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Report No.: TR 4228

Manufacturer: Secto Design

Item No.: Kuulto 9100 Birch

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	30 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	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682	682
2.5	682	681	681	681	681	681	681	683	683	683	682	681	682	682	682	682	682	682	682	680	680	680	682	682
5.0	680	678	678	678	678	678	678	682	682	682	680	680	680	682	682	681	681	681	681	677	677	677	680	680
7.5	677	674	674	674	674	674	674	680	680	680	677	677	677	680	680	679	679	679	678	672	673	673	677	678
10.0	673	669	669	669	669	669	669	677	677	677	672	672	673	677	676	676	675	675	674	666	667	668	673	674
12.5	668	662	662	663	662	662	662	673	673	673	667	666	667	672	672	671	670	670	669	658	660	661	668	669
15.0	661	653	654	655	654	653	652	667	667	667	660	659	660	667	666	665	664	663	662	648	650	652	661	662
17.5	651	642	643	645	644	641	640	659	660	660	650	648	650	659	659	658	656	654	653	636	639	642	653	653
20.0	640	629	631	634	631	628	627	649	651	652	639	636	637	649	650	649	646	643	642	622	626	630	642	642
22.5	626	614	617	619	617	613	611	637	640	642	625	622	623	637	639	638	634	630	629	606	612	615	630	629
25.0	611	597	601	603	601	596	595	623	627	629	610	606	607	623	625	625	621	616	613	589	595	599	616	614
27.5	594	579	584	585	583	578	576	608	613	614	594	588	589	607	610	609	605	599	597	571	577	581	600	598
30.0	575	560	564	565	564	559	556	591	596	597	575	569	570	590	593	592	588	581	579	551	558	561	581	580
32.5	555	540	544	544	542	538	535	572	578	578	554	548	550	571	575	572	569	562	559	531	537	539	562	560
35.0	535	519	522	521	520	516	513	553	558	558	532	527	528	551	554	552	548	542	538	509	515	517	541	540
37.5	513	497	499	497	496	493	491	532	537	536	509	504	506	530	532	529	525	520	517	487	492	493	518	518
40.0	490	474	475	472	471	469	467	510	514	512	484	480	482	508	510	506	502	498	495	464	469	468	494	496
42.5	467	451	450	447	446	445	443	488	491	488	459	455	458	485	486	481	478	475	471	440	444	442	470	472
45.0	442	426	424	420	419	419	418	465	466	462	432	430	433	461	461	455	453	450	448	416	418	416	444	447
47.5	417	401	398	393	392	393	393	441	440	436	405	404	408	437	435	428	427	425	423	391	392	389	417	422
50.0	391	375	367	365	364	366	366	416	414	408	377	376	382	412	408	401	400	399	398	366	365	361	390	395
52.5	365	348	345	337	336	338	339	391	387	381	348	348	354	386	381	374	372	373	372	339	338	333	362	368
55.0	337	320	317	308	306	309	311	365	360	352	319	318	326	359	353	346	344	345	345	312	310	305	334	339
57.5	309	291	287	279	276	279	282	338	332	324	288	288	296	331	326	318	315	316	318	284	281	276	306	310
60.0	279	260	257	249	246	248	252	309	303	295	257	256	266	302	297	288	285	287	290	254	252	247	276	280
62.5	248	229	226	218	214	215	220	280	273	264	225	223	234	272	267	258	255	257	261	224	222	216	244	248
65.0	217	198	195	187	182	183	189	250	243	233	193	191	203	241	236	227	223	225	230	193	191	186	213	216
67.5	185	168	165	157	152	151	158	219	212	202	163	160	172	209	205	196	192	193	199	163	162	157	182	184
70.0	155	140	138	130	123	122	129	188	181	172	133	130	143	178	174	167	161	161	168	135	135	130	152	154
72.5	128	114	114	107	98	94	102	157	152	143	107	103	116	149	146	138	131	131	138	109	111	108	125	125
75.0	102	94	94	87	78	74	80	129	126	118	86	81	92	123	121	114	105	102	111	90	92	88	100	99
77.5	82	80	78	71	62	59	70	105	104	97	69	65	76	100	100	93	84	79	87	76	76	72	81	77
80.0	71	67	64	57	49	48	60	87	86	80	55	53	66	84	82	75	66	63	72	63	63	58	64	62
82.5	60	54	51	44	38	39	49	74	71	65	55	42	66	71	68	61	53	50	62	51	50	46	51	51
85.0	49	42	40	33	29	30	38	62	58	51	43	33	56	59	56	48	41	40	35	40	39	34	40	40
87.5	37	33	30	24	22	23	29	50	46	39	33	25	44	47	43	36	30	31	26	32	30	25	30	31
90.0	29	26	23	18	17	18	23	39	36	29	25	19	34	37	33	26	23	24	21	25	23	19	22	23
92.5	23	21	18	14	13	14	18	31	27	22	19	15	26	29	26	20	18	19	16	20	18	15	17	18
95.0	18	16	13	11	10	11	14	25	21	17	14	11	20	23	20	16	14	15	14	16	14	11	13	14
97.5	14	12	10	8	8	8	11	19	16	13	11	9	16	18	15	12	11	12	11	12	10	9	10	11
100.0	11	8	7	6	6	6	8	15	12	10	9	7	13	14	11	10	9	10	8	9	8	7	8	9
102.5	8	6	5	5	5	5	6	11	9	8	7	5	10	10	8	7	7	8	6	6	6	5	6	7
105.0	6	4	4	4	3	4	5	7	7	6	5	4	7	7	6	6	5	6	5	5	4	4	5	5
107.5	5	3	3	3	3	3	3	5	5	4	4	3	6	5	5	4	4	4	3	3	3	3	4	4
110.0	3	2	2	2	2	2	2	4	4	3	3	2	4	4	4	3	3	3	2	3	3	2	3	3
112.5	2	2	2	2	2	2	2	3	3	3	2	2	3	3	3	3	3	3	2	2	2	2	2	2
115.0	2	1	1	1	1	1	1	2	2	2	2	1	2	2	2	2	2	2	1	2	2	2	2	2
117.5	1	1	1	1	1	1	1	2	2	2	1	1	2	2	2	2	2	2	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)
1890.9 lm	22.44 W	84.3 lm/W	100.0 %	98.5 %	682 cd

