



Product Information

Size of mask	Package	Qty per box	Qty per carton	Carton measure	G. W. per carton
160x102mm	single package	20	1000	62,5x34x48cm	10,5KG

User Instructions in 14 EU Languages

[illegible]

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User Instructions in 14 EU Languages

[illegible]

Connexions Technology (Dong Guan)LTD.,

No.6, Shenbao Road, Qishi Town,
DongGuan,
GuangDong,
China.

It is certified that the manufacturer's technical file and the PPE product detailed on
page 2 have been assessed and found to be in accordance with

Regulation (EU) 2016/425 Module B, EU type-examination

This certificate is valid from 18 August 2021 until 18 August 2026
1. Certified since 18 August 2021

Authorised by



SGS FIMKO OY, Notified Body 0598

Takomotie 8, FI-00380, Helsinki, Finland
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Connexions Technology (Dong Guan)LTD.,

Regulation (EU) 2016/425 Module B, EU type-examination

Issue 1

PPE Product

CTC (logo) CTPL-0020 white folded half mask, consisting of a five layer (polypropylene/ polypropylene/ polypropylene & hot air cotton/polyester & polyethylene/ polypropylene) disposable particle filtering half mask, with nose clip, and nylon/spandex ear band.

The first body layer of masks are available in fourteen colourways: White, Grey, Dark blue, Light blue, Purple, Pink, Turquoise, Black, Orange, Yellow, Deep Pink, Blue, Red, Camouflage.

It is certified that the manufacturer's technical file and the above mentioned PPE have been assessed and found to meet the applicable Essential Health and Safety Requirements in Annex II of Regulation (EU) 2016/425 Personal Protective Equipment

The following have been applied:

EN 149:2001+A1:2009 (Respiratory protective devices - filtering half masks to protect against particles) device classification: FFP2 NR.

This certificate is issued on the strict condition that appropriate checks on manufactured PPE, as detailed in Article 19 (c) of the Regulation are implemented and maintained while the model is in production

Certification is based on technical file reference:

Face mask/ CTPL-0020 with supplement, version 4, dated: 2021-03-30.

SGS Reference Number UK/CRS 242005.

This certificate remains the property of SGS Fimko Oy to whom it must be returned on request.



Certificate CN20/42163

The management system of

Connexions Technology (Dong Guan) LTD.

No.6, Shenbao Road, Qishi Town, Dong Guan, Guang Dong,
P.R. China

has been assessed and certified as meeting the requirements of

Regulation (EU) 2016/425

Module C2

For the following activities

**Manufacture of CTC(logo), CTPL-0020 white folded Particle Filtering
Half Mask.**

(Note: All products marked CE0598 must have a valid EU type-
examination certificate issued under Module B or a valid EC type-
examination certificate issued under Article 10 of Directive
89/686/EEC.)

This certificate is valid from 29 July 2020
and remains valid subject to satisfactory surveillance audits.
Issue 1. Certified since 29 July 2020

Authorised by

Tom Tom

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FINAS
Finnish Accreditation Service
S003 (EN ISO/IEC 17065)



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EU DECLARATION OF CONFORMITY

Manufacturer

Name: Connexions Technology(Dong Guan)LTD.

Address: No.6, Shenbao Road, Qishi Town, DongGuan, Guangdong, China

declares that the new PPE described hereafter

Particle Filtering Half Mask

EN 149:2001 + A1:2009

FFP2 NR

Model: CTPL-0020

are in conformity with the Regulation (EU) 2016/425 and with harmonized standard

EN 149:2001 + A1:2009

Notify Body:

SGS Fimko Oy

Takomotie 8, FI-00380 Helsinki, Finland

Notified Body No. 0598

performed the EU type-examination Module B((EU) 2016/425) and issued the EU type-examination certificate D((EU) 2016/425).

The PPE is subject to the conformity assessment procedure conformity to type based on quality assurance of the production process (Module D) under surveillance of the notified body SGS Fimko Oy 0598.

Signed for on behalf of: Connexions Technology(Dong Guan)LTD.

Place: Dongguan, China

Date: 05.01.2022

Name: Eric Zhang

Position: General Manager

Signature:



Test Report

SL52025246081401TX

Date: June 08, 2020

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CONNEXIONS TECHNOLOGY (DONG GUAN) LTD
NO. 6, SHENBAO ROAD, QISHI TOWN, DONGGUAN CITY, GUANGDONG PROVINCE

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A) Face mask

Style No. : CTPL-0020
Composition : (A) Non-woven fabric, melt-blown fabric, hot air cotton
Sample Color : (A) WHITE
Manufacturer : CONNEXIONS TECHNOLOGY (DONG GUAN) LTD
Country of Destination : Global
Supplier : CONNEXIONS TECHNOLOGY (DONG GUAN) LTD

Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Apr 28, 2020

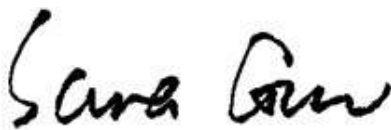
Testing Period : Apr 29, 2020 - Jun 08, 2020

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested, for further details, please refer to the following page(s).

