

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: P912450

Luminaire Tested: DFN2DIP-TR2F0-020D030US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912450
REPORT IS A COMBINATION OF REPORTS P900232 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D030US850-RLLFLL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

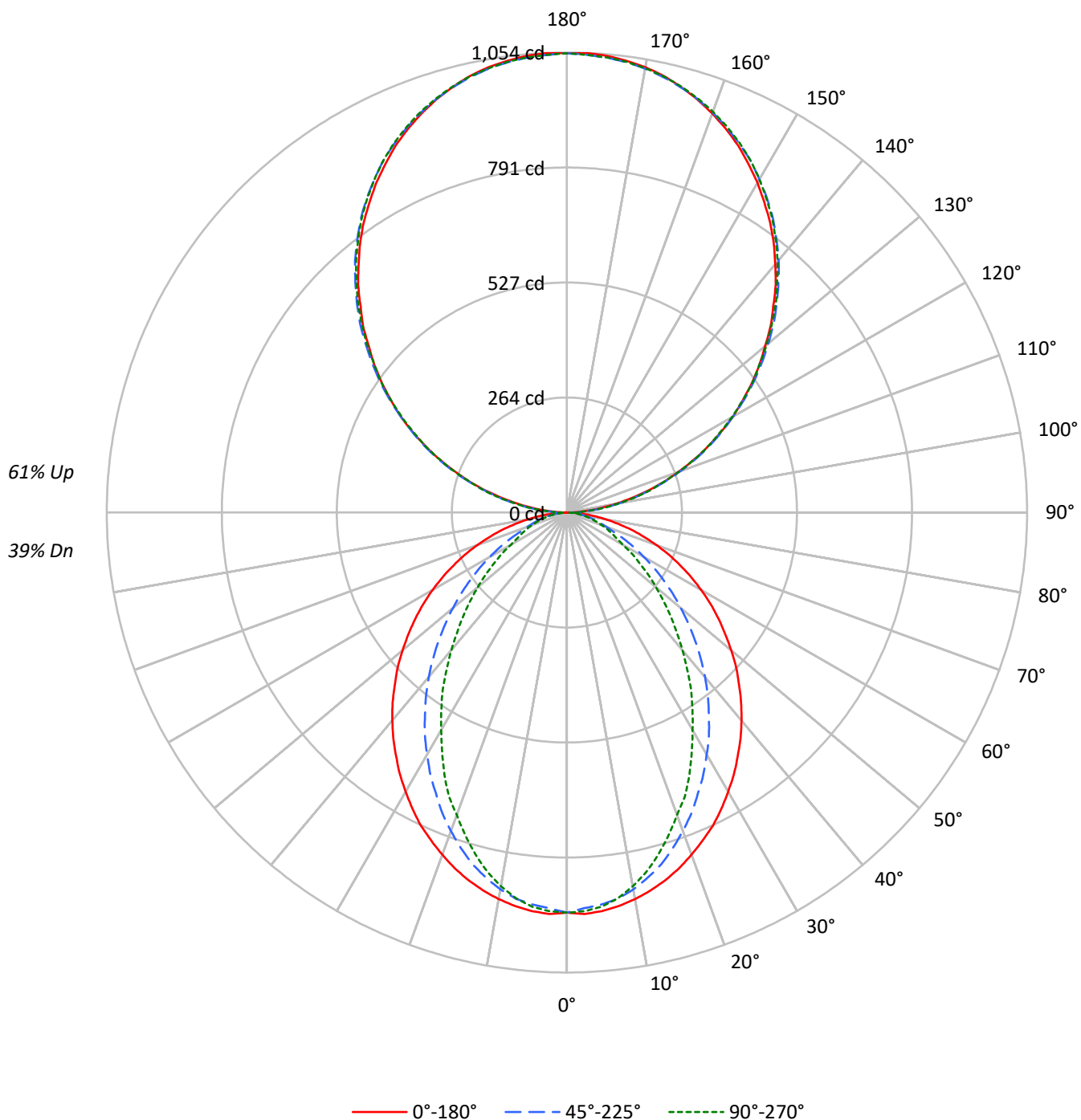
Lumens per Lamp: N/A
Luminaire Lumens: 4829.7 lumens
Efficiency: N/A
Efficacy: 130.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 37
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2045	2045	2045
5°	2045	2008	2021
10°	2022	1964	1952
15°	1991	1894	1848
20°	1951	1801	1720
25°	1910	1697	1597
30°	1856	1590	1442
35°	1803	1476	1306
40°	1749	1359	1151
45°	1687	1229	1010
50°	1623	1099	873
55°	1554	960	742
60°	1476	816	607
65°	1385	669	543
70°	1274	533	486
75°	1136	460	436
80°	936	374	367
85°	614	231	258

