Leatt Corporation (Incorporated in the State of Nevada)
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12 Kiepersol Crescent, Atlas Gardens,
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VAT No. 4050245762 | Reg No. 2007/032780/10

Postal Address
Suite 109, Private Bag X3, Bloubergrant, 7443, Cape Town, South Africa

EU DECLARATION OF CONFORMITY No 2020/178

1. **Goggle Velocity MTB 4.0**: Class I PPE for off-road bicycle users. (This model is described in the technical file number 178, on file at Leatt Corporation.)

2. Manufacturer or authorised representative in the Community:
Leatt® Corporation
No. 12 Kiepersol Crescent
Atlas Gardens
Durbanville 7550
Cape Town
Republic of South Africa

3. This declaration of conformity is issued under the sole responsibility of the manufacturer:
Leatt Corporation.

4. Object of the declaration

Product Type	Standard Number & Level	Product Reference Name / Code	EU Type Examination Certificate No.
Goggles for off-road bicycling.	PPE Regulation (EU) 2016/425	Goggle Velocity MTB 4.0 80210025XX	Nil. Leatt Self Certification

Directors:
Dr. Christopher James Leatt | Jeffrey Joseph Guzy | Sean Macdonald

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Goggle Velocity 4.0 MTB Cactus


Goggle Velocity 4.0 MTB Chilli


Goggle Velocity 4.0 MTB Sand


Goggle Velocity 4.0 MTB Graphene

5. The object of the declaration described in point 4 is in conformity with the relevant Union harmonisation legislation: PPE Regulation (EU) 2016 / 425

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6. Where applicable, Leatt Corporation, 12 Kiepersol Crescent, Atlas Gardens Contermanskloof, Durbanville South Africa (the manufacturer) performed the conformity assessment of Internal Production Control (Module A).

7. Additional Information.

Testing for this product was conducted internally by Leatt Corporation's' The Leatt Lab and externally at the testing facilities of CERTOTICA Scrl, Zona Industriale Villanova, I – 32013 Longarona BL, Italy and CERTOTICA's test report 202171 is appended to this declaration.

Examination of the report will show that the product detailed in point 4 was tested for all relevant areas of performance normally applied to Leatt's motorcycle goggles (EN1938:2010).

The product passed all tests except for the issue of VENTILATION (see page 9/12). To pass this test would have required that ventilation be reduced, and this change was felt by Leatt to be detrimental to a slower moving bicyclist and inappropriate as a measure of performance for bicycle goggles as currently framed.

As can be easily imagined, ventilation is quite important when cycling since you are not going at as high a speed….sometimes very low speeds, as you do when riding a motorcycle.

Therefore, to ensure maximum ventilation when wearing this goggle, Leatt have added small vents at the top of the lens to allow in some air, and have also used a mesh with big holes on the top vents of the goggle frame to ensure optimal airflow. The images below show that the product failed because the holes of the mesh are bigger than 1.5mm in diameter.

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Consequently, Leatt has opted to self-certify this product as Category I PPE and keep the design unchanged until a dedicated bicycling goggle standard is available.

Signed for and on behalf of Leatt Corporation at Cape Town, South Africa on 26th September 2020.

MSD Samara - Pr. Eng.

Certification & Quality

Directors:
Dr. Christopher James Leatt | Jeffrey Joseph Guzy | Sean Macdonald

CERTOTTICA

Istituto Italiano per la Certificazione dei Prodotti Ottici Scarl
Loc. Villanova Zona Industriale - 32013 LONGARONE BL
Tel.: +39 0437 573157 - TeleFAX: +39 0437 573131
Web: www.certottica.it **E-mail:** info@certottica.it

TEST REPORT

Client:	Leatt Corporation
Address:	12 Kiepersol Crescent, Atlas Gardens Business Park - 7550 Cape Town Caper Farms
Article:	Motorcycle goggle
Model:	Velocity MTB 4.0 -MTB RideViz Clear CBL Green
Job no.:	C200736
Report no.:	202171
Receiving Date:	13/05/2020
Date of Test Begin:	18/05/2020
Date of Test End:	29/05/2020
Issuing Date:	29/05/2020
Standard Applied:	EN 1938:2010 - Personal eye protection - Goggles for motorcycle and moped users

Note 1: This test report is valid only for the tested samples and any changes can be made only with the issuance of a new test report.
Note 2: The partial reproduction of this test report is forbidden without written permission of Certottica.
Note 3: The tests were performed on samples sent by client.
Note 4: This test report is an official document digitally signed according to the current italian law.
Note 5: If not otherwise stated, the declared uncertainty must be intended as extended uncertainty with a 95% confidence level and a cover factor k = 2.
Note 6: The assessment of conformity of the quantitative results to the standards or to the disciplinary applied includes the measurement uncertainty: if the result +/- the uncertainty is within the limit, then the product is compliant; if it does NOT return, the product is NOT compliant.

