

Report time: 6.4.2022 17.55
Report No.: TR 4227

Manufacturer: Secto Design

Item No.: Kuulto 9101 Walnut

Goniophotometric Test Report

TEST ARTEFACT

light with lamp type of LED-luminaire.

MEASUREMENT METHOD

The measurements were made by a goniophotometer of type LUMI 180. Goniometer was operated in horizontal axis. The DUT was rotated with 2-axis goniometer around the axes. The Luminous Intensity of the DUT at different directions were measured with a calibrated photometer located at a known far-field position of the DUT.

MEASUREMENT UNCERTAINTY

The photometer of type SSL L200-004 is traceable to national standard at NIST (Certificate of calibration CR 0234 signed on 08.2021). The photometer head of type LH1010-003_CR-0112 is traceable to national standard at PTB (Certificate of calibration CR 0112 signed on 01.2022). The power meter of type GW Instek APS-7050 is traceable to national standard at NIST. The expanded uncertainties of the Luminous flux and efficacy are $\pm 3.8\%$ and $\pm 4.0\%$ ($k = 2$), respectively.

MEASUREMENTS

Table below describes the measurement conditions. The luminaire under test and photometer/spectrometer were mounted onto the same optical axis and perpendicular by an alignment laser. The measurement distance from the rotation axis to the photometer optical receiving surface was measured by laser distance meter. 0.0000 and 0.0000, respectively.

Table - Measurement information

Ambient temperature of the laboratory	25.0 degC
Power supply	230.0 Vac
Measurement distance	8893 mm
Location of the rotation axis (behind the outermost surface of the optics)	25 mm
Angular step, C plane	15.0 deg
Angular step, gamma angle	2.5 deg
Maximum gamma angle	180.0 deg
Stabilization time	33 min

Table. Luminous Intensity (cd) in horizontal (rows) and vertical planes (columns).

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345
0.0	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691
2.5	691	691	691	691	691	691	690	690	690	690	690	689	690	690	690	690	690	690	691	691	691	691	692	692
5.0	689	689	690	690	690	690	687	687	687	687	686	686	688	687	687	687	687	687	689	690	690	690	690	691
7.5	686	686	687	687	687	688	683	683	683	682	682	681	684	683	683	682	682	682	686	687	687	687	688	688
10.0	681	681	682	683	683	683	676	676	676	676	675	673	678	677	677	677	676	675	682	682	683	683	684	684
12.5	673	674	676	677	677	677	668	668	668	668	666	664	670	669	669	669	667	666	675	675	677	678	678	679
15.0	664	665	667	669	669	668	657	657	658	657	655	652	659	659	659	658	657	655	666	667	668	670	671	671
17.5	652	654	657	659	659	658	643	644	645	645	641	637	646	646	647	646	644	641	654	656	658	660	661	661
20.0	638	641	645	647	646	644	627	628	630	630	626	621	630	630	632	631	629	625	640	642	646	648	649	649
22.5	622	625	630	632	631	629	609	611	613	612	608	603	613	613	615	614	611	607	624	626	631	634	635	635
25.0	603	607	613	616	614	611	590	592	594	592	588	583	594	595	596	594	592	588	606	609	613	617	619	618
27.5	584	588	594	596	595	592	569	572	573	571	567	562	574	574	575	572	571	567	587	590	595	598	600	599
30.0	562	567	573	575	574	572	547	550	550	547	544	539	552	552	552	549	548	545	566	569	574	577	579	579
32.5	539	545	550	552	552	550	524	527	526	523	520	516	529	529	528	525	524	523	544	547	552	555	557	557
35.0	516	522	526	527	528	527	501	503	500	497	495	492	506	506	502	499	499	498	521	525	529	530	533	534
37.5	492	498	501	501	503	503	477	479	474	469	468	467	482	481	476	472	473	474	497	501	504	504	507	510
40.0	468	473	474	474	477	479	453	454	448	441	442	442	457	457	449	444	446	449	473	477	478	477	481	486
42.5	443	448	447	446	450	454	428	429	421	414	414	417	433	432	422	416	419	425	449	452	452	450	455	461
45.0	419	424	420	418	423	428	403	404	394	386	387	391	408	406	395	388	392	398	425	428	425	422	428	435
47.5	393	399	393	389	395	402	378	378	366	358	359	364	382	380	368	360	364	372	400	403	398	394	400	410
50.0	368	373	365	361	367	376	352	352	339	330	331	337	356	354	340	332	336	345	374	377	371	366	372	384
52.5	342	347	338	333	339	350	327	326	312	302	303	310	331	327	313	305	308	318	348	351	344	338	344	357
55.0	317	321	311	305	311	323	300	300	285	275	275	283	305	301	286	277	280	291	323	325	316	311	317	330
57.5	290	294	283	278	283	295	274	273	258	248	247	255	278	274	259	250	252	263	296	299	289	284	289	302
60.0	263	267	256	251	255	267	247	246	232	222	219	226	252	248	232	224	224	235	270	273	262	257	261	275
62.5	236	240	230	225	227	239	220	219	206	196	192	198	225	220	206	197	196	207	243	246	236	231	233	247
65.0	209	213	203	198	199	211	192	192	180	170	165	169	197	193	180	172	169	179	216	219	209	204	206	219
67.5	181	185	177	172	172	182	164	165	154	144	137	140	170	167	155	146	143	150	190	192	183	179	179	191
70.0	153	158	151	146	145	154	136	138	127	118	110	112	141	139	128	119	115	121	162	166	158	153	153	162
72.5	125	131	125	119	117	125	109	112	103	92	85	85	113	113	103	94	90	95	134	139	132	127	126	133
75.0	99	106	100	94	91	98	86	90	81	71	63	64	90	91	81	72	67	72	107	113	107	101	99	105
77.5	77	84	79	72	68	74	65	71	64	54	47	48	69	72	64	55	50	53	84	90	85	78	75	80
80.0	59	67	62	55	51	55	54	58	51	41	35	37	55	58	51	42	37	41	64	71	67	60	55	60
82.5	49	55	50	42	38	42	44	47	40	31	26	29	46	48	40	32	28	32	52	58	53	45	41	45
85.0	39	44	39	31	28	32	44	37	30	22	19	21	35	37	30	23	21	24	43	47	42	34	31	35
87.5	30	34	29	22	21	25	34	28	22	16	15	16	27	28	22	16	15	18	33	37	32	25	23	26
90.0	22	25	21	16	15	18	26	22	17	12	11	12	20	22	17	13	12	14	25	28	23	17	17	20
92.5	16	19	15	12	12	14	19	16	12	9	8	8	13	16	12	10	9	10	19	22	18	13	13	15
95.0	10	14	11	9	9	10	13	11	8	7	6	6	8	11	8	8	7	8	13	16	12	10	10	11
97.5	6	9	7	7	7	7	8	7	6	5	4	4	5	7	6	6	6	6	9	12	9	8	7	8
100.0	4	6	5	5	5	5	5	5	4	4	3	3	3	5	4	4	4	4	6	8	6	6	5	5
102.5	3	4	4	4	3	4	3	3	3	3	2	2	2	3	3	3	3	3	4	5	5	4	4	4
105.0	2	3	3	3	2	2	2	2	2	2	1	1	1	2	2	2	2	2	3	4	4	3	3	2
107.5	1	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	2	2	2
110.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1
112.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
115.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
117.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
120.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
122.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
125.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
127.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
130.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
132.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
135.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
137.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
140.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

