

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: P909284

Luminaire Tested: DFN2DIP-SQ3F0-100D040US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909284
REPORT IS A COMBINATION OF REPORTS P899873 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D040US840-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

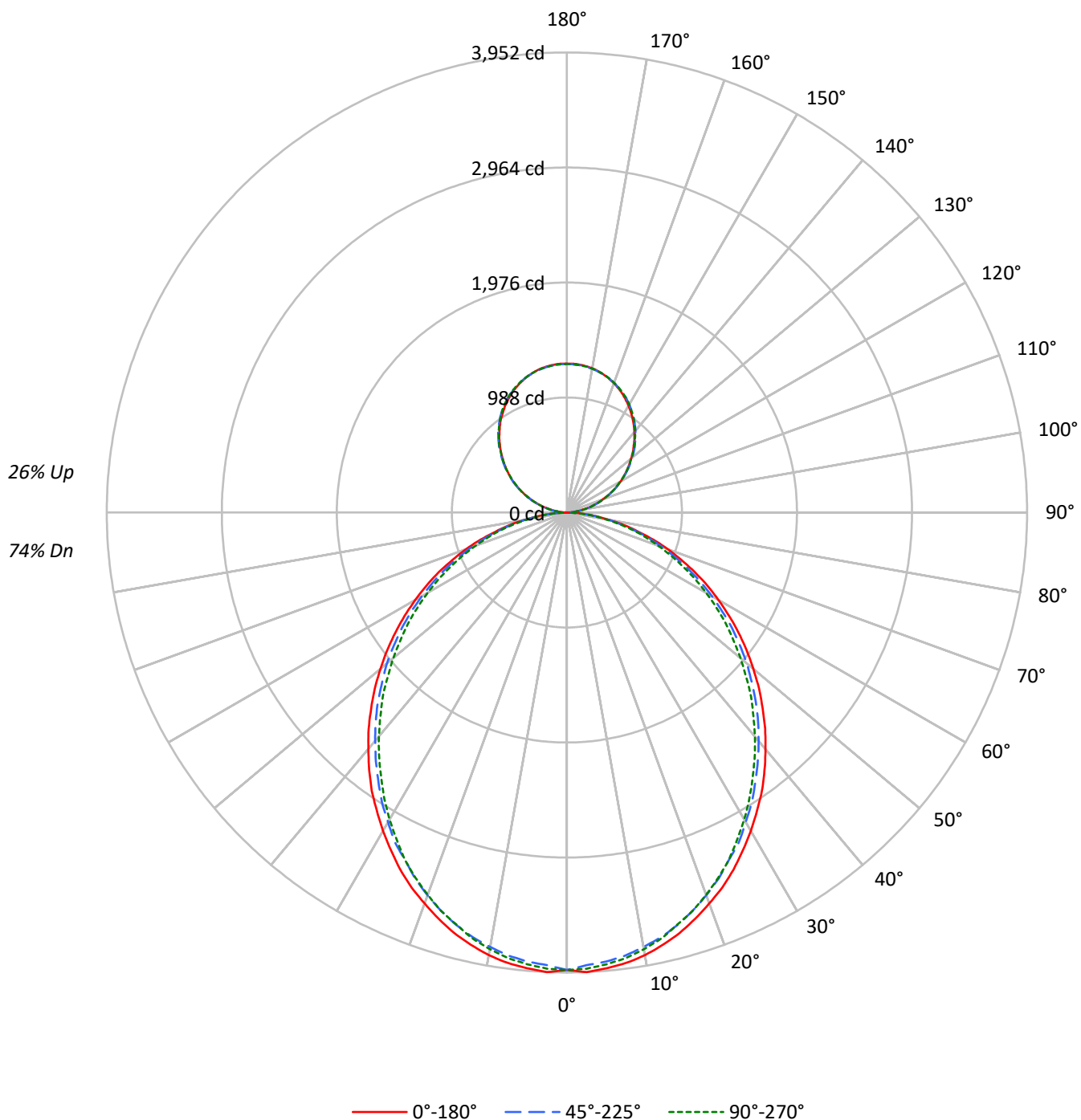
Lumens per Lamp: N/A
Luminaire Lumens: 13572.6 lumens
Efficiency: N/A
Efficacy: 105.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 128.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	113	113	113	113	107	107	107	107	96	96	96		87	87	87		78
1	103	99	95	91	98	94	90	87	85	82	80		77	74	72		69
2	94	86	80	74	89	82	76	71	74	70	66		67	64	61		61
3	86	76	68	62	81	72	65	60	66	60	55		59	55	51		54
4	79	67	59	53	74	64	57	51	58	52	47		53	48	44		48
5	72	60	52	45	68	57	50	44	52	46	41		48	42	38		43
6	67	54	46	40	63	52	44	38	47	41	36		43	38	34		39
7	62	49	41	35	58	47	39	34	43	37	32		39	34	30		36
8	57	45	37	31	54	43	35	30	39	33	28		36	31	27		33
9	54	41	33	28	51	39	32	27	36	30	26		33	28	24		31
10	50	38	30	25	48	36	29	24	33	27	23		31	26	22		28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4502	4502	4502
5°	4507	4437	4468
10°	4467	4374	4406
15°	4399	4299	4310
20°	4307	4196	4212
25°	4216	4073	4099
30°	4102	3959	3955
35°	3994	3825	3803
40°	3862	3689	3658
45°	3730	3552	3510
50°	3585	3409	3339
55°	3433	3243	3181
60°	3262	3047	3000
65°	3074	2844	2786
70°	2835	2595	2556
75°	2504	2297	2341
80°	2105	1916	1935
85°	1481	1270	1267

