

# Goniophotometric Test Report

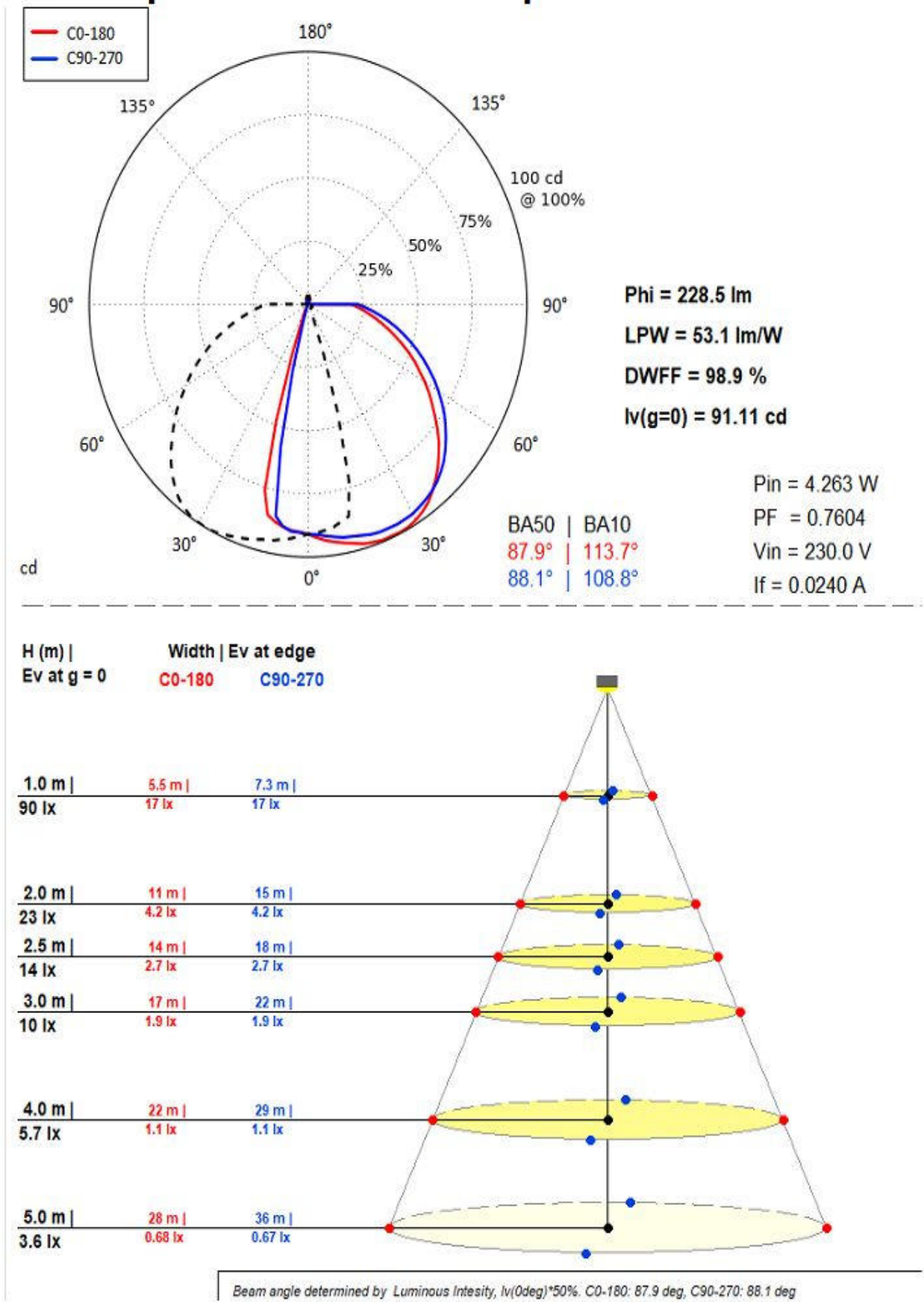


Table. Luminous Intesity (cd) in horizontal (rows) and vertical planes (columns).

