Ordinance to the Federal Act on Protection against the Risks associated with Non-Ionising Radiation and with Sound (O-NIRSA)

of 27 February 2019 (Status as of 31 August 2022)

The Swiss Federal Council,

based on the Federal Act of 16 June 2017 on Protection against Non-Ionising Radiation and Sound[1] (NIRSA),

ordains:

Section 1 Use of Solariums

Art. 1 Definition

For the purposes of this Section, *solariums* means systems, devices and lamps which expose the skin to ultraviolet (UV) radiation.

Art. 2 Duties of the operator

[1] Solarium operators must ensure that:

a. solariums for users are visibly classified as UV type 1, 2, 3 or 4 in accordance with Annex 1 Number 1;

b. the total erythemal effective irradiance of a solarium, taking into account the maximum values of the radiation components given in Annex 1 Number 1, does not exceed 0.3 watt per square metre;

c. a device-specific irradiation plan in accordance to Annex 1 Number 2 shall be made available to the users;

d. UV protective goggles of the type specified by the solarium manufacturer are available;

e. users may only use a solarium of UV type 4 if they present a medical certificate to the staff.

AS **2019** 999

1 SR **814.71**

2 The operator must equip and operate the solarium in such a way that:

a. persons aged under 18 years cannot use the solarium;

b. the users can easily set the parameters of the exposure schedule on the solarium.

3 The operator, prior to the users using the solarium, must:

a. inform them that risk groups, as specified in Annex 1 Number 3, must not use a solarium under any circumstances;

b. explain the dangers of UV irradiation as listed in Annex 1 Number 4, as well as measures to minimise these dangers.

Art. 3 Unattended solariums

In the absence of an attendant, solarium operators may only make solariums of UV type 3 available.

Art. 4 Attended solariums

For the operation of solariums of UV types 1, 2 and 4, solarium operators must deploy personnel trained in accordance with the following standards[2]:

a. SN EN 16489–1:2014, «Professional indoor UV exposure services – Part 1: Requirements for the provision of training»;

b. SN EN 16489–2:2015, «Professional indoor UV exposure services – Part 2: Required qualification and competence of the indoor UV exposure consultant».

Section 2 Use of Products for Cosmetic Purposes

Art. 5 Carrying out treatments

1 Treatments as specified in Annex 2 Number 1 with products that for their effect generate non-ionising radiation or sound may be carried out by the following persons:

a. physicians who are authorised to practice their profession under their own professional responsibility;

b. practice personnel directly instructed by and under the direct supervision and responsibility of a physician as specified under letter a;

c. persons with a certificate of competence obtained through an examination.

2 Treatments specified in Annex 2 Number 2 with such products shall be performed exclusively by persons specified in paragraph 1 letters a or b.

2 This standard can be consulted free of charge and purchased from the Swiss Association for Standardization, Sulzerallee 70, 8404 Winterthur, www.snv.ch

Art. 6 Prohibited use

The following are prohibited:

a. removal of tattoos and permanent make-up by means of intense pulsed light (IPL);

b. removal of melanocytic naevi by means of a laser or IPL.

Art. 7 Responsibilities of the administrative body for certificates of competence

[1] The administrative body for certificates of competence shall be made up of the professional associations with medical and cosmetic orientation.

[2] It draws up the training programme, the examination content and the examination regulations for the certificates of competence. The training programme must provide the know-how and skills as specified in Annex 2 Number 3, and which reflect the state of the art in science and technology. The examinations must certify the acquisition of these skills and know-how.

Art. 8 Responsibilities of the examining bodies

[1] The examining bodies shall conduct examinations and issue the certificates of competence.

[2] They shall notify the Federal Office of Public Health (FOPH) of the certificates of competence issued, including the following details of the recipient:

a. name and first name;

b. date of birth;

c. treatments the recipient is permitted to carry out in accordance with Annex 2 Number 1.

Art. 9 Requirements for training and examinations

[1] Training and examinations must reflect the training programme and the examination content.

[2] The FDHA, by means of an Ordinance, adopts a list of certificates of competence which fulfil the requirements of Annex 2 Number 3.

[3] The FOPH recognises the equivalence of other training qualifications if the acquired skills and knowledge fulfil these requirements.

Section 3 Events involving Laser Radiation

Art. 10 Definitions

For the purposes of this Section:

a. *event involving laser radiation* means: a laser light show, holographic projection or astronomy presentation;

b. *audience zone* means: the floor area reserved for the audience, including the space up to 3 metres above and 2.5 metres to the side of the floor area.

