

MEASUREMENT REPORT NUMBER 2019-113/11.10.2019

testing samples of products

Model number or type, referring to the manufacturer: LED emergency luminaire ASWTLED/3M.

Company identification: Ansell Lighting Ltd.

Applicant testing: S4S OE -SHOP4SECURITY, Euripidou27 ,N.Iraklio P.C 14122 Athina, Greece.

Type of test: control measurements

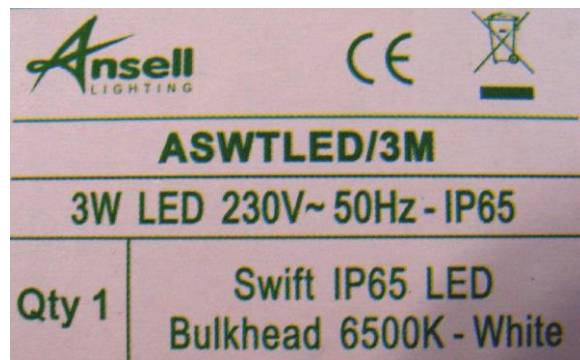
Metrological traceability:

- LMT Photometer B520, ID 04B4021 with photometric head P30SC0 ID 04B4022, calibration certificate of the LMT Lichtmesstechnik GMBH Berlin №04B402/28.05.2014;
- luxmeter PU 550, ID 263621/2586, calibration certificate of the METRA BLANSKO a.s.№2887/2012, 19.12.2012;
- luxmeter KYORITSU 5202, ID K0017929, calibration certificate of the National Centre of Metrology 181-ОИ/15.12.2012;
- luminance-meter L 1003 of angular field 1°, producer "LMT" Germany, ID 0686191, calibration certificate of the National Centre of Metrology 130-ОИ/20.12.2010;
- Ulbricht photometer with diameter 2m;
- Automated goniophotometer.
- Power Meter HM8115-2 ID 015447345, calibration certificate of the National Centre of Metrology 148-ЕЕИ/14.12.2012;
- Digital thermometer with temperature sensor DS18B20 ID 0000011697CDH, calibration certificate of the National Centre of Metrology 268-ТИ/14.11.2012;
- Ampermeter Д5101 ID 737/1990, calibration certificate of 'ЛК УНИСИСТ' Ltd №733/21.11.2012;
- MEGER UT512 ID 1111074682, calibration certificate of 'ЛК УНИСИСТ' Ltd №732/21.11.2012;
- Laser rangefinder DLE-40
- spectroradiometer MK350 ID HS0313220158, test source MK002, calibration certificate of UPRtek lab № A012001 / 2013/7/5

Technical specifications of documentation: LED emergency luminaire ASWTLED/3M, 3W, IP65, 6500K, 230V, 50Hz



Luminare



Label

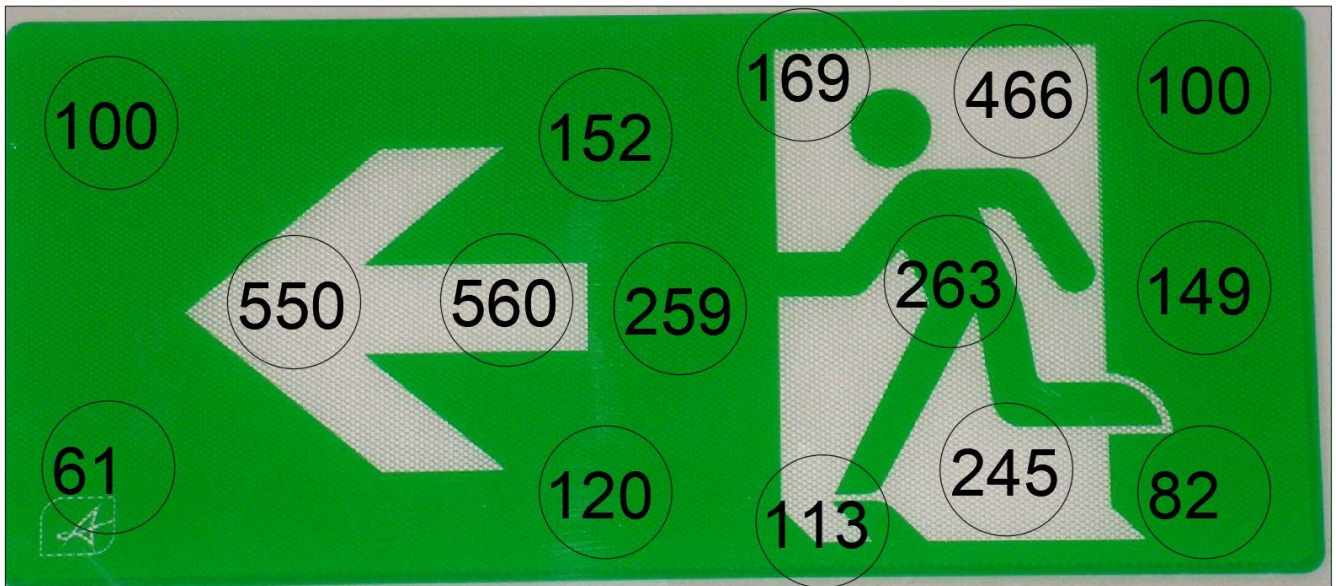
Requirements of EN 1838: 2013 are:

