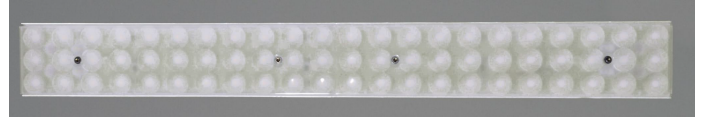


filename : Bubble-Wafer-Suspension-580mm
 meas. number : 2365
 luminaire number : Bubble Wafer Suspension 580mm
 date / operator : 17-08-2017

**default lamp type(s)**

no of lamps	lamp type	luminaire lumens	input wattage
1	LED MODULE	1390 lm	15.4 W

dimensions

luminaire		luminous area	
length	: 580 mm	length	: 575 mm
width	: 65 mm	width	: 60 mm
height	: 15 mm	height	: 10 mm

coordinate system

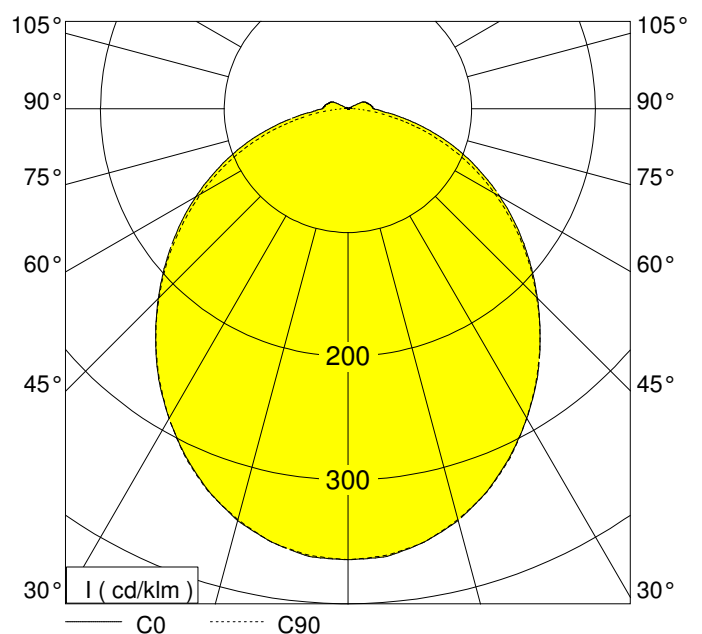
no of planes	: 7	samples / plane	: 37
first c-plane	: 0.0 °	first gamma-angle	: 0.0 °
step angle	: 15.0 °	step angle	: 5.0 °
last c-plane	: 90.0 °	last gamma-angle	: 180.0 °
symmetrics : symmetry to C0 / C90			