Conclusion:

Sample No.	Recommendation Level
(A)	FFP2 NR

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center



Sara Guo (Account Executive)

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Test Result

Respiratory Protective Devices — Filtering Half Masks to Protect against Particles — Requirements, Testing, Marking

(EN 149:2001+A1:2009)

Clause 7.4 Packaging

(EN 149:2001+A1:2009 Clause 8.2)

Test Requirement	Results	Comment
Particle filtering half masks shall be offered for sale packaged in such a way that they are protected against mechanical damage and contamination before use.	Comply	Pass

Clause 7.5 Material

(EN 149:2001+A1:2009, Clause 8.2 & 8.3.1 & 8.3.2)

Test Requirement	Results	Comment
Materials used shall be suitable to withstand handling and wear over the period for which the particle filtering half mask is designed to be used.	Comply	Pass
After undergoing the conditioning described in 8.3.1 none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps.	Comply	
When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse.	Comply	
Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer.	Comply	

Clause 7.6 Cleaning and Disinfecting

(EN 149:2001+A1:2009, Clause 8.4 & 8.5 & 8.11)

Test Requirement	Results	Comment
If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer. With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.	Not applicable (Not designed to be re-usable)	N.A.

Clause 7.7 Practical Performance

(EN 149:2001+A1:2009, Clause 8.4)

Test Requirement	Results	Comment
The particle filtering half mask shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard.	No imperfections	Pass



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Clause 7.8 Finish of Parts

(EN 149:2001+A1:2009, Clause 8.2)

Test Requirement	Results	Comment
Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.	No sharp edges or burrs	Pass

Clause 7.9.1 Total Inward Leakage

(EN 149:2001+A1:2009, Clause 8.5)

Test Requirement	Results	Comment
<p>The total inward leakage consists of three components: face seal leakage, exhalation value leakage(if exhalation value fitted) and filter penetration. For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25% for FFP1, 11% for FFP2, 5% for FFP3</p> <p>and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22% for FFP1, 8% for FFP2, 2% for FFP3</p>	Detail refer to Appendix 1	Meet FFP1, Meet FFP2

Appendix 1: Summarization of Test Data

Inward Leakage Test Data

Subject	Sample No.	Condition	Walk(%)	Head Side/side(%)	Head up/down(%)	Talk(%)	Walk(%)	Mean(%)
Zhou	1	A.R.	6.11	5.08	7.73	5.47	6.33	6.14
Luo	2	A.R.	7.84	6.74	7.17	5.90	8.26	7.18
Lu	3	A.R.	6.44	4.86	6.48	6.18	7.10	6.21
Wang	4	A.R.	5.86	5.60	4.78	5.41	4.82	5.29
Bao	5	A.R.	8.29	8.66	7.51	6.82	5.91	7.44
Ding	6	T.C.	5.59	4.76	5.54	4.97	5.85	5.34
Li	7	T.C.	8.25	7.75	6.81	7.63	8.40	7.77
Chen	8	T.C.	5.45	5.05	5.98	5.58	5.35	5.48
Song	9	T.C.	5.60	6.81	5.64	6.70	6.99	6.35
Ye	10	T.C.	8.33	7.88	8.11	6.80	8.22	7.87

Facial Dimension(mm)

Subject	Face length	Face Width	Face Depth	Mouth Width
Chen	125	150	120	58
Lu	115	132	107	48
Zhou	115	135	106	52
Li	125	130	107	46
Luo	125	136	100	43
Zheng	128	140	112	55
Wang	120	147	103	48
Song	120	140	100	50
Bao	130	134	104	50



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Ding	134	150	110	52
Liu	120	135	117	50
Ye	126	137	105	52

Clause 7.9.2 Penetration of Filter Material

(EN 149:2001+A1:2009, Clause 8.11 & EN 13274-7:2019)

Test Requirement			Results	Comment
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.			Detail refer to Appendix 2	Meet FFP1, Meet FFP2
Classifica tion	Maximum penetration of test aerosol			
	Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.		
FFP1	20	20		
FFP2	6	6		
FFP3	1	1		

Appendix 2: Summarization of Test Data

Penetration of filter material

Aerosol	Condition	Sample No.	Penetration (%)
Sodium chloride test	As received	1	0.117
		2	0.126
		3	0.119
	Simulated wearing treatment	4	0.145
		5	0.190
		6	0.175
	Mechanical strength +Temperature conditioned	7	0.412
		8	0.317
		9	0.396
Paraffin oil test	As received	10	0.201
		11	0.306
		12	0.287
	Simulated wearing treatment	13	0.279
		14	0.314
		15	0.336
	Mechanical strength +Temperature conditioned	16	3.674
		17	4.124
		18	4.176
Flow conditioning : Single filter: 95.0 L/min			



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Clause 7.10 Compatibility with Skin

(EN 149:2001+A1:2009, Clause 8.4 & 8.5)

Test Requirement	Results	Comment
Materials that may come into contact with the wearer's skin shall not be known to be likely to cause irritation or any other adverse effect to health.	No irritation or any other adverse effect to health	Pass