Table. Electrical parameters during the light measurements.

	P _{in}	PF	V _{in}	I _f
Value	22.44 W	0.8970	230.0 V	0.1087 A
St.dev.	0.12 %	0.00 %	0.00 %	0.11 %

Table. Maximum Luminous Intesity and its direction

I _v	g	C plane
682 cd	-0.0°	45.0°

Table. Beam widths at two perpendicular planes

	Beam angle, FWHM, 50% (deg)	Beam angle, 10% (deg)	Effective beam direction from g=0
C0-180	108.3°	160.2°	0.0°
C90-270	107.7°	158.8°	0.0°

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

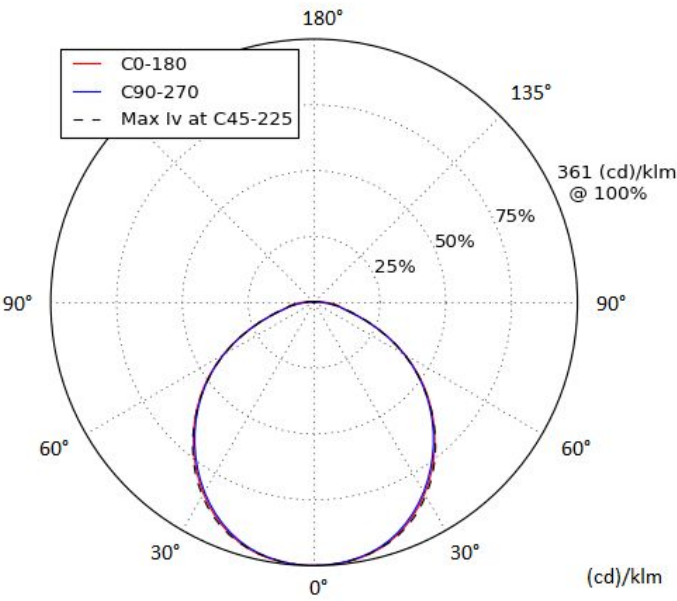


Figure. Luminous Intesity distribution in cartesian diagram at all measured C planes.

