

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: P915916

Luminaire Tested: DFN2DIP-4P4F0-030D030US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915916
REPORT IS A COMBINATION OF REPORTS P899080 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D030US930-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

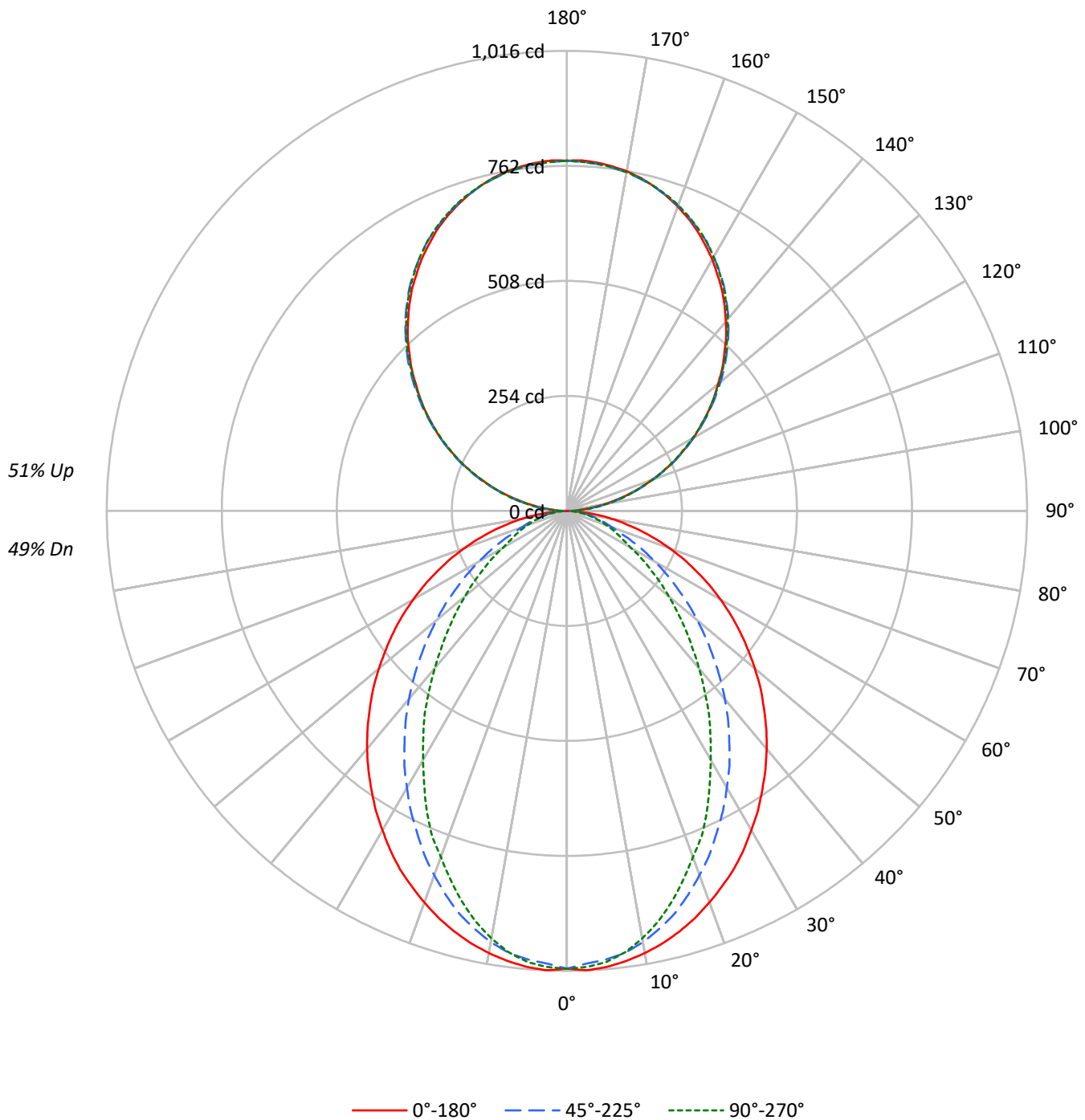
Lumens per Lamp: N/A
Luminaire Lumens: 4243.6 lumens
Efficiency: N/A
Efficacy: 83.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 50.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P915916

