CERTIFICATE

for

Production process and product inspection process

By means of periodical audits it is assured, that the inspection process assures the product/service conformity including all requirements therefor. This certificate does not acquit the company of its responsibility for the compliance with all legal requirements and service properties.

Air Control S.r.l.
Via Colico, 10
I-20158 Milano (MI)

scope:

Production of machinery for the treatment and distribution of air
(Related products see annex)

Certificate registration No. **70 700 7058**	Certificate valid from 2021-01-12 to **2024-01-11**
Audit report No. 4378 9954	First certification 2021-01-12

Darmstadt, 2021-01-12
Certification body of TÜV Hessen
– Head of Certification body –

ANNEX

Related products / product groups

PCO™ - Photocatalytic Oxidation (70 700 7058-1)	MICROPURE ACTIVE AIR KNIGHT FC-CASE FC UNIT PHOTOIONIX WALL HOME
SENSOR (70 700 7058-2)	SENSE

Production process and product inspection process

Certificate registration No. **70 700 7058**

Certificate valid from 2021-01-12 to **2024-01-11**

Darmstadt, 2021-01-12
Certification body of TÜV Hessen
– Head of Certification body –

EUROCERTIFICATIONS S.r.l.
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TEST REPORT **N° JOB N° 64787** **rev. 00**	Sheet No.: 1 Sheets: 7 Enclosure: 1

Name of product : **PCO™ - Photocatalytic Oxidation**

SENSOR

Type / Model :

PCO™ - Photocatalytic Oxidation
1 MICROPURE
2 ACTIVE
3 AIR KNIGHT
4 PURE LIFT
5 FC-CASE
6 FC UNIT
7 D-BOX
8 IPG-INDUSTRIAL
9 PHOTOIONIX
10 LITTLE CAMP
11 VISION
12 WALL
13 HOME

SENSOR
1 SENSE

Serial of tested products :

PCO™ - Photocatalytic Oxidation		
#	Type/model	S/N
1	MICROPURE	20082444878
2	ACTIVE	20063033466
3	AIR KNIGHT	20080642847
4	FC-CASE	RA03PFAA410
5	FC UNIT	20063033675
6	PHOTOIONIX	PHX608
7	WALL	000001000295
8	HOME	000001000293
SENSOR		
#	Type/model	S/N
1	SENSE	000001000294

Applicant : **Air Control S.r.l.**

Manufacturer : **Air Control S.r.l.**

Place of production : **Air Control plant (Milano)**

Number of project : **64787**

Regulations and standards : **ANALYTICAL AND PHYSICAL MEASUREMENTS**

The product FULFILLS REQUIREMENTS of chemicals and physical properties

Tested by : **Ing. S. Müller, N. Müller**

Controlled by : **Ing. S. Müller**

Date of specimen acceptance : **21/12/2020**

Date of end of testing : **28/12/2020**

Date of test report issue : **29/12/2020**

Result of the tests, stated in this test report are apply to the tested subject only. This test report can only be reproduced on the whole, articulately only with a written permission of EUROCERTIFICATIONS s.r.l.

Test result: **P – product passed the test**
F – product failed the test
N/A – product isn't reported to test, test isn´t applied

Ambient condition of the tests : **20°C / 50%**

PCO™ - Photocatalytic Oxidation			
Clause	Requirement – Test	Result - Remark	Verdict
1	**Ozone emission**		
1.1	MICROPURE - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
1.2	ACTIVE - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
1.3	AIR KNIGHT - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
1.4	FC-CASE - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
1.5	FC UNIT - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
1.6	PHOTOIONIX - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
1.7	WALL - The percentage of ozone in the room shall not exceed 5 x 10^{-6}	-	P
2	**Filtration of fine dust**		
2.1.1	MICROPURE - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,480	P
2.1.2	MICROPURE - Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,816	P
2.2.1	ACTIVE - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,507	P
2.2.2	ACTIVE - Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,827	P
2.3.1	AIR KNIGHT - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,500	P
2.3.2	AIR KNIGHT - Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,835	P
2.4.1	FC-CASE - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,501	P
2.4.2	FC-CASE - Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,826	P
2.5.1	FC UNIT - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,509	P
2.5.2	FC UNIT - Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,796	P
2.6.1	PHOTOIONIX - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,503	P
2.6.2	PHOTOIONIX -Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,745	P
2.7.1	WALL - Respirable fraction Average measurement PM 2,5 (µg/m^3) less than 2,587	0,496	P
2.7.2	WALL - Inhalable fraction Average measurement PM 10 (µg/m^3) less than 15,101	2,823	P

3	**Bacterial load on surfaces**			
Clause	Test	Result before treatment	Result after treatment	Verdict
3.1	MICROPURE - Bacterial charge on table	190	1	P
3.2	ACTIVE - Bacterial charge on kitchen sink	4000	<1	P

