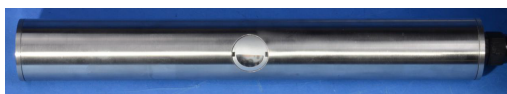


filename : Asymmetric-Handrail.LDT  
 meas. number : 2960  
 luminaire number : Asymmetric-Handrail  
 date / operator : 03-06-2019

**default lamp type(s)**

no of lamps	lamp type	luminaire lumens	input wattage
1	LED MODULE	46 lm	2.8 W

**dimensions**

luminaire		luminous area	
length	: 360 mm	length	: 20 mm
width	: 50 mm	width	: 10 mm
height	: 50 mm	height	: 2 mm

**coordinate system**

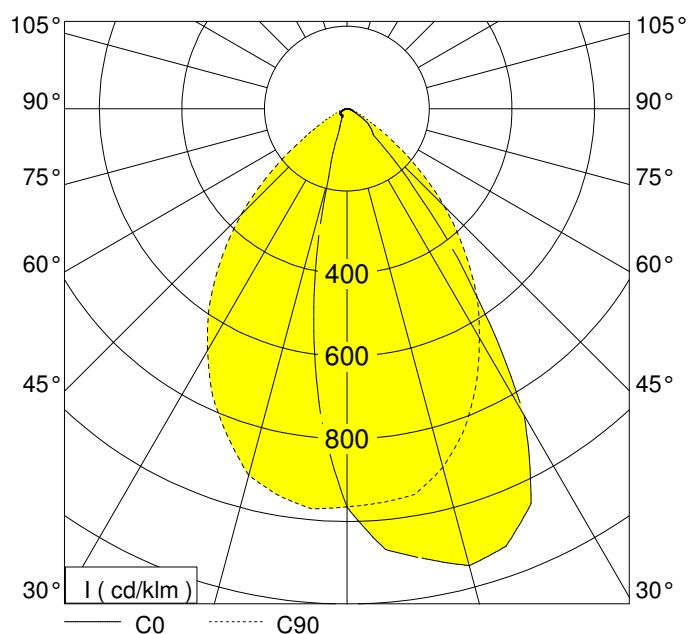
no of planes	: 24	samples / plane	: 37
first c-plane	: 0.0 °	first gamma-angle	: 0.0 °
step angle	: 15.0 °	step angle	: 5.0 °
last c-plane	: 345.0 °	last gamma-angle	: 180.0 °
symmetrics	: asymmetric		