	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	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5
2.5	91.9	91.7	91.9	91.9	91.5	91.1	90.7	90.7	90.5	90.3	90.1	90.1	89.7	89.5	89.5	89.7	90.1	89.9	89.9	90.3	90.7	90.9	91.1	91.5
5.0	93.4	92.9	93.6	93.4	93.2	92.5	91.5	91.3	90.5	90.3	89.7	89.3	89.3	88.7	88.9	88.9	89.5	89.5	89.7	90.5	91.1	91.3	91.9	92.6
7.5	94.4	94.4	94.8	94.4	94.2	93.6	92.3	91.5	90.7	89.9	89.1	88.5	88.3	87.7	87.7	87.9	88.1	88.3	88.1	90.1	91.1	91.7	92.8	93.4
10.0	95.4	95.6	96.2	95.8	95.6	94.6	93.2	92.1	90.7	89.5	87.9	86.9	86.9	86.1	85.9	85.5	85.9	86.5	84.6	89.3	90.7	92.1	93.0	94.4
12.5	96.4	96.8	97.2	96.8	96.6	95.2	93.6	92.1	90.3	88.7	86.6	85.4	84.9	84.1	81.8	76.8	75.1	73.1	57.4	88.3	90.1	92.1	93.8	94.8
15.0	97.6	97.8	98.0	97.8	97.2	96.2	94.2	92.3	90.3	87.9	80.7	71.8	76.0	65.3	57.7	50.3	47.3	43.9	26.9	69.6	88.3	91.9	94.2	95.8
17.5	98.2	98.4	98.6	97.8	97.6	96.6	95.0	92.7	90.1	86.9	66.6	44.9	48.4	38.6	33.7	28.4	25.4	20.8	7.6	45.1	81.0	91.7	94.8	96.6
20.0	98.8	98.6	98.4	98.2	97.8	96.8	95.4	93.0	89.9	86.6	52.5	19.4	21.9	18.0	19.1	17.1	15.1	12.2	2.5	25.8	70.4	91.7	95.2	97.4
22.5	98.8	98.6	98.4	98.0	97.4	96.8	95.4	93.2	89.7	84.6	43.8	6.8	8.2	12.0	15.3	15.9	13.7	9.8	0.9	16.3	61.9	91.5	95.8	98.3
25.0	99.0	98.6	98.2	97.6	97.2	96.4	95.6	93.6	89.7	80.3	35.4	2.9	4.7	10.8	13.2	12.6	10.4	7.4	0.5	10.6	52.9	89.3	96.2	99.1
27.5	98.8	98.0	97.4	96.8	96.4	96.0	95.4	93.2	89.5	75.4	29.9	2.3	3.7	8.0	9.8	9.2	8.0	5.6	0.5	8.2	46.4	85.4	96.6	99.5
30.0	98.0	97.0	96.4	95.6	95.4	95.6	95.2	92.7	89.1	71.2	26.2	2.3	2.5	6.1	7.4	7.2	6.0	4.3	0.3	6.6	40.9	82.0	96.6	99.3
32.5	96.8	95.8	95.0	94.4	94.6	94.4	94.4	92.1	88.7	66.9	23.2	2.1	1.7	4.5	5.5	5.3	4.5	3.1	0.3	5.8	36.9	78.3	96.6	99.1
35.0	95.2	94.2	93.4	93.1	93.0	93.0	93.6	91.3	87.9	63.0	21.1	2.1	1.3	3.3	4.5	4.1	3.7	2.3	0.3	5.2	33.4	75.0	96.4	97.8
37.5	92.7	91.9	91.5	91.1	91.3	91.5	92.5	90.3	87.3	59.6	19.5	1.9	0.9	2.5	3.1	3.1	2.5	1.9	0.1	4.7	30.8	72.0	95.6	96.4
40.0	90.1	89.7	89.3	88.7	89.1	89.7	91.1	88.7	85.8	56.5	17.8	1.9	0.5	1.9	2.3	2.5	2.1	1.5	0.3	4.7	28.7	68.9	93.8	94.0
42.5	87.3	87.1	86.7	86.7	87.1	87.9	89.3	86.7	84.2	53.9	16.6	2.1	0.5	1.3	1.7	1.9	1.5	1.1	0.3	4.5	26.9	65.1	90.9	91.3
45.0	83.8	84.1	84.0	84.0	84.4	85.5	87.3	84.2	81.2	50.6	15.8	1.9	0.3	1.1	1.5	1.7	1.1	0.9	0.1	4.5	25.1	61.0	86.8	88.1
47.5	80.6	81.0	81.2	81.4	82.0	84.6	84.6	81.2	77.5	47.7	15.0	1.9	0.1	0.9	1.1	1.1	1.1	0.5	0.3	4.1	23.5	56.9	82.4	84.4
50.0	76.8	77.6	78.2	78.6	79.2	81.8	81.8	78.4	73.2	44.5	14.6	1.9	0.3	0.5	0.9	0.9	0.9	0.5	0.1	4.3	21.6	52.8	77.7	80.5
52.5	72.7	74.2	75.1	75.5	76.1	79.0	78.7	74.7	69.0	41.2	13.6	1.7	0.1	0.7	0.5	0.7	0.7	0.3	0.1	3.9	20.2	49.0	73.0	76.7
55.0	68.9	70.7	71.9	72.5	73.1	75.9	75.7	70.8	64.5	38.2	12.9	1.7	0.3	0.5	0.7	0.5	0.5	0.3	0.3	3.9	18.8	44.9	68.1	72.8
57.5	65.2	66.9	68.5	69.3	69.6	72.5	72.0	67.2	59.8	35.1	11.9	1.9	0.1	0.3	0.5	0.5	0.3	0.3	0.1	3.9	17.2	41.4	63.4	68.3
60.0	61.4	63.5	65.0	65.8	66.4	69.0	68.4	62.9	55.4	32.3	11.1	1.9	0.1	0.3	0.3	0.3	0.5	0.3	0.3	3.7	16.1	38.2	58.7	64.2
62.5	57.1	59.4	61.2	62.4	62.9	65.4	64.7	58.9	51.1	29.2	10.3	1.7	0.3	0.5	0.3	0.5	0.3	0.3	0.3	3.5	14.9	34.7	54.2	60.2
65.0	53.5	55.8	57.5	59.0	59.7	61.9	60.6	54.8	46.8	26.4	9.1	1.9	0.3	0.1	0.3	0.3	0.3	0.3	0.1	3.5	13.5	31.5	49.9	55.9
67.5	49.4	52.0	54.1	55.3	55.6	58.1	56.8	50.4	42.4	23.7	8.0	1.5	0.3	0.1	0.3	0.5	0.1	0.3	0.3	3.3	12.5	28.6	45.4	51.6
70.0	45.4	48.1	50.3	51.7	52.0	54.4	52.7	45.9	38.3	20.9	7.4	1.7	0.3	0.3	0.3	0.3	0.3	0.5	0.1	3.3	11.1	25.5	41.1	47.3
72.5	41.4	44.5	46.4	48.0	48.3	50.8	48.7	41.9	34.2	18.6	6.6	1.5	0.1	0.3	0.5	0.5	0.3	0.3	0.3	2.9	10.2	22.7	37.2	43.3
75.0	37.7	40.9	42.6	44.2	44.7	46.7	44.6	37.4	30.4	16.4	5.8	1.5	0.3	0.1	0.3	0.3	0.3	0.3	0.1	2.9	8.8	20.0	32.9	39.2
77.5	34.1	37.4	39.3	40.9	41.0	42.9	40.7	33.3	26.1	13.9	4.8	1.7	0.1	0.3	0.3	0.3	0.1	0.3	0.1	2.7	8.0	17.6	29.1	35.1
80.0	30.8	33.8	35.9	37.3	37.6	39.2	36.7	29.3	22.6	11.7	4.4	1.5	0.3	0.5	0.3	0.3	0.1	0.3	0.1	2.5	7.0	15.2	25.4	31.2
82.5	27.6	30.8	32.9	34.1	34.3	35.4	32.8	25.4	19.4	9.7	3.4	1.3	0.5	0.3	0.1	0.3	0.5	0.1	0.1	2.5	5.8	12.7	22.1	27.6
85.0	25.0	27.9	29.8	30.8	30.9	32.1	29.1	22.0	15.9	7.6	2.9	1.3	0.1	0.3	0.3	0.5	0.3	0.3	0.3	2.3	5.0	10.7	19.3	24.5
87.5	22.1	25.1	27.0	28.2	28.1	28.7	25.7	18.7	12.9	5.8	2.1	1.1	0.3	0.3	0.5	0.3	0.3	0.1	0.3	2.1	3.9	8.8	16.2	21.7
90.0	19.7	22.9	25.0	25.8	25.8	22.6	15.7	10.2	4.0	1.5	1.1	0.1	0.3	0.5	0.3	0.5	0.5	0.1	2.1	3.1	7.2	13.6	19.2	
92.5	0.1	0.5	0.3	0.3	0.4	0.1	0.3	0.1	0.4	0.4	0.2	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.2	0.2	0.1
95.0	0.4	0.3	0.3	0.3	0.4	0.3	0.1	0.1	0.6	0.4	0.4	0.1	0.4	0.3	0.3	0.3	0.1	0.3	0.3	0.1	0.1	0.2	0.1	0.1
97.5	0.1	0.1	0.3	0.1	0.3	0.1	0.1	0.3	0.1	0.7	0.4	0.1	0.4	0.1	0.1	0.3	0.3	0.1	0.3	0.1	0.1	0.2	0.2	0.1
100.0	0.1	0.1	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.1	0.1	0.4	0.2	0.1
102.5	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.1	0.4	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.3	0.1	0.3	0.1	0.1	0.2	0.2	0.1
105.0	0.1	0.3	0.3	0.1	0.3	0.3	0.3	0.3	0.1	0.2	0.4	0.4	0.4	0.1	0.1	0.3	0.3	0.3	0.3	0.1	0.4	0.1	0.2	0.1
107.5	0.1	0.1	0.4	0.4	0.3	0.3	0.3	0.1	0.1	0.4	0.4	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.1
110.0	0.4	0.3	0.3	0.3	0.3	0.1	0.1	0.3	0.1	0.4	0.4	0.1	0.1	0.3	0.3	0.1	0.3	0.5	0.3	0.1	0.4	0.2	0.1	0.1
112.5	0.1	0.1	0.4	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.3	0.1	0.1	0.2	0.2	0.1
115.0	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.2	0.1	0.1
117.5	0.1	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1
120.0	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1
122.5	0.1	0.1	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.1
125.0	0.1	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.2	0.1
127.5	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.1
130.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.3	0.1	0.1	0.4	0.1
132.5	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.1	0.1	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
135.0	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
137.5	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.2	0.3	0.4	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1			