Art. 11 Classification of laser devices

Laser devices are assigned to Classes 1, 1M, 2, 2M, 3R, 3B and 4 in accordance with SN EN 60825–1:2014[3], «Safety of laser products – Part 1: Equipment classification and requirements».

Art. 12 Event with no laser radiation in the audience zone

1 Any person who conducts an event without laser radiation in the audience zone, but at which a laser device of Class 1M, 2M, 3R, 3B or 4 is operated, must appoint a person meeting the requirements of paragraph 2 letter a to do this.

2 The person who operates the laser device must:

a. have a certificate of competence level 1 as specified in Article 16 paragraph 1 letter a or a certificate of competence level 2 as specified in Article 16 paragraph 1 letter b;

b. comply with the requirements specified in Annex 3 Number 1.1;

c. notify the FOPH, via its notification portal, no later than 14 days before the event, in accordance with Annex 3 Numbers 2.1 and 2.2.

Art. 13 Event with laser radiation in the audience zone

1 Any person who conducts an event with laser radiation in the audience zone, at which a laser device of Class 1M, 2M, 3R, 3B or 4 is operated, must appoint a person meeting the requirements of paragraph 2 letter a to do this.

2 The person who operates the laser device must:

a. have a certificate of competence level 2 as specified in Article 16 letter b;

b. comply with the requirements specified in Annex 3 Number 1.2;

c. notify the FOPH, via its notification portal, no later than 14 days before the event, in accordance with Annex 3 Numbers 2.1 and 2.3.

3 This standard can be consulted free of charge and purchased from the Swiss Association for Standardization, Sulzerallee 70, 8404 Winterthur, www.snv.ch

3 Persons with a certificate of competence level 2 may instruct a person with a certificate of competence level 1 to supervise an event with laser radiation in the audience zone.

Art. 14 Laser radiation in or into the open air

1 Any person who operates a laser device of any class to emit laser radiation in or into the open air may not endanger other people; in particular, pilots, airport staff and locomotive or motor vehicle drivers must not be dazzled.

2 If a laser device emits laser radiation into airspace, then, in order to ensure the safety of flight operations, the following persons shall provide the following information to the FOPH via its notification portal no later than 14 days in advance in accordance with Annex 3 Number 2.1:

a. to operate laser devices of Class 1M, 2M, 3R, 3B or 4: the person with a certificate of competence level 1 or 2 pursuant to Articles 12 or 13;

b. to operate laser devices of Class 1 or 2: the organiser.

Art. 15 Notification portal for events involving laser radiation

1 The FOPH shall maintain an electronic notification portal for events involving laser radiation.

2 Data in accordance with Annex 3 Number 2 is collected via this portal.

3 The FOPH shall use the data exclusively for the tasks under this Ordinance.

4 No later than 10 years after the end of the event or series of events, the FOPH shall offer personal data to the Federal Archive and destroy data designated as not worth archiving by the Federal Archive.

5 It shall ensure that the notification portal operates with state of the art technology with regard to data protection and data security.

Art. 16 Acquisition of competence

1 Training and examinations for the acquisition of competence must comprise the following modules:

a. for the certificate of competence level 1, the modules specified in Annex 3 Numbers 3.1–3.3;

b. for the certificate of competence level 2, the modules specified in Annex 3 Numbers 3.1–3.4.

2 The certificate of competences at levels 1 and 2 are obtained by passing an examination.

3 The training and the examination must correspond to the state of the art in science and technology.

4 The FDHA, by means of an Ordinance, shall maintain a list of the certificates of competence at levels 1 and 2 which fulfil the requirements of Annex 3 Number 3.

5 The FOPH shall recognise the equivalence of other training qualifications if the acquired skills and knowledge fulfil these requirements.

Art. 17 Responsibilities of the examining bodies

The examining bodies shall carry out the examinations, issue the certificates of competence at levels 1 and 2, and keep examination statistics.

Section 4 Events involving Sound

Art. 18 Average sound level

The average sound level L_{Aeq1h} is defined as the A-weighted and equivalent long-term sound level L_{Aeq} measured over 60 minutes in dB(A).

Art. 19 Sound level limit values for events

1 At events involving electroacoustically amplified sound:

a. the average sound level must not exceed 100 dB(A);

b. the maximum sound level must not exceed 125 dB(A) at any time.