142.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
145.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
147.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
150.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
152.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
155.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
157.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
160.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
162.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
165.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
167.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
170.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
172.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
175.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
177.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table. Measurement results of the main luminous parameters

Luminous flux	Input power	Luminous efficacy	LOR	DWFF	Luminous intensity (g=0)
1780.5 lm	22.39 W	79.5 lm/W	100.0 %	98.9 %	691 cd

Table. Electrical parameters during the light measurements.

	Pin	PF	Vin	If
Value	22.39 W	0.8983	230.0 V	0.1083 A
St.dev.	0.12 %	0.05 %	0.00 %	0.12 %

Table. Maximum Luminous Intesity and its direction

Iv	g	C plane
691 cd	-0.0°	0.0°

Table. Beam widths at two perpendicular planes

	Beam angle, FWHM, 50% (deg)	Beam angle, 10% (deg)	Effective beam direction from g=0
C0-180	103.2°	156.1°	0.0°
C90-270	103.4°	156.4°	0.0°

Figure. Polar curve of the angular Luminous Intesity distribution at two perpendicular C planes and at C plane with maximum Luminous Intesity.

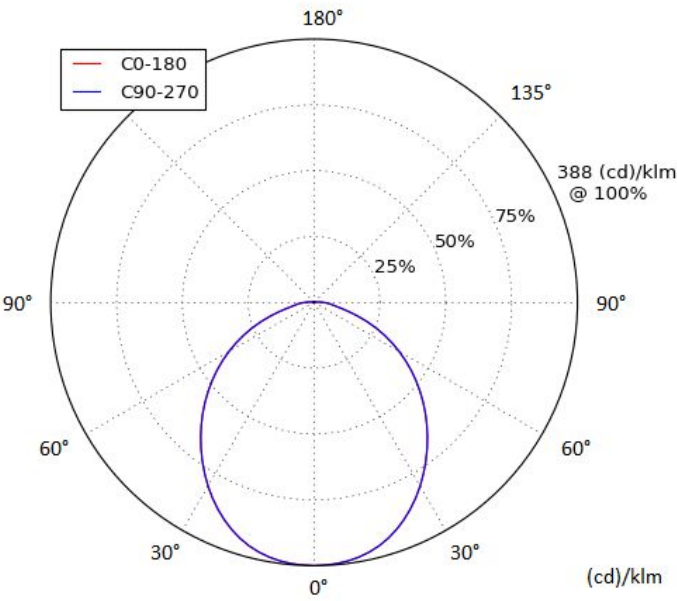


Figure. Luminous Intesity distribution in cartesian diagram at all measured C planes.