Optical Tests

Quality of Material and Surface

Clause 4.6.2.1

Requirements

The filter is examined in a visual way in order to find out possible defects such as spots, scratches, inclusions, and so on.
The examined area is circumscribed by a 30 mm radius circle centered on the datum point, except the possible filter regions that are at less 5 mm from its edge.

Outcomes

The filters examination has produced the following results:

Sample	Defects	Test
202171 1dx	—	Pass
202171 1sx	—	Pass
202171 2dx	—	Pass
202171 2sx	—	Pass
202171 3dx	—	Pass
202171 3sx	—	Pass

Diffusion of Light

Clause 4.6.2.1

Requirements

The measurement of the Luminance Reduced Factor, ℓ^* , index of the light diffused by the filter, is performed with the so called simplified method. ℓ^* shall be not higher than 1 or 2 $\mathrm{cd\,m^{-2}\,lx^{-1}}$ for single lens goggles and for multiple lens goggles respectively.

Outcomes

Measurement values of ℓ^* and the results of their related tests are:

Sample	ℓ^* ($\mathrm{cd\,m^{-2}\,lx^{-1}}$)	Test
202171 1dx	0.13	Pass
202171 1sx	0.14	Pass
202171 2dx	0.20	Pass
202171 2sx	0.18	Pass
202171 3dx	0.17	Pass
202171 3sx	0.19	Pass

Transmittance

Clausola 4.6.2

Spectral Transmittance Measurement Method

The spectral transmittance following the requirements is measured in the ranges from 280 nm to 780 nm and from 280 nm to 2000 nm by mean a spectrophotometer. The step is 1 nm, the spectral band-width is not superior to 2 nm in the ultraviolet and in the visible ranges and not superior to 20 nm in the near infrared.

Computing Methods

The computation of transmittance formulas is performed converting to sum the integral definition. The sum step is 10 nm for T_V, for T_{SIR} and for Q-factors; it is 5 nm for solar radiation transmittance in ultraviolet regions A (from 315 nm to 380 nm) and B (from 280 nm to 315 nm) and in the blue range (from 380 nm to 500 nm). The highest value of the spectral transmittance in the intervals from 280 nm to 315 nm and from 315 nm to 350 nm is computed from the measurement values with a 1 nm step.

Luminous Transmittance

Clause 4.6.2.2

Requirements

The luminous transmittance, T_V, shall not be lower than 18 %. The superior and inferior T_V limits relative to a given filter category are those stated on the Table 2 of the norm.

Outcomes

The measurement values of T_V, in percent, and the test results are:

Sample	T_V(%)	Test
202171 1sx	87.4	Pass
202171 1dx	88.2	Pass
202171 2sx	87.4	Pass
202171 2dx	87.6	Pass
202171 3sx	87.3	Pass
202171 3dx	87.7	Pass

Spectral and Solar Ultraviolet Transmittance

Requirements

The superior value of the spectral transmittance $T(\lambda)$ from 280 nm to 315 nm, here named $T_{MAX,280\div315}$, shall be lower than 0.1 T_V. The superior value of the $T(\lambda)$ from 315 nm to 350 nm, here named $T_{MAX,315\div350}$, shall be inferior to T_V. The maximum value of solar UVA transmittance, here named T_{SUVA}, shall be inferior to T_V.

Outcomes

The measurement values of $T_{MAX,280\div315}$, of $T_{MAX,315\div350}$ and of T_{SUVA} expressed in T_V units and the results of the relative tests are:

Sample	$T_{MAX,280\div315}(T_V)$	Test	$T_{MAX,315\div350}(T_V)$	Test	T_{SUVA} (T_V)	Test
202171 1sx	<0.01	Pass	<0.01	Pass	<0.01	Pass
202171 1dx	<0.01	Pass	<0.01	Pass	<0.01	Pass
202171 2sx	<0.01	Pass	<0.01	Pass	<0.01	Pass
202171 2dx	<0.01	Pass	<0.01	Pass	<0.01	Pass
202171 3sx	<0.01	Pass	<0.01	Pass	<0.01	Pass
202171 3dx	<0.01	Pass	<0.01	Pass	<0.01	Pass

Q-factors

Requirements

The value of the Q-factor of red, yellow, green and blue signals shall not be lower than 0.8, 0.8, 0.6 and 0.4. Quotients according to various signals are here identified as: Q_{RED}, Q_{YELLOW}, $Q_{\mathrm{GREEN}}$and Q_{BLUE}.