2 At events for children or adolescents under 16, the average sound level must not exceed 93 dB(A).

Art. 20 Obligations of the event organiser

1 Any person who carries out events involving electroacoustically amplified sound must:

a. in the case of an average sound level greater than 93 dB(A), notify this in writing to the cantonal enforcement authority at least 14 days beforehand with the information specified in Annex 4 Number 1;

b. in the case of an average sound level greater than 93 dB(A) and less than or equal to 96 dB(A), comply with the requirements specified in Annex 4 Number 2;

c. in the case of an average sound level greater than 96 dB(A) and less than or equal to 100 dB(A):

1. with a sound exposure time for no longer than three hours, comply with the requirements specified in Annex 4 Number 3.1,

2. with a sound exposure time for more than three hours, comply with the requirements specified in Annex 4 Number 3.2.

2 At an event involving electroacoustically amplified sound whose average sound level overall is greater than 93 dB(A), and which comprises a number of component

events at the same location, the component event with the highest average sound level determines whether the obligations specified in paragraph 1 letter b must be met for the whole period of the event or whether these obligations are governed by paragraph 1 letter c.

3 Any person who carries out events involving sound that is not electroacoustically amplified with an average sound level greater than 93 dB(A) must, both in buildings and at fixed outdoor locations, comply with the requirements specified in Annex 4 Number 4.

Art. 21 Determination of the sound levels and control measurements

1 Measurements and calculations to determine the sound level shall comply with Annex 4 Number 5.

2 The cantonal enforcement body may terminate a sound measurement as soon as it can demonstrate by calculation that the limit for the notified average sound level is exceeded.

Section 5 Laser Pointers

Art. 22 Definition

For the purposes of this Section, *laser pointer* means a laser device which, on account of its size and weight, can be held in and guided by hand and which emits laser radiation for pointing out objects and locations, for entertainment and for defence or repellent purposes.

Art. 23 Prohibitions and permissible use

1 The import, transit, offering and supply and the possession of the following are prohibited:

a. laser pointers of Classes 1M, 2, 2M, 3R, 3B and 4;

b. laser pointers which are not or are incorrectly labelled with a laser class in accordance with SN EN 60825–1:2014[4], «Safety of laser products – Part 1: Equipment classification and requirements»;

c. an accessory which is able to focus the laser radiation emitted by laser pointers.

2 The import and possession of laser pointers of classes 1, 1M, 2, 2M, 3R and 3B are permitted for the purpose of bird control on airport perimeters, insofar as the competent authorities have authorised their use for this purpose.

3 Class 1 laser pointers may only be used indoors and only for pointing purposes.

4 This standard can be consulted free of charge and purchased from the Swiss Association for Standardization, Sulzerallee 70, 8404 Winterthur, www.snv.ch

Section 6
Enforcement and Fees Charged by the Federal Authorities

Art. 24 Responsibilities of the FOPH

1 The FOPH shall enforce Section 3 concerning events involving laser radiation as follows:

a. It shall review the submitted notifications, and it may verify compliance with the requirements on-site.

b. It shall transmit notifications pertaining to laser radiation into the airspace as specified in Article 14 paragraph 2 to the competent body for flight safety.

2 It shall make enforcement aids available to the federal and cantonal enforcement bodies.

Art. 25 Responsibilities of the FOCBS

The Federal Office for Customs and Border Security (FOCBS)[5] shall enforce the prohibition on import and transit specified in Article 23 paragraph 1.

Art. 26 Fees

1 Fees are charged for controls and measures. They are charged according to the time spent. The hourly rate is 90–200 Swiss francs, depending on the requisite expertise and the seniority of the personnel involved.

2 No fees are charged for controls that do not reveal any non-compliance.

3 Otherwise, the provisions of the General Fees Ordinance of 8 September 2004[6] apply.

Art. 27 Controls by the enforcement bodies and cooperation duties

1 The FOPH and the cantonal enforcement bodies may carry out unannounced controls and measurements in event venues and premises with a view to collecting further evidence.

2 The FOPH and cantonal enforcement bodies shall be provided, free of charge, with all the information and documents they require and with access to the premises and event.

3 With regard to on-site controls for events involving laser radiation, the directives from the FOPH shall be implemented without delay.