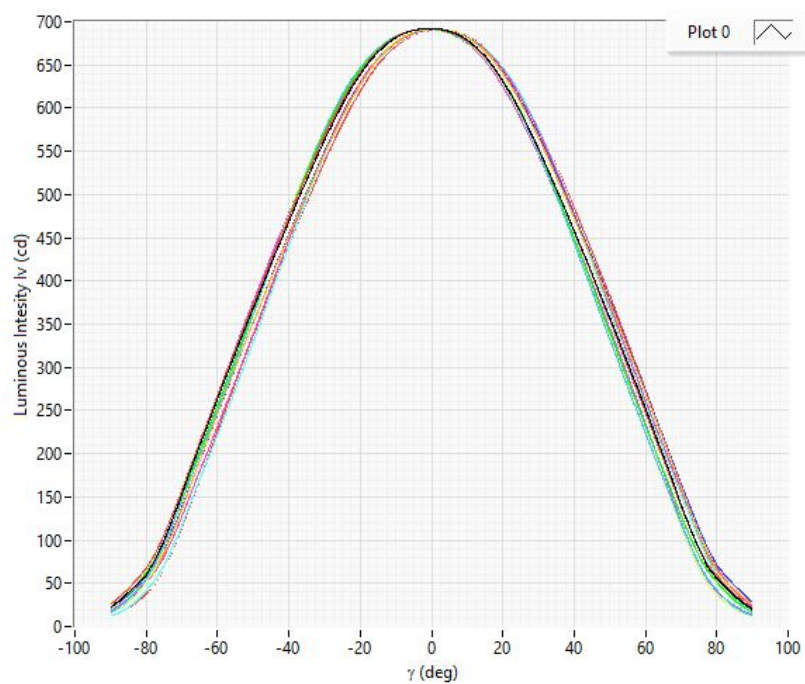


Figure. Isocandela as a function of C plane at gamma angle with maximum luminous intensity

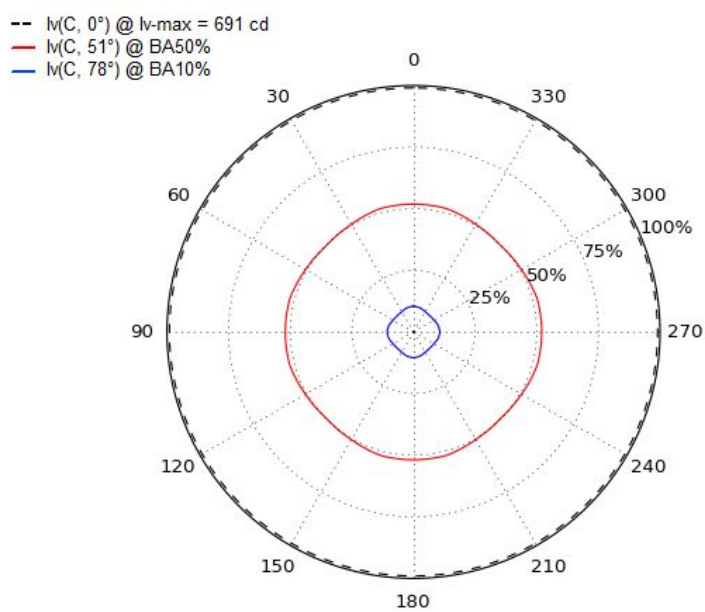


Table. Zonal lumen summary

	Lumens	Relative lumens (%)
0-20	251.90	14.15
0-30	528.50	29.68
0-40	848.90	47.68
0-60	1435.30	80.61
0-80	1724.70	96.87
0-90	1761.70	98.94
10-90	1696.30	95.27
20-40	597.00	33.53
20-50	913.10	51.28
40-70	778.60	43.73
40-90	912.80	51.27
60-80	289.40	16.25
60-90	326.40	18.33
70-80	97.20	5.46
80-90	37.00	2.08
90-110	14.30	0.80
90-120	15.20	0.85
90-130	16.10	0.90
90-150	17.60	0.99
90-180	18.80	1.06
110-180	4.50	0.25
0-180	1780.50	100.00

