

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: P924012

Luminaire Tested: DFN2DIP-4P3F0-020D050US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924012
REPORT IS A COMBINATION OF REPORTS P899060 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D050US950-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

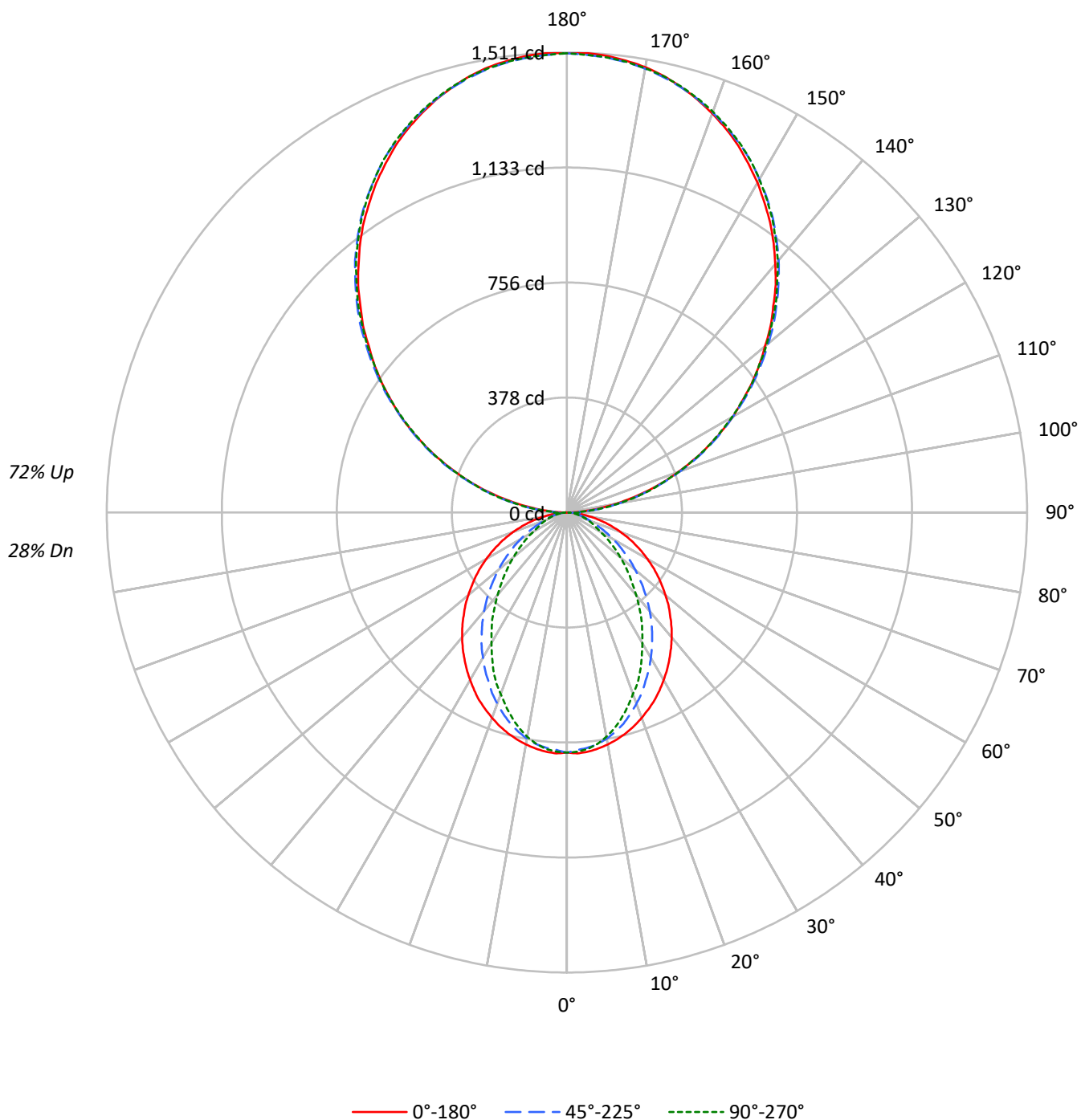
Lumens per Lamp: N/A
Luminaire Lumens: 5843.3 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	899	899	899
5°	900	884	890
10°	890	866	861
15°	877	837	816
20°	860	797	760
25°	843	752	707
30°	820	706	640
35°	798	657	580
40°	775	606	512
45°	749	550	451
50°	721	493	391
55°	692	432	333
60°	659	369	274
65°	621	305	247
70°	574	245	223
75°	516	214	202
80°	431	178	174
85°	292	116	129

