Light Measurement Report

Print date: 12/05/2021
Measurement date and time: 16/10/2020 08.08.46 – Measurement no. VFR-201016-5530-MS
Measurement tracking No. and Link: n/a
Operator:

Laboratory and Equipment

Laboratory Owner and Location	Viso Systems, Copenhagen V, Denmark
Goniospectrometer System and Type	LabSpion – Type C, horizontal
Sensor Name, Calibr. Date and Serial No.	LabSensor – 09/09/2020 – 0345831146
Spectrometer Manufacturer and Model	Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

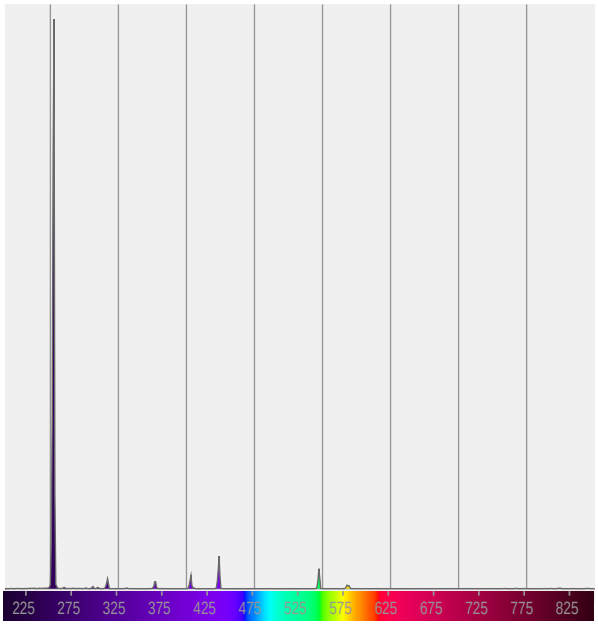
Number of C-planes and Resolution	72 planes – 5°
γ (gamma)-Resolution	5°
Test Distance	1,94 m
Input Power, Power and Displ. Factors	29,9 W – PF 0,99 – DPF 1,0
Input RMS Voltage and Current	115 V – 0,262 A
Frequency of Input Power	60,3 Hz
Warm-up Time and Variation	15 min 1 sec – 2,0%

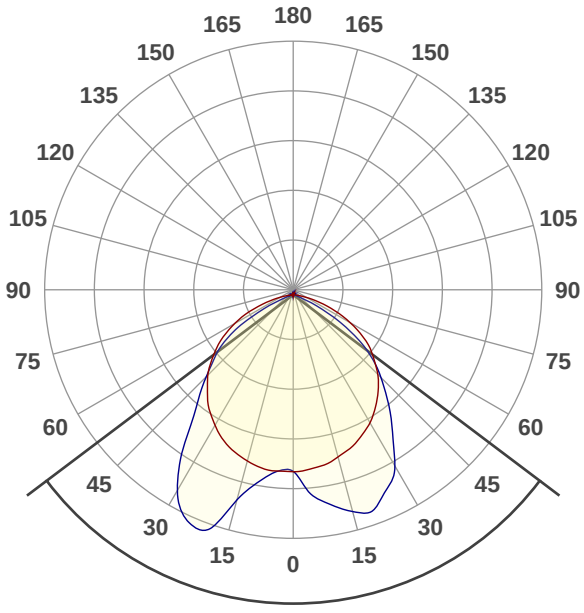
Tested Light Source

Product Name	Demo UV Lighting Fixture
Item No. and Manufacturer	UV 36 Planes –
Product Description (line 1)	36W 254nm Disinfecting Lighting Fixture

Main Light Measurement Results - UV

Output – Total UV flux, 200 nm - 850 nm	5070,57	mW
UVA 320 nm – 399 nm	68,51	mW
UVB 290 nm – 319 nm	106,71	mW
UVC 200nm - 289nm	4376,29	mW
VIS-IR: 400 nm – 850 nm	519,05	mW
Efficacy (Radiated power/lamp power)	16,934	%
Peak Emission Wavelength (λp)	254	nm
Dominant Wavelength (λd)	477	nm
Peak Irradiance (distance 1 m)	200,51	µW/cm2
UV Irradiance at 254 nm (distance 1 m)	171,84	µW/cm2





