

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: P910708

Luminaire Tested: DFN2DIP-HX3F0-030D040US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910708
REPORT IS A COMBINATION OF REPORTS P899216 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D040US850-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

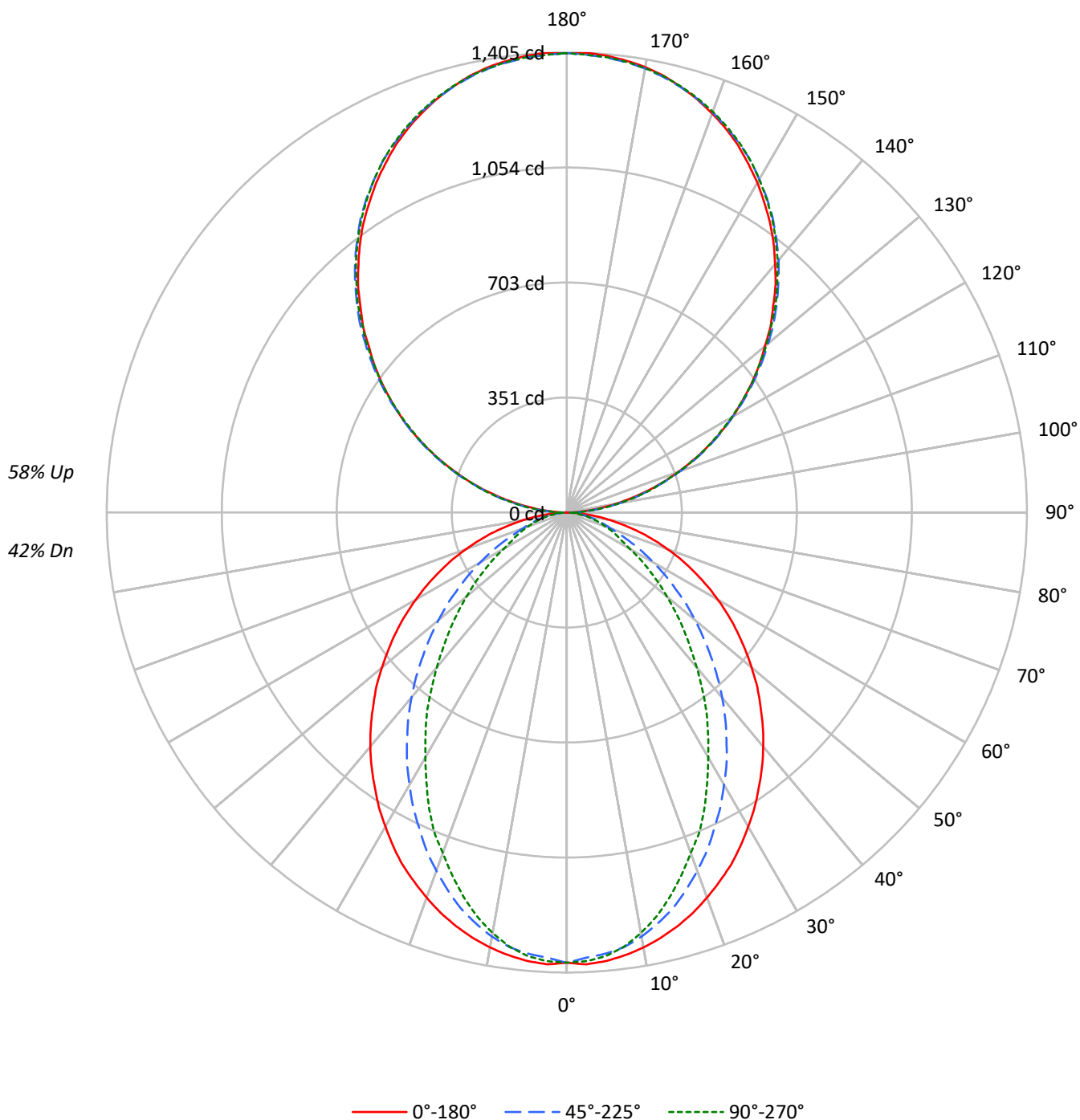
Lumens per Lamp: N/A
Luminaire Lumens: 6753.7 lumens
Efficiency: N/A
Efficacy: 126.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 53.4
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: P910708

CATALOG NUMBER: DFN2DIP-HX3F0-030D040US850-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910708

CATALOG NUMBER: DFN2DIP-HX3F0-030D040US850-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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	47	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	40	34	30	33	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	28	33	28	24	27	23	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	20	18	16
10	47	35	28	24	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1593	1593	1593
5°	1595	1566	1577
10°	1578	1535	1525
15°	1556	1483	1444
20°	1526	1412	1346
25°	1496	1333	1252
30°	1456	1251	1132
35°	1416	1164	1027
40°	1376	1074	907
45°	1329	974	797
50°	1281	873	691
55°	1230	766	589
60°	1172	654	484
65°	1104	540	434
70°	1023	433	392
75°	920	380	354
80°	771	315	305
85°	527	205	224