5.4.1 The luminance of any area of safety colour of the sign shall be at least 2 cd/m^2 .

5.4.2 The ratio of the maximum to the minimum luminance within either white or the safety colour shall be not greater than 10:1. High variation of adjacent points should be avoided.

5.4.3 The ratio of the luminance $L_{\text{contrast colour}}$ to the luminance $L_{\text{safety colour}}$ shall be not less than 5:1 and not greater than 15:1.

Realized luminance in cd / m^2 at separate points pictogram in emergency mode



Realized performance:

1. Realized minimum luminance = $61 \text{ cd/m}^2 > 2 \text{ cd/m}^2$.

2. The ratio of the maximum to the minimum luminance is:

for white = $560/169 < 10:1$;

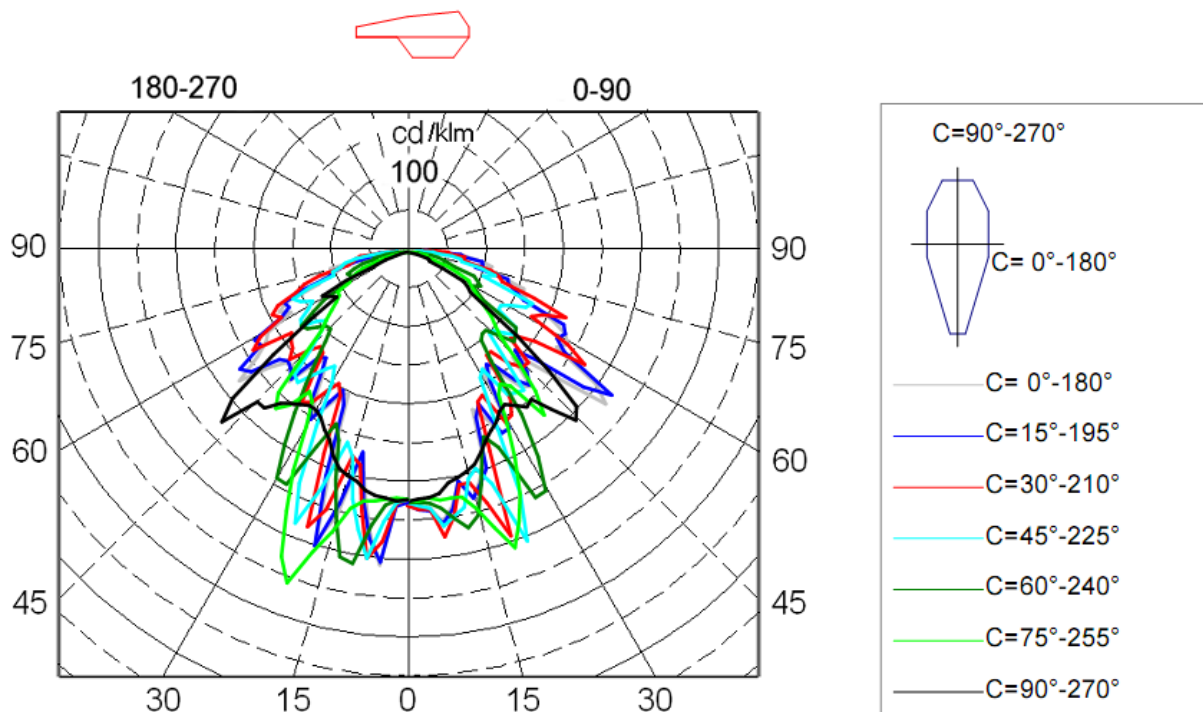
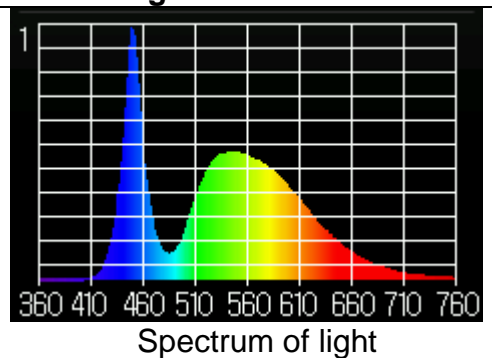
for green = $259/61 < 10:1$