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1687 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.9	1.8
10°-20°	235.8	4.9
20°-30°	331.1	6.9
30°-40°	361.0	7.5
40°-50°	331.8	6.9
50°-60°	260.6	5.4
60°-70°	169.6	3.5
70°-80°	87.3	1.8
80°-90°	25.3	0.5
90°-100°	65.1	1.3
100°-110°	206.9	4.3
110°-120°	354.0	7.3
120°-130°	465.6	9.6
130°-140°	522.6	10.8
140°-150°	512.5	10.6
150°-160°	429.9	8.9
160°-170°	285.1	5.9
170°-180°	99.7	2.1
0°-30°	652.9	13.5
0°-40°	1013.8	21.0
0°-60°	1606.2	33.3
0°-90°	1888.3	39.1
90°-120°	626.0	13.0
90°-150°	2126.7	44.0
90°-180°	2941.0	60.9
0°-180°	4829.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	917	917	917	917	917	
5°	917	913	902	909	907	87
15°	872	863	834	819	811	246
25°	792	765	710	676	664	364
35°	682	640	567	514	496	427
45°	558	502	415	356	336	431
55°	424	359	270	220	204	379
65°	286	219	144	116	114	284
75°	153	94	66	61	60	161
85°	36	18	16	16	16	41
90°	1	11	31	29	30	5
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	916.7	916.7	916.7	916.7	916.7
2.5°	920.8	916.7	907.5	915.9	914.3
5°	916.7	912.6	901.7	909.3	906.7
7.5°	909.3	904.3	892.6	896.0	891.7
10°	899.3	893.4	876.9	874.3	869.5
12.5°	886.9	879.3	856.9	852.0	842.8
15°	871.9	862.7	834.5	818.8	810.6
17.5°	854.5	841.2	806.4	788.1	774.9
20°	834.5	817.9	776.5	755.8	737.5
22.5°	813.0	793.9	745.8	717.6	705.2
25°	791.5	764.9	710.1	676.2	663.6
27.5°	765.8	737.5	676.9	637.9	618.8
30°	738.4	706.8	640.4	598.2	575.7
32.5°	711.8	673.6	605.6	555.8	535.1
35°	681.9	639.7	566.7	514.4	496.1
37.5°	652.9	607.2	530.1	472.9	452.1
40°	622.1	572.5	492.0	433.1	411.4
42.5°	590.7	537.6	453.8	392.4	371.7
45°	557.5	501.8	414.9	355.9	335.9
47.5°	526.0	467.1	377.5	318.5	300.3
50°	491.2	432.3	341.0	283.7	266.4
52.5°	457.0	394.8	306.1	251.4	235.7
55°	423.9	359.2	269.6	219.9	204.1
57.5°	389.9	323.5	237.3	190.9	177.6
60°	355.1	288.7	203.3	161.0	147.7
62.5°	321.1	254.7	174.2	134.4	127.8
65°	286.2	219.0	144.4	116.2	113.7
67.5°	253.1	185.8	116.2	102.0	99.6
70°	218.1	153.5	96.2	87.9	84.6
72.5°	185.0	123.5	80.4	73.9	72.2
75°	152.6	94.5	66.3	60.6	59.8
77.5°	120.3	67.2	52.2	48.9	47.2
80°	90.4	48.1	39.8	36.5	36.5
82.5°	63.0	32.4	27.4	25.7	25.7
85°	35.6	18.2	15.7	15.7	15.7
87.5°	13.3	6.7	6.7	5.8	5.8
90°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2

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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	8.39	9.14	9.44	10.19	11.61	4.37	5.12	5.43	6.18	7.60
	3H	10.04	10.71	11.10	11.77	13.21	5.54	6.21	6.60	7.27	8.71
	4H	10.63	11.26	11.70	12.32	13.77	5.98	6.61	7.05	7.67	9.12
	6H	11.02	11.61	12.11	12.67	14.13	6.28	6.86	7.36	7.93	9.39
	8H	11.14	11.69	12.22	12.77	14.23	6.36	6.91	7.45	8.00	9.45
	12H	11.19	11.71	12.28	12.79	14.27	6.39	6.92	7.48	8.00	9.47
4H	2H	8.39	9.03	9.47	10.09	11.54	4.95	5.58	6.03	6.64	8.09
	3H	10.19	10.72	11.27	11.81	13.27	6.27	6.80	7.36	7.89	9.35
	4H	10.86	11.34	11.95	12.42	13.90	6.80	7.29	7.89	8.37	9.85
	6H	11.35	11.76	12.45	12.87	14.34	7.20	7.61	8.30	8.72	10.19
	8H	11.51	11.89	12.61	12.99	14.48	7.32	7.70	8.42	8.80	10.29
	12H	11.59	11.94	12.70	13.04	14.54	7.37	7.72	8.48	8.83	10.32
8H	4H	10.82	11.20	11.92	12.30	13.79	7.06	7.45	8.16	8.54	10.03
	6H	11.35	11.67	12.48	12.81	14.30	7.55	7.87	8.67	9.01	10.50
	8H	11.56	11.83	12.68	12.95	14.46	7.73	8.01	8.86	9.13	10.64
	12H	11.67	11.92	12.80	13.03	14.58	7.83	8.08	8.96	9.19	10.74
12H	4H	10.76	11.11	11.88	12.22	13.72	7.06	7.41	8.17	8.52	10.01
	6H	11.33	11.61	12.46	12.73	14.23	7.60	7.88	8.72	9.00	10.50
	8H	11.53	11.77	12.66	12.89	14.43	7.79	8.03	8.92	9.15	10.69