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US930-RLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-4P4F0-030D030US930-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	656	656	656
5°	657	646	650
10°	650	633	629
15°	642	612	596
20°	630	584	557
25°	618	552	518
30°	601	519	469
35°	585	483	426
40°	569	446	377
45°	551	406	332
50°	531	364	288
55°	511	320	246
60°	487	274	203
65°	460	227	183
70°	428	184	166
75°	386	162	151
80°	327	137	132
85°	228	93	101

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 587 cd/sqm

TEST NUMBER: P915916

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US930-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.7	2.2
10°-20°	260.1	6.1
20°-30°	365.1	8.6
30°-40°	398.0	9.4
40°-50°	365.8	8.6
50°-60°	287.3	6.8
60°-70°	187.0	4.4
70°-80°	96.3	2.3
80°-90°	26.8	0.6
90°-100°	47.9	1.1
100°-110°	152.1	3.6
110°-120°	260.3	6.1
120°-130°	342.3	8.1
130°-140°	384.2	9.1
140°-150°	376.8	8.9
150°-160°	316.1	7.4
160°-170°	209.6	4.9
170°-180°	73.3	1.7
0°-30°	720.0	17.0
0°-40°	1118.0	26.3
0°-60°	1771.2	41.7
0°-90°	2081.2	49.0
90°-120°	460.2	10.8
90°-150°	1563.5	36.8
90°-180°	2162.0	50.9
0°-180°	4243.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1011	1011	1011	1011	1011	
5°	1011	1006	994	1003	1000	96
15°	962	951	920	903	894	271
25°	873	843	783	746	732	401
35°	752	705	625	567	547	471
45°	615	553	458	392	370	475
55°	467	396	297	242	225	418
65°	316	242	159	128	125	313
75°	168	104	73	67	66	178
85°	39	20	17	17	17	45
90°	1	8	23	21	22	4
95°	34	41	42	42	41	38
105°	140	142	144	145	145	148
115°	261	265	264	263	261	258
125°	380	386	384	382	381	339
135°	491	499	500	499	497	380
145°	597	601	605	606	603	373
155°	682	684	686	689	687	314
165°	742	741	741	746	743	209
175°	772	770	769	774	770	73
180°	774	774	774	774	774	

TEST NUMBER: P915916

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US930-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1010.9	1010.9	1010.9	1010.9	1010.9
2.5°	1015.5	1010.9	1000.8	1010.0	1008.2
5°	1010.9	1006.3	994.4	1002.7	999.9
7.5°	1002.7	997.2	984.4	988.0	983.4
10°	991.6	985.3	967.0	964.2	958.8
12.5°	978.0	969.7	945.0	939.5	929.4
15°	961.5	951.4	920.3	902.9	893.8
17.5°	942.2	927.6	889.2	869.1	854.4
20°	920.3	902.0	856.2	833.5	813.3
22.5°	896.6	875.5	822.4	791.3	777.6
25°	872.8	843.4	783.1	745.6	731.8
27.5°	844.4	813.3	746.5	703.5	682.4
30°	814.2	779.4	706.2	659.7	634.9
32.5°	784.9	742.8	667.9	612.9	590.0
35°	752.0	705.3	624.8	567.2	547.1
37.5°	720.0	669.6	584.6	521.4	498.6
40°	686.2	631.3	542.5	477.5	453.8
42.5°	651.3	592.9	500.4	432.7	409.9
45°	614.8	553.4	457.5	392.4	370.5
47.5°	580.0	515.1	416.3	351.2	331.2
50°	541.6	476.6	376.0	312.8	293.7
52.5°	504.0	435.5	337.6	277.2	259.8
55°	467.4	396.1	297.3	242.5	225.1
57.5°	430.0	356.8	261.7	210.4	195.8
60°	391.5	318.4	224.1	177.5	162.9
62.5°	354.1	280.9	192.1	148.2	141.0
65°	315.6	241.5	159.1	128.1	125.3
67.5°	279.1	204.9	128.1	112.5	109.7
70°	240.6	169.3	106.1	96.9	93.3
72.5°	204.0	136.2	88.7	81.4	79.6
75°	168.3	104.3	73.2	66.8	65.9
77.5°	132.6	74.0	57.6	54.0	52.1
80°	99.7	53.1	43.9	40.3	40.3
82.5°	69.5	35.7	30.2	28.4	28.4
85°	39.3	20.1	17.4	17.4	17.4
87.5°	14.7	7.3	7.3	6.4	6.4
90°	0.7	8.4	22.8	21.4	22.2
92.5°	14.4	19.6	20.3	21.0	21.0
95°	34.1	40.6	41.7	41.7	40.6
97.5°	56.7	62.7	65.3	65.3	65.3
100°	82.8	88.1	90.0	90.0	89.4
102.5°	110.3	114.3	116.8	117.6	116.8
105°	140.4	142.3	143.7	144.8	144.8
107.5°	170.2	173.0	173.0	173.5	170.2
110°	199.2	202.9	202.9	202.9	201.1

