

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: P916104

Luminaire Tested: DFN2DIP-HX2F0-040D030US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916104
REPORT IS A COMBINATION OF REPORTS P899166 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D030US930-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

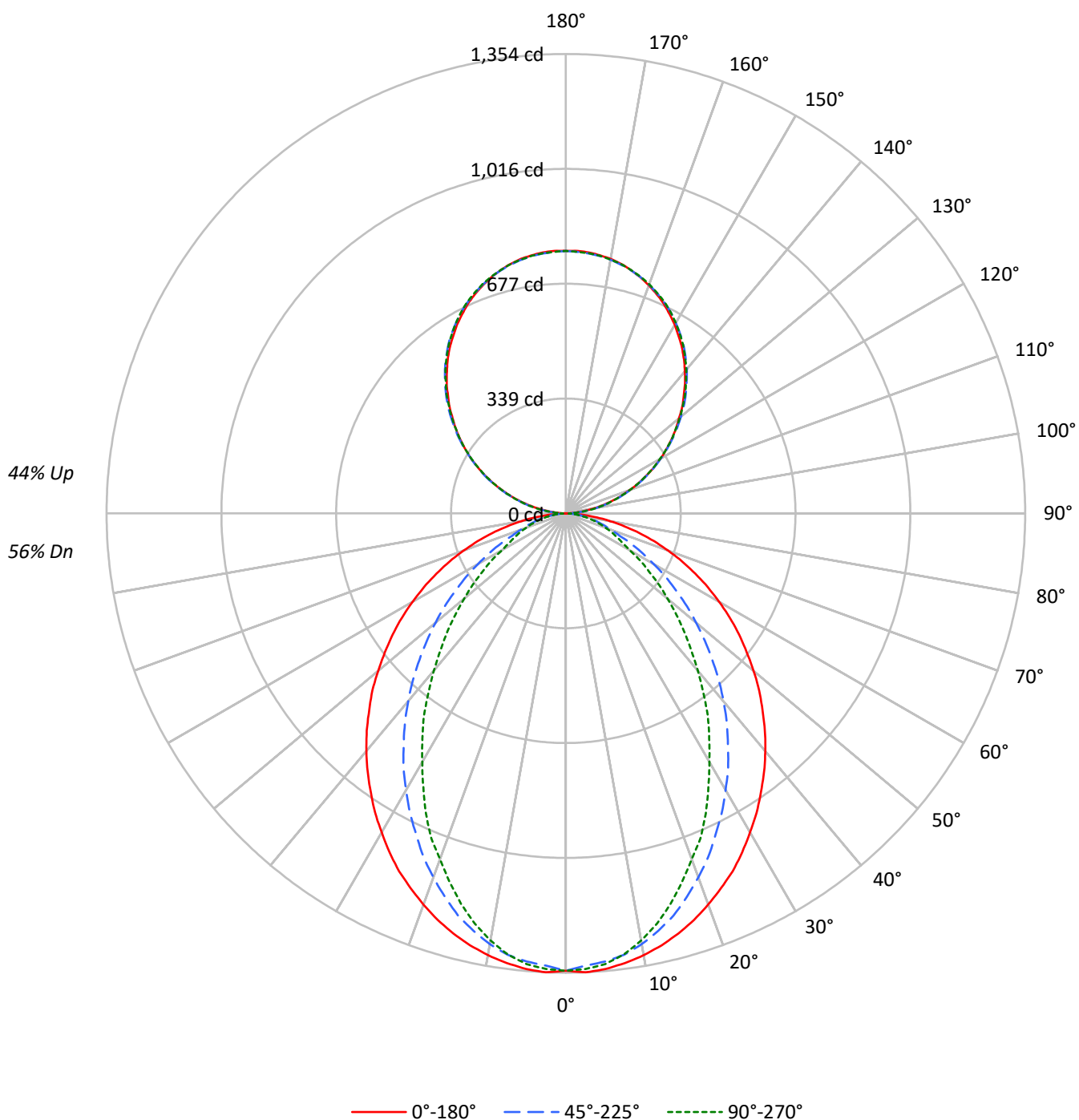
Lumens per Lamp: N/A
Luminaire Lumens: 4936.6 lumens
Efficiency: N/A
Efficacy: 85.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 57.8
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

TEST NUMBER: P916104

CATALOG NUMBER: DFN2DIP-HX2F0-040D030US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916104