Clause 7.11 Flammability

(EN 149:2001+A1:2009, Clause 8.6)

Test Requirement	Results	Comment
The material used shall not present a danger for the wearer and shall not be of highly flammable nature When tested, the particle filtering half mask shall not burn or not to continue to burn for more than 5 s after removal from the flame.	Detail refer to Appendix 3	Pass

Appendix 3: Summarization of Test Data

Flammability

Condition	Sample No.	Result
As received	1	NIL
	2	NIL
Temperature conditioned	3	NIL
	4	NIL

Clause 7.12 Carbon Dioxide Content of The Inhalation Air

(EN 149:2001+A1:2009, Clause 8.7)

Test Requirement	Results	Comment
The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume)	Detail refer to Appendix 4	Pass

Appendix 4: Summarization of Test Data

Carbon Dioxide Content of The Inhalation Air

Condition	Sample No.	Result(%)
As received	1	0.4875
	2	0.4862
	3	0.4869
		Mean value:0.49

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Clause 7.13 Head Harness

(EN 149:2001+A1:2009, Clause 8.4 & 8.5)

Test Requirement	Results	Comment
The head harness shall be designed so that the particle filtering half mask can be donned and removed easily.	Comply	Pass
The head harness shall be adjustable or self-adjusting and shall be sufficiently robust to hold the particle filtering half mask firmly in position and be capable of maintaining total inward leakage requirements for the device.	Comply	

Clause 7.14 Field of Vision

(EN 149:2001+A1:2009, Clause 8.4)

Test Requirement	Results	Comment
The field of vision is acceptable if determined so in practical performance tests.	Comply	Pass

Clause 7.15 Exhalation Valve(s)

(EN 149:2001+A1:2009, Clause 8.2 & 8.9.1 & 8.3.4 & 8.8)

Test Requirement	Results	Comment
(a) A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.	Not applicable due to No exhalation valve	N.A.
(b) If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.	Not applicable due to No exhalation valve	
(c) Exhalation valve(s), if fitted, shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s.	Not applicable due to No exhalation valve	
(d) When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10N applied for 10 s.	Not applicable due to No exhalation valve	



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Clause 7.16 Breathing Resistance
(EN 149:2001+A1:2009, Clause 8.9)

Test Requirement				Results	Comment
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.					
Classification	Maximum permitted resistance (mbar)				
	Inhalation		Exhalation		
	30 l/min	95 l/min	160 l/min		
FFP1	0.6	2.1	3.0		
FFP2	0.7	2.4	3.0		
FFP3	1.0	3.0	3.0		

Appendix 5: Summarization of Test Data

Breathing resistance (mbar)

As received	Flow rate(l/min)		1					2					3				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
	Inhalation	30	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2
		95	0.8	0.7	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.9	0.8	0.8
	Exhalation	160	1.5	1.6	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.7
Simulated wearing treatment	Flow rate(l/min)		4					5					6				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
	Inhalation	30	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3
		95	0.9	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.7	0.8	0.8	0.9
	Exhalation	160	1.6	1.6	1.4	1.5	1.6	1.6	1.5	1.5	1.4	1.6	1.6	1.6	1.6	1.5	1.5
Temperature conditioned	Flow rate(l/min)		7					8					9				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
	Inhalation	30	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2
		95	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7
	Exhalation	160	1.3	1.3	1.4	1.3	1.4	1.3	1.3	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.4

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side



Clause 7.17 Clogging

(EN 149:2001+A1:2009, Clause 8.9 & 8.10)

Test Requirement	Results	Comment																			
<p>Clause 7.17.2 Breathing resistance Valved particle filtering half masks: After clogging the inhalation resistances shall not exceed: FFP1: 4 mbar, FFP2: 5 mbar, FFP3: 7 mbar at 95L/min continuous flow The exhalation resistance shall not exceed 3 mbar at 160 L/min continuous flow.</p> <p>Valveless particle filtering half masks: After clogging the inhalation and exhalation resistances shall not exceed: FFP1: 3 mbar, FFP2: 4 mbar, FFP3: 5 mbar at 95L/min continuous flow</p>	Optional for single shift device only	N.A.																			
<p>Clause 7.17.3 Penetration of filter material All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements.</p> <table border="1"> <thead> <tr> <th rowspan="3">Classification</th><th colspan="2">Maximum penetration of test aerosol</th></tr> <tr> <th>Sodium chloride test 95 l/min</th><th>Paraffin oil test 95 l/min</th></tr> <tr> <th>%</th><th>%</th></tr> </thead> <tbody> <tr> <td></td><td>max.</td><td>max.</td></tr> <tr> <td>FFP1</td><td>20</td><td>20</td></tr> <tr> <td>FFP2</td><td>6</td><td>6</td></tr> <tr> <td>FFP3</td><td>1</td><td>1</td></tr> </tbody> </table>	Classification	Maximum penetration of test aerosol		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min	%	%		max.	max.	FFP1	20	20	FFP2	6	6	FFP3	1	1	Optional for single shift device only	N.A.
Classification		Maximum penetration of test aerosol																			
		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min																		
	%	%																			
	max.	max.																			
FFP1	20	20																			
FFP2	6	6																			
FFP3	1	1																			

Clause 7.18 Demountable Parts

(EN 149:2001+A1:2009, Clause 8.2)

Test Requirement	Results	Comment
All demountable parts (if fitted) shall be readily connected and secured, where possible by hand	No demountable parts	N.A.