**performance**

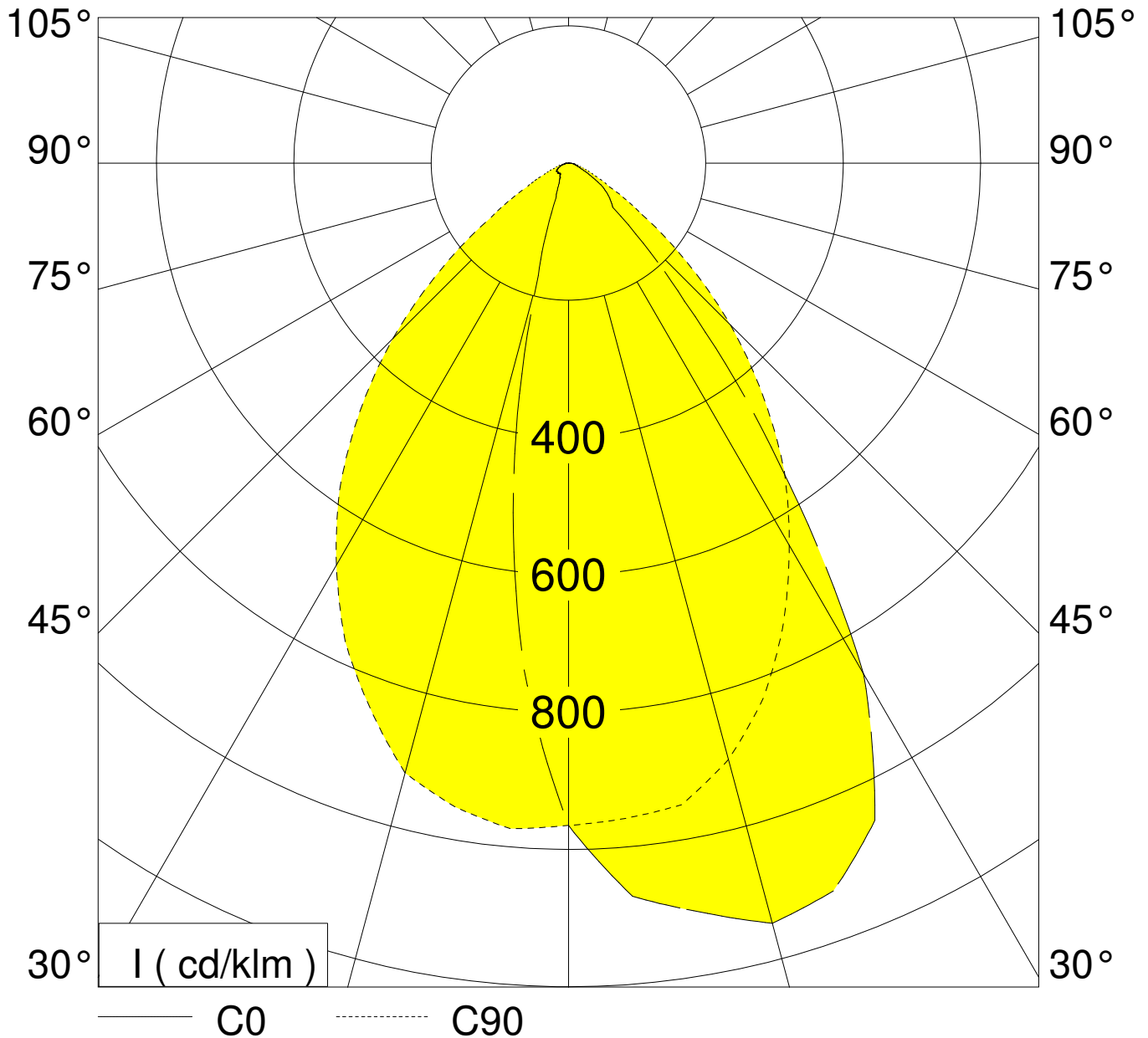
light output ratio	: 100.0 %
DFF	: 100.0 %
UFF	: 0.0 %

**classification**

LiTG / DIN	: A60
UTE	: 1.00B
CIE	: 80 96 99 100 100
BZ	: 1 1 1 1 1 1 1 1 1 1
Ambient Temperature	: 25 degC
Input Voltage	: 240 V
CCT	: 2960K (measured): 3000K (declared)
CRI (Ra)	: 83
S/P Ratio	: 1.4
Luminaire Lumens	: 46 LLm
Driver Details	: MEANWELL LPV-20-46



Measurements made are in absolute units. The luminaire is treated as if it was a lamp as it is not possible to measure each LED separately - hence an LOR of 100%  
The Light output ratio in real terms would be less than 100%. If it was possible to compare real LED lumens with the total output from the luminaire we could obtain an actual LOR  
This also means that the total lumens emitted from the LED's would be greater than the Luminaire Lumens measured. In reality the LED lumens would approximate to this value divided by the actual Light Output.