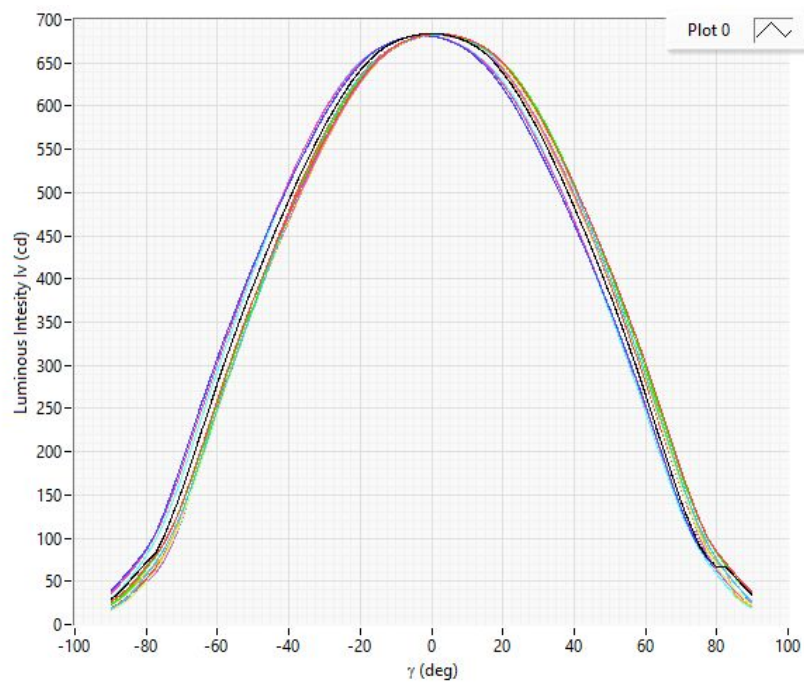


Figure. Isocandela as a function of C plane at gamma angle with maximum luminous intensity

