UNIVERSITY OF MINING AND GEOLOGY "Engineering" LTD
Laboratory "Lighting" www.light-bg.eu

MEASUREMENT REPORT NUMBER 2014-190/16.06.2014

testing samples of products

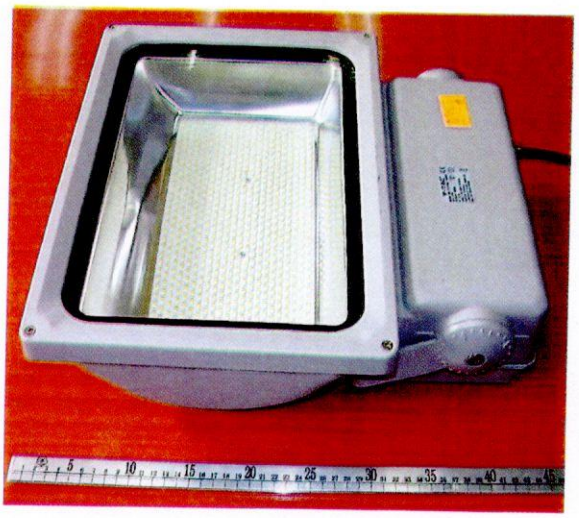
Model number or type, referring to the manufacturer: LED spotlight VT47300
Company identification: V-TAC Europe Ltd., Sofia 1220, 1, Iliansko Shaussee Blvd.
Applicant testing: V-TAC Europe Ltd., Sofia 1220, 1, Iliansko Shaussee Blvd.
Type of test: control measurements

Measurements have been performed:

- 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 2м;
- 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 spotlight VT47300
Optics – aluminium reflector