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1513 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.9	1.3
10°-20°	202.9	3.5
20°-30°	284.8	4.9
30°-40°	310.5	5.3
40°-50°	285.4	4.9
50°-60°	224.1	3.8
60°-70°	145.9	2.5
70°-80°	75.1	1.3
80°-90°	23.4	0.4
90°-100°	93.4	1.6
100°-110°	296.6	5.1
110°-120°	507.6	8.7
120°-130°	667.5	11.4
130°-140°	749.3	12.8
140°-150°	734.8	12.6
150°-160°	616.4	10.5
160°-170°	408.8	7.0
170°-180°	142.9	2.4
0°-30°	561.6	9.6
0°-40°	872.1	14.9
0°-60°	1381.7	23.6
0°-90°	1626.1	27.8
90°-120°	897.5	15.4
90°-150°	3049.2	52.2
90°-180°	4217.0	72.2
0°-180°	5843.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	789	789	789	789	789	
5°	789	785	776	782	780	75
15°	750	742	718	704	697	211
25°	681	658	611	582	571	313
35°	587	550	488	442	427	367
45°	480	432	357	306	289	370
55°	365	309	232	189	176	326
65°	246	188	124	100	98	244
75°	131	81	57	52	51	139
85°	31	16	14	14	14	35
90°	1	16	45	42	43	6
95°	66	79	81	81	79	74
105°	274	277	280	282	282	289
115°	509	517	514	513	509	504
125°	741	752	749	744	743	662
135°	958	972	975	974	970	741
145°	1163	1172	1180	1181	1176	727
155°	1330	1334	1338	1344	1340	612
165°	1447	1446	1446	1455	1449	408
175°	1506	1502	1500	1509	1501	143
180°	1509	1509	1509	1509	1509	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	788.6	788.6	788.6	788.6	788.6
2.5°	792.1	788.6	780.7	787.9	786.5
5°	788.6	785.0	775.7	782.2	780.0
7.5°	782.2	777.9	767.9	770.7	767.1
10°	773.6	768.5	754.3	752.1	747.9
12.5°	762.9	756.4	737.2	733.0	725.0
15°	750.0	742.1	717.9	704.3	697.3
17.5°	735.1	723.6	693.7	677.9	666.6
20°	717.9	703.6	668.0	650.2	634.4
22.5°	699.4	683.0	641.6	617.3	606.6
25°	680.9	658.0	610.8	581.7	570.9
27.5°	658.7	634.4	582.3	548.7	532.3
30°	635.2	608.0	550.9	514.6	495.2
32.5°	612.3	579.5	521.0	478.1	460.3
35°	586.6	550.3	487.5	442.5	426.7
37.5°	561.6	522.3	456.0	406.8	388.9
40°	535.2	492.5	423.2	372.5	353.9
42.5°	508.1	462.5	390.4	337.5	319.8
45°	479.6	431.7	356.9	306.1	289.0
47.5°	452.5	401.8	324.7	274.0	258.3
50°	422.5	371.9	293.4	244.0	229.2
52.5°	393.1	339.6	263.3	216.3	202.7
55°	364.6	309.0	231.9	189.2	175.5
57.5°	335.4	278.3	204.2	164.2	152.7
60°	305.5	248.3	174.9	138.5	127.1
62.5°	276.2	219.1	149.9	115.6	109.9
65°	246.2	188.4	124.2	100.0	97.8
67.5°	217.7	159.8	100.0	87.8	85.7
70°	187.7	132.0	82.7	75.7	72.8
72.5°	159.1	106.3	69.2	63.5	62.1
75°	131.3	81.3	57.0	52.1	51.4
77.5°	103.5	57.8	44.9	42.1	40.6
80°	77.8	41.4	34.2	31.4	31.4
82.5°	54.2	27.9	23.6	22.1	22.1
85°	30.6	15.6	13.5	13.5	13.5
87.5°	11.4	5.7	5.7	5.0	5.0
90°	1.3	16.4	44.6	41.9	43.2
92.5°	28.2	38.2	39.6	40.9	40.9
95°	66.4	79.2	81.4	81.4	79.2
97.5°	110.5	122.3	127.4	127.4	127.4
100°	161.4	171.9	175.5	175.5	174.2
102.5°	215.1	222.9	227.8	229.2	227.8
105°	273.8	277.4	280.2	282.4	282.4
107.5°	332.0	337.4	337.4	338.4	332.0
110°	388.4	395.7	395.7	395.7	392.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	449.3	457.1	455.7	452.1	449.3
115°	509.3	516.7	514.4	513.1	509.3
117.5°	569.0	579.0	572.6	569.0	565.3
120°	629.0	639.0	629.0	629.0	624.9
122.5°	683.5	696.3	689.9	686.3	683.5
125°	740.9	752.2	748.6	744.5	743.2
127.5°	796.8	810.9	805.9	800.4	796.8
130°	849.2	865.5	863.2	860.5	855.5
132.5°	907.8	920.5	921.5	915.1	911.5
135°	958.3	972.3	975.1	973.7	970.1
137.5°	1014.7	1026.0	1028.3	1027.4	1021.9
140°	1064.2	1075.6	1081.9	1081.9	1077.0
142.5°	1115.1	1126.6	1130.2	1131.5	1126.6
145°	1163.4	1172.5	1179.7	1181.1	1176.1
147.5°	1206.6	1218.0	1223.4	1225.7	1220.6
150°	1251.2	1258.9	1263.9	1268.0	1263.9
152.5°	1290.8	1298.5	1304.8	1309.8	1304.8
155°	1330.3	1333.9	1338.0	1344.4	1340.3
157.5°	1364.4	1367.1	1369.4	1378.5	1372.1
160°	1394.8	1397.6	1398.9	1406.7	1401.2
162.5°	1423.1	1423.1	1424.4	1433.1	1426.7
165°	1447.2	1445.8	1445.8	1454.9	1448.6
167.5°	1469.0	1464.9	1464.9	1474.0	1467.6
170°	1485.4	1481.8	1480.4	1489.5	1481.8
172.5°	1496.7	1493.1	1491.8	1500.8	1493.1
175°	1505.9	1502.2	1499.5	1508.6	1500.8
177.5°	1510.8	1507.2	1504.5	1512.2	1504.5
180°	1508.6	1508.6	1508.6	1508.6	1508.6