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345
165.0	2.5	1.3	0.7	0.9	1.4	1.9	1.9	1.9	1.8	1.7	1.7	2.0	2.5	2.9	2.1	1.3	0.7	1.0	1.4	1.8	2.0	0.9	1.7	1.8
167.5	2.0	1.9	1.0	0.7	1.4	2.3	2.3	2.3	2.3	2.5	2.5	2.5	2.8	3.1	2.1	1.0	0.9	1.5	1.9	1.8	1.8	1.7	1.7	2.0
170.0	2.3	2.1	1.2	0.9	1.3	2.5	2.5	2.4	3.2	3.6	3.6	3.5	3.2	3.5	2.1	1.5	1.6	1.9	1.9	1.8	2.0	2.5	2.5	2.5
172.5	2.5	1.7	1.2	1.0	1.8	2.5	2.1	2.1	3.7	4.4	4.2	3.2	3.5	3.7	2.3	1.8	1.4	2.1	1.9	1.8	2.5	2.8	2.8	2.5
175.0	3.2	1.3	1.8	1.8	1.9	1.9	1.9	1.8	3.0	3.6	3.6	3.0	3.2	3.1	1.8	2.0	2.3	2.5	1.9	1.8	2.8	3.4	3.6	3.2
177.5	3.2	1.7	2.1	2.0	1.9	2.1	1.9	1.6	2.5	2.5	2.5	2.5	2.8	1.7	2.0	1.8	2.1	2.5	2.5	2.3	3.5	3.6	3.6	3.2
180.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3

**Table. Measurement results of the main luminous parameters**

Luminous flux	Input power	Luminous efficacy	LOR	DWFF	Luminous intensity (g=0)
228.5 lm	4.3 W	53.1 lm/W	100.0 %	98.9 %	91.11 cd

**Table. Electrical parameters during the light measurements.**

	Pin	PF	Vin	If
Value	4.263 W	0.7604	230.0 V	0.0240 A
St.dev.	0.23 %	0.30 %	0.04 %	0.00 %

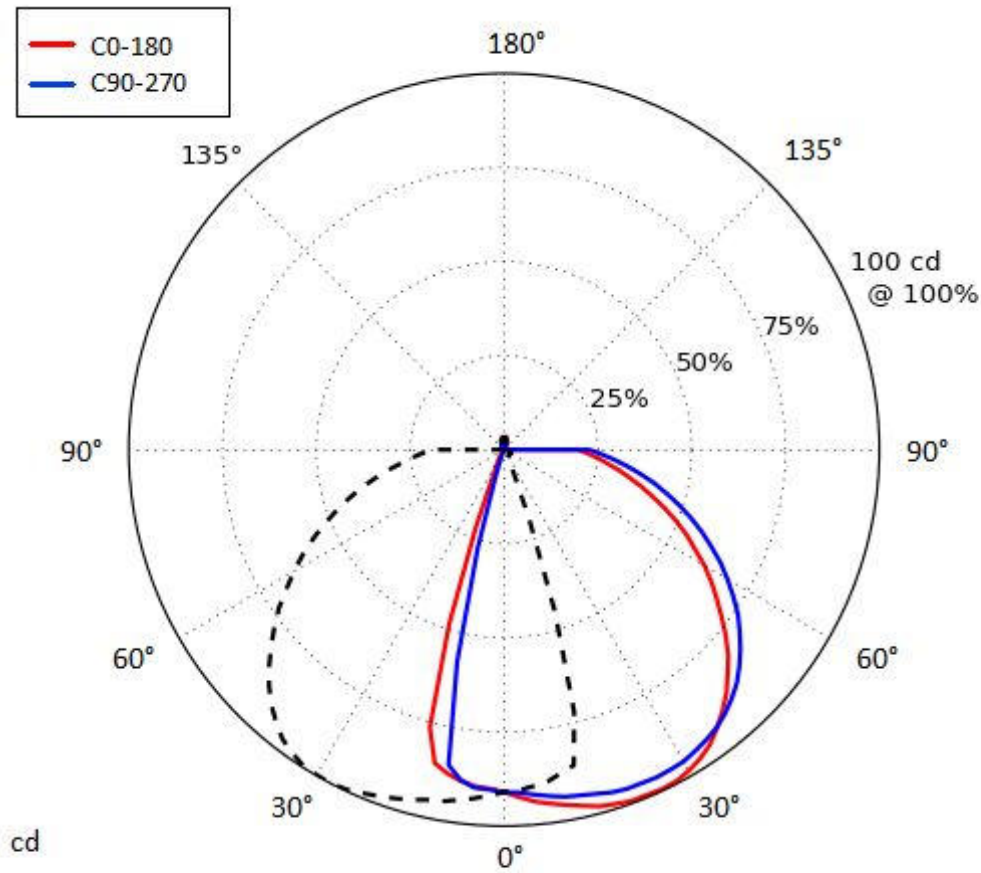
**Table. Maximum Luminous Intensity and its direction**