TEST NUMBER: P915916

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	230.4	234.4	233.7	231.8	230.4
115°	261.2	264.9	263.7	263.1	261.2
117.5°	291.7	296.9	293.6	291.7	289.8
120°	322.5	327.7	322.5	322.5	320.4
122.5°	350.5	357.0	353.8	351.9	350.5
125°	379.9	385.7	383.8	381.7	381.1
127.5°	408.5	415.8	413.3	410.4	408.5
130°	435.4	443.8	442.6	441.2	438.6
132.5°	465.5	472.0	472.5	469.2	467.3
135°	491.4	498.6	500.0	499.3	497.4
137.5°	520.2	526.1	527.3	526.8	524.0
140°	545.7	551.5	554.8	554.8	552.2
142.5°	571.9	577.6	579.5	580.2	577.6
145°	596.6	601.2	605.0	605.6	603.1
147.5°	618.7	624.5	627.3	628.5	625.9
150°	641.6	645.6	648.1	650.2	648.1
152.5°	661.9	665.8	669.0	671.6	669.0
155°	682.2	684.0	686.1	689.3	687.3
157.5°	699.6	701.0	702.2	706.9	703.6
160°	715.3	716.6	717.4	721.3	718.5
162.5°	729.7	729.7	730.4	734.8	731.6
165°	742.1	741.4	741.4	746.0	742.7
167.5°	753.3	751.1	751.1	755.8	752.5
170°	761.7	759.8	759.1	763.8	759.8
172.5°	767.4	765.6	764.9	769.6	765.6
175°	772.2	770.3	768.9	773.6	769.6
177.5°	774.7	772.8	771.4	775.4	771.4
180°	773.6	773.6	773.6	773.6	773.6

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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	5.61	6.43	6.58	7.41	8.70	1.57	2.39	2.54	3.37	4.66
	3H	7.29	8.03	8.27	9.02	10.33	2.76	3.49	3.74	4.48	5.79
	4H	7.90	8.60	8.90	9.59	10.91	3.21	3.90	4.21	4.90	6.22
	6H	8.33	8.97	9.34	9.97	11.30	3.53	4.17	4.54	5.17	6.50
	8H	8.46	9.07	9.47	10.08	11.41	3.62	4.23	4.64	5.25	6.57
	12H	8.52	9.10	9.54	10.11	11.46	3.67	4.25	4.69	5.26	6.61
4H	2H	5.63	6.32	6.63	7.32	8.63	2.17	2.86	3.17	3.86	5.17
	3H	7.46	8.04	8.47	9.06	10.39	3.52	4.09	4.53	5.12	6.45
	4H	8.16	8.69	9.18	9.70	11.06	4.07	4.59	5.09	5.61	6.97
	6H	8.68	9.13	9.71	10.17	11.52	4.49	4.94	5.52	5.98	7.33
	8H	8.86	9.28	9.89	10.31	11.68	4.62	5.04	5.65	6.07	7.44
	12H	8.95	9.34	10.00	10.38	11.75	4.68	5.07	5.73	6.11	7.48
8H	4H	8.12	8.55	9.16	9.58	10.95	4.35	4.77	5.38	5.80	7.17
	6H	8.70	9.05	9.75	10.12	11.48	4.87	5.22	5.93	6.29	7.66
	8H	8.92	9.22	9.98	10.28	11.67	5.06	5.37	6.13	6.43	7.81
	12H	9.06	9.33	10.12	10.38	11.81	5.19	5.46	6.25	6.51	7.93
12H	4H	8.08	8.46	9.12	9.51	10.88	4.35	4.74	5.40	5.78	7.16
	6H	8.67	8.98	9.73	10.04	11.42	4.92	5.23	5.98	6.29	7.67
	8H	8.90	9.17	9.96	10.22	11.65	5.13	5.41	6.20	6.46	7.88

END OF REPORT