Lighttech Lamp Technology LTD.
H-2120 Dunakeszi Hegyrejáró u. 1.
Hungary
Tel.:(+36) 27 541-800
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http://www.lighttech.hu

Tanning Unit Measurement Report

1. Measurement information

This measurement was performed for UV appliances in accordance with the following standards:
IEC 60335-2-27:2009 ed.5.0 Safety of household and similar electrical appliances - part 2: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation
IEC 61228:2008 Method of measuring and specifying the UV-radiation of ultraviolet lamps used for sun-tanning
DIN 5050: Solariums and domestic sun lamps; measuring, marking, classification

2. Instrument

Type and manufacturer: Macam SR9910-v7 double monochromator SN.:6032 with:
Thermoelectically cooled multi-alkali PMT detector;
1m long Quartz Flexible Light guide;
Sideviewing Cosine teflon diffuser
Spectral range: 250nm - 400nm
Spectral resolution: 1nm
Last Calibration: 17. August, 2009

3. Treaceability

Traceability to: PTB (Physikalish-Technische Bundesanstalt)
Calibration lamp: Pre-aged 250W Halogen lamp
Type: BN-LH250-BC, SN.: 010 (Cal.: 24.August, 2004)
Manufacturer: GigaHertz (Germany)

4. Accurancy

Calibration lamp's rel. uncertainty: ±4,5%
Measurement Repeatibility: ±2%
Cosine error: ±3%
Linearity error: <1%
Wavelength Repeatibility: ±0,25nm
Wavelength Accurancy: ±0,5nm
Detector temp. Stabilised to: ±2°C

5. Client

Name:
Address:
Measurement date:

4. Details:

Measured unit:

Lamps:
Measurement position:

Aged: 5 hrs

5. Measurement conditions:

Room temperature:
Burn in time: 15min
Measurement time: 2 min
Number of areas: 1 (maximum)

6. Measurement results

Table 1: Erythema irradiation according to IEC

	Eer			Ter
	Total	≤320nm	>320 nm	
	mW/m²	mW/m²	mW/m²	min
Maximum	237,4	101,9	135,6	42,1
fse	79,1%	34,0%	45,2%	-

According to EN 60335-2-27 this UV appliance has to be characterized as:

According to EN 60335-2-27: UV-Typ 3

The mean, maximum and minimum UV irradiances for UV (250 nm-400 nm), UVA (316 nm-400 nm), UVA2 (320 nm-340 nm), UVA1 (341 nm-400 nm), UVB (281 nm-320 nm) and UVC (250 nm-280 nm) are given in Table 2.

Table 2: UV partial irradiance at exposure distance

	UV	UVA	UVA2	UVA1	UVB	UVC
	W/m²	W/m²	W/m²	W/m²	W/m²	mW/m²
Maximum	346,8	345,8	6,7	338,8	0,91	0,00

Chart 1 shows the relative irradiance in the range between 250 nm to 400 nm.
Chart 2 shows the UV irradiation absolute readings.

The results were saved under the file name: 9L09n009,DTA

Location: Budapest **Measured by:**

LIGHTTECH Ltd.
Lamp -Technology
Dunakeszi, Hegyrejáró u. 1.
2120 HUNGARY

Date: 2009.12.09 **Permitted by:**

Head of laboratory

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Chart 1: Relative spectral irradiation