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3730 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	369.8	2.7
10°-20°	1040.6	7.7
20°-30°	1529.3	11.3
30°-40°	1776.1	13.1
40°-50°	1773.9	13.1
50°-60°	1546.8	11.4
60°-70°	1143.4	8.4
70°-80°	646.9	4.8
80°-90°	174.4	1.3
90°-100°	79.1	0.6
100°-110°	251.2	1.9
110°-120°	429.8	3.2
120°-130°	565.3	4.2
130°-140°	634.5	4.7
140°-150°	622.2	4.6
150°-160°	522.0	3.8
160°-170°	346.2	2.6
170°-180°	121.0	0.9
0°-30°	2939.7	21.7
0°-40°	4715.8	34.7
0°-60°	8036.5	59.2
0°-90°	10001.3	73.7
90°-120°	760.1	5.6
90°-150°	2582.2	19.0
90°-180°	3571.0	26.3
0°-180°	13572.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3930	3930	3930	3930	3930	
5°	3930	3915	3873	3903	3896	373
15°	3741	3718	3669	3684	3665	1054
25°	3386	3355	3291	3298	3291	1558
35°	2921	2883	2823	2800	2781	1824
45°	2377	2350	2293	2252	2237	1834
55°	1799	1776	1731	1685	1666	1608
65°	1213	1190	1153	1118	1100	1199
75°	635	627	608	586	593	677
85°	155	151	148	136	132	173
90°	1	14	38	35	37	13
95°	56	67	69	69	67	63
105°	232	235	237	239	239	245
115°	431	438	436	434	431	427
125°	627	637	634	630	629	561
135°	812	823	826	825	822	627
145°	985	993	999	1000	996	616
155°	1126	1130	1133	1138	1135	519
165°	1226	1224	1224	1232	1227	346
175°	1275	1272	1270	1278	1271	121
180°	1278	1278	1278	1278	1278	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3929.5	3929.5	3929.5	3929.5	3929.5
2.5°	3952.3	3933.4	3891.7	3929.5	3922.2
5°	3929.5	3914.6	3872.9	3903.0	3895.8
7.5°	3903.0	3880.5	3838.8	3869.3	3861.7
10°	3861.7	3835.3	3789.9	3820.0	3808.8
12.5°	3804.8	3782.4	3737.0	3755.9	3748.2
15°	3740.6	3718.2	3668.8	3684.1	3665.3
17.5°	3661.3	3638.8	3589.5	3608.4	3589.5
20°	3574.2	3551.8	3498.9	3510.1	3495.2
22.5°	3487.7	3453.6	3404.3	3404.3	3396.7
25°	3385.5	3355.4	3291.3	3298.4	3291.3
27.5°	3272.0	3245.5	3196.6	3185.4	3166.5
30°	3159.0	3128.5	3071.9	3060.7	3045.5
32.5°	3037.9	3015.5	2954.9	2932.0	2916.8
35°	2920.8	2883.2	2822.6	2799.8	2780.9
37.5°	2788.5	2754.4	2693.9	2667.5	2648.6
40°	2652.6	2622.1	2561.6	2528.0	2512.7
42.5°	2520.3	2489.8	2429.7	2391.7	2369.2
45°	2376.8	2350.4	2293.4	2252.1	2237.0
47.5°	2237.0	2210.5	2149.9	2108.2	2085.8
50°	2089.4	2070.5	2017.6	1964.7	1945.9
52.5°	1945.9	1919.5	1870.5	1828.9	1802.4
55°	1798.8	1775.9	1730.6	1685.3	1666.5
57.5°	1651.2	1632.3	1583.1	1537.8	1522.6
60°	1503.7	1488.8	1435.9	1394.2	1383.0
62.5°	1360.2	1333.7	1296.1	1258.4	1243.1
65°	1213.1	1190.2	1152.6	1118.4	1099.6
67.5°	1062.0	1042.7	1009.1	982.6	967.4
70°	922.0	906.8	872.7	846.3	831.4
72.5°	778.5	763.3	744.5	718.0	706.7
75°	634.6	627.4	608.1	585.7	593.3
77.5°	506.3	491.1	483.4	472.2	461.0
80°	378.0	374.1	366.4	355.2	347.6
82.5°	257.0	257.0	253.4	238.1	238.1
85°	154.7	151.2	147.5	135.9	132.3
87.5°	68.2	60.5	52.9	41.7	37.7
90°	1.1	13.8	37.8	35.4	36.6
92.5°	23.8	32.3	33.5	34.6	34.6
95°	56.2	67.1	69.0	69.0	67.1
97.5°	93.6	103.6	107.9	107.9	107.9
100°	136.7	145.6	148.7	148.7	147.5
102.5°	182.2	188.7	193.0	194.1	193.0
105°	231.9	234.9	237.2	239.1	239.1
107.5°	281.1	285.8	285.8	286.5	281.1
110°	328.9	335.1	335.1	335.1	332.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	380.5	387.1	385.9	382.8	380.5
115°	431.3	437.6	435.6	434.4	431.3
117.5°	481.8	490.3	484.9	481.8	478.8
120°	532.7	541.1	532.7	532.7	529.2
122.5°	578.9	589.7	584.3	581.2	578.9
125°	627.4	637.0	634.0	630.5	629.3
127.5°	674.8	686.7	682.5	677.8	674.8
130°	719.0	733.0	731.0	728.7	724.5
132.5°	768.7	779.5	780.3	774.9	771.8
135°	811.5	823.4	825.8	824.6	821.5
137.5°	859.3	868.9	870.8	870.0	865.5
140°	901.2	910.9	916.3	916.3	912.0
142.5°	944.4	954.0	957.0	958.3	954.0
145°	985.2	992.9	999.1	1000.3	996.0
147.5°	1021.8	1031.4	1036.0	1037.9	1033.7
150°	1059.6	1066.1	1070.4	1073.8	1070.4
152.5°	1093.1	1099.5	1105.0	1109.2	1105.0
155°	1126.5	1129.6	1133.1	1138.5	1135.0
157.5°	1155.5	1157.7	1159.6	1167.4	1162.0
160°	1181.2	1183.6	1184.7	1191.2	1186.6
162.5°	1205.1	1205.1	1206.3	1213.6	1208.2
165°	1225.6	1224.4	1224.4	1232.0	1226.7
167.5°	1244.1	1240.5	1240.5	1248.3	1242.8
170°	1257.9	1254.8	1253.6	1261.3	1254.8
172.5°	1267.5	1264.5	1263.2	1271.0	1264.5
175°	1275.3	1272.1	1269.8	1277.5	1271.0
177.5°	1279.5	1276.4	1274.0	1280.6	1274.0
180°	1277.5	1277.5	1277.5	1277.5	1277.5