Test	Uncertainty
Total inward leakage	3.4%
Penetration of filter material	4.8%
Carbon dioxide content of the inhalation air	3.9%
Breathing resistance (30L/min)	5.9%
Breathing resistance (95L/min)	4.9%
Breathing resistance (160L/min)	4.3%



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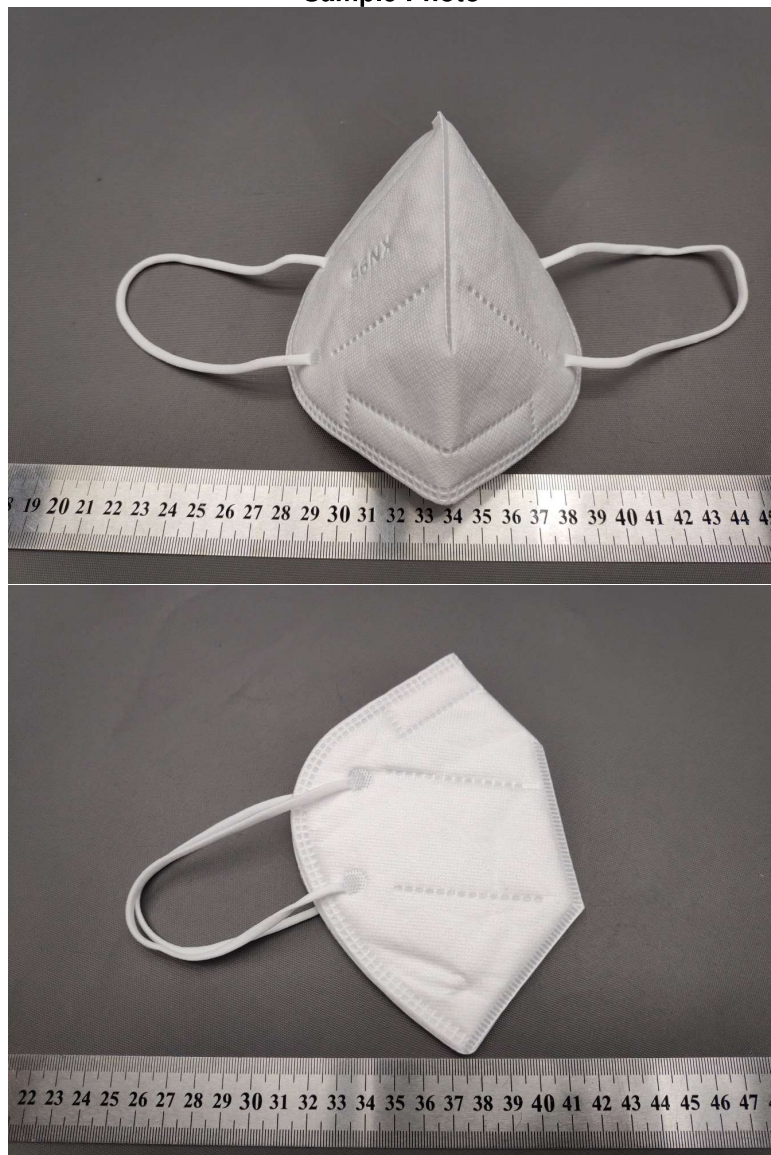
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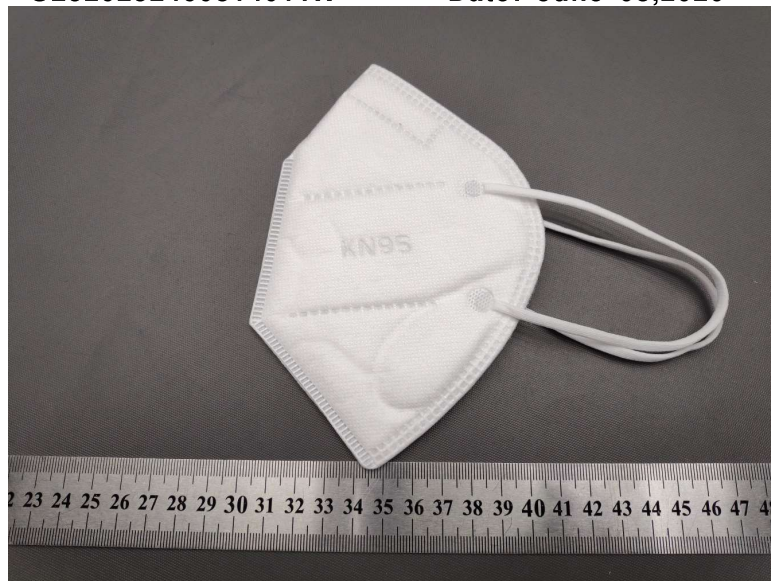
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Connexions Technology (Dong Guan)LTD.,

No.6, Shenbao Road, Qishi Town,
DongGuan,
GuangDong,
China.