Table. Cumulative and Zonal luminous flux

gamma (deg)	Zone Flux (lm)	Sum Flux (lm)	Zone Flux (%)	Sum Flux (%)
0.0	0.0	0.0	0.0	0.0
2.5	8.3	4.1	0.5	0.2
5.0	16.4	16.5	0.9	0.9
7.5	24.5	37.0	1.4	2.1
10.0	32.3	65.4	1.8	3.7
12.5	39.9	101.5	2.2	5.7
15.0	47.0	144.9	2.6	8.1
17.5	53.6	195.2	3.0	11.0
20.0	59.7	251.9	3.4	14.1
22.5	65.1	314.2	3.7	17.6
25.0	69.7	381.6	3.9	21.4
27.5	73.7	453.3	4.1	25.5
30.0	76.8	528.5	4.3	29.7
32.5	79.1	606.5	4.4	34.1
35.0	80.7	686.4	4.5	38.6
37.5	81.5	767.5	4.6	43.1
40.0	81.5	848.9	4.6	47.7
42.5	80.8	930.1	4.5	52.2
45.0	79.5	1010.3	4.5	56.7
47.5	77.5	1088.8	4.4	61.2
50.0	74.9	1165.0	4.2	65.4
52.5	71.7	1238.3	4.0	69.5
55.0	68.0	1308.1	3.8	73.5
57.5	63.7	1374.0	3.6	77.2
60.0	59.0	1435.3	3.3	80.6
62.5	53.8	1491.8	3.0	83.8
65.0	48.3	1542.8	2.7	86.7
67.5	42.4	1588.2	2.4	89.2
70.0	36.1	1627.5	2.0	91.4
72.5	29.7	1660.4	1.7	93.3
75.0	23.7	1687.1	1.3	94.8
77.5	18.5	1708.2	1.0	95.9
80.0	14.5	1724.7	0.8	96.9
82.5	11.5	1737.7	0.6	97.6
85.0	9.0	1747.9	0.5	98.2
87.5	6.8	1755.8	0.4	98.6
90.0	5.1	1761.7	0.3	98.9
92.5	3.8	1766.1	0.2	99.2
95.0	2.7	1769.4	0.2	99.4
97.5	1.9	1771.6	0.1	99.5
100.0	1.3	1773.2	0.1	99.6
102.5	0.9	1774.3	0.0	99.7
105.0	0.6	1775.1	0.0	99.7
107.5	0.4	1775.6	0.0	99.7
110.0	0.3	1776.0	0.0	99.7
112.5	0.3	1776.2	0.0	99.8
115.0	0.2	1776.5	0.0	99.8
117.5	0.2	1776.7	0.0	99.8
120.0	0.2	1776.9	0.0	99.8
122.5	0.2	1777.1	0.0	99.8
125.0	0.2	1777.3	0.0	99.8
127.5	0.2	1777.6	0.0	99.8
130.0	0.2	1777.8	0.0	99.8
132.5	0.2	1778.0	0.0	99.9
135.0	0.2	1778.2	0.0	99.9
137.5	0.2	1778.4	0.0	99.9

140.0	0.2	1778.6	0.0	99.9
142.5	0.2	1778.8	0.0	99.9
145.0	0.2	1779.0	0.0	99.9
147.5	0.2	1779.2	0.0	99.9
150.0	0.2	1779.3	0.0	99.9
152.5	0.2	1779.5	0.0	99.9
155.0	0.2	1779.7	0.0	100.0
157.5	0.1	1779.8	0.0	100.0
160.0	0.1	1780.0	0.0	100.0
162.5	0.1	1780.1	0.0	100.0
165.0	0.1	1780.2	0.0	100.0
167.5	0.1	1780.3	0.0	100.0
170.0	0.1	1780.4	0.0	100.0
172.5	0.1	1780.4	0.0	100.0
175.0	0.0	1780.5	0.0	100.0
177.5	0.0	1780.5	0.0	100.0
180.0	0.0	1780.5	0.0	100.0

