

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242640

Luminaire Tested: S124DRP-S795D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242640
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S795D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

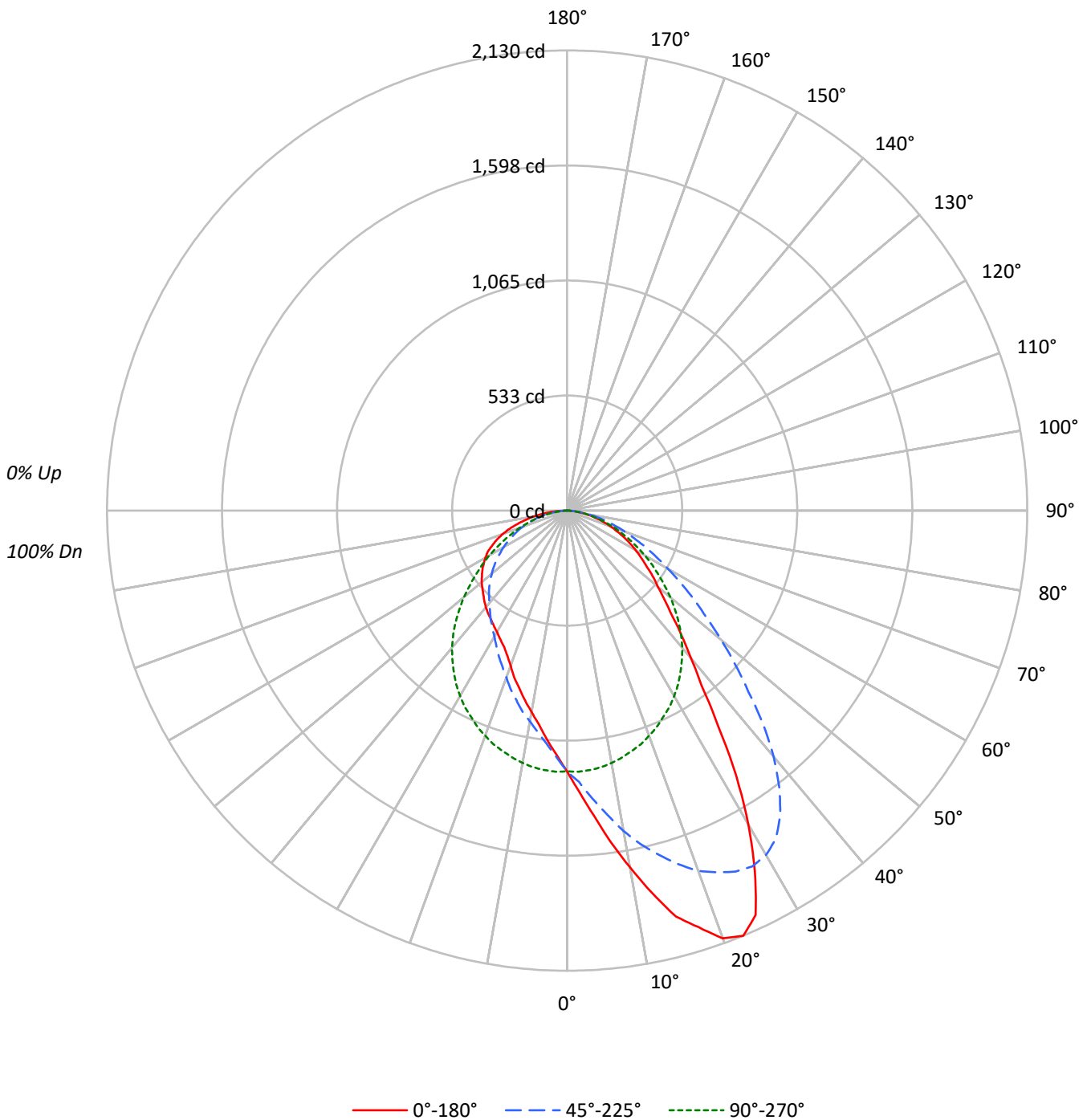
Lumens per Lamp: N/A
Luminaire Lumens: 3330.6 lumens
Efficiency: N/A
Efficacy: 126.2 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 26.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62					62			
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46					46			
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33					33			
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30					30			
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27					27			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	10729	10729	10729	10729	10729
5°	12635	11934	10757	9668	9494
10°	15128	13598	10709	8945	8548
15°	17899	15189	10601	8356	7850
20°	19931	16790	10490	7776	7227
25°	20253	18081	10328	7322	6797
30°	17233	18896	10172	6913	6661
35°	13250	18659	9918	6690	6663
40°	10327	17243	9619	6504	6788
45°	8611	14922	9170	6424	6901
50°	7578	12868	8622	6306	7136
55°	6943	11073	7966	6191	7423
60°	6507	9582	7378	6036	7769
65°	6057	8371	6720	5837	8056
70°	5536	7394	6069	5679	8239
75°	4946	6371	5341	5306	8140
80°	4146	5170	4377	4837	7883
85°	3060	3927	3162	4488	7547

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 16474 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.5	3.5
10°-20°	362.6	10.9
20°-30°	576.0	17.3
30°-40°	640.0	19.2
40°-50°	582.1	17.5
50°-60°	475.6	14.3
60°-70°	339.5	10.2
70°-80°	186.8	5.6
80°-90°	50.5	1.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1056.1	31.7
0°-40°	1696.1	50.9
0°-60°	2753.8	82.7
0°-90°	3330.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3330.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1207	1207	1207	1207	1207	
5°	1416	1338	1206	1084	1064	143
15°	1945	1650	1152	908	853	550
25°	2065	1844	1053	746	693	916
35°	1221	1720	914	616	614	773
45°	685	1187	730	511	549	538
55°	448	714	514	400	479	404
65°	288	398	320	278	383	285
75°	144	186	156	154	237	153
85°	30	38	31	44	74	37
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207
2.5°	1304	1304	1299	1298	1294	1290	1289	1281	1265	1257	1255
5°	1416	1426	1413	1411	1409	1393	1384	1374	1351	1338	1327
7.5°	1547	1548	1542	1537	1527	1513	1494	1472	1446	1419	1400
10°	1676	1680	1674	1673	1647	1631	1599	1572	1541	1507	1475
