



Issued to:

Minuendo AS  
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0153 Oslo  
Norway

Notified Body: 2777

SATRA customer number: P21145

# EU Type-Examination Certificate

## Certificate number: 2777/20156-01/E00-00

This EU Type-Examination Certificate covers the following product group(s) supported by testing to the relevant standards/technical specifications and examination of the technical file documentation:

Following the EU Type-Examination this product group has been shown to satisfy the applicable essential health and safety requirements of Annex II of the PPE Regulation (EU) 2016/425 as a Category III product.

**Product reference:**

MSA101  
Smart Alert Earplugs

**Description:**

Earplugs with four exchangeable ear tip variants:  
Single flange Silicone– Small (9-10mm), Medium (9-11mm), Large (10-12mm)  
Double flange Silicone– One size (8-11mm)  
Triple flange Silicone– Small (7-10mm), Large (8-12mm)  
Foam – Small (8-10mm), Medium (9-12mm), Large (10-13mm)

**Classification:**

**Single Flange**

	SNR = 16 dB		H = 16 dB		M = 13 dB		L = 11 dB			
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	$SNR_M = 18.6dB$	$SNR_S = 3.1dB$
Mean attenuation (dB)	14.5	13.8	15.3	13.8	16.3	19.4	23.3	26.5	$H_M = 19.7dB$	$H_S = 3.7dB$
Standard deviation (dB)	6.8	5.3	5.7	3.7	3.3	4.8	4.4	6.8	$M_M = 15.9dB$	$M_S = 3.0dB$
Assumed protection (dB)	7.7	8.5	9.6	10.0	12.9	14.6	18.9	19.7	$L_M = 14.5dB$	$L_S = 3.3dB$

**Double Flange**

	SNR = 16 dB		H = 16 dB		M = 13 dB		L = 12 dB			
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	$SNR_M = 18.2dB$	$SNR_S = 2.6dB$
Mean attenuation (dB)	14.0	15.9	14.9	15.9	15.5	18.8	19.3	28.3	$H_M = 18.4dB$	$H_S = 2.9dB$
Standard deviation (dB)	5.2	5.4	5.7	4.9	2.8	4.3	3.5	7.6	$M_M = 15.9dB$	$M_S = 2.6dB$
Assumed protection (dB)	8.8	10.5	9.1	11.0	12.7	14.4	15.8	20.7	$L_M = 15.1dB$	$L_S = 3.6dB$

**Triple Flange**

	SNR = 16 dB		H = 16 dB		M = 14 dB		L = 12 dB			
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	$SNR_M = 18.6dB$	$SNR_S = 2.5dB$
Mean attenuation (dB)	12.6	14.1	16.9	16.4	15.9	19.0	19.8	28.8	$H_M = 18.8dB$	$H_S = 2.8dB$
Standard deviation (dB)	6.1	4.9	5.4	3.9	3.5	3.2	4.3	7.2	$M_M = 16.3dB$	$M_S = 2.6dB$
Assumed protection (dB)	6.6	9.3	11.5	12.4	12.4	15.8	15.5	21.6	$L_M = 15.8dB$	$L_S = 3.4dB$

**Foam**

	SNR = 18 dB		H = 19 dB		M = 15 dB		L = 13 dB			
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	$SNR_M = 19.4dB$	$SNR_S = 1.5dB$
Mean attenuation (dB)	15.1	15.0	15.6	14.6	16.5	20.1	23.9	31.0	$H_M = 20.5dB$	$H_S = 2.0dB$
Standard deviation (dB)	4.6	5.1	3.3	2.6	2.6	3.2	3.1	5.2	$M_M = 16.6dB$	$M_S = 1.7dB$
Assumed protection (dB)	10.6	9.9	12.3	12.0	13.9	16.9	20.8	25.8	$L_M = 15.4dB$	$L_S = 1.9dB$

Standards/Technical specifications applied:  
EN 352-2:2020

Technical reports/Approval documents:  
SATRA: SPC0318886/2135/1, CHM0319602/2137/LC/Issue 2

Signed on behalf of SATRA:

Geoff Graham

Date first issued: 28/01/2022  
Date of issue: 28/01/2022  
Expiry date: 28/01/2027

# TERMS AND CONDITIONS

The following conditions apply in addition to SATRA's standard terms and conditions of business and those given in the current certification agreement. This certificate has been issued in accordance with Annex V (Module B) of the applicable legislation (see note 11).

Please note:

1. Where the product is classified as category III then CE or UKCA Marking of production is reliant on current compliance with module C2 or Module D of the applicable legislation (See note 11). (Except that specifically produced to fit an individual user).
2. Full details of the scope of the certification and product(s) certified are contained within the manufacturer's technical documentation.
3. Where a translation of this certificate exists, the English language version shall be considered as the authoritative text.
4. Certification is limited to production undertaken at the sites listed in the manufacturer's technical documentation.
5. Ongoing manufactured product shall be consistent with the product(s) certified and listed on this certificate and an EU declaration of product conformity shall be made available in accordance with the applicable legislation (See note 11)
6. The Manufacturer shall inform SATRA of any changes to the certified product or technical documentation.
7. Where results obtained during type testing are within the budget of uncertainty when compared to the pass requirement, classification or performance level, then it is the responsibility of the manufacturer to ensure that the factory production control and manufacturing tolerances are such that the product placed on the market meets with the stated requirements, classifications or performance levels.
8. This certificate shall be kept together with the relevant technical documentation in a safe place by the client named on this certificate. Production of this certificate and other documentation may be required by a representative of the EC member state, or UK government.
9. This certificate relates only to the condition of the testable items at the time of the certification procedure and is subject to the expiry date shown.
10. SATRA reserves the right to withdraw this certificate if it is found that a condition of manufacture, design, materials or packaging have been changed and therefore no longer comply with the requirements of the applicable legislation (See note 11).
11. These terms and conditions shall apply to the requirements set out in Regulation (EU) 2016/425 of the European Parliament and of the council of 9th March 2016 on personal protective equipment or to UK legislation relating to UKCA Marking as defined within the issued certificate.