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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	14.41	15.54	15.14	16.28	17.17	13.97	15.09	14.69	15.84	16.72
	3H	16.09	17.10	16.82	17.85	18.77	15.60	16.61	16.33	17.36	18.28
	4H	16.68	17.64	17.44	18.40	19.33	16.19	17.14	16.95	17.91	18.84
	6H	17.09	17.97	17.86	18.75	19.69	16.59	17.47	17.36	18.25	19.19
	8H	17.20	18.04	17.98	18.84	19.78	16.70	17.54	17.48	18.33	19.28
	12H	17.26	18.06	18.04	18.85	19.82	16.75	17.55	17.53	18.34	19.31
4H	2H	14.90	15.85	15.66	16.62	17.55	14.55	15.50	15.30	16.26	17.19
	3H	16.78	17.58	17.56	18.38	19.33	16.38	17.17	17.15	17.97	18.92
	4H	17.51	18.23	18.29	19.03	20.01	17.08	17.81	17.87	18.61	19.58
	6H	18.03	18.66	18.83	19.48	20.47	17.60	18.23	18.40	19.05	20.03
	8H	18.18	18.77	18.99	19.59	20.59	17.75	18.33	18.56	19.15	20.15
	12H	18.27	18.80	19.10	19.64	20.64	17.82	18.35	18.65	19.19	20.19
8H	4H	17.72	18.31	18.53	19.13	20.12	17.34	17.93	18.15	18.75	19.74
	6H	18.36	18.84	19.19	19.70	20.70	17.97	18.46	18.81	19.32	20.32
	8H	18.58	19.01	19.42	19.87	20.88	18.18	18.61	19.03	19.47	20.49
	12H	18.72	19.10	19.57	19.95	21.01	18.30	18.69	19.16	19.53	20.60
12H	4H	17.72	18.24	18.54	19.09	20.09	17.35	17.88	18.18	18.72	19.72
	6H	18.39	18.82	19.23	19.68	20.69	18.01	18.45	18.86	19.30	20.32
	8H	18.64	19.02	19.49	19.87	20.94	18.26	18.64	19.11	19.49	20.55