

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: P910381

Luminaire Tested: DFN2DIP-4P3F0-030D020US850-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910381
REPORT IS A COMBINATION OF REPORTS P900552 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D020US850-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

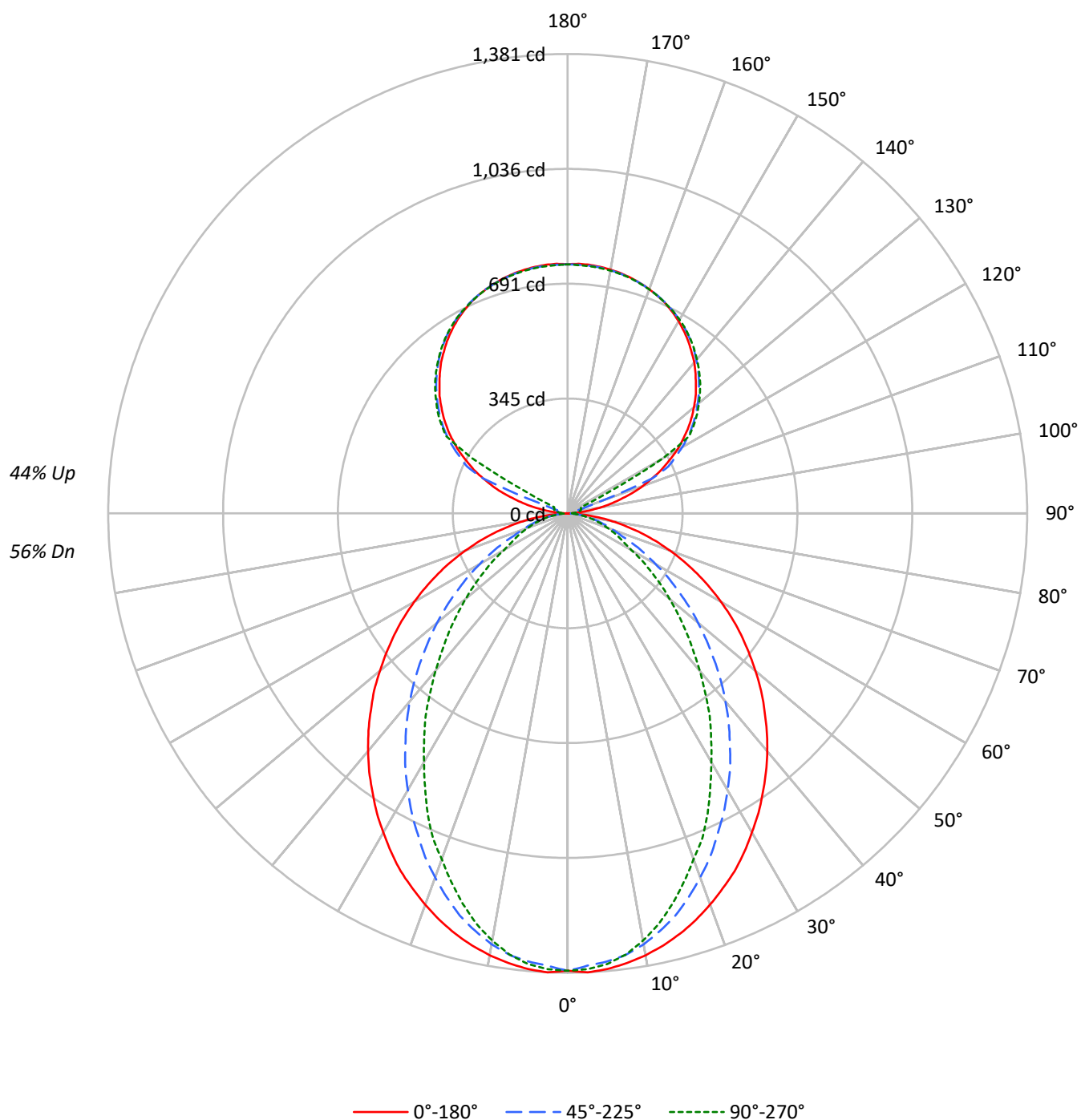
Lumens per Lamp: N/A
Luminaire Lumens: 5023.7 lumens
Efficiency: N/A
Efficacy: 121.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 41.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	56	54	53
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	50	48	46
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	33	30	27
7	61	49	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1567	1567	1567
5°	1568	1541	1551
10°	1552	1510	1501
15°	1530	1459	1422
20°	1500	1389	1326
25°	1470	1311	1233
30°	1431	1231	1115
35°	1391	1145	1012
40°	1352	1057	894
45°	1305	959	787
50°	1257	860	682
55°	1207	754	581
60°	1149	644	478
65°	1082	531	430
70°	1001	427	388
75°	899	374	352
80°	751	311	304
85°	510	202	225