Iv	g	C plane
100 cd	27.5°	165.0°

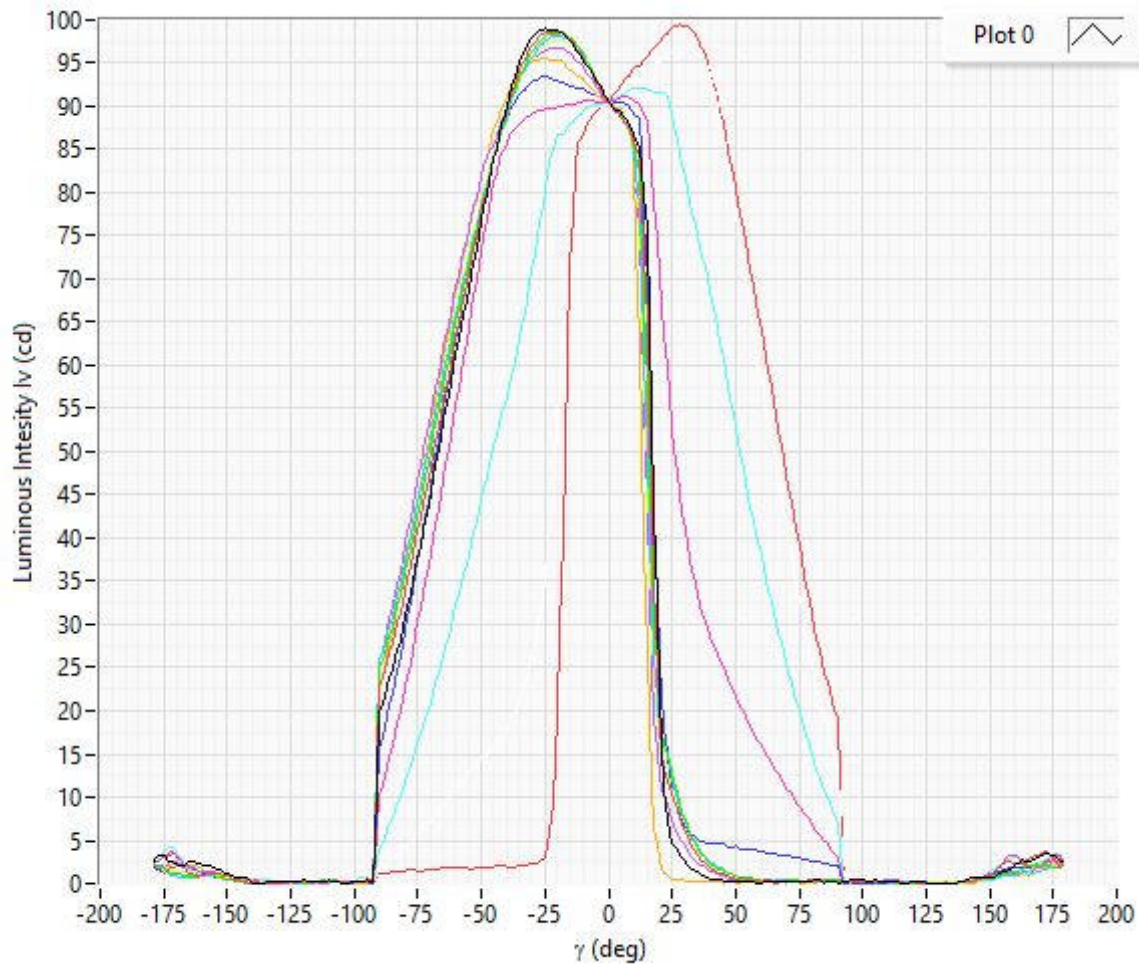
**Table. Beam widths at two perpendicular planes**

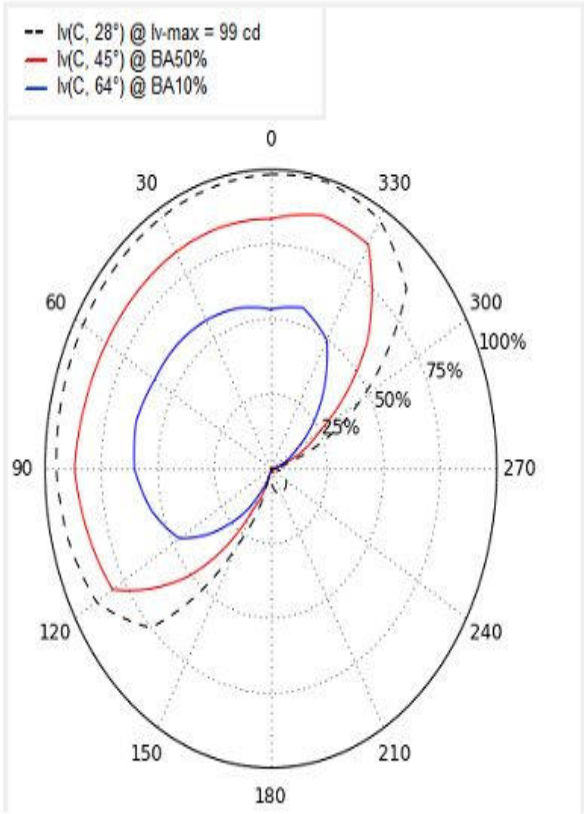
	Beam angle, FWHM, 50% (deg)	Beam angle, 10% (deg)	Effective beam direction from g=0
C0-180	87.9°	113.7°	26.2°
C90-270	88.1°	108.8°	29.3°

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



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





**Table. Zonal lumen summary**

	<b>Lumens</b>	<b>Relative lumens (%)</b>
0-20	33.48	14.65
0-30	61.12	26.75
0-40	94.26	41.25
0-60	163.10	71.38
0-80	212.30	92.91
0-90	226.00	98.91
10-90	215.04	94.11
20-40	60.78	26.60
20-50	96.22	42.11
40-70	97.04	42.47
40-90	131.74	57.65
60-80	49.20	21.53
60-90	62.90	27.53
70-80	21.00	9.19
80-90	13.70	6.00
90-110	0.50	0.22
90-120	0.70	0.31
90-130	0.80	0.35
90-150	1.20	0.53
90-180	2.50	1.09
110-180	2.00	0.88
0-180	228.50	100.00
	10.96	4.80

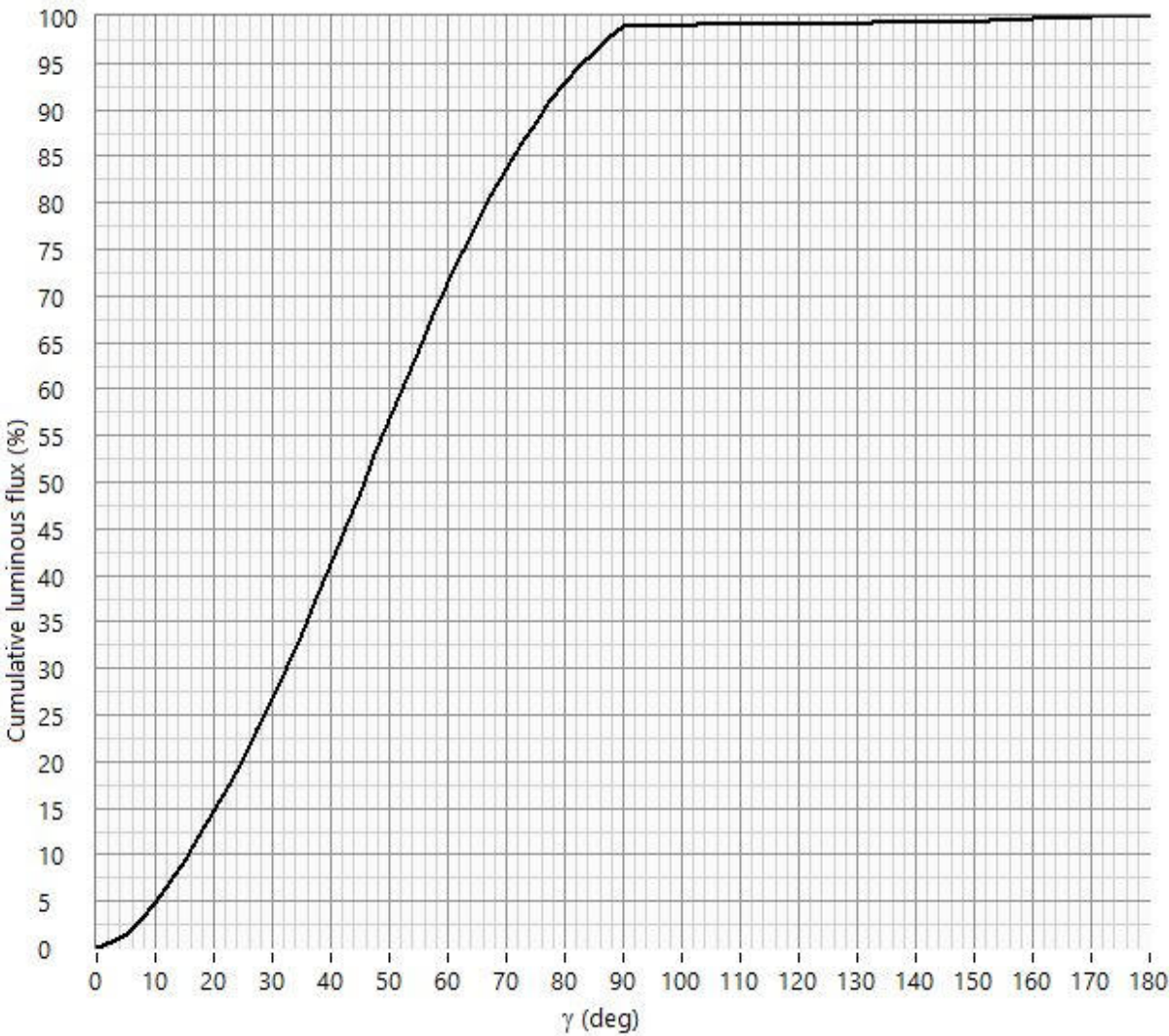
**Table. Cumulative and Zonal luminous flux**