CATALOG NUMBER: DFN2DIP-HX2F0-040D030US930-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	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		55	54	53
2	91	84	78	73		85	79	73	69		68	64	61		58	56	53		49	47	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	30
6	65	53	46	40		61	50	43	38		44	38	34		38	34	31		33	30	27
7	61	48	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°	3176	3176	3176
5°	3176	3118	3140
10°	3139	3049	3032
15°	3091	2941	2868
20°	3029	2795	2670
25°	2965	2633	2478
30°	2881	2467	2238
35°	2799	2290	2027
40°	2714	2107	1785
45°	2617	1906	1567
50°	2516	1703	1354
55°	2411	1487	1150
60°	2287	1263	942
65°	2146	1036	841
70°	1974	825	752
75°	1757	712	674
80°	1446	577	567
85°	946	357	398

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2617 cd/sqm

TEST NUMBER: P916104

CATALOG NUMBER: DFN2DIP-HX2F0-040D030US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	2.6
10°-20°	346.8	7.0
20°-30°	486.9	9.9
30°-40°	530.7	10.8
40°-50°	487.8	9.9
50°-60°	383.1	7.8
60°-70°	249.3	5.1
70°-80°	128.4	2.6
80°-90°	35.0	0.7
90°-100°	47.9	1.0
100°-110°	152.1	3.1
110°-120°	260.3	5.3
120°-130°	342.3	6.9
130°-140°	384.2	7.8
140°-150°	376.8	7.6
150°-160°	316.1	6.4
160°-170°	209.6	4.2
170°-180°	73.3	1.5
0°-30°	960.0	19.4
0°-40°	1490.7	30.2
0°-60°	2361.5	47.8
0°-90°	2774.2	56.2
90°-120°	460.2	9.3
90°-150°	1563.5	31.7
90°-180°	2162.0	43.8
0°-180°	4936.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	1	8	23	21	22	5
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: P916104

CATALOG NUMBER: DFN2DIP-HX2F0-040D030US930-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
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: P916104

CATALOG NUMBER: DFN2DIP-HX2F0-040D030US930-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

TEST NUMBER: P916104

CATALOG NUMBER: DFN2DIP-HX2F0-040D030US930-RLLFLL

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	11.58	12.47	12.49	13.39	14.57	7.56	8.45	8.47	9.37	10.55
	3H	13.24	14.03	14.16	14.96	16.17	8.74	9.53	9.66	10.46	11.67
	4H	13.83	14.58	14.77	15.52	16.73	9.18	9.93	10.12	10.87	12.08
	6H	14.24	14.92	15.19	15.87	17.10	9.49	10.18	10.44	11.12	12.35
	8H	14.35	15.01	15.31	15.97	17.20	9.58	10.23	10.53	11.19	12.42
	12H	14.41	15.03	15.37	15.98	17.24	9.61	10.23	10.57	11.19	12.44
4H	2H	11.60	12.35	12.55	13.29	14.50	8.15	8.90	9.09	9.84	11.05
	3H	13.41	14.03	14.36	15.00	16.23	9.49	10.11	10.44	11.08	12.31
	4H	14.08	14.65	15.05	15.61	16.87	10.02	10.59	10.99	11.55	12.81
	6H	14.58	15.06	15.55	16.05	17.31	10.43	10.91	11.40	11.90	13.16
	8H	14.74	15.20	15.72	16.17	17.44	10.55	11.00	11.52	11.98	13.25
	12H	14.82	15.23	15.82	16.23	17.50	10.61	11.01	11.60	12.01	13.29
8H	4H	14.05	14.51	15.03	15.49	16.75	10.29	10.75	11.27	11.73	13.00
	6H	14.59	14.97	15.59	15.99	17.26	10.79	11.17	11.79	12.19	13.45
	8H	14.79	15.12	15.80	16.13	17.42	10.97	11.30	11.98	12.31	13.59
	12H	14.92	15.21	15.93	16.21	17.54	11.08	11.37	12.09	12.37	13.70
12H	4H	14.01	14.41	15.00	15.41	16.69	10.30	10.71	11.29	11.70	12.98
	6H	14.57	14.90	15.58	15.91	17.19	10.83	11.16	11.84	12.17	13.46
	8H	14.77	15.06	15.78	16.07	17.40	11.03	11.32	12.04	12.32	13.66

END OF REPORT

FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE

8 of 8