3. $L_{\text{average white}} = 398 \text{ cd/m}^2$ $L_{\text{average green}} = 140 \text{ cd/m}^2$

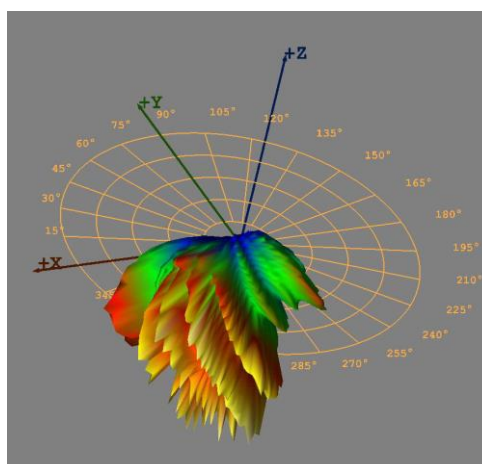
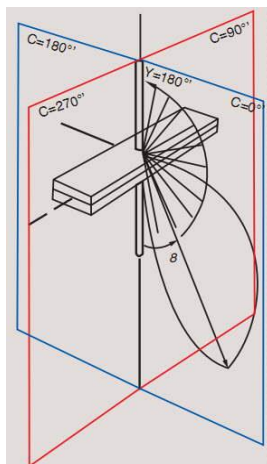
$L_{\text{average white}} / L_{\text{average green}} = 3.93 > 5:1$ and $< 15:1$

Results of the test for feeding the modules with a constant voltage

Operating voltage	AC 230 V
Operating Current	AC 0.046 A
Wattage including ballast (watts)	3.45 W
Power factor	0.33
color temperature	6569K
Color rendering index CRI	71
color coordinates CIE 1931	x=0.3104, y=0.3362
color coordinates CIE 1976	u'=0.1936, v'=0.4718
Luminous flux emitted by a luminaire, when powered by the network	190 lm (54 lm /W)
Luminous flux emitted by a luminaire, in emergency mode	108 lm



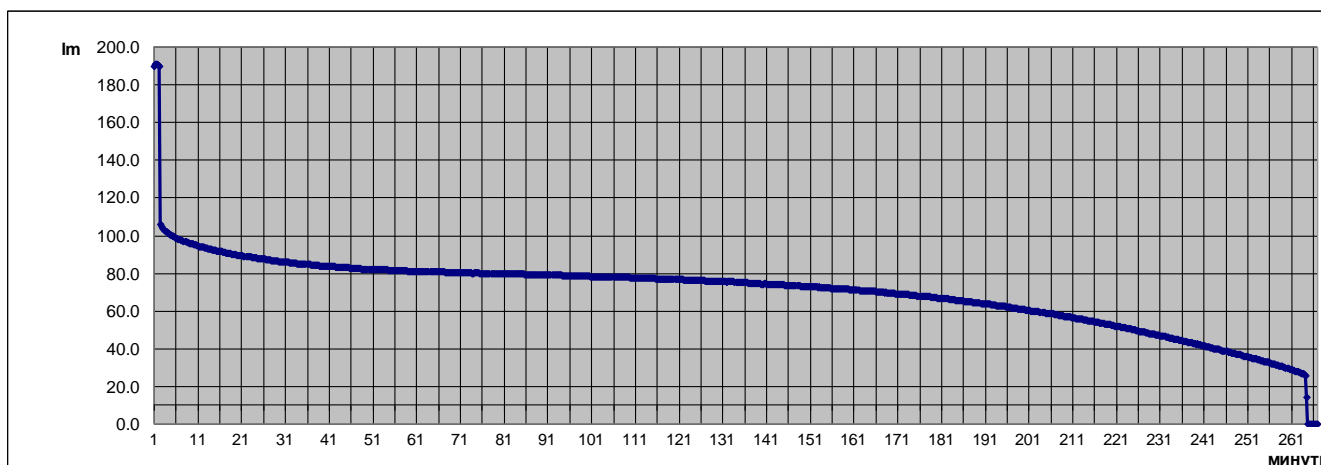
Luminaire light distribution of polar coordinates in the conditional flux 1000lm with transparent cover and without pictogram