Outcomes

The measurement values of Q_{RED}, Q_{YELLOW}, Q_{GREEN}, $Q_{\mathrm{BLUE}}$and the results of the relative tests are:

Sample	Q_{RED}	Test	Q_{YELLOW}	Test	Q_{GREEN}	Test	Q_{BLUE}	Test
202171 1sx	1.02	Pass	1.00	Pass	1.00	Pass	1.00	Pass
202171 1dx	1.01	Pass	1.00	Pass	1.00	Pass	1.00	Pass
202171 2sx	1.01	Pass	1.00	Pass	1.00	Pass	1.00	Pass
202171 2dx	1.02	Pass	1.01	Pass	1.00	Pass	1.00	Pass
202171 3sx	1.02	Pass	1.00	Pass	1.00	Pass	1.00	Pass
202171 3dx	1.02	Pass	1.00	Pass	1.00	Pass	1.00	Pass

Spectral Transmittance from 500 nm to 650 nm

Requirements

The minimum value of the spectral transmittance from 500 nm to 650 nm, here named $T_{\mathrm{MIN},500\div650}$, shall not be inferior to 0.2 T_{V}.

Outcomes

The measured value of $T_{\mathrm{MIN},500\div650}$, is:

Sample	$T_{\mathrm{MIN},500\div650}$ (T_{V})	Test
202171 1sx	0.99	Pass
202171 1dx	0.98	Pass
202171 2sx	0.99	Pass
202171 2dx	0.98	Pass
202171 3sx	0.98	Pass
202171 3dx	0.98	Pass

On road use: day Yes ; night Yes .

UV, UVA, UVB Solar Radiation and Blue Light Transmittances

Requirements

Note: These specifications are applied only if requirements are claimed.
Values claimed for Solar Radiation Transmittance in the regions from 280 nm to 380 nm (UV), from 280 nm to 315 nm (UVB), from 315 nm to 380 nm (UVA) and from 380 nm to 500 nm (Blue Light), here named respectively, T_{SUV}, T_{SUVB}, T_{SUVA} e T_{SB}, shall not be higher than 0.5% of the corresponding measured values.
If the values are expressed as an absorption factor, the previous paragraph is applied to the complement to 100% of the claimed values.

Outcomes

The measurement values and the results of the relative tests are:

Sample	T_{SUV} (%)	Test	T_{SUVB} (%)	Test	T_{SB} (%)	Test
202171 1sx	<0.01	—	<0.01	—	78.5	—
202171 1dx	<0.01	—	<0.01	—	79.5	—
202171 2sx	<0.01	—	<0.01	—	78.4	—
202171 2dx	<0.01	—	<0.01	—	78.5	—
202171 3sx	<0.01	—	<0.01	—	78.5	—
202171 3dx	<0.01	—	<0.01	—	79.0	—

Filter Category

Requirements

The filter category, satisfied the obligatory requirements in the ultraviolet regions, is assignable on the basis of Table 2 of the norm.

Outcomes

The category is:

Sample	Category
202171 1sx	0
202171 1dx	0
202171 2sx	0
202171 2dx	0
202171 3sx	0
202171 3dx	0

Transmittance Uniformity

Clause 4.6.2.1

Requirements

The luminous transmittance relative difference, here named $\Delta T_V/T_V$, relative to the highest value, between two any points of the filter within 20 mm from the visual centre, except those points within a distance of 5 mm from the filter edge, must be not superior to 10%.

Outcomes

The $\Delta T_V/T_V$ values, in percent, and the results of the relative tests are:

Sample	$\Delta T_V/T_V$(%)	Test
202171 1dx	1	Pass
202171 1sx	0	Pass
202171 2dx	0	Pass
202171 2sx	0	Pass
202171 3dx	0	Pass
202171 3sx	1	Pass