Figure. Cumulative luminous flux

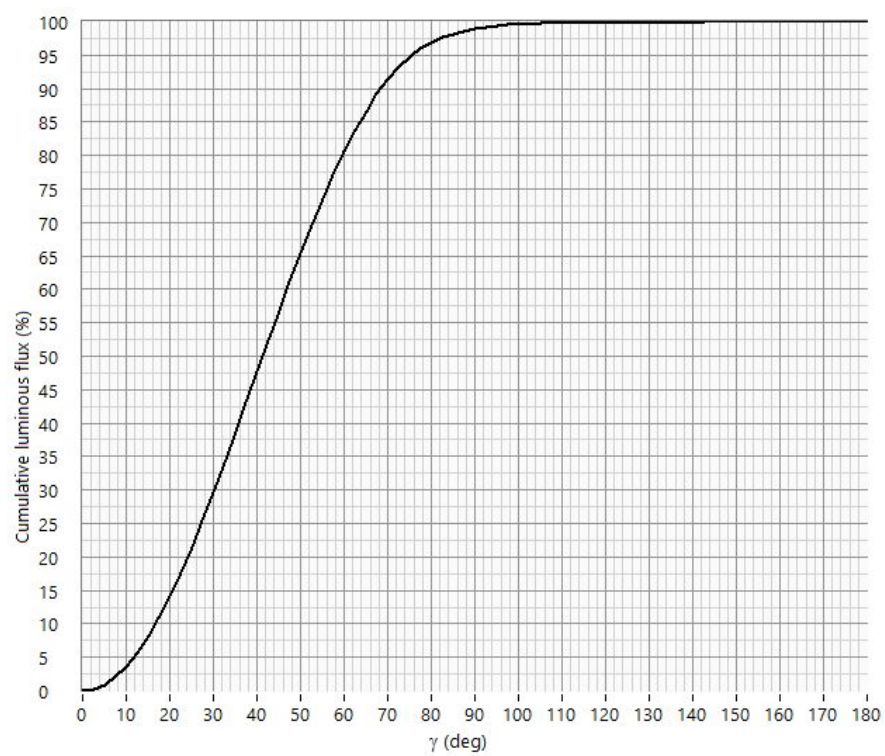


Table. Luminance at different angles based on the defined luminous areas and measured luminous intensities.

	C 0	C 45	C 90
g 0	4310	4310	4310
g 45	2975	2697	2978
g 55	2555	2182	2563
g 65	2021	1632	2034
g 75	1236	931	1263
g 85	748	425	866

Table. Unified Glare Rating (UGR) Index in different types of indoor spaces.

Ceiling		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor		20	20	20	20	20	20	20	20	20	20
Room size		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
X	Y										
2H	2H	15.3	16.9	15.7	17.2	17.5	15.3	16.9	15.7	17.2	17.6
	3H	16.8	18.2	17.2	18.5	18.9	16.8	18.2	17.2	18.6	19.0
	4H	17.2	18.5	17.6	18.9	19.3	17.3	18.6	17.7	19.0	19.4
	6H	17.5	18.7	17.9	19.1	19.5	17.6	18.8	18.0	19.2	19.6
	8H	17.6	18.8	18.1	19.2	19.6	17.7	18.9	18.1	19.3	19.7
	12H	17.7	18.8	18.2	19.2	19.7	17.8	18.9	18.3	19.3	19.8
4H	2H	15.7	17.1	16.2	17.4	17.8	15.8	17.1	16.2	17.5	17.9
	3H	17.4	18.5	17.8	18.9	19.3	17.4	18.5	17.8	18.9	19.4
	4H	17.9	18.9	18.3	19.3	19.8	17.9	18.9	18.4	19.4	19.8
	6H	18.3	19.2	18.8	19.6	20.1	18.4	19.2	18.8	19.7	20.2
	8H	18.4	19.2	18.9	19.7	20.2	18.5	19.3	19.0	19.8	20.3
	12H	18.6	19.3	19.1	19.8	20.3	18.7	19.4	19.2	19.9	20.4
8H	4H	18.0	18.9	18.5	19.3	19.8	18.1	18.9	18.6	19.4	19.9
	6H	18.5	19.2	19.0	19.7	20.2	18.6	19.2	19.1	19.8	20.3
	8H	18.7	19.3	19.2	19.8	20.3	18.8	19.4	19.3	19.9	20.4
	12H	18.9	19.5	19.4	20.0	20.5	19.0	19.6	19.5	20.1	20.6
12H	4H	18.0	18.8	18.5	19.3	19.8	18.1	18.8	18.6	19.3	19.8
	6H	18.5	19.1	19.1	19.6	20.2	18.6	19.2	19.1	19.7	20.2
	8H	18.8	19.3	19.3	19.8	20.4	18.8	19.4	19.4	19.9	20.5

Table. Coefficient of Utilization (CU).

RC	80				70				50			30			10		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RF / RCR	20				20				20			20			20		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101
1	88	84	81	78	89	86	83	80	88	85	83	91	88	86	93	91	89
2	84	78	72	67	84	78	73	69	79	75	71	80	76	73	81	78	75
3	80	71	64	59	79	71	65	59	71	66	61	72	67	62	72	67	63
4	75	65	57	51	74	65	57	52	64	58	53	64	59	54	64	59	55
5	70	59	51	45	70	59	51	46	59	52	46	58	52	47	58	52	48
6	66	54	46	40	65	54	46	41	53	46	41	53	46	42	52	47	42
7	62	50	42	36	61	49	42	36	49	42	37	48	42	37	48	42	37
8	58	46	38	33	57	46	38	33	45	38	33	45	38	33	44	38	34
9	55	42	35	30	54	42	35	30	42	35	30	41	35	30	41	35	30
10	52	39	32	27	51	39	32	27	39	32	27	38	32	28	38	32	28

Figure. Number of luminaires in different sizes of rectangular spaces.

