INSTYTUT BIOTECHNOLOGII
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KL/I 1/1 Lodz, 22-08-2016

Certificate of Analysis No K/313/02/2016

Subject of analysis: Flow bactericidal lamp series NBVE 60 N/S/P equipped with OSRAM light tubes

Customer: **Ultra-Viol sp.j. Pietras, Purgał, Wójcik**
ul. Stępowizna 34
95-100 Zgierz

The sample for testing was delivered by the Customer: 12-07-2016
The tests began: 13-07-2016
The tests finished: 30-07-2016

Type of analysis	Method	Results
Microbiological parameters		
Research of the air disinfection effectiveness	Own Methodology Instruction MAS-100 Eco™	The reduction of microorganisms
- the total number of microorganisms after 2 hours		R_{2h} = 48%
- the total number of microorganisms after 6 hours		R_{6h} = 71%
- the total number of microorganisms after 20 hours		R_{20h} = 99%
- the number of molds and yeast after 2 hours		R_{2h} = 3,4%
- the number of molds and yeast after 6 hours		R_{6h} = 13%
- the number of molds and yeast after 20 hours		R_{20h} = 90%

Authorized:
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Accepted:
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Assessment of antibacterial efficacy of Flow bactericidal lamp series NBVE 60 N/S/P equipped with OSRAM light tubes

The aim and scope of the research

The aim of the study was to determine the effectiveness of air disinfection by flow bactericidal lamp series NBVE 60 N/S/P equipped with OSRAM light tubes (Research report K /313/02/2016) on the basis of examination the total number of microorganisms and the number of mold and yeast using aspiration method after 2, 6 and 20 hours lamp working in a room with an area of 24 m^2.

Test procedure

The research was conducted in accordance with its own methodology developed at the Laboratory and the manufacturer's instructions MAS-100 ECO^{TM} (Microbiological Air Sampler).

Bactericidal lamp was set next to the wall in the office room with an area of 24 m^2, in which, during the first 8 hours of experience, on average, every half an hour moved 1-2 people. Over the next 12 hours there were no people in the room. Measure the degree of air pollution was carried out in three points: on the opposite side of the lamp at a distance of 5 m, and in the corners of approx. 7 meters. The total count of microorganisms and the number of molds and yeasts was determined in the air before switching on the lamp. Then the lamp was turned on and the same research were done after 2, 6 and 20 hours of operation. The study was performed with sampling by aspiration method using a microbial air sampler MAS-100 ECO^{TM}. Each time the device was placed on a flat surface, at a height of approx. 45 cm from the floor, facing the outlet up and sucked the 200 (control) or 1000 liters of air (time suck approx. 8 minutes), by a perforated plate. The air stream containing the particles was directed to the agar surface PCA or YGC in a standard Petri dish. After completing the sampling, plates were incubated at an appropriate temperature (30°C for 72 h or 25°C for 5 days). Then grown colonies were counted and the number of microorganisms was determined in a 1 m^3 of air, having a statistical correction to the Feller conversion table. The percentage reduction in the number of microorganisms was calculated according to the formula 1.

(1) $R = 100 - (b \times 100/k)$

were:

R – reduction in the number of microorganisms

b – the number of microorganisms on the tests plates after operation of the lamp

k – the number of microorganisms on the control plates before operation of the lamp