<b>gamma (deg)</b>	<b>Zone Flux (lm)</b>	<b>Sum Flux (lm)</b>	<b>Zone Flux (%)</b>	<b>Sum Flux (%)</b>
0	0.1353	0.1353	0.05924	0.05924
2.5	1.084	1.219	0.4744	0.5337
5	2.174	3.393	0.9514	1.485
7.5	3.254	6.647	1.424	2.909
10	4.312	10.96	1.887	4.797
12.5	5.211	16.17	2.281	7.078
15	5.644	21.81	2.47	9.548
17.5	5.755	27.57	2.519	12.07
20	5.908	33.48	2.586	14.65
22.5	6.298	39.78	2.757	17.41
25	6.721	46.5	2.942	20.35
27.5	7.12	53.62	3.116	23.47
30	7.503	61.12	3.284	26.75
32.5	7.855	68.98	3.438	30.19
35	8.178	77.15	3.579	33.77
37.5	8.448	85.6	3.698	37.47
40	8.663	94.26	3.791	41.26
42.5	8.816	103.1	3.859	45.12
45	8.877	112	3.885	49
47.5	8.886	120.8	3.889	52.89
50	8.815	129.7	3.858	56.75
52.5	8.675	138.3	3.797	60.55
55	8.499	146.8	3.72	64.27
57.5	8.248	155.1	3.61	67.88
60	7.973	163.1	3.49	71.37
62.5	7.642	170.7	3.345	74.71
65	7.277	178	3.185	77.9
67.5	6.865	184.8	3.005	80.9
70	6.431	191.3	2.815	83.72
72.5	5.985	197.3	2.62	86.33
75	5.496	202.7	2.405	88.74
77.5	5.02	207.8	2.197	90.94
80	4.544	212.3	1.989	92.93
82.5	4.071	216.4	1.782	94.71
85	3.633	220	1.59	96.3
87.5	3.199	223.2	1.4	97.7



gamma (deg)	Zone Flux (lm)	Sum Flux (lm)	Zone Flux (%)	Sum Flux (%)
90	2.828	226	1.238	98.94
92.5	0.05952	226.1	0.02605	98.96
95	0.07124	226.2	0.03118	98.99
97.5	0.05583	226.2	0.02444	99.02
100	0.06504	226.3	0.02847	99.05
102.5	0.04814	226.3	0.02107	99.07
105	0.0615	226.4	0.02692	99.09
107.5	0.05881	226.5	0.02574	99.12
110	0.06245	226.5	0.02734	99.15
112.5	0.04511	226.6	0.01974	99.17
115	0.03466	226.6	0.01517	99.18
117.5	0.03579	226.6	0.01566	99.2
120	0.03034	226.7	0.01328	99.21
122.5	0.03035	226.7	0.01328	99.22
125	0.03173	226.7	0.01389	99.24
127.5	0.02903	226.8	0.0127	99.25
130	0.03151	226.8	0.01379	99.26
132.5	0.02887	226.8	0.01264	99.28
135	0.02598	226.9	0.01137	99.29
137.5	0.0285	226.9	0.01247	99.3
140	0.03575	226.9	0.01565	99.32
142.5	0.04594	227	0.02011	99.34
145	0.0618	227	0.02705	99.36
147.5	0.0896	227.1	0.03922	99.4
150	0.1009	227.2	0.04416	99.45
152.5	0.129	227.3	0.05646	99.5
155	0.1559	227.5	0.06823	99.57
157.5	0.1657	227.7	0.07251	99.64
160	0.1536	227.8	0.06721	99.71
162.5	0.1348	228	0.05902	99.77
165	0.1181	228.1	0.0517	99.82
167.5	0.1139	228.2	0.04987	99.87
170	0.1112	228.3	0.04865	99.92
172.5	0.08854	228.4	0.03875	99.96
175	0.06002	228.4	0.02627	99.99
177.5	0.02893	228.5	0.01266	100
180	0.003398	228.5	0.001487	100