106°

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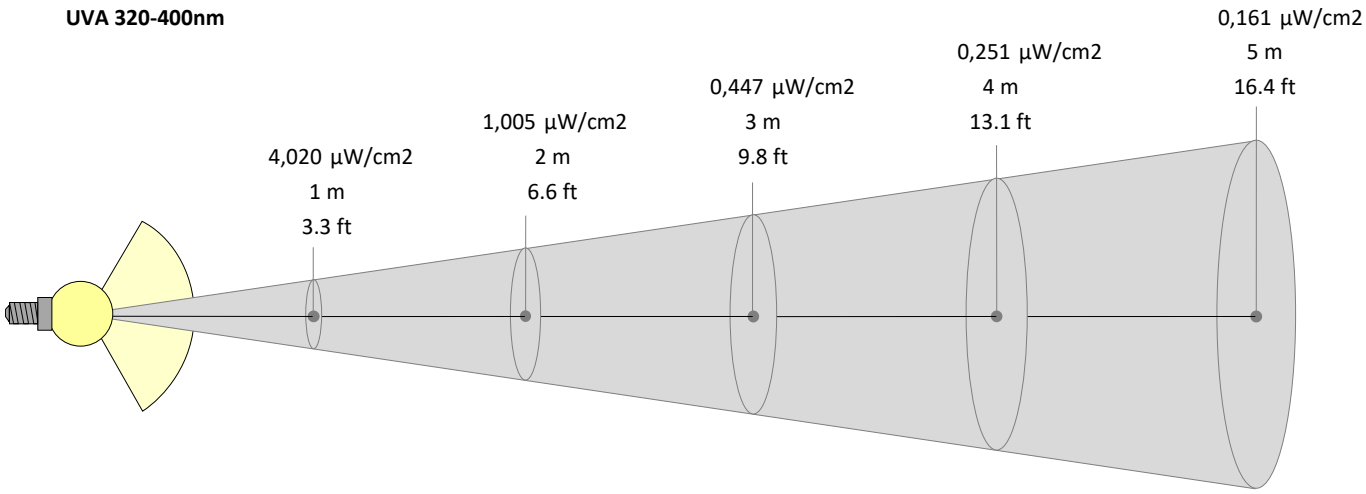
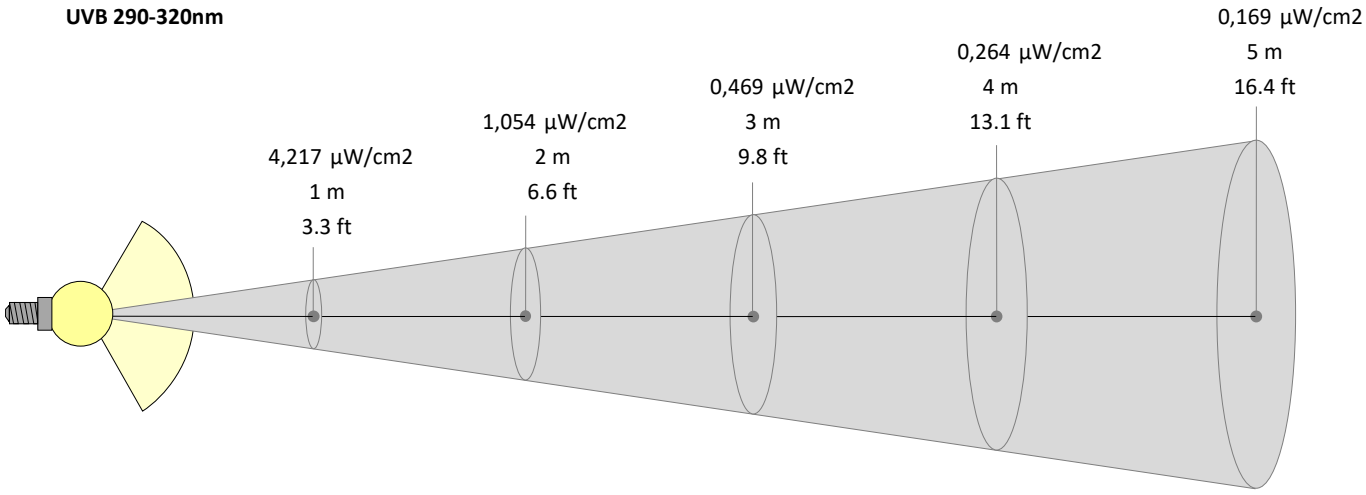
Beam – Irradiation Patterns