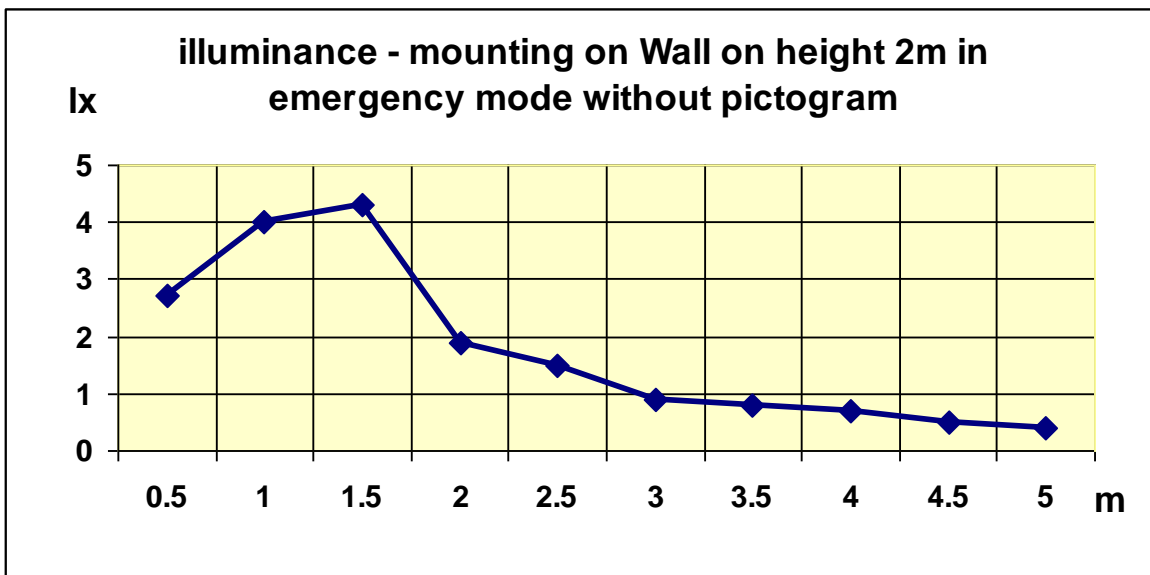
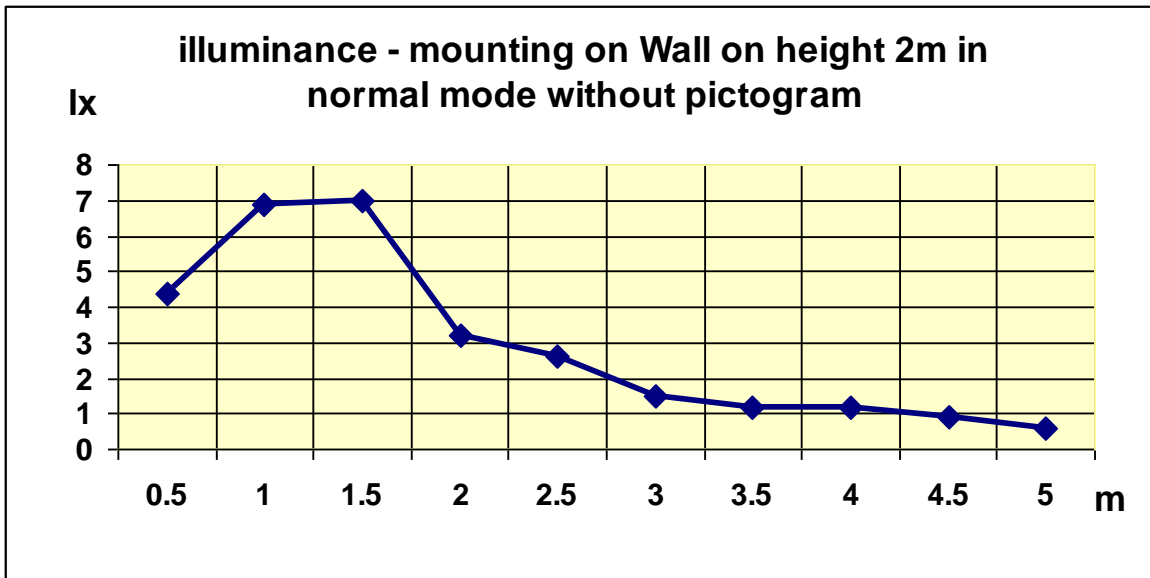
Luminaire light distribution of the 3D with transparent cover and without pictogram