Left-Right Relative Difference of Luminous Transmittance

Clause 4.6.2.2

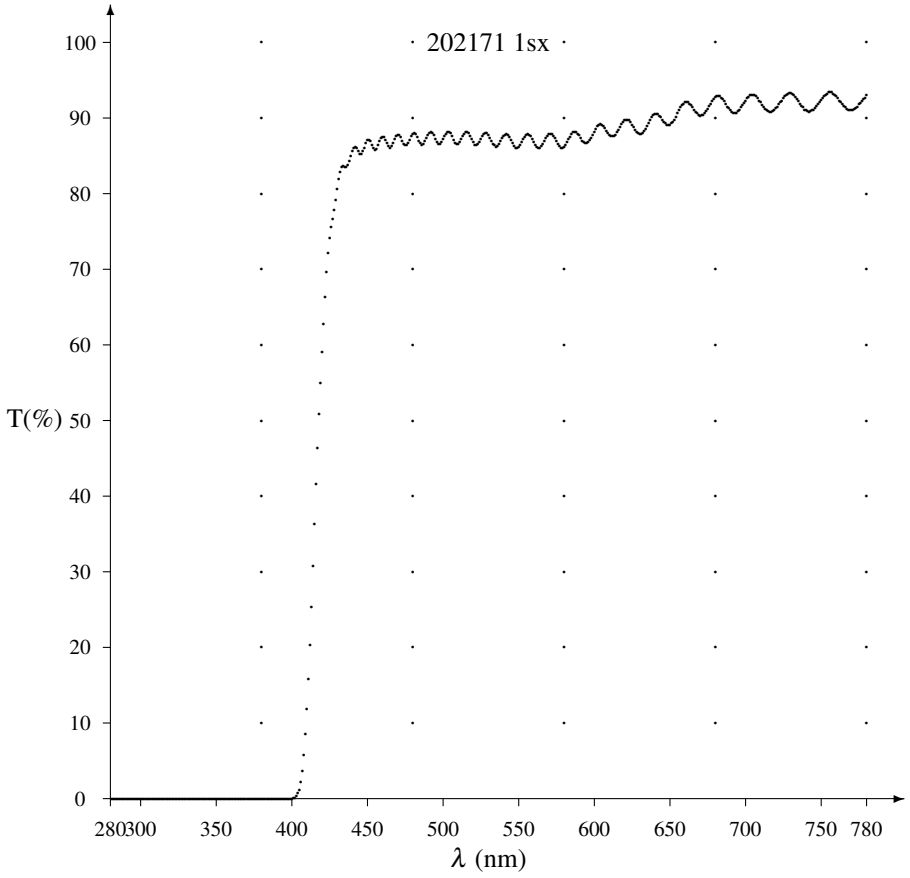
Requirements

The relative difference between the measurement value of T_V, here named $\Delta T_V/T_{V_{L-R}}$, determined respect to the higher value, on the visual centre of the singular oculars, shall not be higher than 20%.

Outcomes

$\Delta T_V/T_{V_{L-R}}$values, in percent, and the results of the relative tests are:

Sample	$\Delta T_V/T_{V_{L-R}}(\%)$	Test
202171 1	1	Pass
202171 2	0	Pass
202171 3	0	Pass



Resistance to Radiation

Clause 4.6.2.1

Requirements

Filters are exposed for 50 h at room temperature to the radiation of a 450 W Xenon OFR lamp positioned at 300 mm from the specimen. Measurement value of ℓ^* after the irradiation shall be not higher than 1 cd m^{-2} lx^{-1} or 2 cd m^{-2} lx^{-1} .

Outcomes

Measurement values of ℓ^* after irradiation and the results of the relative tests are:

Sample	ℓ^* (cd m^{-2} lx^{-1})	Test
202171 1dx	0.12	Pass
202171 1sx	0.14	Pass
202171 2dx	0.26	Pass
202171 2sx	0.17	Pass
202171 3dx	0.14	Pass
202171 3sx	0.18	Pass

Refractive Power

Clause 4.6.2.1

Requirements

The spherical refractive power, S, must be in the range from -0.12 D to $+0.12$ D and the astigmatic power, A, must be not superior to 0.12 D. The horizontal difference of the prismatic power between the two oculars must be not superior to 1.00 cm/m for base out and 0.25 cm/m for base in. The vertical difference of prismatic power must be not superior to 0.25 cm/m. The absolute difference between the spherical powers of the left and right oculars must be less than 0.18 D.