5 The name of this administrative unit was changed on 1 Jan. 2022 pursuant to Art. 20 para. 2 of the Publications Ordinance of 7 Oct. 2015 (SR **170.512.1**) (AS **2021** 589). This change has been made throughout the text.

6 SR **172.041.1**

Section 7 Final Provisions

Art. 28 Repeal and amendment of other legislation

1 The Sound Levels and Laser Ordinance of 28 February 2007[7] is repealed.

2 ...[8]

Art. 29 Transitional provisions

1 Operators of solariums must:

a. have equipped and operate their solariums in accordance with the requirements of this Ordinance one year at the latest after this Ordinance comes into force;

b. by 1 January 2022 at the latest have equipped their solariums in such a way, and operate them as of this date, such that they cannot be used by persons aged under 18.

2 Treatments as specified in Annex 2 Number 1 may continue to be carried out up to five years after this Ordinance comes into force without the certificate of competence specified in Article 5. In this regard, the use of Class 4 lasers and of high energetic pulsed non-coherent light sources which are commercialised as medical devices is governed by Annex 6 Number 1 letters b and c and Number 2 letters b and c of the Medical Devices Ordinance of 17 October 2001[9] as amended on 24 March 2010[10].

3 Events involving laser radiation may continue to be conducted in accordance with the Sound Levels and Laser Ordinance of 28 February 2007[11] for up to 18 months after this Ordinance comes into force.

4 Laser pointers of Classes 1M, 2M, 3R, 3B and 4 must be disposed of professionally within one year at the latest after this Ordinance comes into force. Their possession is permitted up to then, but it is prohibited to use them.

5 Laser pointers of Class 2 must be disposed of professionally within two years at the latest after this Ordinance comes into force. Up to then their possession and use are only permitted indoors and only for pointing purposes.

Art. 30 Commencement

This Ordinance comes into force on 1 June 2019.

7 [AS **2007** 1307, **2010** 4489, **2012** 793]
8 The amendment may be consulted under AS **2019** 999.
9 SR **812.213**
10 AS **2007** 1307, **2010** 4489, **2012** 793
11 AS **2007** 1307

Annex 1
(Art. 2)

Use of solariums

1 UV types of solarium

Solarium UV type	Effective irradiance W/m²	
	UVB radiation component	UVA radiation component
1	< 0.0005	≥ 0.15
2	0.0005 to 0.15	≥ 0.15
3	< 0.15	< 0.15
4	≥ 0.15	< 0.15

2 Exposure schedule

The following settings must be available for each specific type of device and be easily adjustable on the device by the users:

Session series	Session	Irradiation time	Irradiation quantity[12]	Waiting period before next treatment	% of maximum annual dose[13]
1	**1st session with non-tanned skin**	Operator indication	max. 100 J/m²	48 hours	Operator indication
	2nd session with non-tanned skin	Operator indication min. 10 minutes	max. 250 J/m²	48 hours	Operator indication
	Following session 1	Operator indication min. 10 minutes	Operator indication max. 600 J/m²	48 hours	Operator indication
	Following session 2	Operator indication min. 10 minutes	Operator indication max. 600 J/m²	48 hours	Operator indication
	Following session …	Operator indication min. 10 minutes	Operator indication max. 600 J/m²	48 hours	Operator indication

12 Weighted according to the erythema action spectrum of Standard SN EN 60335-2-27:2013, «Household and similar electrical appliances - Safety - Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation».

13 Weighted with the effect spectrum for non-melanocytic skin cancer SN EN 60335-2-27:2013, of Standard SN EN 60335-2-27:2013, ‹‹Household and similar electrical appliances - Safety - Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation».

Session series	Session	Irradiation time	Irradiation quantity[12]	Waiting period before next treatment	% of maximum annual dose[13]
	Total session series		**Max. 3000 J/m²**		**Total session 1**
2	**Total session series 2**		**Max. 3000 J/m²**		**Total session 2**
…	**Total session series …**		**Max. 3000 J/m²**		**Total series …**
All session series	**Total**				**Total year max. 25 000 J/m²**

3 Risk groups

3.1 Information on the risk groups listed below must be posted in the entrance to the establishment; the information must be easily visible and readable on a DIN A1 size poster and written in the official languages of the relevant canton and in English.