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1329 cd/sqm

TEST NUMBER: P910708

CATALOG NUMBER: DFN2DIP-HX3F0-030D040US850-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	1.9
10°-20°	353.8	5.2
20°-30°	496.7	7.4
30°-40°	541.4	8.0
40°-50°	497.6	7.4
50°-60°	390.8	5.8
60°-70°	254.4	3.8
70°-80°	130.9	1.9
80°-90°	37.4	0.6
90°-100°	86.8	1.3
100°-110°	275.8	4.1
110°-120°	472.0	7.0
120°-130°	620.8	9.2
130°-140°	696.8	10.3
140°-150°	683.3	10.1
150°-160°	573.2	8.5
160°-170°	380.1	5.6
170°-180°	132.9	2.0
0°-30°	979.3	14.5
0°-40°	1520.7	22.5
0°-60°	2409.2	35.7
0°-90°	2831.9	41.9
90°-120°	834.7	12.4
90°-150°	2835.6	42.0
90°-180°	3922.0	58.1
0°-180°	6753.7	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	15	42	39	40	7
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	

TEST NUMBER: P910708

CATALOG NUMBER: DFN2DIP-HX3F0-030D040US850-RLFL

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°	1.2	15.2	41.5	38.9	40.1
92.5°	26.2	35.5	36.8	38.0	38.0
95°	61.8	73.6	75.7	75.7	73.6
97.5°	102.8	113.8	118.4	118.4	118.4
100°	150.2	159.9	163.2	163.2	162.0
102.5°	200.1	207.3	211.9	213.1	211.9
105°	254.6	258.0	260.5	262.6	262.6
107.5°	308.7	313.8	313.8	314.6	308.7
110°	361.2	368.0	368.0	368.0	364.6

TEST NUMBER: P910708

CATALOG NUMBER: DFN2DIP-HX3F0-030D040US850-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	417.9	425.1	423.7	420.4	417.9
115°	473.7	480.5	478.3	477.1	473.7
117.5°	529.1	538.4	532.5	529.1	525.8
120°	585.0	594.2	585.0	585.0	581.1
122.5°	635.7	647.5	641.7	638.2	635.7
125°	689.0	699.6	696.2	692.3	691.1
127.5°	741.0	754.1	749.5	744.4	741.0
130°	789.6	804.9	802.8	800.3	795.6
132.5°	844.2	856.0	856.9	850.9	847.6
135°	891.2	904.3	906.8	905.5	902.2
137.5°	943.6	954.2	956.3	955.4	950.4
140°	989.7	1000.3	1006.2	1006.2	1001.5
142.5°	1037.1	1047.7	1051.0	1052.3	1047.7
145°	1081.9	1090.4	1097.1	1098.5	1093.8
147.5°	1122.1	1132.6	1137.7	1139.8	1135.2
150°	1163.6	1170.8	1175.4	1179.2	1175.4
152.5°	1200.4	1207.5	1213.5	1218.1	1213.5
155°	1237.1	1240.5	1244.3	1250.3	1246.4
157.5°	1268.9	1271.4	1273.5	1282.0	1276.0
160°	1297.2	1299.7	1301.0	1308.2	1303.1
162.5°	1323.4	1323.4	1324.7	1332.7	1326.8
165°	1345.9	1344.6	1344.6	1353.0	1347.1
167.5°	1366.2	1362.3	1362.3	1370.8	1364.8
170°	1381.4	1377.9	1376.7	1385.1	1377.9
172.5°	1391.9	1388.6	1387.2	1395.8	1388.6
175°	1400.4	1397.0	1394.5	1402.9	1395.8
177.5°	1405.1	1401.7	1399.1	1406.3	1399.1
180°	1402.9	1402.9	1402.9	1402.9	1402.9

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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	7.92	8.68	8.95	9.72	11.10	3.89	4.66	4.92	5.69	7.08
	3H	9.58	10.27	10.62	11.31	12.71	5.07	5.76	6.11	6.80	8.20
	4H	10.18	10.83	11.23	11.88	13.29	5.52	6.17	6.57	7.21	8.62
	6H	10.59	11.19	11.65	12.24	13.66	5.83	6.43	6.89	7.48	8.90
	8H	10.71	11.28	11.78	12.35	13.77	5.92	6.49	6.98	7.55	8.97
	12H	10.77	11.31	11.84	12.37	13.81	5.96	6.50	7.03	7.55	9.00
4H	2H	7.93	8.58	8.98	9.62	11.03	4.47	5.13	5.53	6.17	7.58
	3H	9.74	10.28	10.81	11.35	12.78	5.81	6.36	6.88	7.43	8.85
	4H	10.42	10.92	11.50	11.98	13.43	6.36	6.85	7.43	7.91	9.36
	6H	10.93	11.35	12.01	12.44	13.88	6.77	7.19	7.85	8.28	9.72
	8H	11.10	11.49	12.18	12.57	14.03	6.89	7.29	7.97	8.37	9.82
	12H	11.19	11.54	12.28	12.64	14.10	6.95	7.31	8.05	8.40	9.86
8H	4H	10.39	10.78	11.47	11.86	13.32	6.63	7.02	7.71	8.10	9.56
	6H	10.94	11.27	12.04	12.39	13.84	7.14	7.46	8.24	8.58	10.04
	8H	11.15	11.44	12.26	12.54	14.01	7.32	7.61	8.43	8.71	10.19
	12H	11.28	11.53	12.40	12.63	14.14	7.44	7.69	8.55	8.79	10.30
12H	4H	10.33	10.69	11.43	11.79	13.25	6.63	6.99	7.73	8.08	9.54
	6H	10.92	11.20	12.03	12.31	13.78	7.18	7.47	8.29	8.57	10.05
	8H	11.13	11.38	12.24	12.48	13.99	7.39	7.64	8.50	8.74	10.25