	C 0.0	C 15.0	C 30.0	C 45.0	C 60.0	C 75.0	C 90.0	C 105.0
0.0°	964.40	964.40	964.40	964.40	964.40	964.40	964.40	964.40
5.0°	1071.70	1044.60	1017.50	1000.90	984.20	970.90	957.60	884.40
10.0°	1107.10	1079.40	1051.70	1026.80	1001.80	975.20	948.60	793.10
15.0°	1145.90	1094.90	1044.00	1013.00	982.00	940.50	899.10	692.20
20.0°	1127.60	1075.90	1024.10	964.00	903.90	866.60	829.20	594.00
25.0°	1055.70	989.70	923.70	869.30	814.90	777.50	740.20	470.20
30.0°	859.40	836.90	814.40	772.30	730.20	686.20	642.20	376.40
35.0°	535.30	576.10	616.90	604.30	591.60	569.60	547.50	314.20
40.0°	262.50	313.30	364.20	414.10	464.10	451.20	438.30	251.10
45.0°	91.30	135.00	178.80	247.70	316.70	325.10	333.50	193.40
50.0°	77.60	71.90	66.20	116.70	167.10	196.20	225.30	135.00
55.0°	61.60	53.40	45.20	55.60	66.00	98.30	130.70	84.00
60.0°	37.70	35.40	33.10	33.00	33.00	50.90	68.70	48.70
65.0°	21.70	21.30	21.00	20.90	20.90	30.70	40.60	30.40
70.0°	14.80	14.60	14.40	14.30	14.30	19.50	24.80	24.60
75.0°	10.30	10.70	11.00	11.00	11.00	13.40	15.80	14.80
80.0°	8.00	7.90	7.70	7.70	7.70	8.90	10.10	9.90
85.0°	4.60	5.60	6.60	5.50	4.40	4.50	4.50	4.40
90.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	cd / klm							

	C 120.0	C 135.0	C 150.0	C 165.0	C 180.0	C 195.0	C 210.0	C 225.0
0.0°	964.40	964.40	964.40	964.40	964.40	964.40	964.40	964.40
5.0°	811.10	771.10	731.20	736.00	740.90	781.20	821.50	867.00
10.0°	637.60	553.20	468.80	463.90	459.00	494.70	530.40	649.40
15.0°	485.40	369.60	253.90	211.70	169.60	248.20	326.90	451.90
20.0°	358.70	218.30	78.00	66.00	54.00	77.90	101.70	273.80
25.0°	200.10	123.20	46.40	39.40	32.40	43.80	55.20	183.50
30.0°	110.70	72.20	33.70	29.30	24.80	31.90	39.00	101.70
35.0°	80.90	53.60	26.30	24.00	21.60	26.00	30.30	64.90
40.0°	63.90	44.00	24.20	21.80	19.40	23.30	27.10	50.30
45.0°	53.20	38.70	24.20	22.90	21.60	23.80	26.00	41.10
50.0°	44.70	34.50	24.20	22.40	20.50	22.70	24.90	34.60
55.0°	37.30	29.70	22.10	21.90	21.60	22.70	23.80	29.80
60.0°	28.70	23.80	19.00	19.20	19.40	19.50	19.50	23.80
65.0°	20.20	17.00	13.70	14.90	16.20	15.10	14.10	16.80
70.0°	24.50	17.00	9.50	10.70	11.90	10.80	9.70	11.90
75.0°	13.80	10.10	6.30	6.90	7.60	6.50	5.40	7.00
80.0°	9.60	6.90	4.20	4.80	5.40	4.90	4.30	4.90
85.0°	4.30	3.70	3.20	3.70	4.30	3.80	3.20	3.20
90.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	cd / klm							