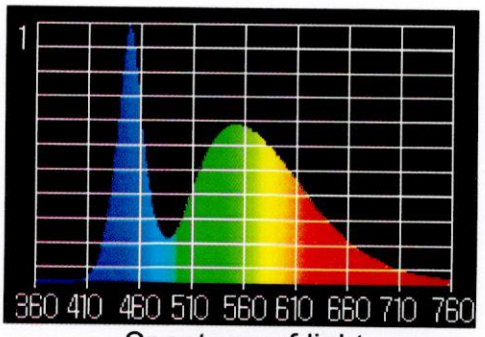
tabele



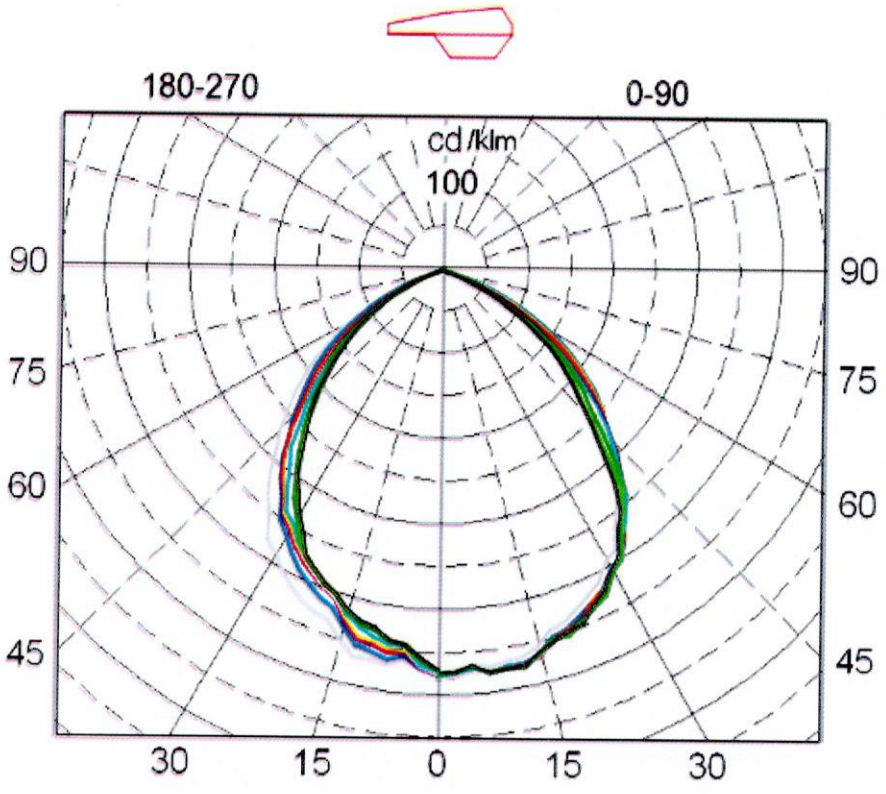
Luminaire

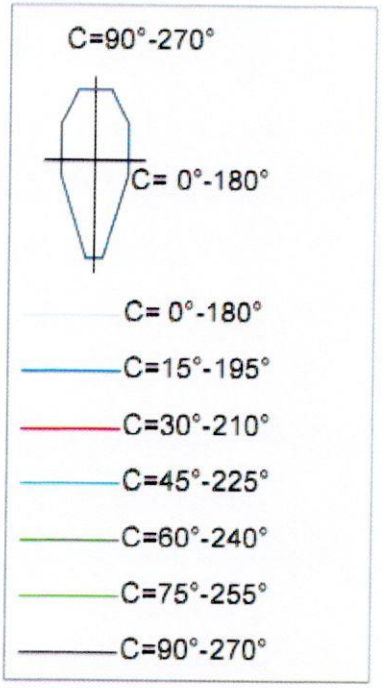
Results of test

Operating voltage	**AC 230V**
Operating Current	**AC 1.174 A**
Wattage including ballast (watts)	**263.6W**
Power factor	**0.98**
color temperature	**6352K**
Color rendering index CRI	**73**
color coordinates CIE 1931	**x=0.3148, y=0.3351**
color coordinates CIE 1976	**u'=0.1970, v'= 0.4719**
Luminous flux emitted by a luminaire	**23527 lm**
Light output of the luminaire	**89.2 lm/W**