12.5°	1812	1804	1802	1775	1776	1743	1705	1677	1625	1584	1539
15°	1945	1934	1927	1898	1883	1843	1803	1773	1710	1651	1606
17.5°	2022	2036	2018	2006	1966	1940	1900	1838	1791	1717	1666
20°	2107	2108	2099	2087	2057	2021	1977	1907	1849	1775	1697
22.5°	2130	2130	2128	2116	2096	2068	2024	1968	1894	1813	1735
25°	2065	2063	2068	2081	2072	2063	2038	1994	1928	1844	1760
27.5°	1881	1894	1921	1953	1976	1997	1995	1977	1930	1857	1767
30°	1679	1696	1715	1747	1809	1845	1884	1913	1897	1841	1759
32.5°	1457	1458	1489	1526	1582	1658	1726	1793	1822	1800	1735
35°	1221	1228	1259	1295	1364	1448	1541	1624	1692	1720	1685
37.5°	1023	1045	1068	1109	1173	1248	1348	1452	1552	1613	1620
40°	890	903	918	948	1000	1074	1157	1280	1388	1486	1518
42.5°	785	791	799	825	862	935	1009	1114	1223	1345	1404
45°	685	693	709	724	754	805	876	965	1074	1187	1286
47.5°	610	615	625	642	669	704	764	839	946	1056	1162
50°	548	552	560	575	594	624	671	741	820	931	1034
52.5°	499	500	505	514	529	553	589	644	716	812	915
55°	448	450	455	463	476	492	522	565	629	715	804
57.5°	406	408	412	415	427	441	465	496	546	622	704
60°	366	365	370	373	380	391	409	438	481	539	613
62.5°	327	326	330	333	337	346	359	381	413	465	526
65°	288	286	289	293	297	302	312	333	360	398	447
67.5°	248	251	251	253	256	263	270	286	306	337	380
70°	213	214	216	216	217	223	229	238	257	285	318
72.5°	178	181	179	181	182	186	190	198	213	232	259
75°	144	146	146	146	148	149	153	159	170	186	205
77.5°	111	111	112	114	114	117	120	124	131	142	155
80°	81	82	82	83	83	85	86	92	94	101	111
82.5°	54	55	55	57	58	58	59	61	63	69	72
85°	30	31	30	31	33	33	35	35	37	39	42
87.5°	11	13	13	13	14	15	15	15	17	17	19
90°	0	0	0	0	0	0	0	0	0	0	0

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207
2.5°	1256	1249	1244	1240	1229	1222	1217	1210	1202	1194	1183
5°	1317	1300	1287	1268	1250	1235	1220	1206	1189	1170	1157
7.5°	1379	1356	1324	1300	1270	1245	1222	1199	1174	1150	1127
10°	1438	1406	1370	1327	1287	1252	1219	1187	1156	1125	1098
12.5°	1502	1459	1402	1350	1304	1254	1212	1171	1132	1099	1067
15°	1557	1499	1437	1371	1312	1256	1202	1152	1110	1067	1037
17.5°	1592	1520	1454	1384	1316	1247	1190	1135	1083	1041	1003
20°	1627	1555	1467	1398	1313	1241	1173	1109	1054	1009	970
22.5°	1657	1571	1483	1386	1302	1224	1148	1084	1028	979	942
25°	1664	1568	1473	1382	1286	1196	1128	1053	993	943	903
27.5°	1666	1565	1460	1361	1262	1179	1091	1026	964	910	872
30°	1661	1554	1439	1329	1230	1138	1064	991	928	875	835
32.5°	1643	1531	1412	1294	1190	1101	1024	956	894	842	800
35°	1606	1497	1370	1250	1144	1054	985	914	852	803	762