Figure. Cumulative luminous flux



Söllner diagram (EN 12464) - Luminance

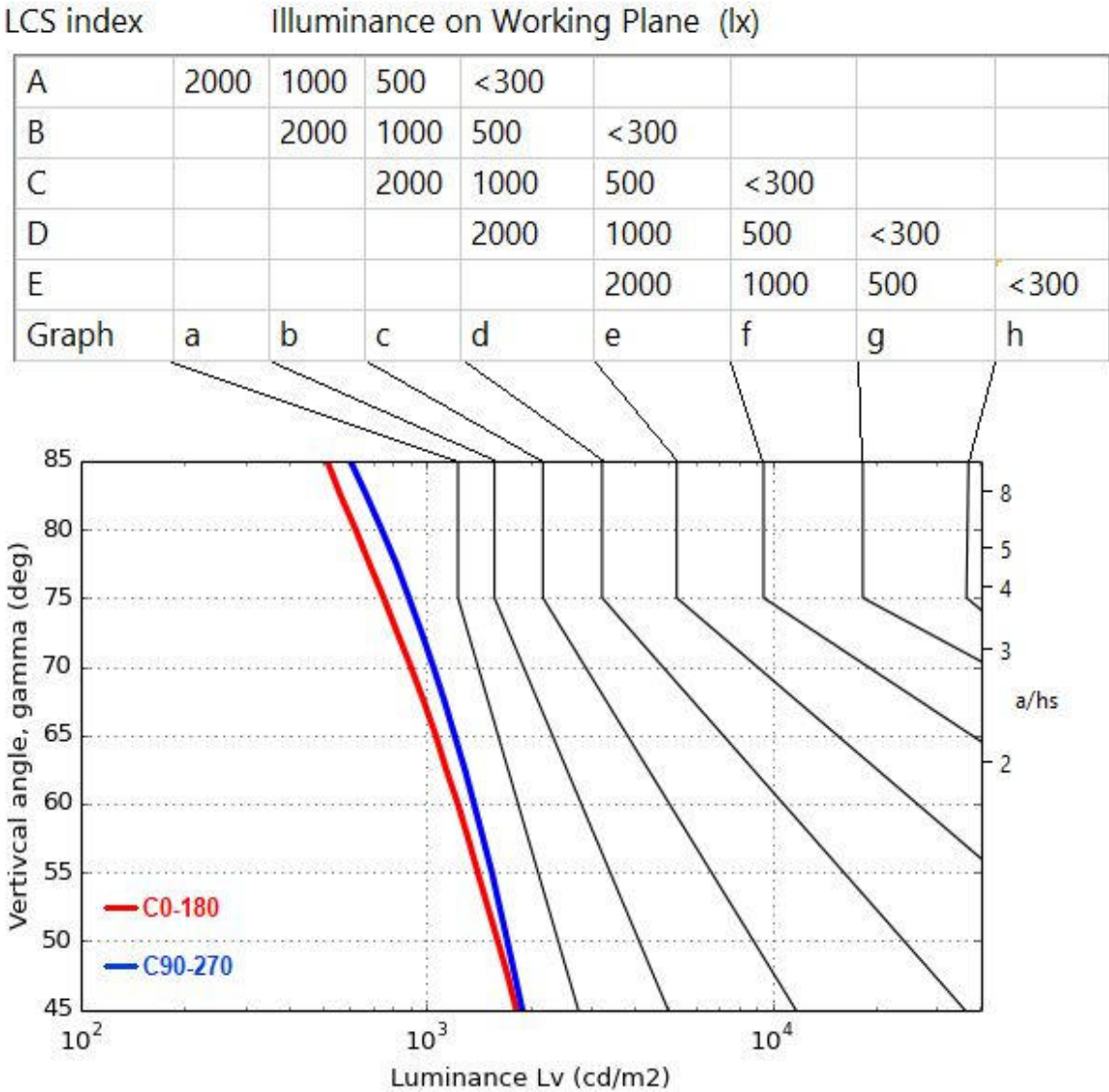


Table. Luminance [Lv] = cd/m2

	C 0	C 45	C 90
γ 0	4967	4967	4967
γ 45	1612	1232	1677
γ 55	1234	972	1356
γ 65	924	750	1048
γ 75	648	550	766
γ 85	440	388	514

## UGR table (CIE 190)

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	14.4	16.1	14.8	16.4	16.8	14.2	15.8	14.6	16.2	16.6
	3H	16.2	17.7	16.6	18.1	18.5	16.1	17.6	16.5	18.0	18.4
	4H	16.9	18.3	17.3	18.7	19.2	16.9	18.3	17.3	18.7	19.1
	6H	17.5	18.9	18.0	19.3	19.7	17.6	18.9	18.0	19.3	19.8
	8H	17.8	19.1	18.2	19.5	20.0	17.9	19.2	18.3	19.6	20.1
	12H	18.0	19.3	18.5	19.7	20.2	18.2	19.4	18.6	19.8	20.3
4H	2H	15.0	16.4	15.4	16.8	17.2	14.1	15.6	14.6	16.0	16.4
	3H	17.0	18.2	17.4	18.7	19.1	16.3	17.6	16.8	18.0	18.4
	4H	17.9	19.0	18.3	19.5	19.9	17.3	18.4	17.7	18.9	19.3
	6H	18.6	19.7	19.1	20.1	20.6	18.1	19.2	18.6	19.6	20.1
	8H	19.0	19.9	19.5	20.4	20.9	18.5	19.5	19.0	20.0	20.5
	12H	19.3	20.2	19.8	20.7	21.2	18.9	19.8	19.4	20.3	20.8
8H	4H	18.2	19.2	18.7	19.7	20.2	17.3	18.2	17.8	18.7	19.2
	6H	19.2	20.0	19.7	20.5	21.0	18.2	19.1	18.8	19.6	20.1
	8H	19.6	20.4	20.2	20.9	21.4	18.7	19.5	19.3	20.0	20.5
	12H	20.1	20.7	20.6	21.3	21.9	19.2	19.9	19.8	20.4	21.0
12H	4H	18.3	19.2	18.8	19.7	20.2	17.2	18.1	17.8	18.6	19.1
	6H	19.3	20.1	19.9	20.5	21.1	18.2	19.0	18.8	19.5	20.0
	8H	19.8	20.5	20.4	21.0	21.6	18.7	19.4	19.3	19.9	20.5

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

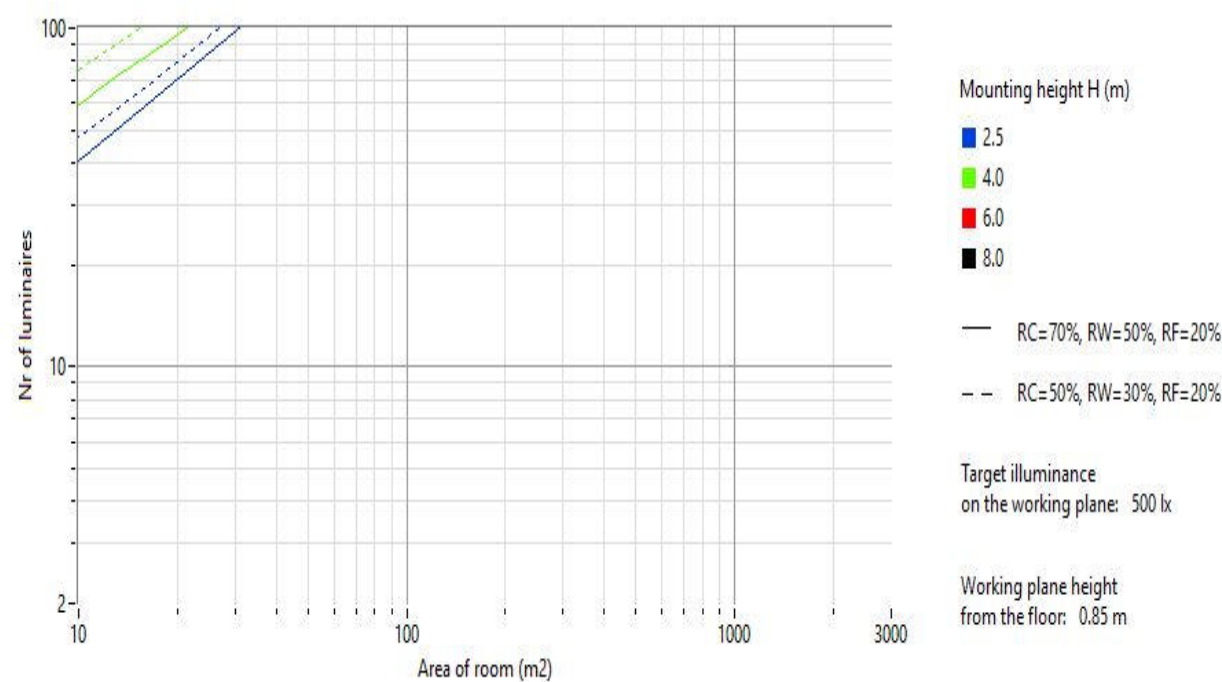


Table. Coefficient of Utilization (CU).