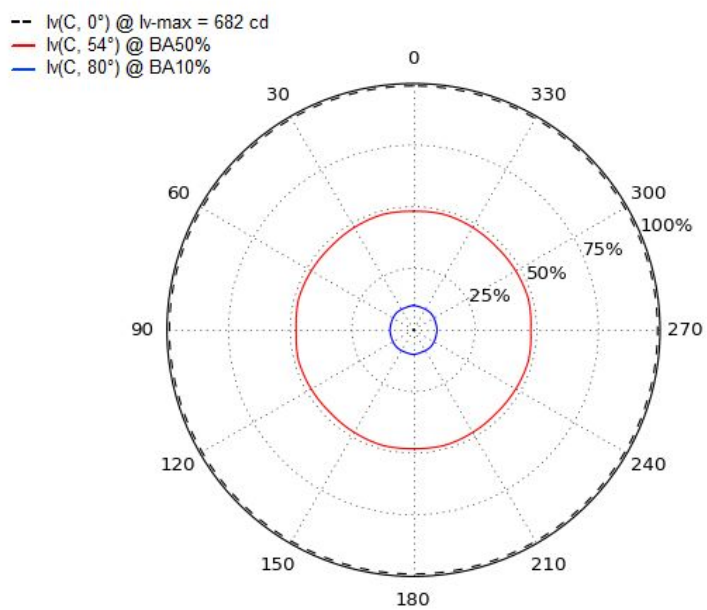


Table. Zonal lumen summary

	Lumens	Relative lumens (%)
0-20	250.50	13.25
0-30	531.20	28.09
0-40	864.50	45.72
0-60	1497.40	79.19
0-80	1813.70	95.92
0-90	1862.00	98.47
10-90	1797.40	95.06
20-40	614.00	32.47
20-50	951.80	50.34
40-70	840.90	44.47
40-90	997.50	52.75
60-80	316.30	16.73
60-90	364.60	19.28
70-80	108.30	5.73
80-90	48.30	2.55
90-110	23.50	1.24
90-120	25.30	1.34
90-130	26.20	1.39
90-150	27.80	1.47
90-180	28.90	1.53
110-180	5.40	0.29
0-180	1890.90	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	8.1	4.1	0.4	0.2
5.0	16.2	16.3	0.9	0.9
7.5	24.2	36.5	1.3	1.9
10.0	32.0	64.6	1.7	3.4
12.5	39.6	100.4	2.1	5.3
15.0	46.8	143.5	2.5	7.6
17.5	53.6	193.7	2.8	10.2
20.0	59.9	250.5	3.2	13.2
22.5	65.6	313.2	3.5	16.6
25.0	70.7	381.3	3.7	20.2
27.5	75.1	454.2	4.0	24.0
30.0	78.8	531.2	4.2	28.1
32.5	81.7	611.4	4.3	32.3
35.0	83.9	694.2	4.4	36.7
37.5	85.3	778.9	4.5	41.2
40.0	86.0	864.5	4.5	45.7
42.5	85.9	950.4	4.5	50.3
45.0	85.0	1035.9	4.5	54.8
47.5	83.4	1120.1	4.4	59.2
50.0	81.1	1202.3	4.3	63.6
52.5	78.1	1281.9	4.1	67.8
55.0	74.3	1358.1	3.9	71.8
57.5	69.8	1430.2	3.7	75.6
60.0	64.6	1497.4	3.4	79.2
62.5	58.7	1559.1	3.1	82.4
65.0	52.2	1614.5	2.8	85.4
67.5	45.4	1663.4	2.4	88.0
70.0	38.6	1705.4	2.0	90.2
72.5	32.1	1740.7	1.7	92.1
75.0	26.3	1769.9	1.4	93.6
77.5	21.6	1793.9	1.1	94.9
80.0	18.0	1813.7	0.9	95.9
82.5	15.0	1830.2	0.8	96.8
85.0	11.8	1843.6	0.6	97.5
87.5	9.1	1854.0	0.5	98.0
90.0	7.0	1862.0	0.4	98.5
92.5	5.4	1868.2	0.3	98.8
95.0	4.2	1873.0	0.2	99.1
97.5	3.3	1876.8	0.2	99.3
100.0	2.5	1879.7	0.1	99.4
102.5	1.8	1881.8	0.1	99.5
105.0	1.4	1883.4	0.1	99.6
107.5	1.0	1884.6	0.1	99.7
110.0	0.8	1885.5	0.0	99.7
112.5	0.6	1886.2	0.0	99.7
115.0	0.4	1886.7	0.0	99.8
117.5	0.3	1887.0	0.0	99.8
120.0	0.3	1887.3	0.0	99.8
122.5	0.2	1887.6	0.0	99.8
125.0	0.2	1887.8	0.0	99.8
127.5	0.2	1888.0	0.0	99.8
130.0	0.2	1888.2	0.0	99.9
132.5	0.2	1888.5	0.0	99.9
135.0	0.2	1888.7	0.0	99.9
137.5	0.2	1888.9	0.0	99.9

140.0	0.2	1889.1	0.0	99.9
142.5	0.2	1889.3	0.0	99.9
145.0	0.2	1889.4	0.0	99.9
147.5	0.2	1889.6	0.0	99.9
150.0	0.2	1889.8	0.0	99.9
152.5	0.2	1890.0	0.0	99.9
155.0	0.2	1890.1	0.0	100.0
157.5	0.1	1890.3	0.0	100.0
160.0	0.1	1890.4	0.0	100.0
162.5	0.1	1890.5	0.0	100.0
165.0	0.1	1890.6	0.0	100.0
167.5	0.1	1890.7	0.0	100.0
170.0	0.1	1890.8	0.0	100.0
172.5	0.1	1890.8	0.0	100.0
175.0	0.0	1890.9	0.0	100.0
177.5	0.0	1890.9	0.0	100.0
180.0	0.0	1890.9	0.0	100.0

Figure. Cumulative luminous flux

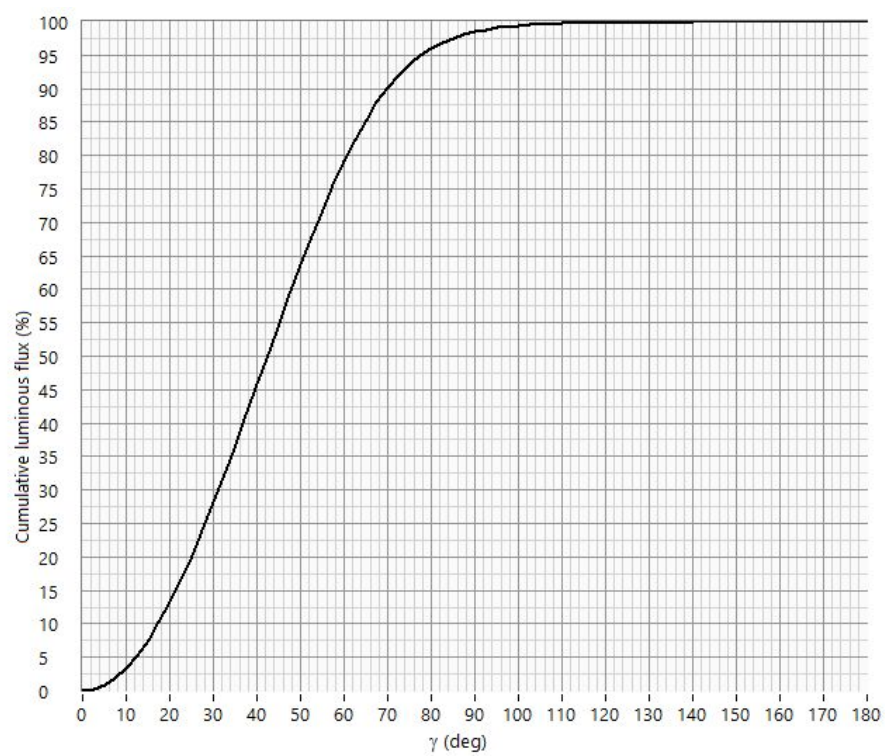


Table. Luminance at different angles based on the defined luminous areas and measured luminous intensities.