It is certified that the manufacturer's technical file and the PPE product detailed on
page 2 have been assessed and found to be in accordance with

Regulation (EU) 2016/425 Module B, EU type-examination

This certificate is valid from 18 August 2021 until 18 August 2026
1. Certified since 18 August 2021

Authorised by



SGS FIMKO OY, Notified Body 0598

Takomotie 8, FI-00380, Helsinki, Finland
t +358 9 696 361 f +358 9 692 5474 www.sgs.com



Connexions Technology (Dong Guan)LTD.,

Regulation (EU) 2016/425 Module B, EU type-examination

Issue 1

PPE Product

CTC (logo) CTPL-0020 white folded half mask, consisting of a five layer (polypropylene/ polypropylene/ polypropylene & hot air cotton/polyester & polyethylene/ polypropylene) disposable particle filtering half mask, with nose clip, and nylon/spandex ear band.

The first body layer of masks are available in fourteen colourways: White, Grey, Dark blue, Light blue, Purple, Pink, Turquoise, Black, Orange, Yellow, Deep Pink, Blue, Red, Camouflage.

It is certified that the manufacturer's technical file and the above mentioned PPE have been assessed and found to meet the applicable Essential Health and Safety Requirements in Annex II of Regulation (EU) 2016/425 Personal Protective Equipment

The following have been applied:

EN 149:2001+A1:2009 (Respiratory protective devices - filtering half masks to protect against particles) device classification: FFP2 NR.

This certificate is issued on the strict condition that appropriate checks on manufactured PPE, as detailed in Article 19 (c) of the Regulation are implemented and maintained while the model is in production

Certification is based on technical file reference:

Face mask/ CTPL-0020 with supplement, version 4, dated: 2021-03-30.

SGS Reference Number UK/CRS 242005.

This certificate remains the property of SGS Fimko Oy to whom it must be returned on request.



Certificate CN20/42163

The management system of

Connexions Technology (Dong Guan) LTD.

No.6, Shenbao Road, Qishi Town, Dong Guan, Guang Dong,
P.R. China

has been assessed and certified as meeting the requirements of

Regulation (EU) 2016/425

Module C2

For the following activities

**Manufacture of CTC(logo), CTPL-0020 white folded Particle Filtering
Half Mask.**

(Note: All products marked CE0598 must have a valid EU type-
examination certificate issued under Module B or a valid EC type-
examination certificate issued under Article 10 of Directive
89/686/EEC.)

This certificate is valid from 29 July 2020
and remains valid subject to satisfactory surveillance audits.
Issue 1. Certified since 29 July 2020

Authorised by

Tom Tom

SGS FIMKO OY, Notified Body 0598

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EU DECLARATION OF CONFORMITY

Manufacturer

Name: Connexions Technology(Dong Guan)LTD.

Address: No.6, Shenbao Road, Qishi Town, DongGuan, Guangdong, China

declares that the new PPE described hereafter

Particle Filtering Half Mask

EN 149:2001 + A1:2009

FFP2 NR

Model: CTPL-0020

are in conformity with the Regulation (EU) 2016/425 and with harmonized standard

EN 149:2001 + A1:2009

Notify Body:

SGS Fimko Oy

Takomotie 8, FI-00380 Helsinki, Finland

Notified Body No. 0598

performed the EU type-examination Module B((EU) 2016/425) and issued the EU type-examination certificate D((EU) 2016/425).

The PPE is subject to the conformity assessment procedure conformity to type based on quality assurance of the production process (Module D) under surveillance of the notified body SGS Fimko Oy 0598.

Signed for on behalf of: Connexions Technology(Dong Guan)LTD.

Place: Dongguan, China

Date: 05.01.2022

Name: Eric Zhang

Position: General Manager

Signature:



Test Report

SL52025246081401TX

Date: June 08, 2020

Page 1 of 10

CONNEXIONS TECHNOLOGY (DONG GUAN) LTD
NO. 6, SHENBAO ROAD, QISHI TOWN, DONGGUAN CITY, GUANGDONG PROVINCE

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A)Face mask

Style No. : CTPL-0020
Composition : (A)Non-woven fabric, melt-blown fabric, hot air cotton
Sample Color : (A)WHITE
Manufacturer : CONNEXIONS TECHNOLOGY (DONG GUAN) LTD
Country of Destination : Global
Supplier : CONNEXIONS TECHNOLOGY (DONG GUAN) LTD

Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Apr 28, 2020

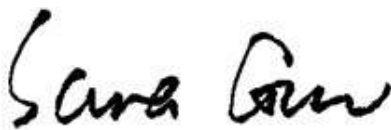
Testing Period : Apr 29, 2020 - Jun 08, 2020

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested, for further details, please refer to the following page(s).