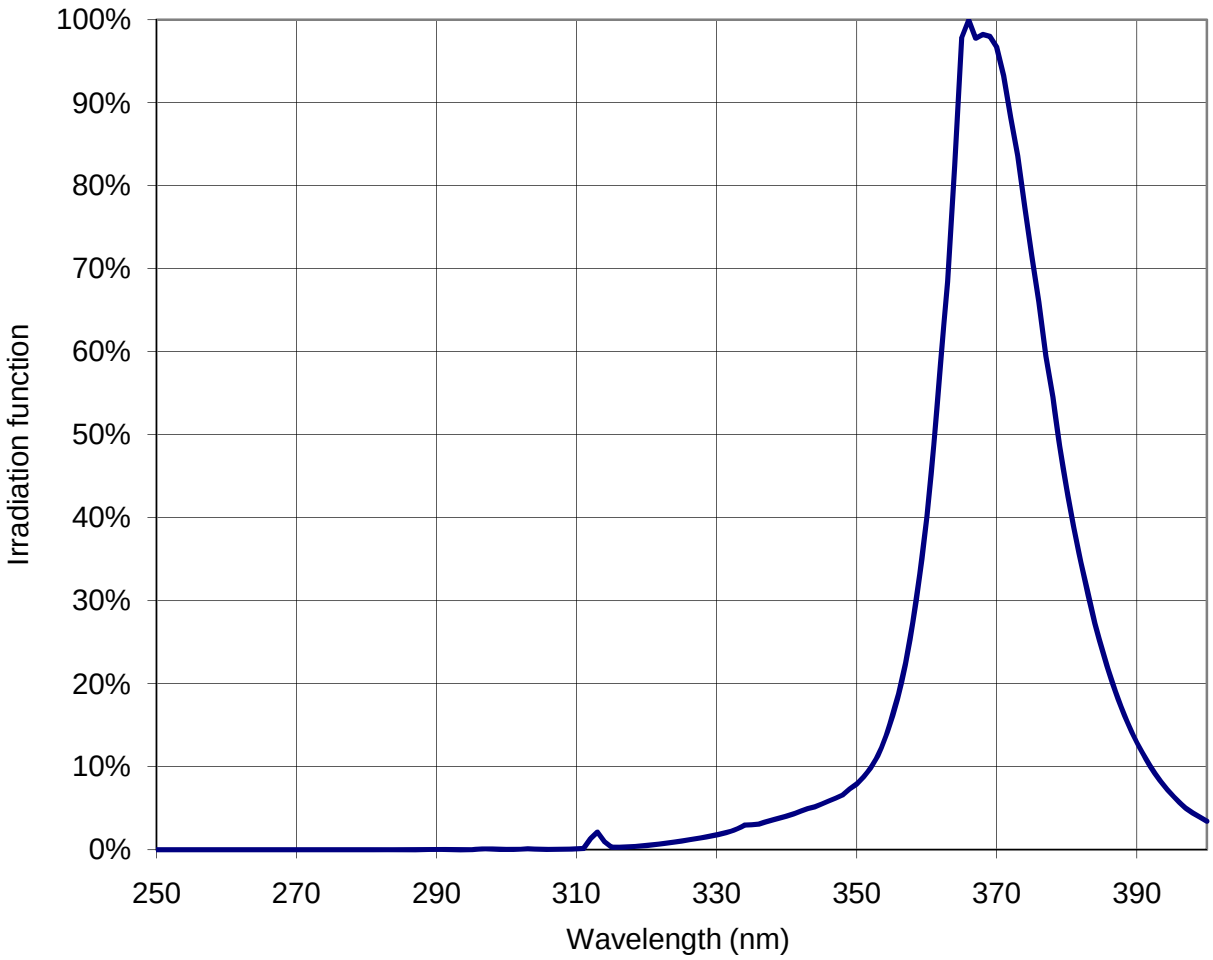

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Chart 2: Absolute spectral irradiation