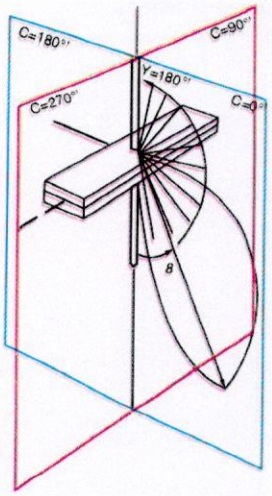


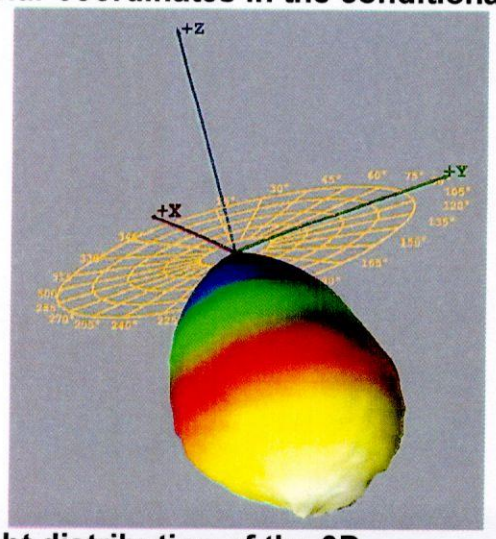
Spectrum of light





Luminaire light distribution of polar coordinates in the conditional flux 1000lm

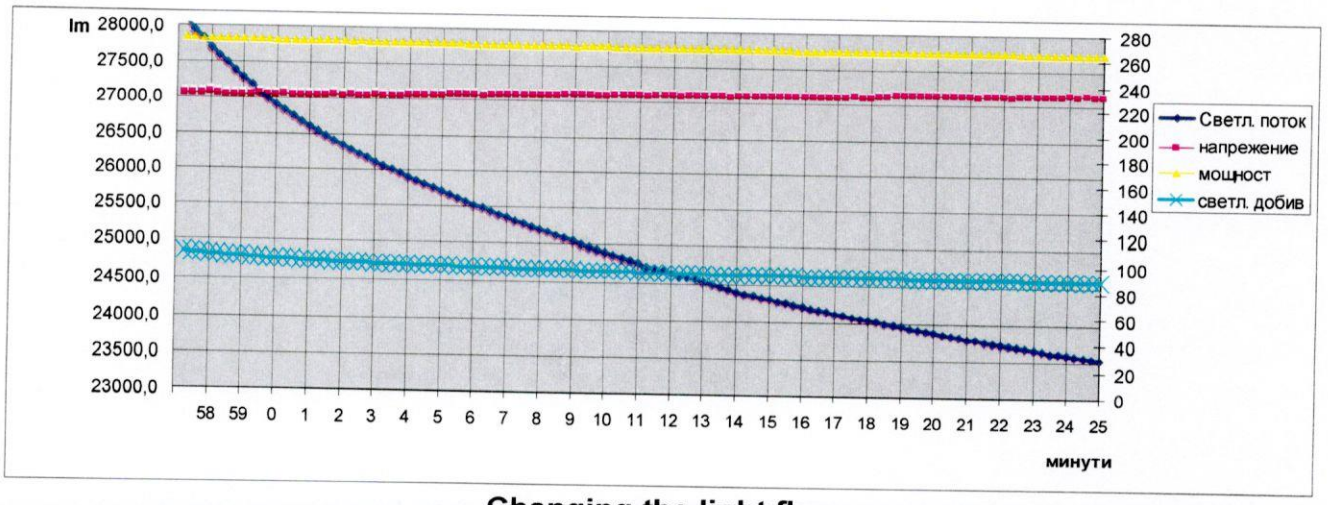




Luminaire light distribution of the 3D

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

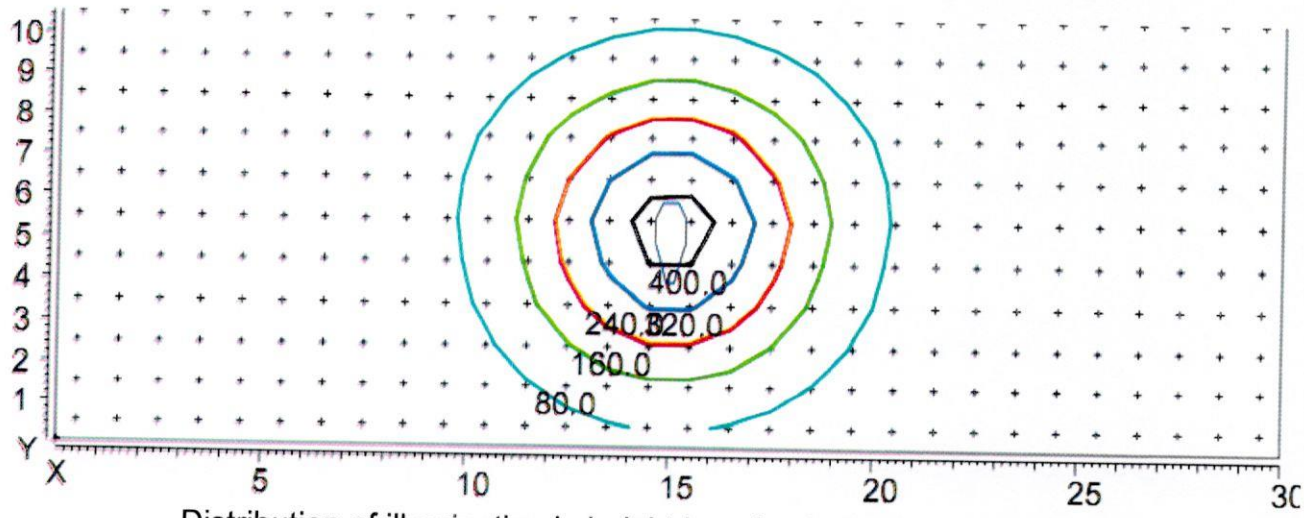
gm/C	0	15	30	45	60	75	90	105	120	135	150	165	180
0.0	477	482	481	480	479	478	478	477	477	477	477	477	477
2.5	473	479	479	478	477	477	476	475	474	473	474	474	473
5.0	467	473	471	471	471	470	469	469	469	470	466	465	461
7.5	471	479	480	480	480	481	480	479	477	475	475	470	469
10.0	467	475	477	478	478	477	478	477	475	477	472	469	466
12.5	466	475	477	480	480	481	480	480	479	474	476	472	467
15.0	458	468	470	469	467	467	467	466	465	466	462	456	451
17.5	443	452	456	458	456	457	459	455	451	448	441	439	434
20.0	440	449	451	454	459	456	453	453	455	442	439	435	430
22.5	430	440	445	446	447	449	451	448	442	436	433	429	423
25.0	421	431	431	438	439	437	436	435	432	430	420	419	413
27.5	413	424	423	425	432	431	427	427	419	414	410	409	401
30.0	396	407	409	411	414	411	410	408	405	403	397	393	387