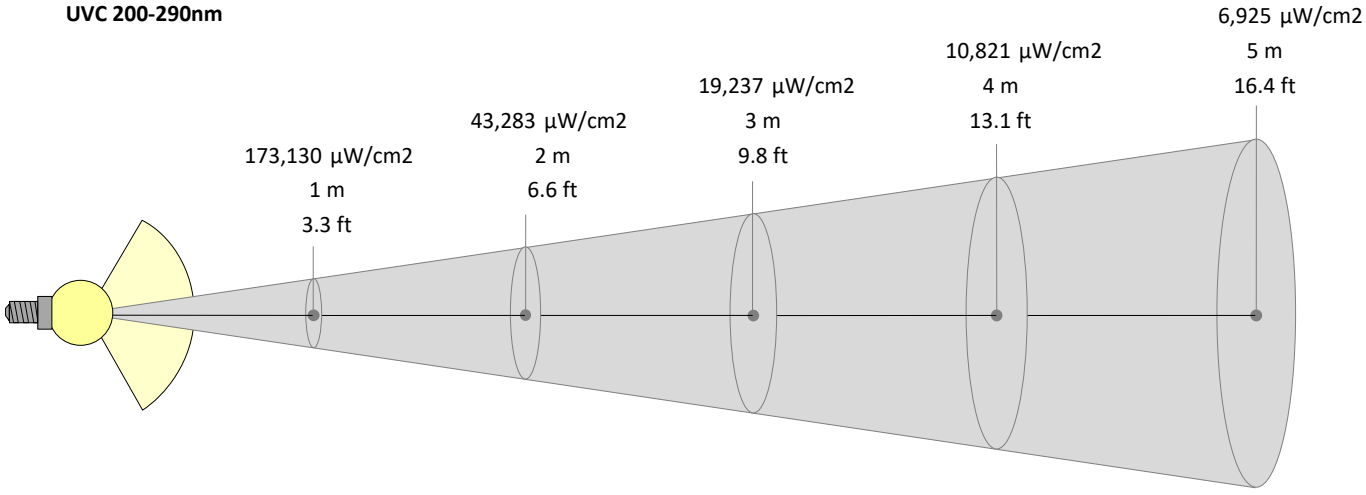
UVA 320-400nm



UVB 290-320nm



UVC 200-290nm



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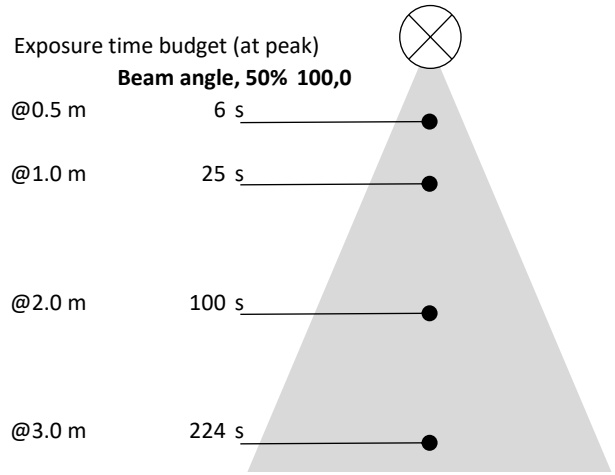
Exposure time, COVID 19