	C 0	C 45	C 90
g 0	2524	2524	2524
g 45	1953	1842	1931
g 55	1716	1568	1696
g 65	1339	1197	1337
g 75	842	760	828
g 85	743	464	517

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	14.0	15.6	14.4	15.9	16.3		14.0	15.5	14.4	15.9	16.3
	3H	15.4	16.8	15.8	17.2	17.6		15.4	16.8	15.8	17.2	17.6
	4H	15.8	17.2	16.2	17.5	17.9		15.8	17.1	16.2	17.5	17.9
	6H	16.2	17.4	16.6	17.8	18.2		16.1	17.4	16.6	17.8	18.2
	8H	16.3	17.5	16.8	17.9	18.4		16.3	17.5	16.7	17.9	18.3
	12H	16.5	17.6	16.9	18.0	18.5		16.4	17.5	16.8	17.9	18.4
4H	2H	14.5	15.8	14.9	16.2	16.6		14.5	15.8	14.9	16.2	16.6
	3H	16.0	17.2	16.5	17.6	18.0		16.0	17.2	16.5	17.6	18.0
	4H	16.6	17.6	17.0	18.0	18.5		16.6	17.6	17.0	18.0	18.5
	6H	17.1	17.9	17.5	18.4	18.9		17.0	17.9	17.5	18.4	18.9
	8H	17.3	18.1	17.8	18.6	19.1		17.2	18.0	17.7	18.5	19.0
	12H	17.5	18.2	18.0	18.7	19.2		17.4	18.1	17.9	18.6	19.1
8H	4H	16.8	17.6	17.3	18.1	18.6		16.8	17.6	17.3	18.1	18.6
	6H	17.4	18.1	17.9	18.6	19.1		17.3	18.0	17.9	18.6	19.1
	8H	17.7	18.3	18.2	18.8	19.3		17.6	18.2	18.1	18.8	19.3
	12H	18.0	18.5	18.5	19.0	19.6		17.9	18.4	18.4	18.9	19.5
12H	4H	16.8	17.6	17.3	18.1	18.6		16.8	17.5	17.3	18.1	18.6
	6H	17.4	18.0	18.0	18.5	19.1		17.4	18.0	17.9	18.5	19.1
	8H	17.8	18.3	18.3	18.8	19.4		17.7	18.2	18.2	18.8	19.4

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	110	110	110	105	105	105	101	101	101
1	88	84	81	78	89	85	82	79	88	85	82	90	87	85	92	90	88
2	84	77	72	67	84	78	72	68	79	74	70	80	75	72	80	77	74
3	79	70	63	58	79	70	64	59	71	65	60	71	66	61	71	66	62
4	75	64	56	50	74	64	57	51	64	57	52	63	58	53	63	58	54
5	70	58	50	44	69	58	50	45	58	51	45	57	51	46	57	51	47
6	66	53	45	39	65	53	45	40	53	45	40	52	45	41	51	46	41
7	62	49	41	35	60	49	41	35	48	41	36	47	41	36	47	41	36
8	58	45	37	32	57	45	37	32	44	37	32	44	37	32	43	37	33
9	54	42	34	29	53	41	34	29	41	34	29	40	34	29	40	34	29
10	51	39	31	26	50	38	31	26	38	31	26	37	31	27	37	31	27

