

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: P906224

Luminaire Tested: DFN2DIP-SQ2F0-040D040US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906224
REPORT IS A COMBINATION OF REPORTS P899785 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D040US835-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

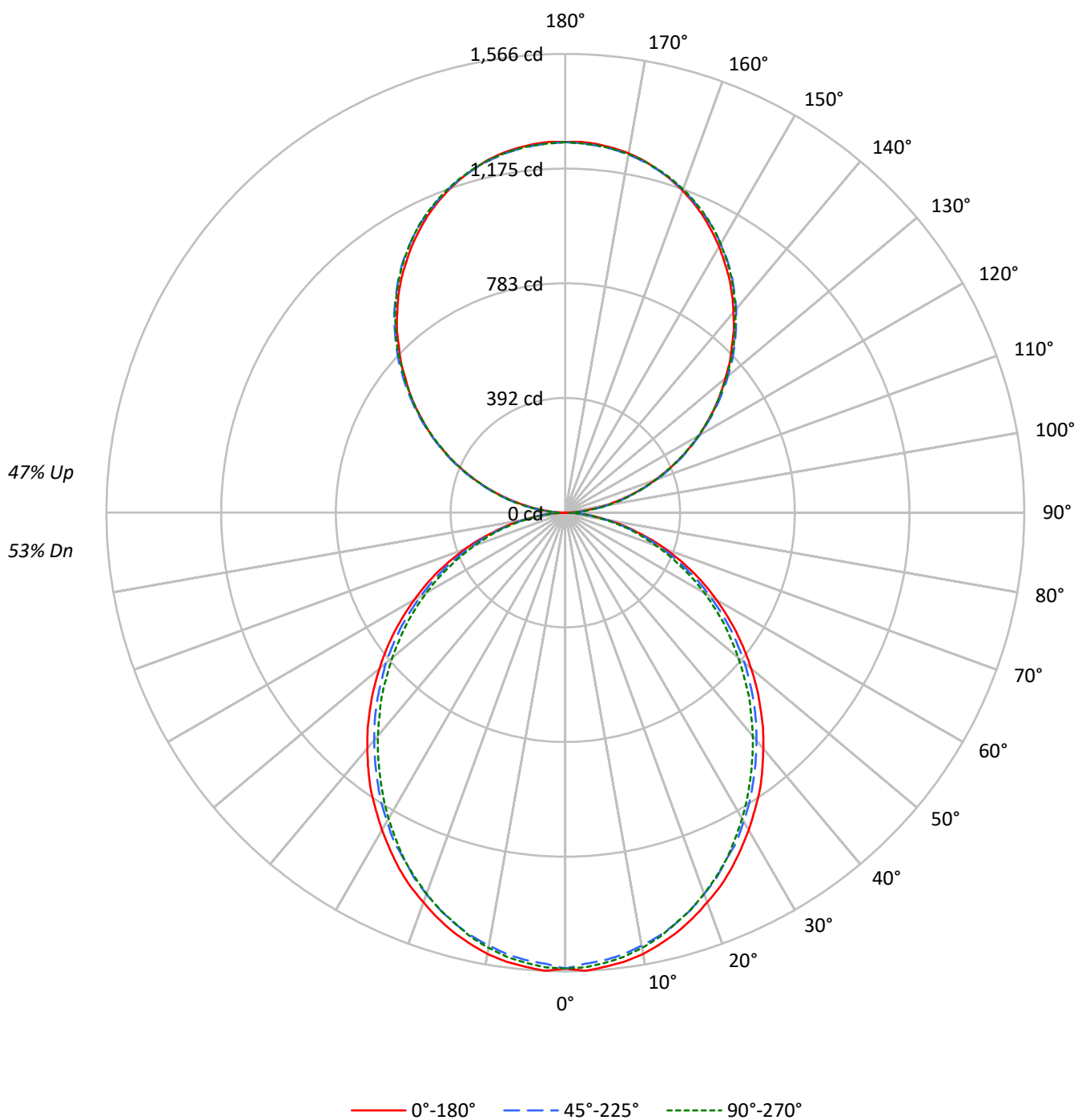
Lumens per Lamp: N/A
Luminaire Lumens: 7500.0 lumens
Efficiency: N/A
Efficacy: 118.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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
RCR																				
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	50	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	42	42	37
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	36	36	32
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31	31	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27	27	27	24
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	24	24	21
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21	21	21	18
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19	19	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	17	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15	15	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3422	3422	3422
5°	3422	3367	3393
10°	3388	3315	3342
15°	3332	3252	3265
20°	3259	3169	3187
25°	3186	3071	3098
30°	3096	2980	2985
35°	3010	2873	2866
40°	2906	2764	2753
45°	2801	2655	2636
50°	2686	2540	2502
55°	2566	2408	2377
60°	2429	2252	2234
65°	2279	2089	2066
70°	2089	1891	1883
75°	1828	1652	1708
80°	1509	1349	1388
85°	1020	851	872