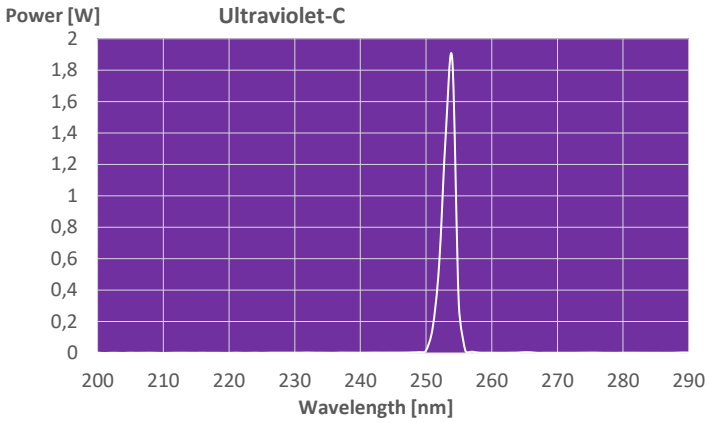
Peak Emission Wavelength (λp)	254,00	nm
Peak emission in specific wavelength range*	200,51	µW/cm2
Dose needed (254 nm, COVID-19), 99.9% deactivation**	5,00	mJ/cm2

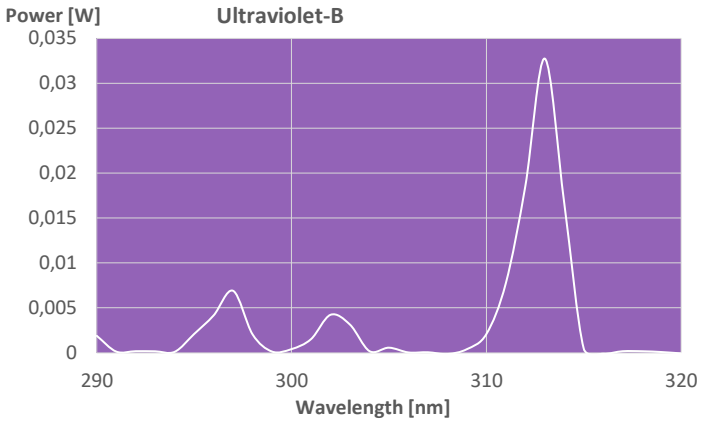
**Range picked in software - Edit > measurements*

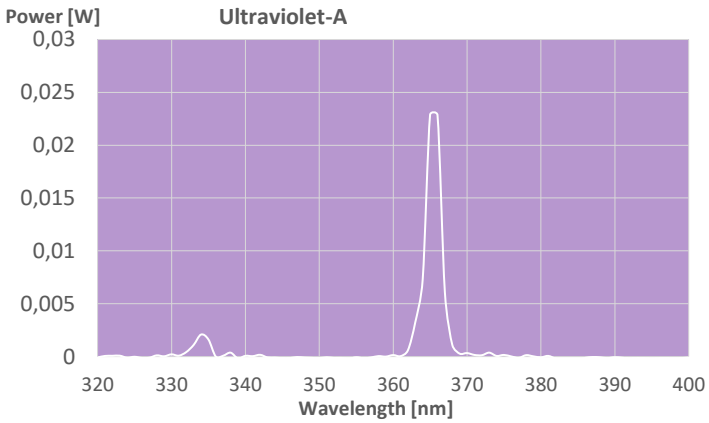
***Demo dose. Please change to scientifically valid number*