PCO™ - Photocatalytic Oxidation				
Clause	Requirement – Test		Result - Remark	Verdict
3.3	AIR KNIGHT - Bacterial charge on sofa	3600	1	P
3.4	FC-CASE - Battery charge on Living room carpet	6000	1	P
3.5	FC UNIT - Bacterial charge on bathroom sink	6400	<1	P
3.6	PHOTOIONIX - Bacterial charge on kitchen carpet	6200	1	P
3.7	WALL - Battery charge on Bathroom carpet	6200	1	P

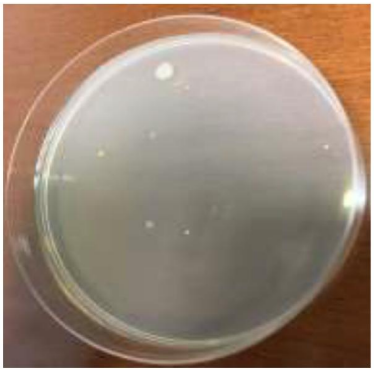
PCO™ - Photocatalytic Oxidation			
Clause	Requirement – Test	Result - Remark	Verdict
4	**Antimicrobial capacity**		
4.1.1	Elimination of bacterial colonies on PCA medium after 6 hours of exposure	<62%	P
4.1.2	Elimination of bacterial colonies on LB medium after 6 hours of exposure	<59%	P
4.2.1	Mold removal on LB soil after 6 hours of exposure	<86%	P
4.2.2	Mold removal on PCA soil after 6 hours of exposure	<95%	P

Annex 1 - plates with PCA soil before treatment

-

plates with PCA soil after treatment

Annex 2 - plates with LB soil before treatment



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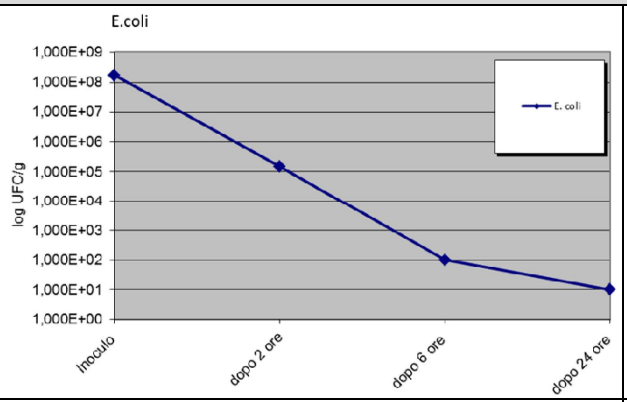
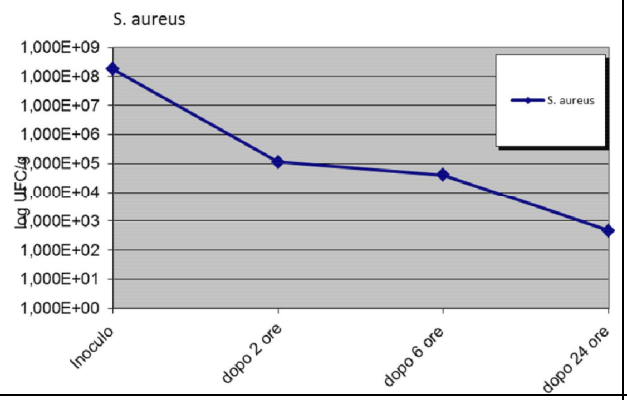
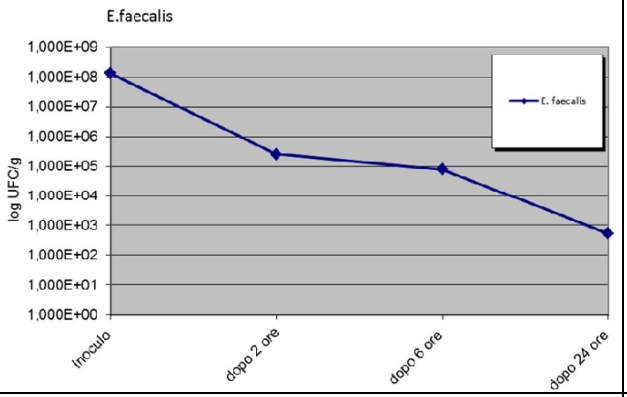
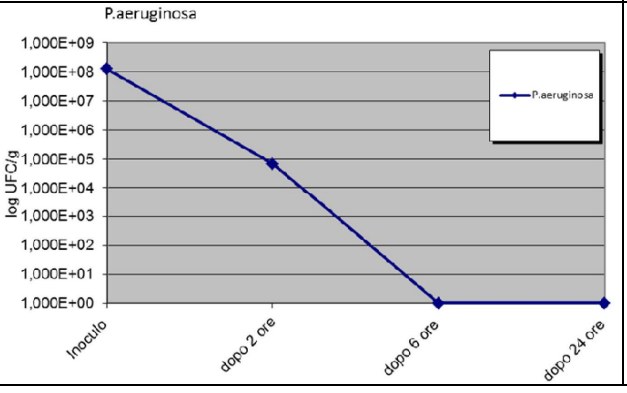
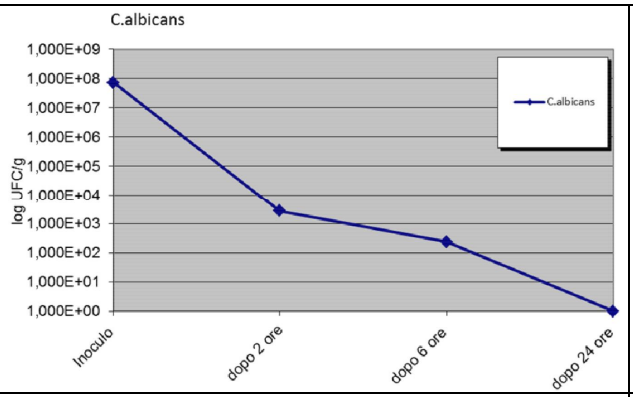
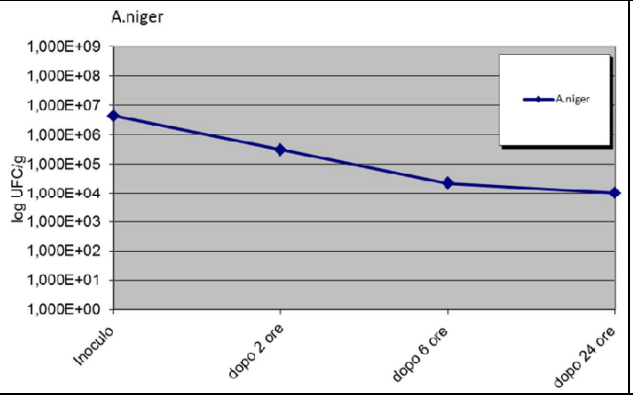
plates with LB soil after treatment

