	160.7	82.1	71.0	71.0	71.0
87.5°	59.9	29.8	29.8	26.2	26.2
90°	1.1	13.7	37.4	35.1	36.2
92.5°	23.6	32.0	33.2	34.3	34.3
95°	55.7	66.4	68.3	68.3	66.4
97.5°	92.7	102.6	106.8	106.8	106.8
100°	135.4	144.2	147.2	147.2	146.1
102.5°	180.4	186.9	191.1	192.2	191.1
105°	229.6	232.6	234.9	236.8	236.8
107.5°	278.4	283.0	283.0	283.7	278.4
110°	325.7	331.8	331.8	331.8	328.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	376.8	383.3	382.1	379.1	376.8
115°	427.1	433.3	431.3	430.2	427.1
117.5°	477.1	485.5	480.2	477.1	474.1
120°	527.5	535.8	527.5	527.5	524.0
122.5°	573.2	583.9	578.6	575.5	573.2
125°	621.3	630.8	627.8	624.3	623.2
127.5°	668.2	680.0	675.8	671.2	668.2
130°	712.0	725.8	723.9	721.6	717.4
132.5°	761.2	771.9	772.7	767.3	764.3
135°	803.6	815.4	817.7	816.5	813.5
137.5°	850.9	860.4	862.3	861.5	857.0
140°	892.4	902.0	907.3	907.3	903.1
142.5°	935.2	944.7	947.7	948.9	944.7
145°	975.6	983.2	989.3	990.5	986.3
147.5°	1011.8	1021.3	1025.9	1027.8	1023.6
150°	1049.2	1055.7	1059.9	1063.3	1059.9
152.5°	1082.4	1088.8	1094.2	1098.4	1094.2
155°	1115.5	1118.6	1122.0	1127.4	1123.9
157.5°	1144.2	1146.4	1148.3	1156.0	1150.6
160°	1169.7	1172.0	1173.1	1179.6	1175.0
162.5°	1193.3	1193.3	1194.5	1201.7	1196.4
165°	1213.6	1212.4	1212.4	1220.0	1214.7
167.5°	1231.9	1228.4	1228.4	1236.1	1230.7
170°	1245.6	1242.5	1241.4	1249.0	1242.5
172.5°	1255.1	1252.1	1250.9	1258.6	1252.1
175°	1262.8	1259.7	1257.4	1265.0	1258.6
177.5°	1267.0	1263.9	1261.6	1268.1	1261.6
180°	1265.0	1265.0	1265.0	1265.0	1265.0

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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	12.79	13.82	13.55	14.60	15.55	8.76	9.80	9.53	10.58	11.52
	3H	14.48	15.41	15.26	16.20	17.17	9.97	10.89	10.75	11.68	12.66
	4H	15.10	15.97	15.90	16.77	17.76	10.43	11.30	11.22	12.10	13.09
	6H	15.53	16.34	16.34	17.14	18.15	10.76	11.56	11.57	12.37	13.37
	8H	15.67	16.43	16.48	17.26	18.26	10.86	11.62	11.68	12.45	13.45
	12H	15.74	16.46	16.56	17.28	18.31	10.91	11.64	11.73	12.46	13.48
4H	2H	12.83	13.70	13.63	14.50	15.49	9.38	10.25	10.18	11.05	12.04
	3H	14.68	15.40	15.49	16.24	17.24	10.75	11.48	11.56	12.31	13.31
	4H	15.38	16.04	16.21	16.87	17.90	11.31	11.97	12.14	12.80	13.83
	6H	15.91	16.48	16.75	17.33	18.37	11.74	12.31	12.58	13.17	14.20
	8H	16.09	16.62	16.93	17.47	18.52	11.88	12.41	12.72	13.26	14.31
	12H	16.19	16.67	17.06	17.54	18.60	11.95	12.43	12.82	13.30	14.35
8H	4H	15.36	15.89	16.21	16.75	17.80	11.61	12.13	12.45	12.99	14.04
	6H	15.94	16.38	16.81	17.27	18.32	12.13	12.57	13.01	13.47	14.52
	8H	16.16	16.55	17.04	17.44	18.50	12.33	12.72	13.21	13.61	14.67
	12H	16.31	16.65	17.19	17.53	18.65	12.46	12.80	13.34	13.68	14.80
12H	4H	15.33	15.80	16.19	16.67	17.73	11.62	12.10	12.48	12.97	14.02
	6H	15.92	16.30	16.80	17.19	18.26	12.18	12.57	13.07	13.46	14.53
	8H	16.15	16.49	17.03	17.37	18.49	12.41	12.75	13.29	13.63	14.75

END OF REPORT