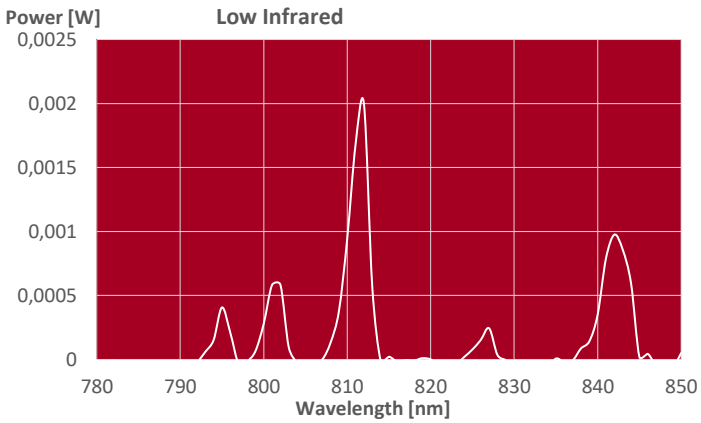


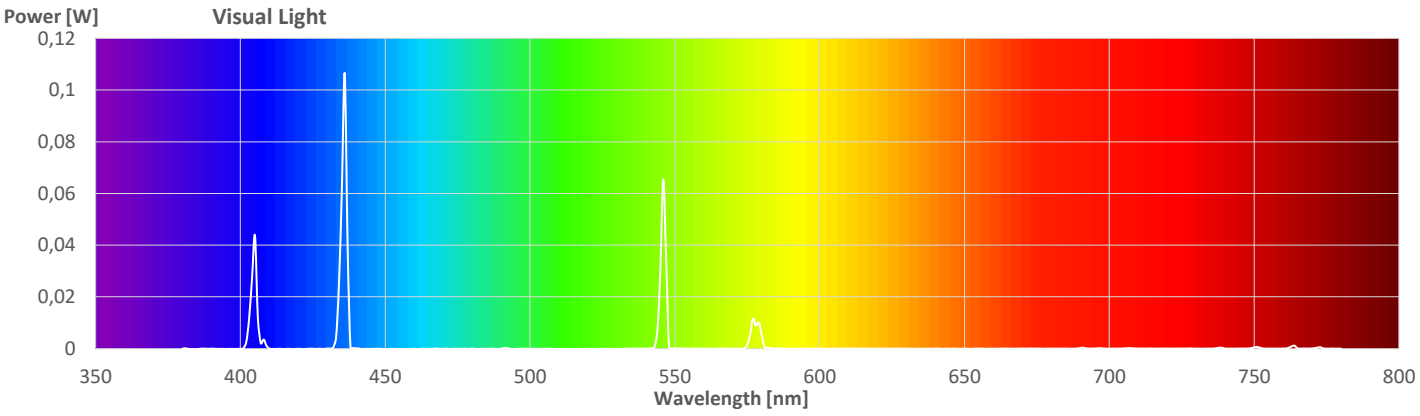
Specific spectra











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Budget exposure time map

Luminaire elevation above plane = 1 m
Floor dimensions = 1,2 m * 1,2 m
Units: MM:SS

99,9% inactivation of e-coli
Dose 5 mJ/cm^2

> 1h	> 1h	> 1h	47:28	32:53	30:45	34:56	28:44	37:23	52:39	> 1h	> 1h	> 1h
> 1h	> 1h	49:51	29:03	18:09	15:06	17:25	14:41	19:50	30:26	50:04	> 1h	> 1h
> 1h	> 1h	31:28	16:42	09:43	06:56	08:10	06:48	09:57	17:10	30:30	> 1h	> 1h
> 1h	52:56	20:51	09:44	05:08	03:09	03:40	03:01	05:01	09:48	19:53	46:54	> 1h
> 1h	40:20	14:33	06:02	02:43	01:27	01:37	01:19	02:37	06:03	13:31	35:31	> 1h
> 1h	33:15	11:17	04:14	01:41	00:45	00:48	00:41	01:34	04:14	10:40	30:11	> 1h
> 1h	32:54	10:26	03:40	01:22	00:34	00:35	00:31	01:18	03:43	09:31	27:44	> 1h
> 1h	34:35	11:27	04:15	01:40	00:45	00:47	00:41	01:36	04:15	10:41	31:06	> 1h
> 1h	41:20	14:25	05:59	02:44	01:26	01:35	01:22	02:37	06:00	13:44	37:54	> 1h
> 1h	51:48	20:54	09:48	05:04	03:10	03:38	03:08	05:02	09:55	20:04	47:01	> 1h
> 1h	> 1h	31:31	16:30	09:48	06:54	08:08	06:58	09:57	17:28	30:38	> 1h	> 1h
> 1h	> 1h	48:43	28:31	18:22	14:49	17:07	14:41	19:44	31:24	50:32	> 1h	> 1h
> 1h	> 1h	> 1h	48:12	33:18	29:54	33:50	27:56	36:43	54:25	> 1h	> 1h	> 1h