	C 240.0	C 255.0	C 270.0	C 285.0	C 300.0	C 315.0	C 330.0	C 345.0
0.0°	964.40	964.40	964.40	964.40	964.40	964.40	964.40	964.40
5.0°	912.50	942.60	972.80	993.90	1014.90	1030.40	1045.90	1058.80
10.0°	768.50	860.10	951.80	989.90	1028.00	1054.80	1081.60	1094.30
15.0°	576.90	748.10	919.20	962.10	1005.00	1043.30	1081.60	1113.80
20.0°	445.90	645.30	844.60	889.20	933.70	997.60	1061.50	1094.60
25.0°	311.70	540.40	769.00	808.00	847.00	905.20	963.30	1009.50
30.0°	164.50	420.00	675.50	714.10	752.70	801.10	849.40	854.40
35.0°	99.60	340.30	581.00	608.10	635.30	630.20	625.10	580.20
40.0°	73.60	273.20	472.70	483.80	494.80	429.40	363.90	313.20
45.0°	56.30	208.80	361.40	356.80	352.20	261.50	170.80	131.00
50.0°	44.40	144.60	244.80	213.50	182.10	121.80	61.40	69.50
55.0°	35.70	86.70	137.60	105.60	73.50	58.00	42.40	52.00
60.0°	28.10	49.80	71.40	50.50	29.60	29.30	29.00	33.30
65.0°	19.50	29.20	38.90	28.80	18.70	18.30	17.90	19.80
70.0°	14.10	18.10	22.10	17.10	12.10	12.20	12.30	13.60
75.0°	8.70	11.20	13.70	11.20	8.80	8.80	8.90	9.60
80.0°	5.40	6.40	7.30	7.00	6.60	6.60	6.70	7.30
85.0°	3.20	3.70	4.20	4.30	4.40	4.40	4.50	4.50
90.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	cd / klm							

<b>glare rating according to UGR</b>											
ρ-ceiling		70	70	50	50	30	70	70	50	50	30
ρ-walls		50	30	50	30	30	50	30	50	30	30
ρ-workplane		20	20	20	20	20	20	20	20	20	20
room dimensions X                  Y		viewed crosswise					viewed endwise				
2H	2H	23.9	25.0	24.1	25.1	25.3	24.7	25.8	25.0	26.0	26.1
	3H	23.2	24.0	23.4	24.2	24.3	24.2	25.0	24.4	25.2	25.3
	4H	23.3	24.1	23.6	24.3	24.5	24.4	25.1	24.6	25.3	25.5
	6H	23.4	24.1	23.7	24.4	24.6	24.5	25.2	24.7	25.4	25.7
	8H	23.4	24.2	23.7	24.4	24.6	24.5	25.3	24.8	25.5	25.7
	12H	23.5	24.2	23.8	24.5	24.7	24.6	25.3	24.9	25.6	25.8
4H	2H	23.3	24.1	23.5	24.2	24.4	24.1	24.8	24.3	25.0	25.2
	3H	23.5	24.2	23.8	24.5	24.7	24.4	25.2	24.7	25.4	25.7
	4H	23.6	24.4	24.0	24.6	24.9	24.6	25.4	25.0	25.7	25.9
	6H	23.5	24.1	23.9	24.4	24.8	24.6	25.2	25.0	25.5	25.8
	8H	23.6	24.2	24.0	24.5	24.9	24.7	25.2	25.1	25.6	25.9
	12H	23.8	24.3	24.2	24.7	25.1	24.8	25.4	25.3	25.8	26.2
8H	4H	23.5	24.1	23.9	24.4	24.8	24.5	25.1	24.9	25.4	25.8
	6H	23.8	24.3	24.3	24.8	25.2	24.9	25.4	25.3	25.8	26.3
	8H	23.9	24.4	24.4	24.9	25.4	25.0	25.5	25.5	26.0	26.5
	12H	23.9	24.3	24.4	24.8	25.3	25.0	25.4	25.5	25.9	26.4
12H	4H	23.6	24.2	24.1	24.6	25.0	24.7	25.2	25.1	25.6	26.0
	6H	23.9	24.4	24.4	24.8	25.3	24.9	25.5	25.4	25.9	26.4
	8H	23.9	24.3	24.4	24.8	25.3	25.0	25.4	25.5	25.9	26.4
variation of observer position											
S =	1.0H	+3.3/		-4.2		+1.2/		-2.9			
	1.5H	+5.5/		-5.2		+3.2/		-5.2			
	2.0H	+7.4/		-6.0		+5.0/		-5.8			
standard-table		BK01					BK01				
correction for luminaire		5.7					6.7				
correct glare indices for a total flux of 46lm											

class		glare rating for service value of illuminance (lx)									
A	A	1000	750	500	--	≤ 300					
1	B	2000	1500	1000	750	500	≤ 300				
2	D					2000	1000	500	≤ 300		
3	E						2000	1000	500	≤ 300	