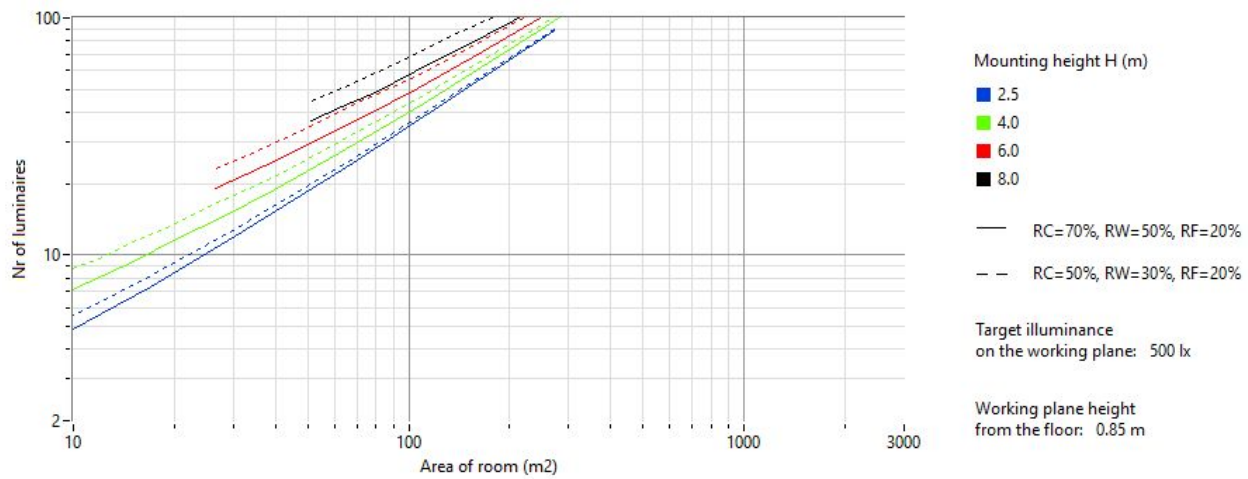


Table. Wall Exitance Coefficients (WEC).

RC	80				70				50			30			10		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RF / RCR	20				20				20			20			20		
1	44.3	29.9	17.0	5.4	43.1	29.2	16.7	5.3	27.8	16.0	5.1	26.5	15.3	4.9	25.3	14.7	4.7
2	43.5	28.2	15.5	4.7	42.3	27.5	15.2	4.7	26.3	14.6	4.5	25.1	14.1	4.4	24.0	13.6	4.3
3	41.9	26.2	14.0	4.2	40.7	25.6	13.7	4.1	24.5	13.3	4.0	23.5	12.9	4.0	22.5	12.5	3.9
4	40.1	24.3	12.7	3.7	38.9	23.8	12.5	3.7	22.8	12.1	3.6	21.9	11.7	3.5	21.0	11.4	3.5
5	38.3	22.6	11.5	3.4	37.1	22.1	11.4	3.3	21.2	11.1	3.3	20.4	10.8	3.2	19.6	10.5	3.1
6	36.5	21.0	10.6	3.0	35.4	20.6	10.4	3.0	19.8	10.2	3.0	19.0	9.9	2.9	18.3	9.6	2.9
7	34.8	19.6	9.8	2.8	33.7	19.3	9.6	2.8	18.5	9.4	2.7	17.8	9.2	2.7	17.2	8.9	2.6
8	33.2	18.4	9.1	2.6	32.2	18.1	8.9	2.5	17.4	8.7	2.5	16.8	8.5	2.5	16.1	8.3	2.4
9	31.7	17.3	8.4	2.4	30.8	17.0	8.3	2.4	16.4	8.1	2.3	15.8	7.9	2.3	15.2	7.7	2.2
10	30.3	16.3	7.9	2.2	29.5	16.1	7.8	2.2	15.5	7.6	2.2	14.9	7.4	2.1	14.4	7.3	2.1

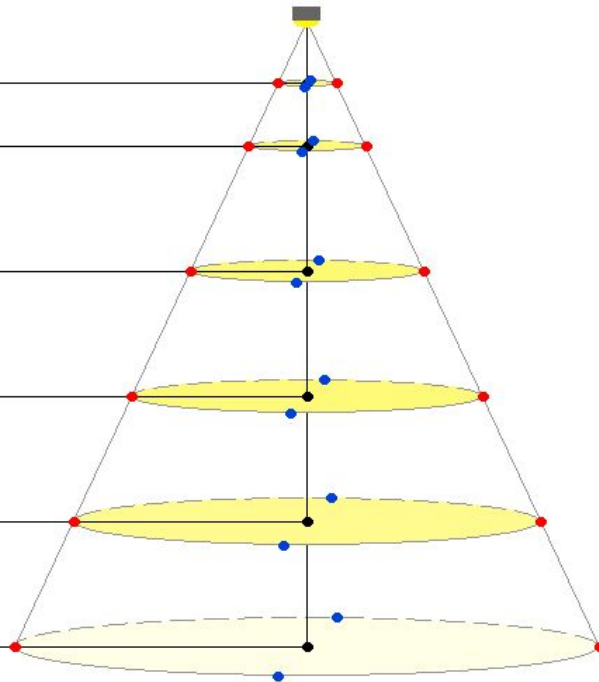
Table. Ceiling Cavity Exitance Coefficients (CCEC).

