

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: P921970

Luminaire Tested: DFN2DIP-PN2F0-030D030US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921970
REPORT IS A COMBINATION OF REPORTS P899474 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D030US940-RLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

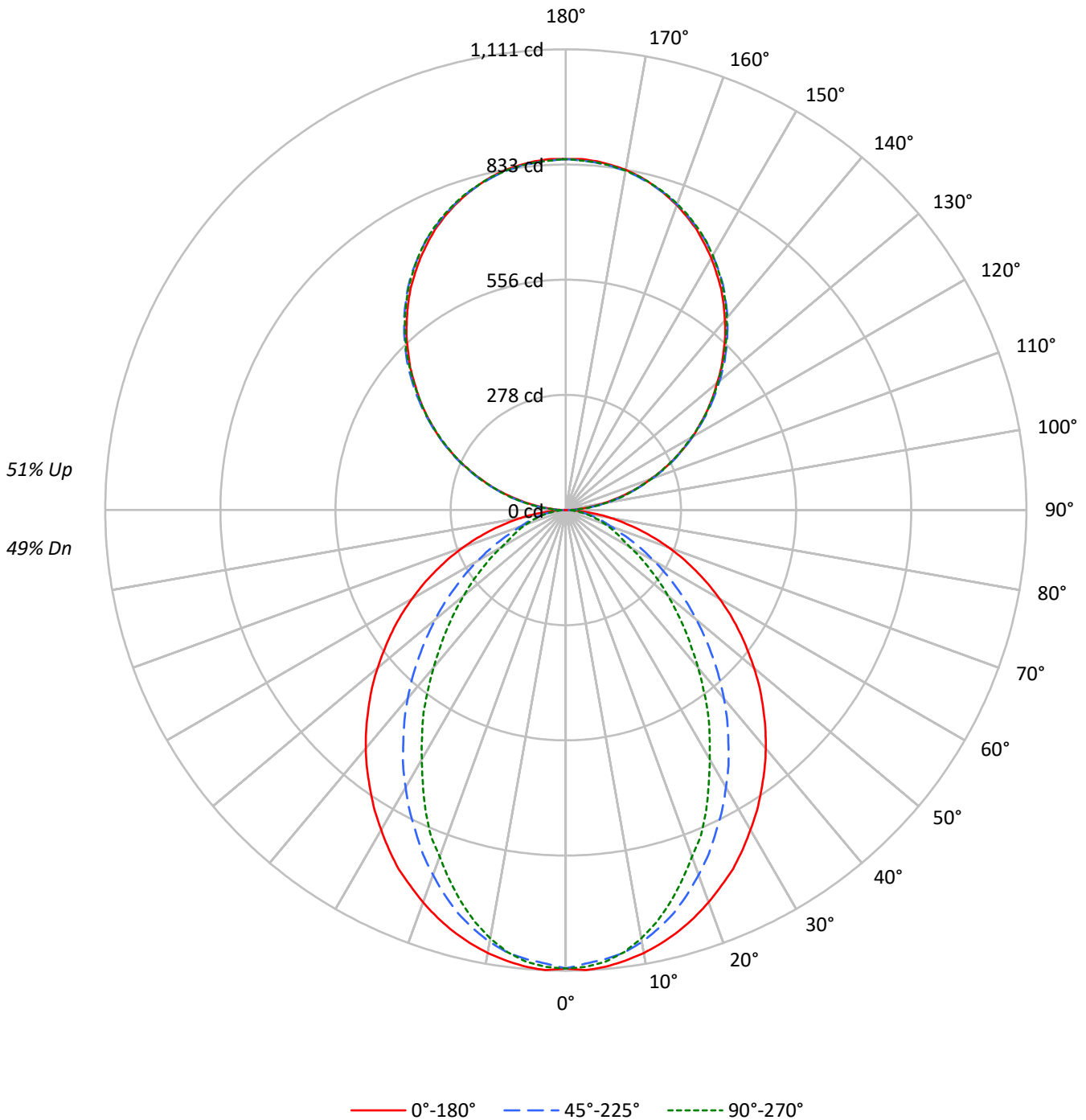
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4641.3 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 46.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49			49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42			42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36			36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31			31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27			27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24			24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21			21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19			19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17			17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16			16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14			14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2395	2395	2395
5°	2395	2352	2368
10°	2367	2300	2288
15°	2331	2219	2165
20°	2284	2110	2016
25°	2236	1988	1873
30°	2172	1863	1692
35°	2110	1730	1533
40°	2047	1593	1351
45°	1973	1441	1187
50°	1897	1288	1026
55°	1817	1126	872
60°	1724	957	715
65°	1617	785	640
70°	1487	626	573
75°	1324	542	515
80°	1090	440	436
85°	712	274	309