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

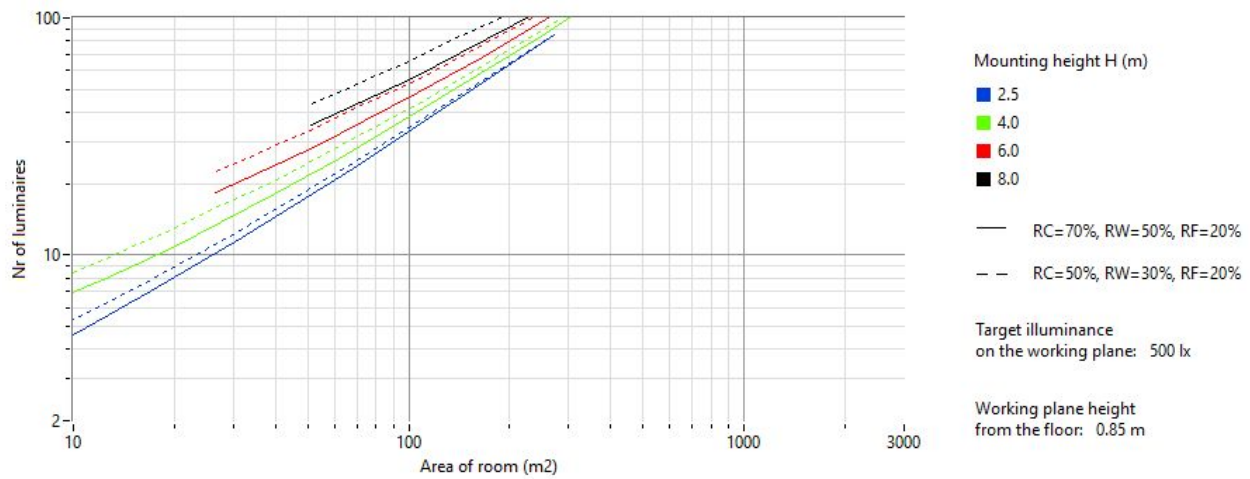


Table. Wall Exitance Coefficients (WEC).

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	45.6	30.8	17.5	5.6	44.3	30.0	17.1	5.4	28.6	16.4	5.2	27.3	15.7	5.0	26.0	15.0	4.9
2	44.4	28.8	15.8	4.9	43.2	28.1	15.5	4.8	26.9	14.9	4.6	25.6	14.4	4.5	24.5	13.8	4.4
3	42.7	26.7	14.2	4.3	41.4	26.1	14.0	4.2	25.0	13.5	4.1	23.9	13.1	4.0	22.8	12.6	3.9
4	40.8	24.7	12.9	3.8	39.5	24.2	12.7	3.8	23.2	12.3	3.7	22.2	11.9	3.6	21.2	11.5	3.5
5	38.9	22.9	11.7	3.4	37.7	22.5	11.6	3.4	21.5	11.2	3.3	20.6	10.9	3.3	19.8	10.6	3.2
6	37.0	21.4	10.8	3.1	35.9	20.9	10.6	3.1	20.1	10.3	3.0	19.3	10.0	3.0	18.5	9.7	2.9
7	35.3	20.0	9.9	2.8	34.2	19.6	9.8	2.8	18.8	9.5	2.8	18.0	9.3	2.7	17.3	9.0	2.6
8	33.7	18.7	9.2	2.6	32.7	18.4	9.1	2.6	17.6	8.9	2.5	17.0	8.6	2.5	16.3	8.4	2.4
9	32.2	17.6	8.6	2.4	31.2	17.3	8.5	2.4	16.6	8.3	2.4	16.0	8.0	2.3	15.3	7.8	2.3
10	30.7	16.6	8.1	2.3	29.8	16.3	8.0	2.2	15.7	7.7	2.2	15.1	7.5	2.2	14.5	7.3	2.1

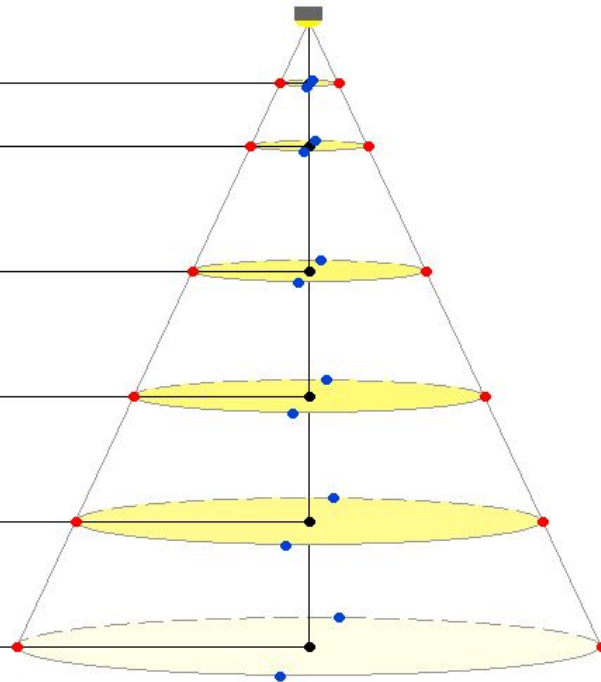
Table. Ceiling Cavity Exitance Coefficients (CCEC).