32.5	390	401	405	404	401	401	399	396	393	393	393	384	378
35.0	365	374	384	381	375	374	372	370	366	371	365	358	352
37.5	347	359	363	364	357	357	355	353	349	353	349	342	334
40.0	327	341	346	346	338	335	322	328	328	333	330	319	312
42.5	302	311	318	317	310	290	285	283	301	303	300	291	286
45.0	283	291	297	295	275	256	253	249	266	281	282	273	268
47.5	259	268	270	267	242	227	224	221	233	253	254	249	245
50.0	242	251	251	241	222	207	203	200	213	224	232	232	226
52.5	222	230	225	209	196	182	179	176	187	195	207	209	203
55.0	199	205	202	179	171	157	158	153	163	167	184	185	182
57.5	177	182	177	152	147	134	132	131	137	141	158	162	158
60.0	155	160	150	129	118	111	108	106	111	117	132	139	136
62.5	131	135	122	105	96	88	82	85	88	94	105	114	112
65.0	107	109	95	80	72	64	59	59	65	70	81	90	89
67.5	82	82	69	57	48	39	33	36	43	49	57	65	66
70.0	63	61	51	41	31	20	16	19	26	33	40	46	47
72.5	44	43	34	25	13	8	7	7	10	19	25	29	30
75.0	23	23	18	11	6	5	5	5	5	7	12	14	14
77.5	10	10	8	5	4	4	4	4	4	4	5	6	6
80.0	5	5	4	3	3	3	2	2	2	3	3	4	4
82.5	3	3	2	2	2	1	1	1	1	2	2	2	2
85.0	2	2	1	1	1	1	1	1	1	1	1	2	2
87.5	1	1	1	1	1	1	1	1	1	1	1	1	1
90.0	1	1	1	1	1	1	1	1	1	1	1	1	1
92.5	1	1	1	1	1	1	1	1	1	1	1	1	1
95.0	1	1	1	1	1	1	1	1	1	1	1	1	1