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	87	82	78	74	87	83	79	75	85	81	78	87	84	81	88	86	83
2	82	74	67	62	82	74	68	63	75	69	65	76	71	66	76	72	68
3	77	67	59	53	76	67	59	53	67	60	55	67	61	56	66	61	57
4	72	61	52	46	71	60	52	46	60	53	47	59	53	48	59	53	48
5	68	55	46	40	67	55	47	40	54	47	41	54	47	41	53	47	42
6	63	50	42	36	62	50	42	36	49	42	36	49	42	37	48	42	37
7	60	46	38	32	58	46	38	32	45	38	32	45	38	33	44	38	33
8	56	43	34	29	55	42	34	29	42	34	29	41	34	29	40	34	29
9	53	40	32	26	52	39	32	26	39	31	26	38	31	27	37	31	27
10	50	37	29	24	49	37	29	24	36	29	24	35	29	24	35	29	24



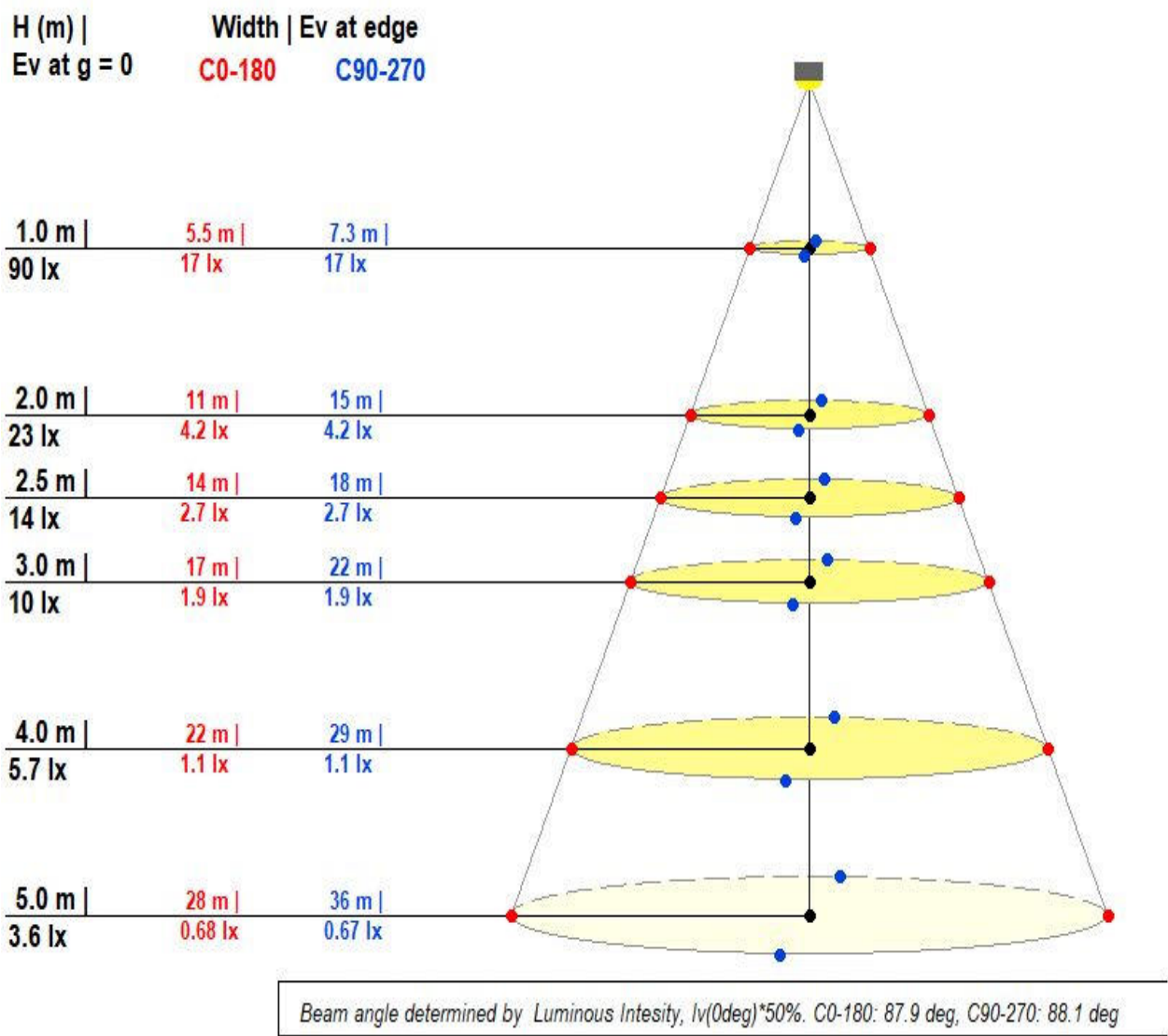
**Table. Wall Exitance Coefficients (WEC).**

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	54.9	37.1	21.1	6.7	53.6	36.3	20.7	6.6	34.9	20.0	6.4	33.5	19.3	6.2	32.3	18.7	6.0
2	50.6	32.7	18.0	5.5	49.2	32.1	17.7	5.5	30.8	17.1	5.3	29.6	16.6	5.2	28.4	16.1	5.1
3	47.0	29.4	15.7	4.7	45.7	28.8	15.4	4.7	27.6	15.0	4.6	26.5	14.6	4.5	25.5	14.1	4.4
4	44.0	26.6	13.9	4.1	42.7	26.1	13.7	4.1	25.1	13.3	4.0	24.1	12.9	3.9	23.1	12.6	3.8
5	41.2	24.3	12.4	3.6	40.0	23.8	12.3	3.6	22.9	12.0	3.5	22.0	11.6	3.5	21.2	11.3	3.4
6	38.8	22.4	11.3	3.2	37.7	21.9	11.1	3.2	21.1	10.8	3.2	20.3	10.6	3.1	19.5	10.3	3.1
7	36.7	20.7	10.3	2.9	35.6	20.3	10.2	2.9	19.6	9.9	2.9	18.8	9.7	2.8	18.1	9.4	2.8
8	34.7	19.3	9.5	2.7	33.7	18.9	9.4	2.7	18.2	9.1	2.6	17.6	8.9	2.6	16.9	8.7	2.5
9	33.0	18.0	8.8	2.5	32.0	17.7	8.7	2.5	17.1	8.5	2.4	16.4	8.3	2.4	15.9	8.1	2.3
10	31.4	16.9	8.2	2.3	30.5	16.6	8.1	2.3	16.0	7.9	2.2	15.5	7.7	2.2	14.9	7.5	2.2