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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	4.20	4.88	5.33	6.00	7.55	0.16	0.84	1.29	1.96	3.52
	3H	5.86	6.46	7.00	7.59	9.17	1.33	1.94	2.47	3.07	4.64
	4H	6.46	7.03	7.61	8.16	9.74	1.77	2.35	2.92	3.47	5.05
	6H	6.87	7.40	8.02	8.53	10.12	2.08	2.61	3.23	3.74	5.33
	8H	6.99	7.49	8.15	8.64	10.22	2.16	2.66	3.32	3.81	5.39
	12H	7.04	7.52	8.21	8.66	10.26	2.20	2.67	3.36	3.81	5.42
4H	2H	4.20	4.77	5.35	5.90	7.48	0.74	1.31	1.89	2.44	4.02
	3H	6.01	6.48	7.17	7.64	9.23	2.06	2.54	3.23	3.70	5.29
	4H	6.69	7.13	7.85	8.27	9.88	2.60	3.04	3.76	4.18	5.79
	6H	7.19	7.57	8.36	8.73	10.33	3.00	3.38	4.17	4.55	6.15
	8H	7.36	7.71	8.53	8.87	10.49	3.13	3.48	4.29	4.63	6.25
	12H	7.45	7.76	8.63	8.93	10.55	3.18	3.50	4.36	4.67	6.29
8H	4H	6.64	6.99	7.81	8.15	9.77	2.87	3.22	4.03	4.37	5.99
	6H	7.20	7.49	8.39	8.69	10.30	3.37	3.66	4.56	4.86	6.47
	8H	7.41	7.66	8.60	8.84	10.48	3.55	3.81	4.75	4.98	6.62
	12H	7.54	7.76	8.73	8.94	10.60	3.66	3.88	4.86	5.06	6.72
12H	4H	6.59	6.91	7.77	8.07	9.70	2.86	3.18	4.05	4.35	5.97
	6H	7.17	7.42	8.36	8.60	10.24	3.42	3.67	4.61	4.85	6.48
	8H	7.38	7.60	8.58	8.78	10.45	3.61	3.84	4.81	5.01	6.68

END OF REPORT