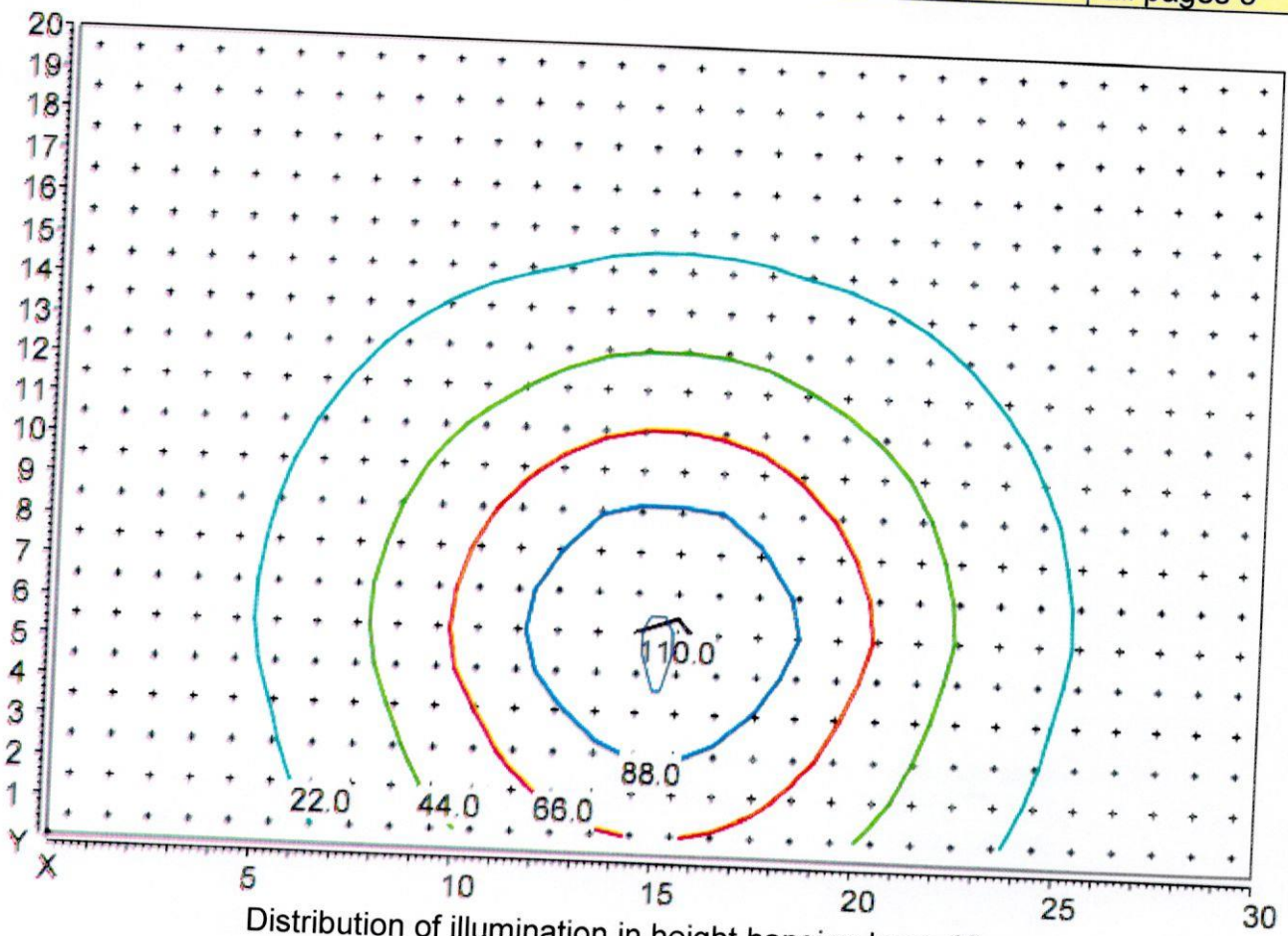
Changing the light flux

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

gm/C	180	195	210	225	240	255	270	285	300	315	330	345	360
0.0	477	477	476	476	475	474	473	472	471	471	472	472	477
2.5	473	471	469	468	464	461	459	459	461	464	466	467	473
5.0	461	457	453	446	445	445	445	446	446	447	451	460	467
7.5	469	464	454	446	444	441	441	440	444	447	452	461	471
10.0	466	457	447	440	432	431	429	430	432	438	445	453	467
12.5	467	454	445	433	430	427	426	426	427	430	439	447	466
15.0	451	437	428	422	419	417	416	417	418	421	429	440	458
17.5	434	418	405	403	403	403	403	404	406	408	412	424	443
20.0	430	412	398	395	396	395	395	397	400	403	405	418	440
22.5	423	402	388	385	386	385	384	385	387	390	393	406	430
25.0	413	392	379	375	374	375	374	375	378	379	383	396	421
27.5	401	379	367	362	360	356	350	358	366	367	374	385	413
30.0	387	362	353	347	339	332	332	333	344	351	358	366	396
32.5	378	351	344	338	322	315	312	318	326	344	352	360	390
35.0	352	326	323	315	298	293	294	294	304	323	332	337	365
37.5	334	309	306	293	277	268	269	271	281	298	315	320	347
40.0	312	289	287	276	254	254	247	256	261	283	298	302	327
42.5	286	265	264	246	234	225	227	228	239	253	273	278	302
45.0	268	247	240	226	213	204	206	206	216	237	254	260	283
47.5	245	225	216	201	189	181	182	186	197	208	225	238	259
50.0	226	206	196	178	173	163	163	169	181	190	208	221	242
52.5	203	186	173	160	155	145	143	150	159	170	183	200	222
55.0	182	166	150	140	134	123	125	130	139	148	165	180	199
57.5	158	145	130	118	113	103	106	108	118	126	140	159	177
60.0	136	125	108	99	90	87	83	88	98	105	120	139	155
62.5	112	100	86	77	72	65	67	69	76	86	101	118	131
65.0	89	80	68	59	53	47	47	51	59	68	80	94	107
67.5	66	58	48	41	35	29	28	32	39	48	58	72	82
70.0	47	42	34	28	21	15	14	18	26	34	43	54	63
72.5	30	27	21	16	9	9	9	10	13	23	29	38	44
75.0	14	13	10	7	7	7	7	8	8	11	15	21	23
77.5	6	5	5	5	5	5	5	6	6	6	8	10	10
80.0	4	3	3	3	3	3	3	4	4	4	3	4	5
82.5	2	2	2	2	2	2	2	2	2	2	2	3	3
85.0	2	2	2	1	1	1	1	1	2	2	2	2	2
87.5	1	1	1	1	1	1	1	1	1	1	1	1	1
90.0	1	1	1	1	1	1	1	1	1	1	1	1	1
92.5	1	1	1	1	1	1	1	1	1	1	1	1	1
95.0	1	1	1	1	1	1	1	1	1	1	1	1	1



Distribution of illumination in height hanging lamp 5 м
Coordinates of the luminaire X=15m, Y=5m.



Distribution of illumination in height hanging lamp 10 м
Coordinates of the luminaire X=15m, Y=5m.

Applications:
Files with the EULUMDAT format. Light distribution is captured in γ-C planes with step 2.5° in plane γ (от 0 ° - 95 °) и 5° in plane C (от 0 ° - 360 °) accordance with EN 13032-1 p 4.2.3.
Files with the measured values
- 2014-190.ldt
(photometric data in a standard format for axel of symmetry),
Test results relate only to test samples.

Sofia 16.06.2014

The measurements made:

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

Manager:

/ prof. d-r. L. Totev/