performance

light output ratio	: 100.0 %
DFF	: 96.9 %
UFF	: 3.1 %

classification

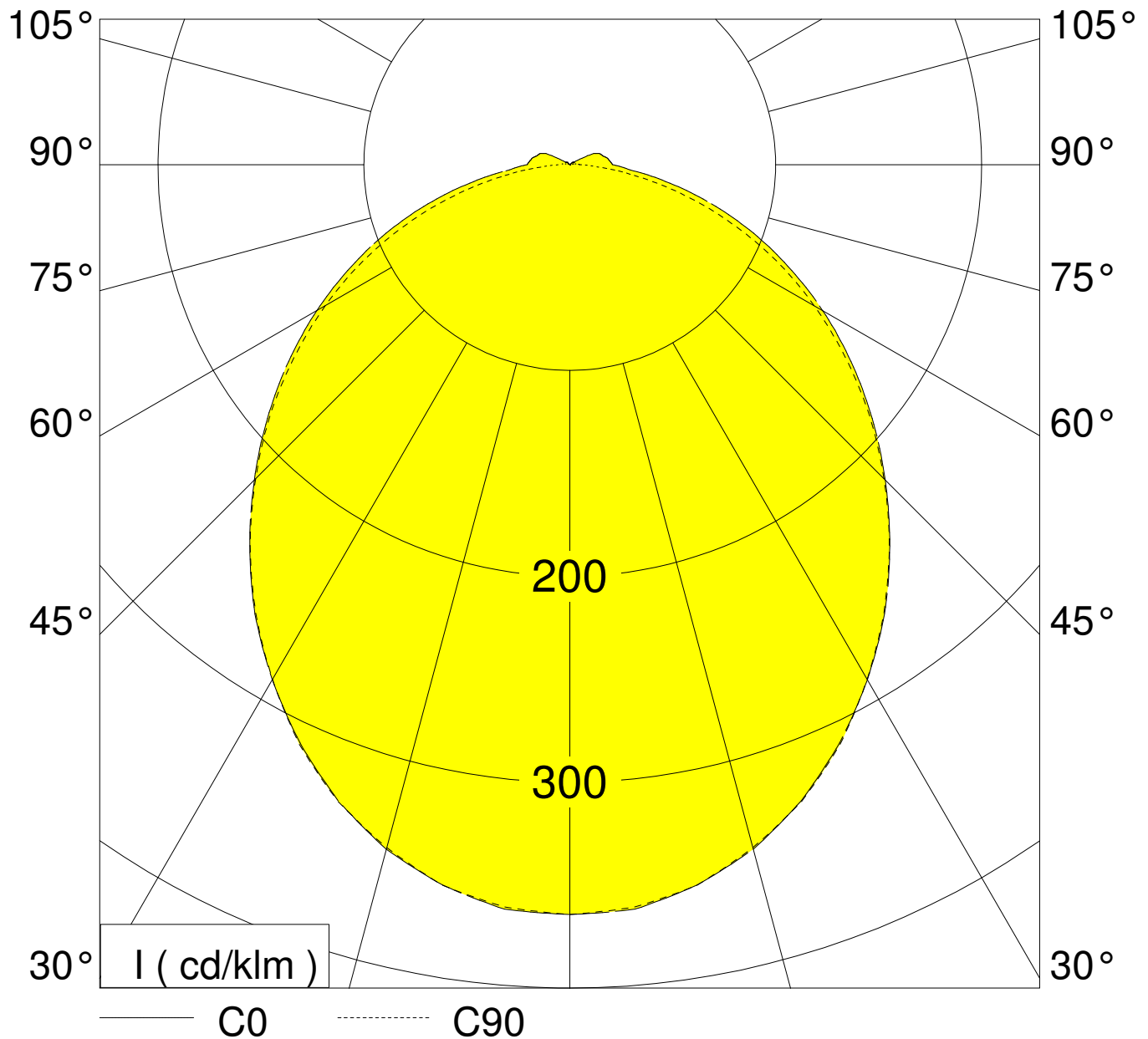
LiTG / DIN	: A41
UTE	: 0.97D+0.03T 0.97E+0.03T
CIE	: 48 78 94 97 100
BZ	: 4 4 4 4 4 4 4 5 5
Ambient Temperature	: 25 degC
Input Voltage	: 240 V
Circuit Watts	: 15.4W
Amps (running)	: 0.069A
V.A.	: 16.56VA
Power Factor	: 0.93
CCT	: 3882K (measured): 3900K (declared)
CRI (Ra)	: 86
Luminaire Lumens	: 1390 LLm
Output Current DC	: 520mA
Output Voltage DC	: 23.6V
Output Power	: 12.27 W
Luminaire Lm/circ.Watt	: 90.26 LLm/circ.Watt
Driver Efficiency	: 80%
Driver Details	: HELVAR LL1X30-E-CV24