RC	80				70				50			30			10		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RF / RCR	20				20				20			20			20		
1	29.8	26.7	23.8	21.3	20.3	18.0	15.9	14.0	10.9	9.6	8.4	6.1	5.4	4.8	1.9	1.7	1.5
2	30.7	24.9	20.2	16.2	21.2	17.0	13.4	10.4	10.4	8.2	6.3	5.8	4.6	3.6	1.9	1.5	1.2
3	31.0	23.3	17.4	12.7	21.7	16.0	11.6	8.0	9.9	7.1	4.8	5.6	4.1	2.8	1.8	1.3	0.9
4	30.9	21.8	15.2	10.1	21.8	15.1	10.1	6.3	9.4	6.3	3.8	5.3	3.6	2.2	1.7	1.2	0.7
5	30.4	20.4	13.3	8.1	21.7	14.3	9.0	5.0	8.9	5.6	3.0	5.1	3.2	1.8	1.6	1.1	0.6
6	29.7	19.0	11.8	6.6	21.4	13.4	8.0	4.0	8.5	5.0	2.5	4.9	2.9	1.5	1.6	1.0	0.5
7	28.9	17.7	10.5	5.4	21.0	12.7	7.2	3.3	8.1	4.6	2.1	4.6	2.7	1.2	1.5	0.9	0.4
8	28.0	16.5	9.3	4.4	20.4	11.9	6.5	2.7	7.7	4.2	1.7	4.4	2.5	1.1	1.4	0.8	0.4
9	27.0	15.4	8.3	3.5	19.8	11.2	5.9	2.2	7.3	3.9	1.5	4.2	2.3	0.9	1.4	0.8	0.3
10	26.0	14.4	7.5	2.8	19.2	10.6	5.3	1.8	6.9	3.6	1.3	4.0	2.1	0.8	1.3	0.7	0.3

CONE DIAGRAM

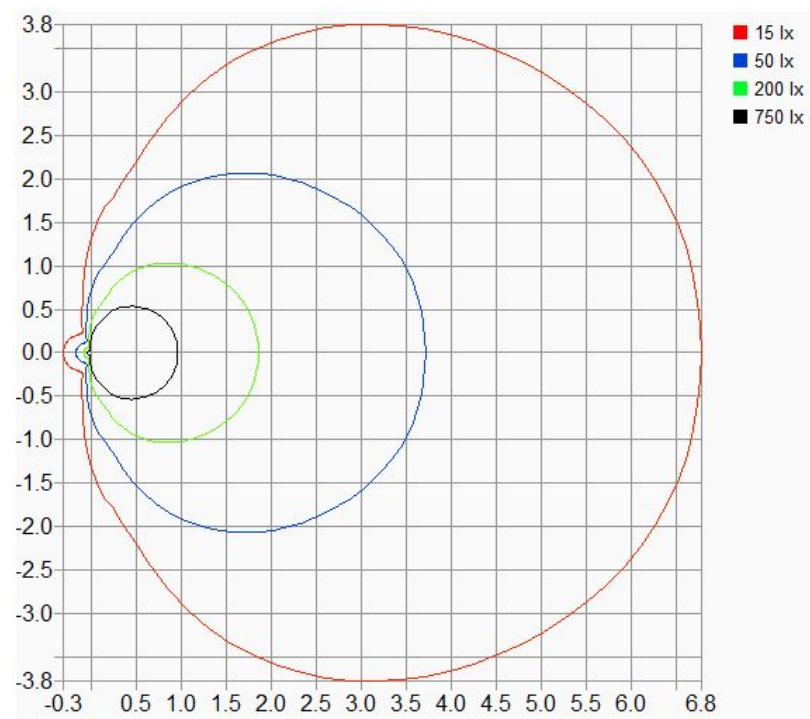
- Cone is limited by the beam angle at the planes of C0 and C90
- H = Mounting Height
- D = Cone diameter
- Ev Edge = Illuminance at the edge of the cone of the C0/90 plane
- Ev Center = Illuminance at the center of the cone

H (m)	Width Ev at edge	
Ev at g = 0	C0-180	C90-270
0.50 m 2765lx	0.60 m 1383lx	0.60 m 1383lx
1.0 m 691lx	1.2 m 346lx	1.2 m 346lx
2.0 m 173lx	2.4 m 86lx	2.4 m 86lx
3.0 m 77lx	3.6 m 38lx	3.6 m 38lx
4.0 m 43lx	4.8 m 22lx	4.8 m 22lx
5.0 m 28lx	6.0 m 14lx	6.0 m 14lx