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1305 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	2.6
10°-20°	353.8	7.0
20°-30°	496.7	9.9
30°-40°	541.4	10.8
40°-50°	497.6	9.9
50°-60°	390.8	7.8
60°-70°	254.4	5.1
70°-80°	130.9	2.6
80°-90°	34.8	0.7
90°-100°	24.7	0.5
100°-110°	92.0	1.8
110°-120°	244.0	4.9
120°-130°	404.8	8.1
130°-140°	429.9	8.6
140°-150°	399.6	8.0
150°-160°	321.3	6.4
160°-170°	207.0	4.1
170°-180°	71.2	1.4
0°-30°	979.3	19.5
0°-40°	1520.7	30.3
0°-60°	2409.2	48.0
0°-90°	2829.2	56.3
90°-120°	360.7	7.2
90°-150°	1595.0	31.7
90°-180°	2194.0	43.7
0°-180°	5023.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1375	1375	1375	1375	1375	
5°	1375	1369	1353	1364	1360	130
15°	1308	1294	1252	1228	1216	369
25°	1187	1147	1065	1014	995	546
35°	1023	959	850	772	744	640
45°	836	753	622	534	504	646
55°	636	539	404	330	306	568
65°	429	328	216	174	170	426
75°	229	142	100	91	90	242
85°	54	27	24	24	24	61
90°	1	6	11	14	15	5
95°	35	17	21	24	23	42
105°	165	181	33	39	41	176
115°	311	321	334	83	44	307
125°	440	447	458	462	463	393
135°	545	554	558	564	563	421
145°	632	632	641	645	642	395
155°	696	691	698	701	697	321
165°	733	730	732	736	732	207
175°	750	746	748	751	746	71
180°	749	749	749	749	749	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1375.0	1375.0	1375.0	1375.0	1375.0
2.5°	1381.3	1375.0	1361.3	1373.8	1371.4
5°	1375.0	1368.8	1352.6	1363.8	1360.1
7.5°	1363.8	1356.4	1339.0	1343.9	1337.7
10°	1348.9	1340.2	1315.4	1311.5	1304.2
12.5°	1330.2	1319.0	1285.4	1278.0	1264.3
15°	1307.8	1294.1	1251.8	1228.2	1215.8
17.5°	1281.7	1261.8	1209.5	1182.2	1162.2
20°	1251.8	1226.9	1164.7	1133.7	1106.2
22.5°	1219.6	1190.8	1118.6	1076.4	1057.8
25°	1187.2	1147.3	1065.2	1014.2	995.4
27.5°	1148.6	1106.2	1015.4	957.0	928.2
30°	1107.6	1060.2	960.6	897.3	863.6
32.5°	1067.6	1010.4	908.5	833.7	802.6
35°	1022.9	959.4	849.9	771.5	744.1
37.5°	979.4	910.8	795.2	709.2	678.3
40°	933.3	858.7	737.9	649.5	617.3
42.5°	886.0	806.5	680.7	588.5	557.5
45°	836.3	752.8	622.3	533.8	503.9
47.5°	788.9	700.7	566.3	477.8	450.5
50°	736.7	648.3	511.5	425.5	399.5
52.5°	685.6	592.3	459.2	377.1	353.4
55°	635.8	538.8	404.3	329.8	306.2
57.5°	584.9	485.3	356.0	286.2	266.3
60°	532.5	433.1	304.9	241.4	221.6
62.5°	481.6	382.1	261.3	201.6	191.7
65°	429.3	328.5	216.5	174.2	170.5
67.5°	379.6	278.7	174.2	153.0	149.3
70°	327.3	230.2	144.3	131.9	126.9
72.5°	277.5	185.3	120.7	110.8	108.2
75°	228.9	141.8	99.6	90.8	89.6
77.5°	180.4	100.7	78.4	73.4	70.9
80°	135.6	72.2	59.7	54.8	54.8
82.5°	94.5	48.6	41.0	38.6	38.6
85°	53.5	27.3	23.6	23.6	23.6
87.5°	20.0	9.9	9.9	8.8	8.8
90°	0.6	6.5	10.8	13.5	14.6
92.5°	13.5	11.4	13.0	14.1	14.6
95°	35.2	17.3	21.1	23.8	23.3
97.5°	63.3	19.0	27.6	29.3	29.8
100°	95.9	21.6	30.8	35.2	36.3
102.5°	131.6	130.5	31.9	37.9	39.6
105°	164.7	180.9	33.0	38.9	41.1
107.5°	203.2	216.6	34.2	40.0	42.3
110°	240.0	251.3	94.8	40.7	42.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	274.6	284.3	275.1	41.7	43.4
115°	311.4	320.6	334.3	83.4	44.5
117.5°	343.3	354.2	363.4	286.0	144.1
120°	379.2	387.3	397.0	403.6	330.4
122.5°	409.4	418.1	429.0	432.2	432.8
125°	440.4	447.4	457.7	461.5	463.1
127.5°	468.6	476.1	484.3	489.6	490.2
130°	495.1	503.7	509.7	515.7	515.1
132.5°	522.1	529.2	535.1	540.0	539.5
135°	545.0	553.6	558.4	563.9	562.8
137.5°	568.7	575.2	580.7	586.1	584.4
140°	592.0	596.4	602.3	607.2	604.5
142.5°	611.5	615.4	622.4	626.7	623.9
145°	632.1	631.6	640.8	644.6	641.9
147.5°	650.0	648.3	657.5	660.2	658.1
150°	667.3	663.5	672.2	675.4	672.7
152.5°	681.9	677.6	685.7	689.0	685.1
155°	696.0	691.1	697.7	700.9	696.6
157.5°	707.4	703.1	708.0	711.8	707.4
160°	717.2	713.9	717.2	720.4	716.6
162.5°	725.7	722.5	725.3	729.1	724.2
165°	733.4	730.2	731.7	735.6	731.7
167.5°	739.4	736.0	737.7	741.6	736.6
170°	744.2	740.9	742.0	745.8	740.9
172.5°	747.5	744.2	745.4	749.1	744.2
175°	750.1	746.4	747.5	751.2	745.8
177.5°	751.2	747.5	748.0	751.8	746.9
180°	748.6	748.6	748.6	748.6	748.6