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
0.0°	364.10	364.10	364.10	364.10	364.10	364.10	364.10
5.0°	363.00	362.50	361.90	361.90	361.90	361.90	361.90
10.0°	355.30	355.30	355.30	355.30	355.40	355.40	355.40
15.0°	344.20	344.30	344.30	344.40	344.40	343.90	343.40
20.0°	328.70	328.80	328.90	329.00	329.00	329.10	329.10
25.0°	309.90	310.10	310.20	310.30	310.40	310.50	310.60
30.0°	288.90	289.10	289.30	289.40	289.60	289.10	288.70
35.0°	266.50	266.20	265.90	266.30	266.70	266.30	265.80
40.0°	241.70	242.20	242.70	242.80	242.80	242.10	241.40
45.0°	216.60	217.20	217.70	217.70	217.60	216.70	215.70
50.0°	191.60	192.20	192.70	192.60	192.40	191.20	190.10
55.0°	166.70	167.10	167.50	167.00	166.40	164.90	163.40
60.0°	141.80	142.20	142.60	141.80	140.90	139.00	137.00
65.0°	116.90	117.20	117.60	116.50	115.40	113.10	110.80
70.0°	92.90	93.10	93.30	91.40	89.50	86.70	83.90
75.0°	69.00	68.70	68.50	66.40	64.30	61.10	57.80
80.0°	47.30	46.70	46.20	43.60	41.00	37.40	33.80
85.0°	29.30	28.60	27.80	24.80	21.70	17.90	14.10
90.0°	20.80	20.00	19.10	16.00	12.80	8.80	4.80
95.0°	19.60	18.80	17.90	14.80	11.60	7.70	3.80
100.0°	18.50	17.50	16.60	13.00	9.40	5.60	1.90
105.0°	16.60	15.90	15.20	11.00	6.90	4.30	1.60
110.0°	15.60	14.70	13.90	7.80	1.60	0.80	0.00
115.0°	12.80	10.50	8.10	4.10	0.00	0.00	0.00
120.0°	2.50	2.20	1.80	0.90	0.00	0.00	0.00
125.0°	1.80	1.70	1.70	0.80	0.00	0.00	0.00
130.0°	1.70	0.80	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
140.0°	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
150.0°	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
160.0°	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
170.0°	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
180.0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	cd / klm						

glare rating according to UGR											
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	20.4	21.9	20.7	22.1	22.4	20.7	22.2	21.0	22.5	22.7
	3H	21.4	22.5	21.7	22.7	23.0	21.7	22.8	22.0	23.1	23.3
	4H	22.0	23.1	22.3	23.4	23.6	22.3	23.4	22.6	23.7	23.9
	6H	22.5	23.5	22.8	23.8	24.1	22.7	23.8	23.1	24.1	24.4
	8H	22.7	23.8	23.1	24.1	24.4	22.9	24.0	23.3	24.3	24.6
	12H	22.9	23.9	23.3	24.3	24.6	23.1	24.1	23.4	24.4	24.7
4H	2H	20.6	21.7	20.9	22.0	22.2	20.9	22.0	21.2	22.2	22.5
	3H	22.4	23.4	22.8	23.8	24.1	22.7	23.7	23.0	24.0	24.3
	4H	23.3	24.3	23.7	24.6	25.0	23.5	24.5	23.9	24.8	25.2
	6H	23.7	24.5	24.1	24.8	25.2	23.8	24.7	24.2	25.0	25.4
	8H	23.9	24.7	24.4	25.1	25.5	24.1	24.8	24.5	25.2	25.7
	12H	24.3	25.0	24.8	25.5	26.0	24.3	25.1	24.8	25.6	26.0
8H	4H	23.4	24.2	23.8	24.6	25.0	23.6	24.4	24.1	24.8	25.2
	6H	24.4	25.2	24.9	25.6	26.1	24.6	25.3	25.1	25.8	26.3
	8H	24.8	25.6	25.4	26.1	26.6	24.9	25.6	25.5	26.2	26.7
	12H	25.0	25.6	25.6	26.2	26.7	25.0	25.6	25.6	26.2	26.7
12H	4H	23.6	24.4	24.1	24.8	25.3	23.8	24.6	24.3	25.0	25.5
	6H	24.6	25.3	25.1	25.8	26.4	24.7	25.4	25.3	26.0	26.5
	8H	24.9	25.5	25.4	26.0	26.6	25.0	25.5	25.5	26.1	26.7
variation of observer position											
S =	1.0H	+0.1/ -0.1				+0.1/ -0.1					
	1.5H	+0.2/ -0.3				+0.2/ -0.3					
	2.0H	+0.4/ -0.6				+0.4/ -0.6					
standard-table		BK06					BK06				
correction for luminaire		7.5					7.7				
correct glare indices for a total flux of 1390lm											