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	34.3	30.8	27.7	24.9	21.8	19.3	17.0	15.0	11.1	9.8	8.5	6.2	5.4	4.8	2.0	1.7	1.5
2	35.0	28.7	23.5	19.2	22.7	18.2	14.4	11.2	10.6	8.3	6.3	5.9	4.7	3.6	1.9	1.5	1.2
3	35.2	26.8	20.3	15.1	23.1	17.1	12.4	8.6	10.1	7.2	4.9	5.6	4.1	2.8	1.8	1.3	0.9
4	34.8	24.9	17.6	12.0	23.2	16.1	10.8	6.7	9.6	6.4	3.8	5.4	3.6	2.2	1.7	1.2	0.7
5	34.2	23.1	15.4	9.7	22.9	15.1	9.5	5.3	9.1	5.7	3.0	5.1	3.3	1.8	1.7	1.1	0.6
6	33.2	21.4	13.5	7.8	22.5	14.2	8.4	4.3	8.6	5.1	2.5	4.9	3.0	1.5	1.6	1.0	0.5
7	32.2	19.9	11.9	6.3	22.0	13.3	7.5	3.4	8.2	4.6	2.0	4.7	2.7	1.2	1.5	0.9	0.4
8	31.0	18.4	10.5	5.0	21.4	12.4	6.7	2.7	7.8	4.2	1.7	4.5	2.5	1.1	1.4	0.8	0.4
9	29.8	17.1	9.2	4.0	20.7	11.7	6.0	2.1	7.4	3.9	1.4	4.3	2.3	0.9	1.4	0.8	0.3
10	28.6	15.8	8.2	3.1	20.0	10.9	5.4	1.7	7.0	3.5	1.2	4.1	2.1	0.8	1.3	0.7	0.3

CONE DIAGRAM

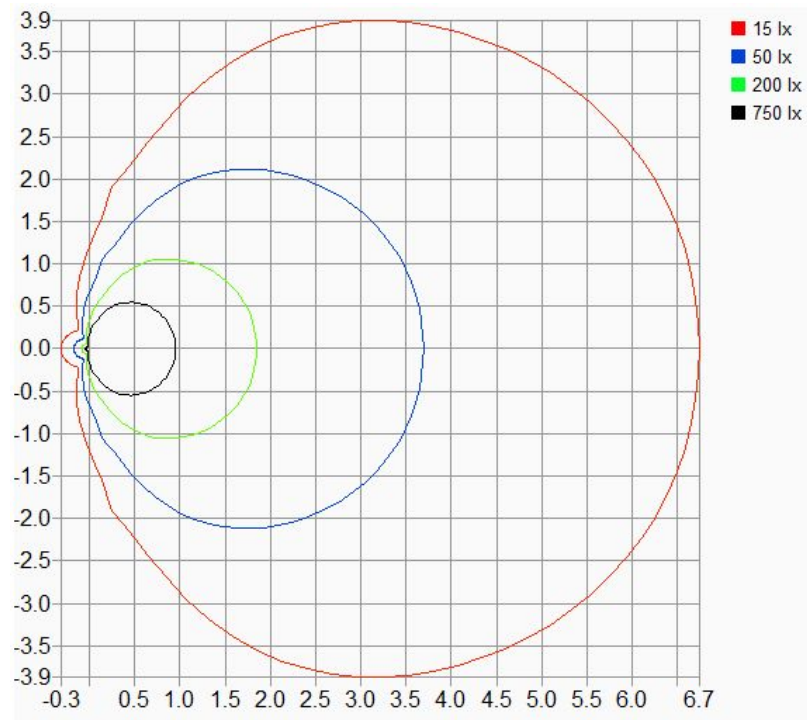
- Cone is limited by the beam angle at the planes of C0 and C90
- H = Mounting Height
- D = Cone diameter
- Ev Edge = Illuminance at the edge of the cone of the C0/90 plane
- Ev Center = Illuminance at the center of the cone