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2801 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	2.0
10°-20°	412.2	5.5
20°-30°	605.7	8.1
30°-40°	703.5	9.4
40°-50°	702.6	9.4
50°-60°	612.7	8.2
60°-70°	452.9	6.0
70°-80°	256.2	3.4
80°-90°	71.2	0.9
90°-100°	78.3	1.0
100°-110°	248.7	3.3
110°-120°	425.6	5.7
120°-130°	559.8	7.5
130°-140°	628.3	8.4
140°-150°	616.2	8.2
150°-160°	516.9	6.9
160°-170°	342.8	4.6
170°-180°	119.8	1.6
0°-30°	1164.4	15.5
0°-40°	1867.9	24.9
0°-60°	3183.2	42.4
0°-90°	3963.6	52.8
90°-120°	752.7	10.0
90°-150°	2556.9	34.1
90°-180°	3536.0	47.1
0°-180°	7500.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	1	14	37	35	36	7
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°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
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	11.69	12.58	12.62	13.53	14.76	11.25	12.13	12.18	13.08	14.31
	3H	13.33	14.13	14.28	15.09	16.34	12.84	13.64	13.79	14.60	15.85
	4H	13.91	14.66	14.87	15.63	16.89	13.41	14.17	14.37	15.13	16.39
	6H	14.29	14.99	15.26	15.96	17.23	13.80	14.49	14.76	15.46	16.73
	8H	14.39	15.05	15.37	16.04	17.31	13.89	14.55	14.87	15.54	16.81
	12H	14.44	15.06	15.42	16.04	17.34	13.93	14.56	14.91	15.54	16.83
4H	2H	12.14	12.90	13.11	13.86	15.12	11.79	12.54	12.75	13.50	14.77
	3H	13.99	14.62	14.96	15.61	16.89	13.58	14.21	14.55	15.20	16.48
	4H	14.69	15.26	15.67	16.25	17.55	14.26	14.84	15.25	15.83	17.13
	6H	15.19	15.68	16.18	16.69	17.99	14.75	15.25	15.75	16.26	17.56
	8H	15.33	15.79	16.32	16.79	18.11	14.89	15.35	15.89	16.36	17.67
	12H	15.39	15.81	16.41	16.83	18.15	14.94	15.36	15.96	16.38	17.70
8H	4H	14.88	15.34	15.87	16.34	17.66	14.50	14.96	15.49	15.96	17.28
	6H	15.48	15.87	16.50	16.91	18.22	15.10	15.48	16.12	16.53	17.84
	8H	15.69	16.03	16.72	17.06	18.39	15.30	15.64	16.33	16.67	18.00
	12H	15.81	16.11	16.84	17.13	18.51	15.40	15.70	16.43	16.72	18.10
12H	4H	14.86	15.28	15.88	16.30	17.62	14.49	14.91	15.51	15.93	17.25
	6H	15.51	15.85	16.54	16.88	18.21	15.14	15.47	16.16	16.51	17.83
	8H	15.74	16.03	16.77	17.06	18.43	15.36	15.65	16.39	16.68	18.05