

# EFFICACY TEST

MICROBIOLOGICAL ANALYSIS FOR THE DETERMINATION OF THE ANTI-MICROBIAL EFFECTIVENESS OF UVC RAYS ON TISSUE.

**Product:**

***DIFFERENT CLOTHING  
(3 SHIRTS, 2 PANTS AND 2 MASKS)***

**Research promoter:**

**TECNO-ELECTRIC GIRONA, S.L.**

Güell, 37,  
17180 VILABLAREIX (GIRONA),

PRODUCT TESTED	:	DIFFERENT CLOTHING
LIMS SA REFERENCE CODE	:	20_012071, 20_012072, 20_012073, 20_012074, 20_012083, 20_012084, 20_012075, 20_12076, 20_012085, 20_012086, 20_012079, 20_012080, 20_012081, 20_012082
REPORT	:	20_012754 V0
STARTING DATE OF THE STUDY	:	June, 23rd 2020
COMPLETION DATE	:	June, 29th 2020

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## PROTOCOL

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### **Aim of the test:**

The objective of this test is to be able to determine the decrease in the microbial load, present in a tissue, after undergoing UVC treatment.

### **Methodology:**

*This study has different stages:*

1. Sampling:
  - A sample of the microbial load is taken, using a swab on a 10 \* 10 cm surface, in different clothing items that have been used in the normal way (shirt, mask, pants, ...).
  - Once the sample has been taken, the garments are subjected to a treatment with UVC light.
  - The microbial load is taken again, with a new swab, from each of the garments.
2. Recovery of microbial load
  - The swabs are sent to the laboratory where the microbial load collected in the different swabs is resuspended and plated in plates with TSA medium (for the detection of bacteria) and in SAB (for the detection of molds and yeasts)
  - The seeded plates are incubated:
    - 3 days at 30°C (TSA medium for bacteria)
    - 5 days at 25°C (SAB for molds and yeasts)
3. Obtaining results
  - After incubation, the number of colonies obtained on each of the plates is counted and the results are compared before and after the treatment of each of the garments.

## RESULTS

TYPE OF GARMENT	Count	Nº SAMPLE	Before UVC treatment	After UVC treatment
Shirt	Bacteria	20_012071	1360	20
	Molds and Yeasts	20_012072	<10	<10
Shirt	Bacteria	20_012073	560	<10
	Molds and Yeasts	20_012074	<10	<10
Shirt	Bacteria	20_012083	280	<10
	Molds and Yeasts	20_012084	<10	<10
Trouser	Bacteria	20_012075	490	<10
	Molds and Yeasts	20_012076	<10	<10
Trouser	Bacteria	20_012085	210	<10
	Molds and Yeasts	20_012086	<10	<10
Mask	Bacteria	20_012079	880	10
	Molds and Yeasts	20_012080	<10	<10
Mask	Bacteria	20_012081	350	<10
	Molds and Yeasts	20_012082	<10	<10

The table shows that all garments present a significant bacterial load before treatment.

On the contrary, no load of molds and yeasts is observed in the garments before treatment, therefore it is not possible to compare results and verify the efficacy of the treatment on these microorganisms.

## CONCLUSION

In all cases, a decrease of two logarithmic units is observed in the bacterial load of the garments once the UVC treatment has been carried out.

\* The results obtained always and exclusively refer to the sample sent by the client to the Laboratory LIMSA CORPO, S.L.

L'Hospitalet de Llobregat (Barcelona), July, 3rd 2020.

### SIGNATURES:



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Technical director



**Montse Díaz**  
Micro. Dep. Technician

Electronically signed by:  
**LIMSA CORPO, S.L.**

Report version	Modification date	Reason for modification
V0	---	---