**Light distribution of luminaries are in tabular form
for conditional luminous flux 1000lm:**

gm/C	0	15	30	45	60	75	90	105	120	135	150	165	180
0.0	326	329	330	327	327	325	325	325	325	324	324	324	324
2.5	337	337	335	331	327	325	322	325	325	324	324	326	330
5.0	334	339	336	335	329	322	321	321	321	331	353	382	409
7.5	355	357	375	361	337	326	318	318	334	408	405	387	371
10.0	336	340	350	350	353	326	305	319	378	400	353	332	319
12.5	307	306	311	341	368	327	301	321	418	339	289	267	268
15.0	333	332	311	306	356	346	296	331	381	282	264	331	356
17.5	312	316	343	295	318	377	290	362	328	248	343	403	396
20.0	292	300	393	321	284	410	278	389	274	304	389	320	289
22.5	222	233	281	408	260	379	266	432	241	379	298	217	200
25.0	238	219	216	349	281	348	256	436	244	349	214	196	205
27.5	265	266	210	242	360	303	250	380	298	273	185	215	228
30.0	265	266	255	189	359	260	240	306	330	203	201	245	250
32.5	184	201	252	181	316	221	236	257	293	171	231	237	221
35.0	181	179	233	226	259	210	244	222	261	177	237	197	188
37.5	198	186	170	231	178	220	255	235	225	192	200	166	176
40.0	228	218	169	235	149	277	251	246	194	213	167	174	194
42.5	237	235	197	183	145	246	278	244	158	215	158	222	228
45.0	194	220	212	151	144	205	310	183	134	173	173	215	210
47.5	209	190	213	152	161	167	298	146	134	143	199	213	213
50.0	257	218	175	164	181	150	240	130	136	130	195	209	235
52.5	325	289	181	177	177	138	181	118	151	138	184	250	276
55.0	300	325	204	172	172	121	125	98	157	160	180	262	239
57.5	230	242	273	140	117	109	97	94	137	152	230	222	219
60.0	241	225	241	140	104	100	90	92	108	133	217	221	209
62.5	232	232	182	150	96	92	82	78	75	121	174	182	171
65.0	208	225	194	170	105	88	51	75	71	143	177	170	184
67.5	169	164	223	176	99	71	31	59	74	155	170	173	170
70.0	161	151	175	132	92	55	31	43	77	117	147	132	123
72.5	159	137	129	104	65	36	28	34	65	81	132	104	115
75.0	127	135	124	118	55	26	14	17	46	86	92	104	92
77.5	97	91	112	97	47	26	0	0	29	85	79	82	103
80.0	112	99	83	72	41	25	0	0	33	72	72	80	66
82.5	98	98	73	70	31	12	0	0	25	47	56	45	45
85.0	79	75	75	58	19	0	0	0	14	33	50	36	39
87.5	70	70	56	39	14	0	0	0	10	25	28	28	28
90.0	36	39	53	33	7	0	0	0	7	17	22	17	17
92.5	31	31	36	19	0	0	0	0	0	11	17	11	8
95.0	20	22	22	11	0	0	0	0	0	11	11	11	8



**Changing the luminous flux in emergency mode for luminaire, lm
light time > 240 minutes**



Sofia 11.10.2019

Manager of Laboratory "Lighting":

/assoc. prof. d-r. Krasimir Velinov/

Manager:

/ prof. d-r. L. Totev/