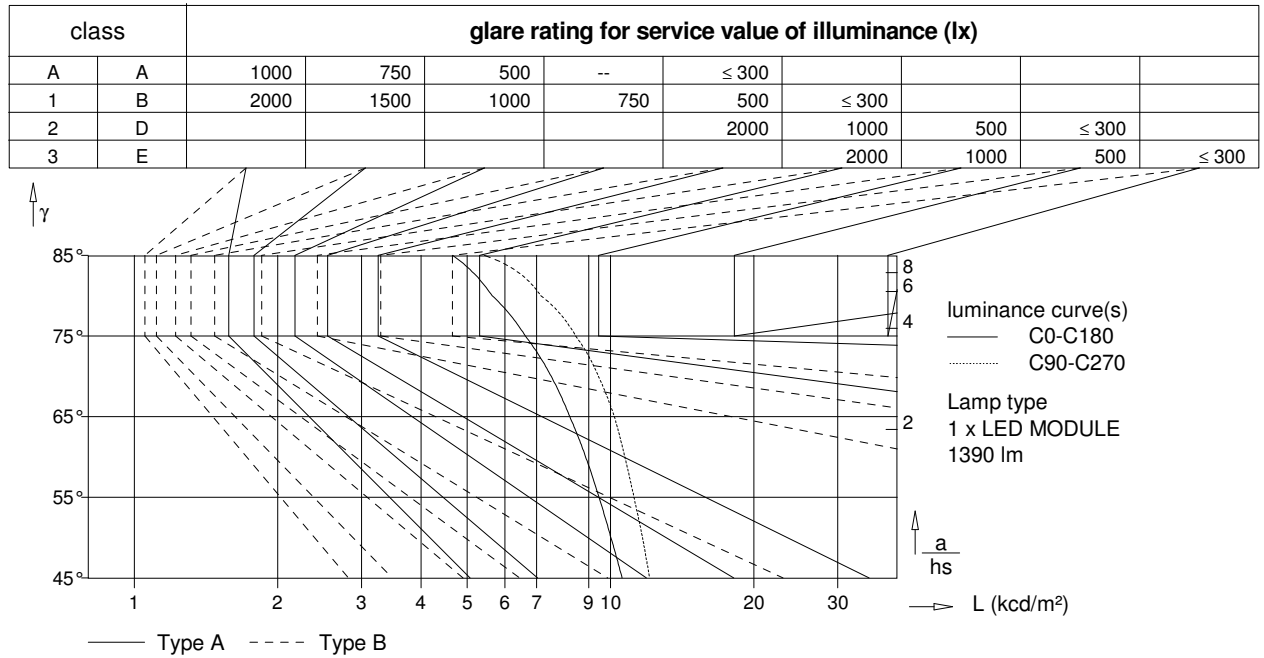


Table of intensities

gamma	C 0	C 90	C 180	C 270
45°	10578.5	12080.2	10578.5	12080.2
50°	10019.4	11673.5	10019.4	11673.5
55°	9458.2	11199.6	9458.2	11199.6
60°	8866.6	10716.6	8866.6	10716.6
65°	8210.1	10183.2	8210.1	10183.2
70°	7506.3	9432.7	7506.3	9432.7
75°	6622.1	8449.2	6622.1	8449.2
80°	5641.8	7138.2	5641.8	7138.2
85°	4662.5	5437.2	4662.5	5437.2

all values in cd/m²

utilization factors / TM5											
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	60	68	75	80	87	92	95	99	102
70	30	20	52	60	68	73	81	86	90	95	98
70	10	20	47	55	62	68	76	81	86	91	95
50	50	20	58	65	72	77	83	88	91	95	97
50	30	20	51	59	66	71	78	83	87	91	94
50	10	20	47	54	61	66	74	79	83	88	92
30	50	20	56	63	70	74	80	84	87	90	93
30	30	20	50	58	64	69	76	80	83	88	91
30	10	20	46	53	60	65	72	77	80	85	88
0	0	0	44	50	57	62	68	73	76	80	83
BZ-class			4	4	4	4	4	4	4	5	5
SHRnom : 1.50						SHRmax : 1.507					