λ (nm)	E (W/m^2)	λ (nm)	E (W/m^2)	λ (nm)	E	λ (nm)	E (W/m^2)
250	0,00E+00	**288**	1,85E-04	**326**	1,87E-01	**364**	1,33E+01
251	0,00E+00	**289**	1,37E-03	**327**	2,12E-01	**365**	1,58E+01
252	0,00E+00	**290**	1,96E-03	**328**	2,34E-01	**366**	1,61E+01
253	0,00E+00	**291**	9,39E-04	**329**	2,60E-01	**367**	1,58E+01
254	0,00E+00	**292**	4,55E-04	**330**	2,89E-01	**368**	1,59E+01
255	0,00E+00	**293**	4,52E-04	**331**	3,16E-01	**369**	1,58E+01
256	0,00E+00	**294**	3,30E-04	**332**	3,49E-01	**370**	1,56E+01
257	0,00E+00	**295**	4,02E-04	**333**	4,10E-01	**371**	1,50E+01
258	0,00E+00	**296**	7,62E-03	**334**	4,74E-01	**372**	1,42E+01
259	0,00E+00	**297**	1,76E-02	**335**	4,83E-01	**373**	1,35E+01
260	0,00E+00	**298**	1,25E-02	**336**	4,96E-01	**374**	1,25E+01
261	0,00E+00	**299**	3,99E-03	**337**	5,38E-01	**375**	1,15E+01
262	0,00E+00	**300**	1,35E-03	**338**	5,77E-01	**376**	1,06E+01
263	0,00E+00	**301**	3,44E-03	**339**	6,12E-01	**377**	9,60E+00
264	0,00E+00	**302**	1,17E-02	**340**	6,51E-01	**378**	8,80E+00
265	0,00E+00	**303**	1,42E-02	**341**	6,95E-01	**379**	7,85E+00
266	0,00E+00	**304**	7,96E-03	**342**	7,44E-01	**380**	7,02E+00
267	0,00E+00	**305**	4,75E-03	**343**	7,97E-01	**381**	6,27E+00
268	0,00E+00	**306**	5,06E-03	**344**	8,30E-01	**382**	5,59E+00
269	0,00E+00	**307**	6,35E-03	**345**	8,88E-01	**383**	5,00E+00
270	0,00E+00	**308**	8,01E-03	**346**	9,43E-01	**384**	4,40E+00
271	0,00E+00	**309**	1,01E-02	**347**	1,00E+00	**385**	3,91E+00
272	0,00E+00	**310**	1,26E-02	**348**	1,06E+00	**386**	3,45E+00
273	0,00E+00	**311**	2,31E-02	**349**	1,18E+00	**387**	3,06E+00
274	0,00E+00	**312**	2,13E-01	**350**	1,27E+00	**388**	2,69E+00
275	0,00E+00	**313**	3,39E-01	**351**	1,42E+00	**389**	2,38E+00
276	0,00E+00	**314**	1,50E-01	**352**	1,59E+00	**390**	2,08E+00
277	0,00E+00	**315**	4,73E-02	**353**	1,83E+00	**391**	1,84E+00
278	0,00E+00	**316**	4,30E-02	**354**	2,14E+00	**392**	1,60E+00
279	0,00E+00	**317**	5,10E-02	**355**	2,54E+00	**393**	1,41E+00
280	0,00E+00	**318**	5,94E-02	**356**	3,03E+00	**394**	1,23E+00
281	1,62E-05	**319**	6,88E-02	**357**	3,63E+00	**395**	1,07E+00
282	0,00E+00	**320**	8,02E-02	**358**	4,41E+00	**396**	9,38E-01
283	0,00E+00	**321**	9,45E-02	**359**	5,36E+00	**397**	8,09E-01
284	0,00E+00	**322**	1,09E-01	**360**	6,45E+00	**398**	7,14E-01
285	0,00E+00	**323**	1,28E-01	**361**	7,86E+00	**399**	6,31E-01
286	1,58E-05	**324**	1,44E-01	**362**	9,47E+00	**400**	5,52E-01
287	0,00E+00	**325**	1,64E-01	**363**	1,10E+01		

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Table 3: Irradiation program according to IEC

1. Irradiation	7	Min
2. Irradiation	18	Min
3. Irradiation	20	Min
4. Irradiation	22	Min
5. Irradiation	25	Min
6. Irradiation	27	Min
7. Irradiation	30	Min
8. Irradiation	32	Min
9. Irradiation	35	Min
10. Irradiation	37	Min
11. Irradiation	40	Min
from 12. Irrad.	42	Min

Wait 48 hrs between first and second exposure, since
delayed unexpected side effects can
occur until 48 hrs after the first exposure.

Waiting period between subsequent exposures should be
approximately 48 hrs due to
cumulative behaviour of the erythemal reaction.

Maximum number of irradiations per year	**30** (=25kJ/m²) weighted according to the nonmelanoma skin cancer action spectrum