Conclusion:

Sample No.	Recommendation Level
(A)	FFP2 NR

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center



Sara Guo (Account Executive)

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Test Result

Respiratory Protective Devices — Filtering Half Masks to Protect against Particles — Requirements, Testing, Marking

(EN 149:2001+A1:2009)

Clause 7.4 Packaging

(EN 149:2001+A1:2009 Clause 8.2)

Test Requirement	Results	Comment
Particle filtering half masks shall be offered for sale packaged in such a way that they are protected against mechanical damage and contamination before use.	Comply	Pass

Clause 7.5 Material

(EN 149:2001+A1:2009, Clause 8.2 & 8.3.1 & 8.3.2)

Test Requirement	Results	Comment
Materials used shall be suitable to withstand handling and wear over the period for which the particle filtering half mask is designed to be used.	Comply	Pass
After undergoing the conditioning described in 8.3.1 none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps.	Comply	
When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse.	Comply	
Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer.	Comply	

Clause 7.6 Cleaning and Disinfecting

(EN 149:2001+A1:2009, Clause 8.4 & 8.5 & 8.11)

Test Requirement	Results	Comment
If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer. With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.	Not applicable (Not designed to be re-usable)	N.A.

Clause 7.7 Practical Performance

(EN 149:2001+A1:2009, Clause 8.4)

Test Requirement	Results	Comment
The particle filtering half mask shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard.	No imperfections	Pass



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Clause 7.8 Finish of Parts

(EN 149:2001+A1:2009, Clause 8.2)

Test Requirement	Results	Comment
Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.	No sharp edges or burrs	Pass

Clause 7.9.1 Total Inward Leakage

(EN 149:2001+A1:2009, Clause 8.5)

Test Requirement	Results	Comment
<p>The total inward leakage consists of three components: face seal leakage, exhalation value leakage(if exhalation value fitted) and filter penetration. For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25% for FFP1, 11% for FFP2, 5% for FFP3</p> <p>and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22% for FFP1, 8% for FFP2, 2% for FFP3</p>	Detail refer to Appendix 1	Meet FFP1, Meet FFP2

Appendix 1: Summarization of Test Data

Inward Leakage Test Data

Subject	Sample No.	Condition	Walk(%)	Head Side/side(%)	Head up/down(%)	Talk(%)	Walk(%)	Mean(%)
Zhou	1	A.R.	6.11	5.08	7.73	5.47	6.33	6.14
Luo	2	A.R.	7.84	6.74	7.17	5.90	8.26	7.18
Lu	3	A.R.	6.44	4.86	6.48	6.18	7.10	6.21
Wang	4	A.R.	5.86	5.60	4.78	5.41	4.82	5.29
Bao	5	A.R.	8.29	8.66	7.51	6.82	5.91	7.44
Ding	6	T.C.	5.59	4.76	5.54	4.97	5.85	5.34
Li	7	T.C.	8.25	7.75	6.81	7.63	8.40	7.77
Chen	8	T.C.	5.45	5.05	5.98	5.58	5.35	5.48
Song	9	T.C.	5.60	6.81	5.64	6.70	6.99	6.35
Ye	10	T.C.	8.33	7.88	8.11	6.80	8.22	7.87

Facial Dimension(mm)

Subject	Face length	Face Width	Face Depth	Mouth Width
Chen	125	150	120	58
Lu	115	132	107	48
Zhou	115	135	106	52
Li	125	130	107	46
Luo	125	136	100	43
Zheng	128	140	112	55
Wang	120	147	103	48
Song	120	140	100	50
Bao	130	134	104	50



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Ding	134	150	110	52
Liu	120	135	117	50
Ye	126	137	105	52

Clause 7.9.2 Penetration of Filter Material

(EN 149:2001+A1:2009, Clause 8.11 & EN 13274-7:2019)

Test Requirement			Results	Comment
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.			Detail refer to Appendix 2	Meet FFP1, Meet FFP2
Classifica tion	Maximum penetration of test aerosol			
	Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.		
FFP1	20	20		
FFP2	6	6		
FFP3	1	1		

Appendix 2: Summarization of Test Data

Penetration of filter material

Aerosol	Condition	Sample No.	Penetration (%)
Sodium chloride test	As received	1	0.117
		2	0.126
		3	0.119
	Simulated wearing treatment	4	0.145
		5	0.190
		6	0.175
	Mechanical strength +Temperature conditioned	7	0.412
		8	0.317
		9	0.396
Paraffin oil test	As received	10	0.201
		11	0.306
		12	0.287
	Simulated wearing treatment	13	0.279
		14	0.314
		15	0.336
	Mechanical strength +Temperature conditioned	16	3.674
		17	4.124
		18	4.176
Flow conditioning : Single filter: 95.0 L/min			



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Clause 7.10 Compatibility with Skin

(EN 149:2001+A1:2009, Clause 8.4 & 8.5)

Test Requirement	Results	Comment
Materials that may come into contact with the wearer's skin shall not be known to be likely to cause irritation or any other adverse effect to health.	No irritation or any other adverse effect to health	Pass

Clause 7.11 Flammability

(EN 149:2001+A1:2009, Clause 8.6)