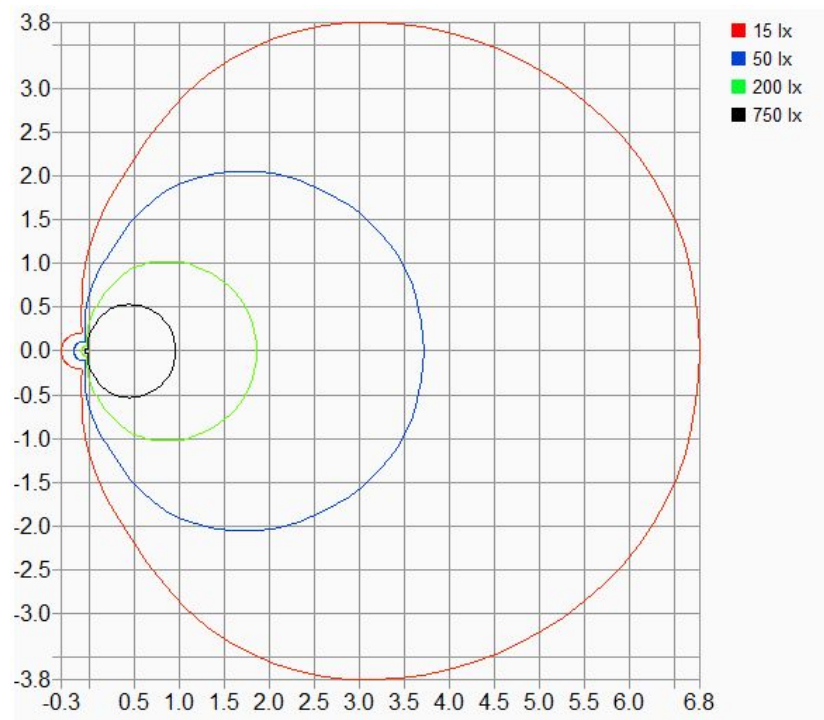


Beam angle determined by Field Illuminance, $Ev(0deg) \cdot 50\%$. C0-180: 61.9 deg, C90-270: 61.9 deg

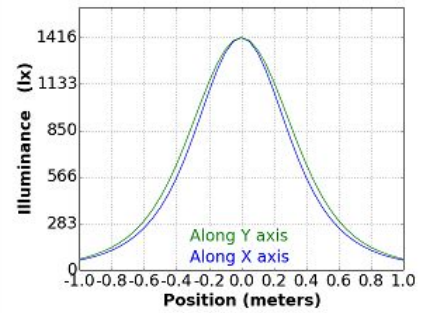
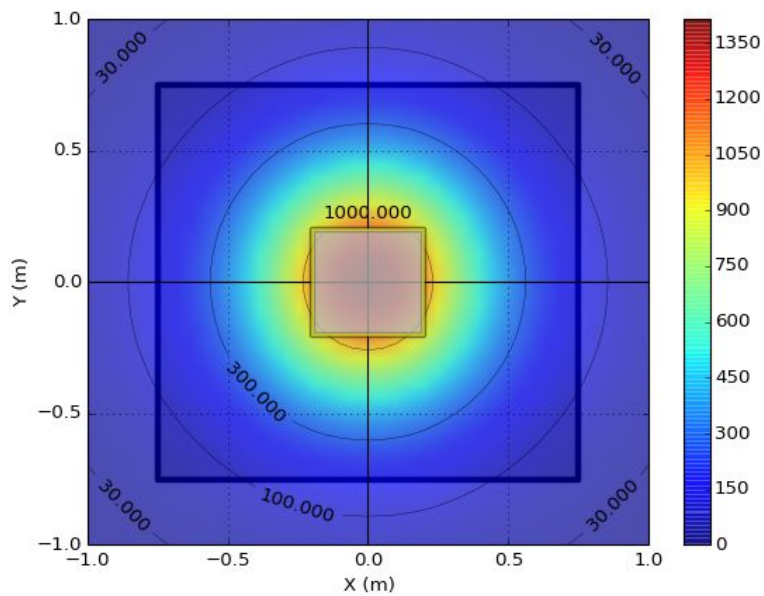
Vertical isolux



Horizontal isolux



Floor illuminance figures at mounting height of 0.6 meters
with C rotation of 0.0 degrees and with gamma rotation of 0.0 degrees.
Degradation factor of installation was 1.00.



Average Ev: 87 lx
Uniformity: 14 %
Max Ev: 304 lx
Min Ev: 12 lx

Power Consumption: 0.00 kW

Stabilization time (min) 32.5