37.5°	1557	1455	1326	1201	1099	1007	938	873	817	766	724
40°	1488	1401	1272	1150	1038	952	888	829	774	726	687
42.5°	1408	1335	1219	1088	981	894	832	781	730	687	647
45°	1311	1261	1149	1030	917	835	776	730	686	643	610
47.5°	1202	1174	1077	963	855	773	721	677	637	600	570
50°	1093	1081	999	890	788	712	660	624	591	559	531
52.5°	985	987	916	818	726	653	602	568	541	516	492
55°	874	888	831	742	657	591	545	514	494	473	454
57.5°	773	796	746	665	593	530	489	466	444	430	415
60°	674	696	659	593	526	474	436	415	397	388	378
62.5°	586	605	580	520	464	415	384	364	353	343	338
65°	503	519	496	451	402	362	335	320	308	304	297
67.5°	421	436	423	384	342	311	290	273	266	262	258
70°	349	364	351	318	287	262	242	234	226	225	218
72.5°	289	298	284	260	235	215	201	192	189	186	183
75°	226	235	226	206	187	172	159	156	151	150	147
77.5°	169	178	171	157	143	130	123	118	117	114	115
80°	122	127	121	112	101	93	88	86	83	82	84
82.5°	79	81	78	73	66	61	58	55	55	56	55
85°	46	45	45	40	37	34	32	31	31	32	33
87.5°	19	20	19	17	16	14	14	13	14	14	15
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207
2.5°	1178	1174	1167	1158	1151	1143	1141	1138	1144	1139	1137
5°	1145	1135	1121	1106	1097	1084	1081	1076	1071	1071	1066
7.5°	1111	1096	1079	1063	1049	1035	1026	1025	1017	1013	1008
10°	1078	1059	1038	1023	1006	991	981	975	970	964	959
12.5°	1039	1018	1002	986	965	954	935	924	924	925	910
15°	1010	990	964	941	930	908	899	887	879	872	866
17.5°	975	951	931	905	884	868	855	848	836	825	818
20°	943	916	895	867	844	822	812	802	793	784	776
22.5°	910	882	854	827	806	783	773	759	751	747	738
25°	875	845	815	789	767	747	733	723	714	710	704
27.5°	837	807	779	749	723	709	698	689	684	678	675
30°	801	770	739	711	688	674	664	658	654	652	649
32.5°	764	734	701	676	656	644	637	631	630	629	629
35°	725	694	664	641	622	617	610	607	606	610	611
37.5°	687	658	630	607	594	586	584	583	587	590	593
40°	650	622	596	577	565	561	560	562	566	570	574
42.5°	615	587	564	547	539	535	536	539	545	549	556
45°	578	555	532	517	510	511	511	516	521	528	534
47.5°	543	520	500	488	484	483	485	491	499	506	515
50°	508	486	470	459	455	456	460	466	475	485	495
52.5°	473	453	438	428	426	429	433	442	450	461	473
55°	436	419	407	399	398	400	404	414	426	439	450
57.5°	399	385	373	368	368	369	376	388	400	414	428
60°	362	349	340	336	337	340	349	359	375	389	404
62.5°	327	316	308	304	303	311	319	330	346	362	379
65°	289	280	273	271	273	278	289	303	317	333	350
67.5°	252	245	240	241	242	249	259	271	286	303	321
70°	217	210	206	207	210	219	227	239	256	273	287