Test Requirement	Results	Comment
The material used shall not present a danger for the wearer and shall not be of highly flammable nature When tested, the particle filtering half mask shall not burn or not to continue to burn for more than 5 s after removal from the flame.	Detail refer to Appendix 3	Pass

Appendix 3: Summarization of Test Data

Flammability

Condition	Sample No.	Result
As received	1	NIL
	2	NIL
Temperature conditioned	3	NIL
	4	NIL

Clause 7.12 Carbon Dioxide Content of The Inhalation Air

(EN 149:2001+A1:2009, Clause 8.7)

Test Requirement	Results	Comment
The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume)	Detail refer to Appendix 4	Pass

Appendix 4: Summarization of Test Data

Carbon Dioxide Content of The Inhalation Air

Condition	Sample No.	Result(%)
As received	1	0.4875
	2	0.4862
	3	0.4869
		Mean value:0.49

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Clause 7.13 Head Harness

(EN 149:2001+A1:2009, Clause 8.4 & 8.5)

Test Requirement	Results	Comment
The head harness shall be designed so that the particle filtering half mask can be donned and removed easily.	Comply	Pass
The head harness shall be adjustable or self-adjusting and shall be sufficiently robust to hold the particle filtering half mask firmly in position and be capable of maintaining total inward leakage requirements for the device.	Comply	

Clause 7.14 Field of Vision

(EN 149:2001+A1:2009, Clause 8.4)

Test Requirement	Results	Comment
The field of vision is acceptable if determined so in practical performance tests.	Comply	Pass

Clause 7.15 Exhalation Valve(s)

(EN 149:2001+A1:2009, Clause 8.2 & 8.9.1 & 8.3.4 & 8.8)

Test Requirement	Results	Comment
(a) A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.	Not applicable due to No exhalation valve	N.A.
(b) If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.	Not applicable due to No exhalation valve	
(c) Exhalation valve(s), if fitted, shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s.	Not applicable due to No exhalation valve	
(d) When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10N applied for 10 s.	Not applicable due to No exhalation valve	



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Clause 7.16 Breathing Resistance
(EN 149:2001+A1:2009, Clause 8.9)

Test Requirement				Results	Comment
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.					
Classification	Maximum permitted resistance (mbar)				
	Inhalation		Exhalation		
	30 l/min	95 l/min	160 l/min		
FFP1	0.6	2.1	3.0		
FFP2	0.7	2.4	3.0		
FFP3	1.0	3.0	3.0		

Appendix 5: Summarization of Test Data

Breathing resistance (mbar)

As received	Flow rate(l/min)		1					2					3				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
	Inhalation	30	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2
		95	0.8	0.7	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.9	0.8	0.8
	Exhalation	160	1.5	1.6	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.7
Simulated wearing treatment	Flow rate(l/min)		4					5					6				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
	Inhalation	30	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3
		95	0.9	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.7	0.8	0.8	0.9
	Exhalation	160	1.6	1.6	1.4	1.5	1.6	1.6	1.5	1.5	1.4	1.6	1.6	1.6	1.6	1.5	1.5
Temperature conditioned	Flow rate(l/min)		7					8					9				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
	Inhalation	30	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2
		95	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7
	Exhalation	160	1.3	1.3	1.4	1.3	1.4	1.3	1.3	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.4

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side



Clause 7.17 Clogging

(EN 149:2001+A1:2009, Clause 8.9 & 8.10)

Test Requirement	Results	Comment																			
<p>Clause 7.17.2 Breathing resistance Valved particle filtering half masks: After clogging the inhalation resistances shall not exceed: FFP1: 4 mbar, FFP2: 5 mbar, FFP3: 7 mbar at 95L/min continuous flow The exhalation resistance shall not exceed 3 mbar at 160 L/min continuous flow.</p> <p>Valveless particle filtering half masks: After clogging the inhalation and exhalation resistances shall not exceed: FFP1: 3 mbar, FFP2: 4 mbar, FFP3: 5 mbar at 95L/min continuous flow</p>	Optional for single shift device only	N.A.																			
<p>Clause 7.17.3 Penetration of filter material All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements.</p> <table border="1"> <thead> <tr> <th rowspan="3">Classification</th><th colspan="2">Maximum penetration of test aerosol</th></tr> <tr> <th>Sodium chloride test 95 l/min</th><th>Paraffin oil test 95 l/min</th></tr> <tr> <th>%</th><th>%</th></tr> </thead> <tbody> <tr> <td></td><td>max.</td><td>max.</td></tr> <tr> <td>FFP1</td><td>20</td><td>20</td></tr> <tr> <td>FFP2</td><td>6</td><td>6</td></tr> <tr> <td>FFP3</td><td>1</td><td>1</td></tr> </tbody> </table>	Classification	Maximum penetration of test aerosol		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min	%	%		max.	max.	FFP1	20	20	FFP2	6	6	FFP3	1	1	Optional for single shift device only	N.A.
Classification		Maximum penetration of test aerosol																			
		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min																		
	%	%																			
	max.	max.																			
FFP1	20	20																			
FFP2	6	6																			
FFP3	1	1																			

Clause 7.18 Demountable Parts

(EN 149:2001+A1:2009, Clause 8.2)

Test Requirement	Results	Comment
All demountable parts (if fitted) shall be readily connected and secured, where possible by hand	No demountable parts	N.A.