Spherical and Astigmatic Refractive Power

Outcomes

The measurement values of spherical and astigmatic refractive powers and their relative tests are:

Sample	S (D)	Test	A (D)	Test
202171 4dx	-0.04	Pass	0.04	Pass
202171 4sx	-0.04	Pass	0.04	Pass
202171 5dx	-0.03	Pass	0.03	Pass
202171 5sx	-0.04	Pass	0.05	Pass
202171 6dx	-0.03	Pass	0.04	Pass
202171 6sx	-0.04	Pass	0.05	Pass

Differences of the Horizontal and Vertical Refractive Prismatic Powers

Outcomes

Measurement values of the difference of the horizontal, ΔP_{HORZ}, and of the vertical, ΔP_{VERT}, refractive prismatic powers, the base, the relative tests are:

Sample	Base	ΔP_{HORZ}(cm/m)	Test	ΔP_{VERT}(cm/m)	Test
202171 4	out	0.40	Pass	0.00	Pass
202171 5	out	0.40	Pass	0.00	Pass
202171 6	out	0.40	Pass	0.00	Pass

Spherical Refractive Power Difference

The spherical refractive power difference, $|\Delta S|$, between the two mounted oculars is:

Sample	$\|\Delta S\|$(D)	Test
202171 4	0.00	Pass
202171 5	0.01	Pass
202171 6	0.01	Pass

Resistance to Surface Damage by Fine Particles

Clause 4.7.3

Requirements

The ocular is fixed onto a revolving plate. Whilst the plate is rotated, 3 kg of quartz sand with grain size between 500 µm and 710 µm is tickled onto the sample.
The test of the light diffusion is performed after the abrasion according to the basic method. The Reduced Luminance Factor, ℓ^* , of the sample must be less than 10 $\mathrm{cd\,m^{-2}\,lx^{-1}}$. The measurement values of ℓ^* and the results of their related tests are:

Sample	ℓ^* ($\mathrm{cd\,m^{-2}\,lx^{-1}}$)	Test
202171 15dx	2.43	Pass
202171 15sx	1.80	Pass
202171 16dx	1.73	Pass
202171 16sx	1.93	Pass

Mechanical Tests

Design and Manufacturing, Materials, Sit and Fit, Ventilation

Clauses 4.2, 4.3, 4.4 and 4.5

Requirements

Design and Manufacturing

Eye-protectors shall meet the general construction requirements consisting in being free from projections, sharp edges or other defects which can cause discomfort or injury during normal use.

Materials

Protectors shall be made of materials which do not cause skin irritation in case of contact with the wearer.

Sit and Fit

Goggles shall sit securely, adapting to the wearer's face by soft and flexible materials. The retaining strap shall be elastic or adjustable, shall sit in position and shall not rip or deform permanently during use.

Ventilation

Goggles shall be designed in such a way to assure a good ventilation during use, without reducing the peripheral vision significantly. Design measures to ensure ventilation shall be outside the oculars areas. When goggle are provided with opening to allow circulation of air, the vented portion shall be such that openings shall exclude spherical objects 1.5 mm in diameter or larger.

Outcomes

The examinations, according to the previous requirements, have given the following results:

Sample	Design and Manufacturing Test	Materials Test	Sit and Fit Test	Ventilation Test	Note
202171 1	Pass	—	Pass	**FAIL**	—
202171 2	Pass	—	Pass	**FAIL**	—
202171 3	Pass	—	Pass	**FAIL**	—

Field of vision

Clause 4.6.1

Requirements

Goggles shall have a field of vision including for each eye the field defined by a cone having its vertex in the pupil and such to form an ellipse with its section on a 250 mm distant plane parallel to the two pupils and orthogonal to the horizontal sight axis. The ellipses have geometric features and positions as specified on the norm.

Outcomes

The performed tests given the following results:

Sample	Observations	Test
202171 4	—	Pass
202171 5	—	Pass
202171 6	—	Pass

Impact Resistance

Clause 4.7.2

Requirements

The sample shall withstand the impact of a 6 mm nominal diameter steel ball striking the ocular at a speed of:
45^{+2}_{-0} m/s for minimum protection level.
60^{+2}_{-0} m/s for enhanced protection level.
The impact shall occur in correspondence to the visual centre.
Four samples are pre-conditioned in air for 2 h at a temperature of $+50\ ^{\circ}\mathrm{C}$ and four samples in air for 2 h at $-10\ ^{\circ}\mathrm{C}$.
The test shall be made at ambient temperature within 30 s after the removal of the sample from the thermic conditioning.
The performed tests have given the following results:

Sample	Impact Point	Temperature (^oC)	Velocity (m/s)	Notes	Test
202171 7	right frontal	-10	61.1	—	Pass
202171 8	left frontal	-10	60.8	—	Pass
202171 9	right frontal	-10	61.2	—	Pass
202171 10	left frontal	-10	60.9	—	Pass
202171 11	right frontal	+50	61.1	—	Pass
202171 12	left frontal	+50	60.9	—	Pass
202171 13	right frontal	+50	60.9	—	Pass
202171 14	left frontal	+50	60.9	—	Pass

Figure 1: Specimen picture.

Laboratory Technical Manager: Giorgio Sommariva

END OF TEST REPORT