72.5°	181	177	174	176	179	185	195	208	222	238	253
75°	145	145	143	144	149	155	162	175	190	203	215
77.5°	114	112	113	115	118	125	134	143	155	168	178
80°	82	83	85	88	89	95	104	112	121	132	141
82.5°	57	57	58	62	63	69	74	83	90	97	104
85°	34	34	36	38	40	44	48	53	60	65	72
87.5°	16	16	18	19	21	23	24	30	32	34	39
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1207	1207	1207	1207
2.5°	1136	1135	1132	1131
5°	1063	1060	1059	1064
7.5°	1007	1005	1001	999
10°	954	952	948	947
12.5°	903	899	899	900
15°	859	857	852	853
17.5°	814	812	805	812
20°	772	768	765	764
22.5°	732	729	729	725
25°	700	697	696	693
27.5°	674	672	670	671
30°	651	650	649	649
32.5°	631	631	632	632
35°	613	615	616	614
37.5°	597	598	600	601
40°	578	582	583	585
42.5°	560	564	567	567
45°	542	546	549	549
47.5°	523	528	532	532
50°	503	510	514	516
52.5°	484	491	496	497
55°	462	472	477	479
57.5°	442	451	457	458
60°	418	428	436	437
62.5°	393	404	411	415
65°	364	375	382	383
67.5°	334	345	349	352
70°	301	310	315	317
72.5°	264	273	279	279
75°	226	234	237	237
77.5°	187	191	195	196
80°	149	151	154	154
82.5°	110	112	115	114
85°	71	76	75	74
87.5°	40	41	42	43
90°	0	0	0	0



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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	18.21	19.77	18.58	20.09	20.40	19.12	20.68	19.49	21.00	21.31
	3H	19.69	21.10	20.07	21.43	21.79	20.49	21.90	20.87	22.22	22.58
	4H	20.23	21.56	20.63	21.90	22.28	20.96	22.28	21.36	22.63	23.01
	6H	20.59	21.82	21.00	22.18	22.57	21.27	22.49	21.68	22.86	23.25
	8H	20.69	21.86	21.12	22.25	22.65	21.35	22.51	21.77	22.90	23.30
	12H	20.75	21.86	21.18	22.25	22.68	21.39	22.51	21.82	22.89	23.32
4H	2H	19.37	20.69	19.77	21.04	21.42	19.81	21.13	20.21	21.48	21.86
	3H	20.90	22.00	21.31	22.40	22.80	21.52	22.62	21.93	23.02	23.42
	4H	21.49	22.48	21.92	22.90	23.34	22.11	23.10	22.54	23.51	23.95
	6H	21.92	22.78	22.37	23.23	23.68	22.50	23.37	22.96	23.81	24.27
	8H	22.04	22.85	22.50	23.29	23.76	22.61	23.42	23.07	23.86	24.33
	12H	22.12	22.84	22.60	23.32	23.79	22.67	23.40	23.15	23.87	24.35
8H	4H	21.94	22.76	22.41	23.20	23.67	22.42	23.23	22.88	23.67	24.14
	6H	22.45	23.12	22.95	23.61	24.09	22.95	23.62	23.44	24.11	24.59
	8H	22.62	23.22	23.13	23.73	24.22	23.11	23.71	23.62	24.22	24.71
	12H	22.74	23.28	23.25	23.77	24.33	23.22	23.76	23.73	24.25	24.81
12H	4H	21.99	22.72	22.47	23.20	23.67	22.45	23.18	22.93	23.65	24.13
	6H	22.52	23.13	23.04	23.64	24.12	23.00	23.61	23.52	24.12	24.60
	8H	22.75	23.28	23.25	23.77	24.33	23.23	23.76	23.73	24.25	24.81