Test	Uncertainty
Total inward leakage	3.4%
Penetration of filter material	4.8%
Carbon dioxide content of the inhalation air	3.9%
Breathing resistance (30L/min)	5.9%
Breathing resistance (95L/min)	4.9%
Breathing resistance (160L/min)	4.3%



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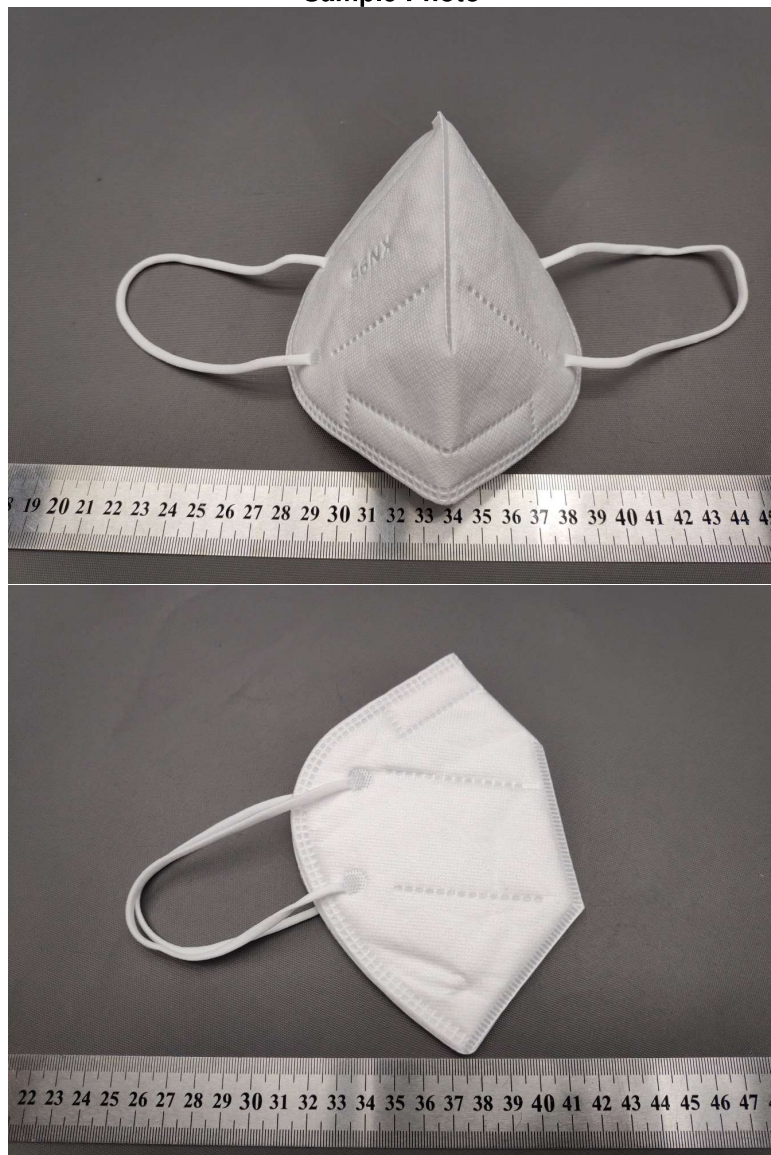
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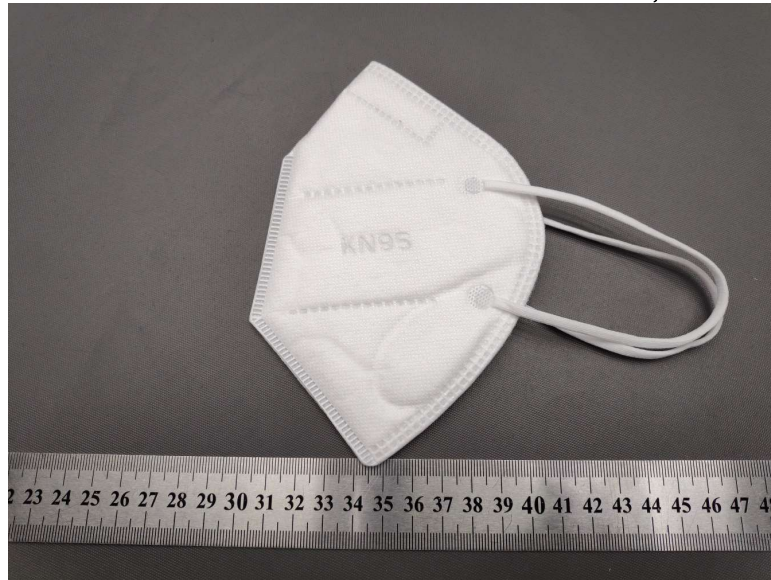
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Sample Photo





End of Report



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