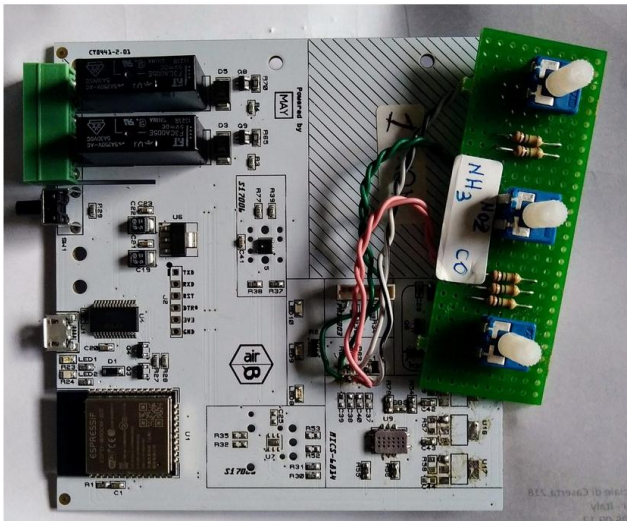
PCO™ - Photocatalytic Oxidation			
Clause	Requirement – Test	Result - Remark	Verdict
5	**Abatement of bacterial presence**		
5.1	Escherichia coli presence reduction after 24 hours of exposure of 99%		P
5.2	Staphylococcus aureus presence reduction after 24 hours of exposure of 99%		P
5.3	Enterococcus faecalis presence reduction after 24 hours of exposure of 99%		P
5.4	Pseudomonas aerurginosa presence reduction after 24 hours of exposure		P

5.5	Candida albicans presence reduction after 24 hours of exposure		P
5.6	Aspergilus niger presence reduction after 24 hours of exposure		P

Conclusions:
At the end of 24 hours for E.coli, P.aeruginosa and C.albicans there was a total culling, S. aureus and E. faecalis showed a culling of 6 orders, while for A. niger a culling of orders. In the face of a 99% reduction, the effectiveness of the technology in reducing the bacterial load can therefore be affirmed.

PCO™ - Photocatalytic Oxidation			
Clause	Requirement – Test	Result - Remark	Verdict
1	**% Reduction of SARS-CoV-2**		
6.1	Reduction of the presence of SARS-CoV-2 on the inoculated petri dish after a Dust Free treatment of 20 minutes	90.0%	P
6.2	Reduction of the presence of SARS-CoV-2 on the cloth after a Dust Free treatment of 20 minutes	99.7%	P

SENSOR			
Clause	Requirement – Test	Result - Remark	Verdict
1	**Sensitivity in the detection of gas**		
1.1	Sensitivity in OZONE detection (O_3)	-	P
1.2	Sensitivity in ETHANOL detection (CH_3CH_2OH)	-	P
1.3	Sensitivity in CARBON MONOXIDE detection (CO)	-	P
1.4	Sensitivity in AMMONIA detection (NH_3)	-	P



Annex 3 – SGX sensor chip Sensortech mics-684