**Table. Ceiling Cavity Exitance Coefficients (CCEC).**

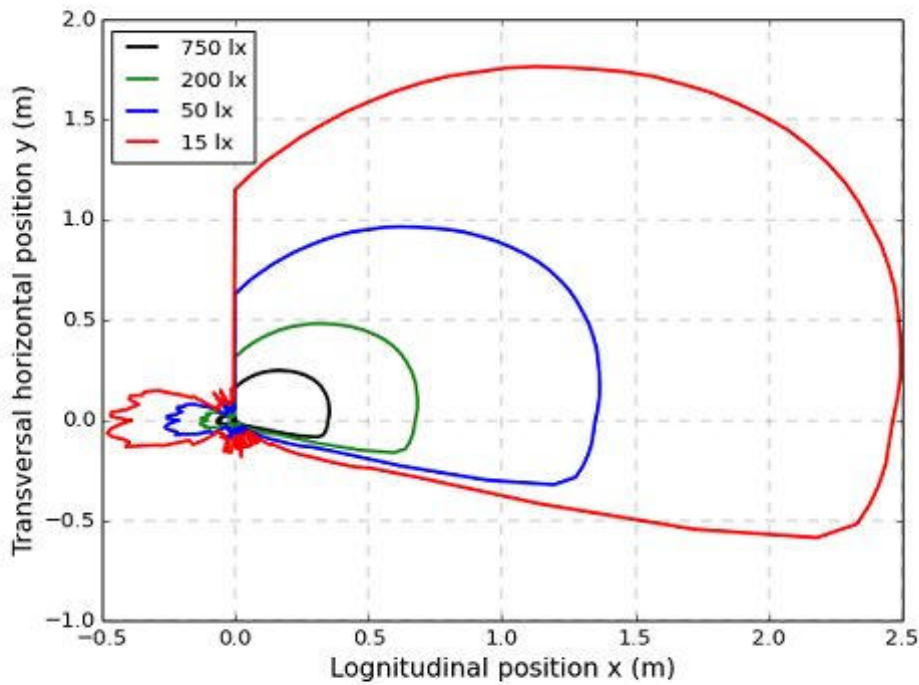
RC	80				70				50			30			10		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RF / RCR	20				20				20			20			20		
1	31.8	27.9	24.5	21.4	21.6	18.7	16.1	13.7	11.2	9.6	8.1	6.3	5.4	4.6	2.0	1.7	1.5
2	32.8	26.3	20.8	16.3	22.6	17.7	13.6	10.1	10.8	8.2	6.0	6.1	4.6	3.4	1.9	1.5	1.1
3	33.1	24.6	18.0	12.7	23.1	16.8	11.8	7.7	10.3	7.1	4.5	5.8	4.1	2.6	1.9	1.3	0.9
4	32.9	23.0	15.7	10.2	23.2	15.8	10.3	6.1	9.8	6.3	3.6	5.5	3.6	2.1	1.8	1.2	0.7
5	32.2	21.4	13.8	8.2	22.9	14.8	9.1	4.8	9.3	5.6	2.9	5.3	3.3	1.7	1.7	1.1	0.6
6	31.4	19.9	12.2	6.7	22.5	14.0	8.1	3.9	8.8	5.1	2.4	5.0	3.0	1.4	1.6	1.0	0.5
7	30.4	18.5	10.8	5.4	21.9	13.1	7.3	3.2	8.3	4.6	2.0	4.8	2.7	1.2	1.5	0.9	0.4
8	29.3	17.2	9.6	4.4	21.2	12.3	6.6	2.6	7.9	4.2	1.7	4.5	2.5	1.0	1.5	0.8	0.4
9	28.2	16.0	8.6	3.5	20.6	11.6	5.9	2.1	7.5	3.9	1.4	4.3	2.3	0.9	1.4	0.8	0.3
10	27.1	14.9	7.7	2.8	19.8	10.9	5.4	1.7	7.1	3.6	1.2	4.1	2.2	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

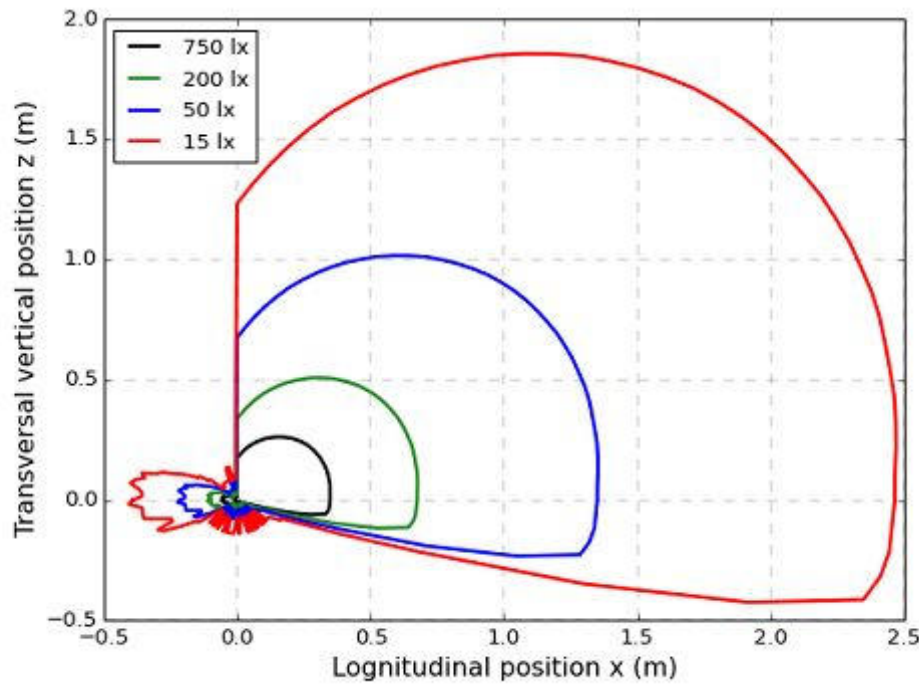


LOGNITUDINAL ISOLUX CURVES

Horizontal



Vertical





Illumination uniformity figures at the perpendicular plane to the lamp axis.  
Mounting height of 2.50 m.  
Lamp center position  $x = 0.0$  m,  $y = 0.0$  m.  
C rotation of 0.0 deg. Gamma rotation of 0.0 deg.  
Maintenance factor = 0.80.  
Nr of lamps: X = 1 pcs, Y = 1 pcs.  
Distance between lamps: X = 0.00 meters, Y = 0.00 meters.