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1973 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	2.2
10°-20°	284.5	6.1
20°-30°	399.4	8.6
30°-40°	435.3	9.4
40°-50°	400.1	8.6
50°-60°	314.2	6.8
60°-70°	204.5	4.4
70°-80°	105.3	2.3
80°-90°	29.3	0.6
90°-100°	52.3	1.1
100°-110°	166.3	3.6
110°-120°	284.7	6.1
120°-130°	374.4	8.1
130°-140°	420.2	9.1
140°-150°	412.1	8.9
150°-160°	345.7	7.4
160°-170°	229.2	4.9
170°-180°	80.1	1.7
0°-30°	787.5	17.0
0°-40°	1222.8	26.3
0°-60°	1937.2	41.7
0°-90°	2276.3	49.0
90°-120°	503.4	10.8
90°-150°	1710.0	36.8
90°-180°	2365.0	51.0
0°-180°	4641.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	1	9	25	24	24	5
95°	37	44	46	46	44	41
105°	154	156	157	158	158	162
115°	286	290	288	288	286	283
125°	416	422	420	418	417	371
135°	537	545	547	546	544	415
145°	652	658	662	662	660	408
155°	746	748	750	754	752	343
165°	812	811	811	816	812	229
175°	844	842	841	846	842	80
180°	846	846	846	846	846	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	0.8	9.2	25.0	23.5	24.3
92.5°	15.8	21.4	22.2	22.9	22.9
95°	37.3	44.4	45.7	45.7	44.4
97.5°	62.0	68.6	71.4	71.4	71.4
100°	90.5	96.4	98.4	98.4	97.7
102.5°	120.6	125.0	127.8	128.6	127.8
105°	153.6	155.6	157.1	158.4	158.4
107.5°	186.2	189.2	189.2	189.8	186.2
110°	217.8	221.9	221.9	221.9	219.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	252.0	256.4	255.6	253.5	252.0
115°	285.7	289.7	288.5	287.8	285.7
117.5°	319.1	324.7	321.1	319.1	317.0
120°	352.8	358.4	352.8	352.8	350.4
122.5°	383.3	390.5	386.9	384.9	383.3
125°	415.5	421.9	419.8	417.5	416.8
127.5°	446.8	454.8	452.0	448.9	446.8
130°	476.2	485.4	484.1	482.6	479.7
132.5°	509.1	516.2	516.7	513.2	511.1
135°	537.4	545.3	546.9	546.1	544.0
137.5°	569.0	575.4	576.7	576.2	573.1
140°	596.8	603.2	606.8	606.8	604.0
142.5°	625.4	631.8	633.8	634.6	631.8
145°	652.5	657.5	661.6	662.4	659.6
147.5°	676.7	683.1	686.1	687.4	684.6
150°	701.7	706.1	708.8	711.1	708.8
152.5°	723.9	728.2	731.7	734.6	731.7
155°	746.1	748.1	750.4	753.9	751.7
157.5°	765.2	766.7	768.0	773.1	769.5
160°	782.3	783.8	784.6	788.9	785.9
162.5°	798.1	798.1	798.9	803.7	800.1
165°	811.6	810.8	810.8	815.9	812.3
167.5°	823.9	821.5	821.5	826.6	823.0
170°	833.0	831.0	830.3	835.4	831.0
172.5°	839.4	837.4	836.6	841.7	837.4
175°	844.5	842.5	841.0	846.1	841.7
177.5°	847.3	845.3	843.7	848.1	843.7
180°	846.1	846.1	846.1	846.1	846.1



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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	9.97	10.79	10.94	11.78	13.06	5.94	6.76	6.91	7.75	9.03
	3H	11.63	12.36	12.61	13.35	14.66	7.11	7.85	8.10	8.84	10.15
	4H	12.22	12.92	13.22	13.91	15.23	7.55	8.25	8.55	9.24	10.56
	6H	12.63	13.27	13.63	14.27	15.60	7.86	8.50	8.86	9.49	10.82
	8H	12.74	13.35	13.76	14.37	15.70	7.94	8.55	8.95	9.56	10.89
	12H	12.80	13.38	13.82	14.39	15.74	7.97	8.55	8.99	9.56	10.91
4H	2H	9.98	10.68	10.99	11.67	12.99	6.52	7.22	7.53	8.21	9.53
	3H	11.79	12.37	12.80	13.39	14.72	7.85	8.43	8.86	9.45	10.79
	4H	12.47	12.99	13.48	14.01	15.36	8.39	8.91	9.41	9.93	11.29
	6H	12.96	13.41	13.99	14.45	15.81	8.79	9.24	9.82	10.28	11.63
	8H	13.12	13.55	14.16	14.58	15.95	8.91	9.33	9.94	10.36	11.73
	12H	13.21	13.59	14.26	14.64	16.01	8.96	9.34	10.01	10.39	11.76
8H	4H	12.43	12.85	13.46	13.88	15.25	8.65	9.08	9.68	10.11	11.48
	6H	12.97	13.32	14.03	14.40	15.76	9.15	9.50	10.20	10.57	11.94
	8H	13.18	13.48	14.24	14.54	15.92	9.33	9.63	10.39	10.69	12.08
	12H	13.30	13.57	14.36	14.62	16.05	9.43	9.70	10.50	10.76	12.18
12H	4H	12.38	12.76	13.43	13.81	15.18	8.65	9.04	9.70	10.08	11.46
	6H	12.95	13.25	14.01	14.31	15.70	9.19	9.50	10.25	10.56	11.94
	8H	13.15	13.42	14.22	14.48	15.90	9.39	9.66	10.45	10.71	12.14