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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	9.24	10.13	10.15	11.05	12.23	5.20	6.09	6.11	7.01	8.19
	3H	10.92	11.71	11.84	12.64	13.85	6.39	7.18	7.31	8.11	9.32
	4H	11.53	12.28	12.47	13.21	14.43	6.84	7.59	7.77	8.52	9.74
	6H	11.95	12.64	12.90	13.58	14.81	7.16	7.85	8.10	8.79	10.02
	8H	12.08	12.73	13.03	13.69	14.92	7.25	7.90	8.20	8.86	10.09
	12H	12.14	12.76	13.10	13.71	14.96	7.29	7.91	8.25	8.86	10.11
4H	2H	9.27	10.01	10.21	10.95	12.17	5.80	6.55	6.75	7.49	8.70
	3H	11.10	11.72	12.05	12.68	13.91	7.15	7.77	8.10	8.74	9.97
	4H	11.79	12.35	12.75	13.31	14.57	7.70	8.26	8.66	9.22	10.48
	6H	12.30	12.79	13.27	13.77	15.03	8.11	8.60	9.09	9.58	10.84
	8H	12.47	12.93	13.45	13.91	15.17	8.24	8.69	9.21	9.67	10.94
	12H	12.57	12.98	13.56	13.97	15.25	8.30	8.71	9.30	9.71	10.98
8H	4H	11.76	12.21	12.73	13.19	14.46	7.98	8.43	8.95	9.41	10.68
	6H	12.32	12.70	13.32	13.72	14.98	8.49	8.87	9.49	9.89	11.15
	8H	12.53	12.86	13.54	13.87	15.16	8.68	9.01	9.69	10.02	11.30
	12H	12.67	12.96	13.68	13.96	15.30	8.79	9.09	9.80	10.09	11.42
12H	4H	11.71	12.12	12.70	13.12	14.39	7.99	8.39	8.98	9.39	10.66
	6H	12.30	12.63	13.30	13.64	14.92	8.54	8.87	9.55	9.88	11.16
	8H	12.51	12.81	13.53	13.81	15.14	8.75	9.04	9.76	10.04	11.37

END OF REPORT