H (m)	Width Ev at edge	
Ev at g = 0	C0-180	C90-270
0.50 m 2729lx	0.62 m 1364lx	0.62 m 1364lx
1.0 m 682lx	1.2 m 341lx	1.2 m 341lx
2.0 m 171lx	2.5 m 85lx	2.5 m 85lx
3.0 m 76lx	3.7 m 38lx	3.7 m 38lx
4.0 m 43lx	5.0 m 21lx	4.9 m 21lx
5.0 m 27lx	6.2 m 14lx	6.2 m 14lx

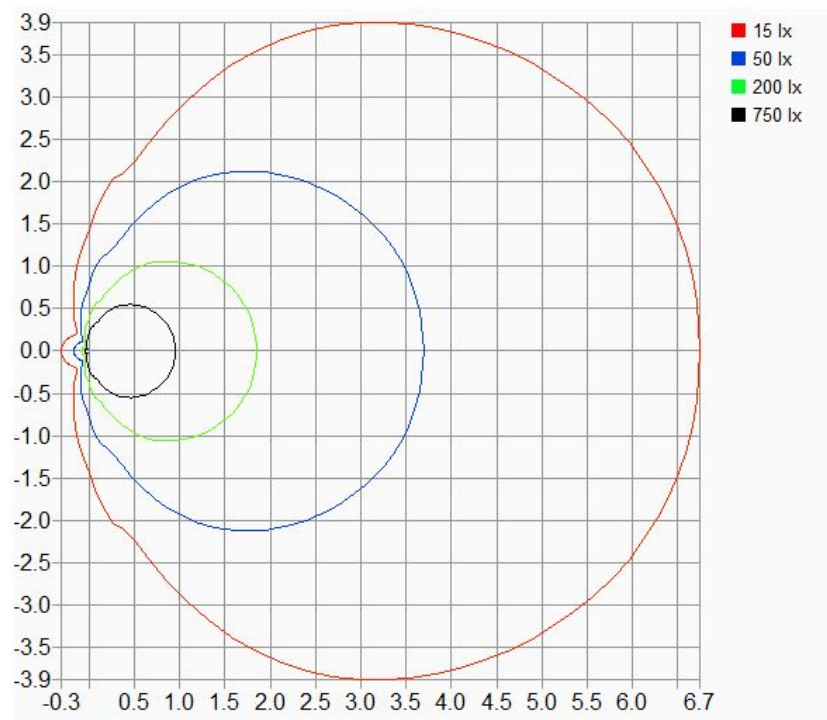


Beam angle determined by Field Illuminance, $Ev(0deg) \cdot 50\%$. C0-180: 63.8 deg, C90-270: 63.4 deg

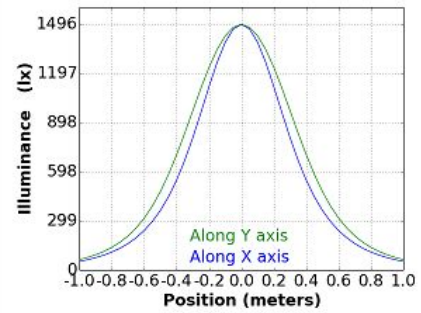
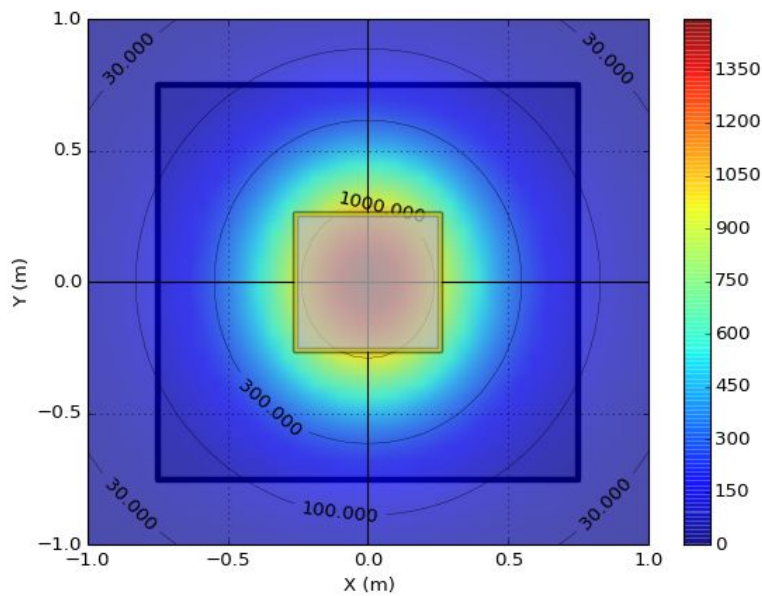
Vertical isolux



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)