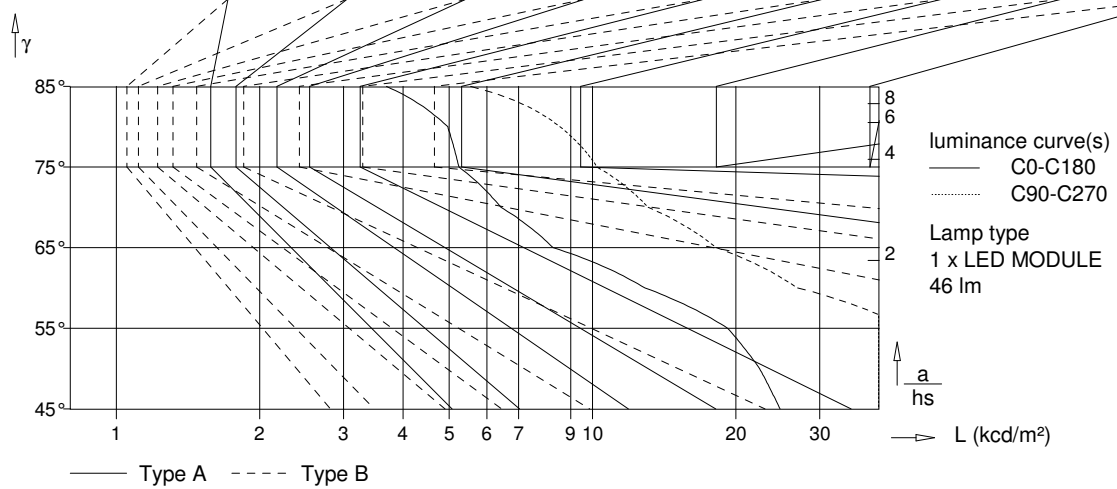


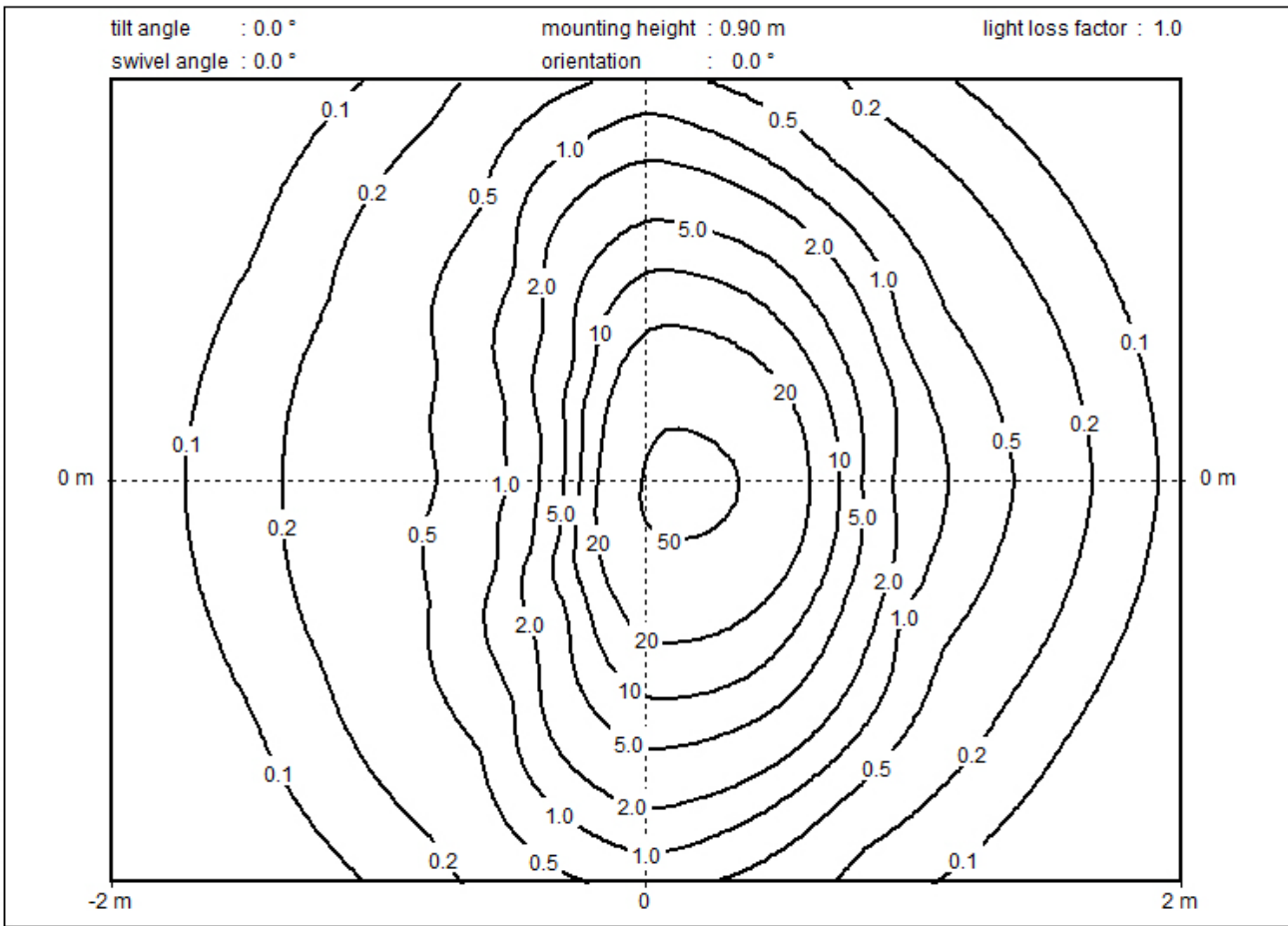
Table of intensities

gamma	C 0	C 90	C 180	C 270
45°	24747.6	98615.7	5854.8	106865.7
50°	22422.2	72031.7	5923.4	78266.1
55°	19213.3	45860.2	6737.1	48281.3
60°	12880.2	26936.5	6628.0	27995.1
65°	8264.9	18193.9	6170.1	17432.1
70°	6423.1	13082.9	5164.6	11658.5
75°	5241.1	10224.8	3867.2	8865.8
80°	4964.8	8536.4	3351.2	6169.9
85°	3694.2	5541.4	3453.3	5172.0

all values in cd/m<sup>2</sup>

<b>utilization factors / TM5</b>											
reflection			room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	76	84	90	93	98	102	104	107	108
70	30	20	70	79	85	89	94	98	100	104	106
70	10	20	66	75	81	85	91	95	98	102	104
50	50	20	75	82	87	91	95	98	100	103	104
50	30	20	70	78	83	87	92	95	98	101	102
50	10	20	66	74	80	84	89	93	95	99	101
30	50	20	73	81	85	89	93	95	97	99	101
30	30	20	69	77	82	85	90	93	95	98	99
30	10	20	66	74	79	82	87	91	93	96	98
0	0	0	64	72	76	80	84	87	89	92	93
BZ-class			1	1	1	1	1	1	1	1	1
SHRnom : 1.00						SHRmax : 1.100					





article code  
Asymmetric-Handrail

lamp(s)  
1 x LED MODULE  
total flux  
48 lm  
LOR  
100 %  
tilt angle  
0.0 °

