



Printed copy No. 1/2
 Revision No. 2.0

TEST PROTOCOL No. 314A/2022

Customer's data

Customer: (Name and address)	GRIZZLY s.r.o. Kráľovská 34, 927 01 Šaľa	Date of receiving the sample:	25.01.2022
Operation/department:	Chirana T. Injecta, a.s., Nám. Dr. Schweitzera 194, 916 01 Stará Turá	Date of performance tests from:	25.01.2022
Contract/order:	<i>Email 25.1.2022</i>	to:	01.02.2022
Order:	<i>Microbial contamination of air</i>	Issue date of protocol:	01.03.2022
Sender/ transferred:	Dagmara Masárová, Erika Nedorostová	Number of samples:	1

Sample's data

Identification of test:	<i>Microbial control of air contamination according to STN EN 17141 (SOP 4439)</i>		
Place of take-off:	Production in Grizzly	Number of measurements:	14
Laboratory number of sample:	22-0249 (PO 016/2022)		
Type of sample:	Spectra Infinity		
Indication of sample:	Close UVC irradiation		
Take off performed by:	<i>Erika Nedorostová</i>	Date of take-off:	25.01.2022

Tests result

Test /Measurand/ parameter/ symbol/ Indication of take-off place	Unit of measurement	Test result	Uncertainty	Testing method SOP	Type of test
Microbiological control - air	CFU/1 m ³	See Annex 1	-	EN 17141 (SOP 4439)	A

Type of test: A – accredited, N – unaccredited, SA – sub delivery accredited, SN – sub delivery unaccredited

Annexes to protocol: No.1 Results from measuring.

Test protocol performed by: Ing. Dagmara Masárová, PhD.



Approved and responsible for correctness: Ing. Dagmara Masárová, PhD. – Head of ML

- END OF PROTOCOL -

Declaration: Testing laboratory declares that all the test results are concerned only for test objects. This declaration protocol can be only entirely reproduced and part of protocol can be reproduced only after laboratory agreement. Testing laboratory is not responsible for the data provided by the customer. Such data are clearly identified in italics in the protocol.

Claims: Test results can be claimed within 30 days from the date of sending the results to the customer. Only written form claims are going to be dealt with or accepted.

TEST INFORMATION

Name of the apparatus: SPECTRA INFINITY

Manufacturer: Spectra infinity is professional device that combine three technologies:

1. Open UVC emitter with UVC power 1 760W (360° radiation)
2. Close UVC emitter with UVC power 440W with power ventilator 1320m³/h
3. Ozone generator with power 80 000 mg/h wit power ventilator 1320m³/h

Height: 1,76m + base diameter 50cm

Weight: 76kg

Max. power: 2200W

Supply voltage: 230V/50Hz

Siren noise: 98dB

Suitable for room: to 200m²

Open UVC system: - UVC power: 1760W

- Type of tube: Philips PL-L 55 2G11 or OSRAM HNS 55 2G11
- Quantity of tubes 32
- Lamp life 20 000h

Close UVC system: - UVC power 440W

- Type of tube: Philips PL-L 55 2G11 or OSRAM HNS 55 2G11
- Quantity of tubes 8
- Lamp life 20 000h
- Ventilator 1320m³/h

Ozone disinfection: - Power 80 000mg/h

- Number ozone ceramic plates: 16
- Life: 8 000h
- Ventilator: 1320m³/h

TEST CONDITIONS

Date: 25.01.2022

Room Temperature: 21,9°C

Humidity: 39%

The test points: The points were defined according to norm EN 17 141:2022

Contact time of the apparatus: 20,40 and 60 minutes

Carrier type: without carriers – evaluated with Sampler air – gas flow meter

Measuring points:

- According to standard EN 17 141:2020 was defined one measuring points in the test room (three independents' measurements in the point)

Incubation medium: TSA - Tryptone soy agar – universal medium for identification of microorganisms

TSA: L 7293 Exp.: 23/05/2022 (certificate medium)

Identification of microorganisms in the measure point - Table no.1

Time and temperature of incubation: 3 days at 30-35°C, 4 days at 20-22°C

PREPARATION MEDIUM AND CONDITIONS

TSA plates were used (tryptone soy agar), batch L 7293 exp. 23.05.2022 (certificated medium). The using plates were tempered on test temperature (room temperature). The air contamination (microbial contamination) was defined with gas flowmeter Sampler Air, before and after using apparatus Spectra Infinity from company Grizzly, s.r.o

The measure point was defined accordance to size of the test room. The control air was flow with gas flowmeter – Sampler Air in 0 minute.

Positive control was prepared from the room in the production of Grizzly company and negative control – correct condition by testing a transport.

The other control of microbial contamination in air were prepared after 20, 40 and 60 minutes of Spectra Infinity activity.

The plates were cultivated 3days at 30-35°C and 4 days at 20-22°C.

RESULTS:

Table no 1.: Account of CFU (colony forming the unit) and identification of microorganism's species in the air sample in the zero minute and after 20-, 40- and 60-minute activity of UVC irradiation

Measurement point	0'	20'	40'	60'
	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
1 st measure	290	0	0	0
Identification	Coagulase negative <i>Staphylococci</i> , <i>Micrococcus luteus</i> , <i>Bacillus</i> spp., <i>Trichoderma</i> spp.	-	-	-
2 nd measure	340	0	0	0
Identification	Coagulase negative <i>Staphylococci</i> , <i>Micrococcus luteus</i> , <i>Bacillus</i> spp., <i>Trichoderma</i> spp.	-	-	-
3 th measure	325	0	0	0
Identification	Coagulase negative <i>Staphylococci</i> , <i>Micrococcus luteus</i> , <i>Bacillus</i> spp., <i>Bacillus</i> <i>subtilis</i> , <i>Aspergillus</i> <i>niger</i>	-	-	-
Positive control	525	-	-	-
Identification	<i>Penicillium</i> spp., <i>Bacillus subtilis</i> , <i>Micrococcus luteus</i> , Coagulase negative <i>Staphylococci</i>			
Negative control	0	-	-	-

CONCLUSION:

Microbial contamination of the air was affected with apparatus Spectra Infinity from the company GRIZZLY, s.r.o.

Air contamination average was **318,3** CFU in m³ in the test room – identification of the microorganisms is definite in the table 1. After 20 minutes activity of the close UVC irradiation from apparatus Spectra Infinity was air contamination average **0** CFU in m³. After 40 minutes activity of the close UVC irradiation from apparatus Spectra 110W was air contamination average **0** CFU in m³. After 60 minutes activity of the close UVC irradiation from apparatus Spectra 110W was air contamination average **0** CFU in m³.

The air contamination was defined as average of CFU from three times measuring of the point in the test room before and after used apparatus Spectra Infinity from company GRIZZLY, s.r.o.