3.2 The risk groups are:

3.2.1 Persons who suffer or have suffered from skin cancer;

3.2.2 Persons with an increased risk of skin cancer, particularly if:

a. they have a first-degree relative with a history of melanoma,
b. they have a history of frequent severe sunburn during childhood,
c. they have moles indicating an increased risk of skin cancer (more than 16 moles, asymmetrical irregularly shaped moles larger than 5 millimetres in diameter with variable pigmentation or irregular borders);

3.2.3 Persons sensitive to UV radiation who:

a. suffer from sunburn,
b. are not able to tan at all or burn easily when exposed to the sun,
c. tend to freckle,
d. have abnormal discoloured patches on the skin,
e. have a natural red hair colour,
f. are being treated for photosensitivity,
g. are receiving photosensitising medications.

4 Dangers and Measures

4.1 The following information on the dangers and measures must be posted in close proximity to the devices, be easily visible and readable on a DIN A1

size poster and written in the official languages of the relevant canton and in English.

4.2 The operator must inform users that:

4.2.1 UV radiation from solariums can cause irreversible skin or eye damage, such as skin cancer or lens opacity (cataracts);

4.2.2 UV radiation at any age and particularly at an early age increases the risk of skin damage in later life;

4.2.3 after overexposure to UV radiation, the skin may develop sunburn, premature skin aging may occur, and the risk of skin cancer may be increased;

4.2.4 certain medicines may increase UV sensitivity; in the event of any doubt, a physician or a pharmacist can provide advice in this regard;

4.2.5 an interval of at least 48 hours should be left between the first two UV exposure sessions;

4.2.6 if erythema (skin reddening) occurs after the UV exposure, sessions planned in accordance with the UV exposure schedule may be restarted only after one week;

4.2.7 they must not sunbathe and use the solarium on the same day;

4.2.8 when visiting the solarium:

a. they must remove cosmetics and not use any sunscreens or products which accelerate tanning,

b. they must always wear suitable goggles and protect sensitive skin areas such as scars, tattoos and the genitals from exposure;

4.2.9 prior to an irradiation session, they should consult a physician if:

a. they have a pronounced sensitivity or an allergic reaction to UV radiation,

b. unexpected effects, such as itching, occur within 48 hours after the first UV exposure session,

c. persistent lumps or sores appear on the skin, or if there are changes in pigmented moles.

Annex 2
(Art. 5, 7 para. 2 and 9 para. 2)

Use of products for cosmetic purposes

1 Treatments requiring a certificate of competence

The following treatments may only be carried out by persons with a certificate of competence in accordance with Article 5 paragraph 1 letter c or by physicians in accordance with Article 5 paragraph 1 letter a or by their practice personnel in accordance with Article 5 paragraph 1 letter b:

1.1 Treatment of:

a. acne;
b. cellulite and subcutaneous fat;
c. telangiectasia (couperose), haemangiomas (benign vascular lesions) and spider naevi measuring less than or equal to 3 mm, subject to the requirements of Number 2.2;
d. wrinkles;
e. onychomycosis;
f. scars;
g. post inflammatory hyperpigmentation;
h. striae (stretch marks).

1.2 Removal of:

a. hair;
b. permanent make-up by laser treatment, subject to the requirements of Number 2.2;
c. tattoos by laser treatment, subject to the requirements of Number 2.2.

1.3 Laser acupuncture.

2 Physician-only treatments

2.1 Only physicians qualified in accordance with Article 5 paragraph 1 letter a, or their practice personnel in accordance with Article 5 paragraph 1 letter b, may carry out the following treatments:

a. actinic and seborrhoeic keratosis;
b. age spots;
c. angiomas / large haemangiomas (greater than 3 mm);
d. dermatitis;
e. eczema;
f. genital warts;
g. fibromas;
h. port-wine stains;

i. keloids;
j. melasma;
k. psoriasis;
l. syringomas;
m sebaceous gland hyperplasia;
n. varicose and spider veins;
o. vitiligo;
p. warts;
q. xanthelasma.

2.2 Only physicians qualified in accordance with Article 5 paragraph 1 letter a, or their practice personnel in accordance with Article 5 paragraph 1 letter b, may carry out the following treatments on eyelids or close to the eyes (up to 10 mm):
a. removing permanent make-up;
b. removing tattoos and telangiectasia (couperose);
c. treating spider naevi and haemangioma.

2.3 Only physicians qualified in accordance with Article 5 paragraph 1 letter a, or their practice personnel in accordance with Article 5 paragraph 1 letter b, may use the following techniques and processes:
a. highly focused ultrasound;
b. ablative laser;
c. long-pulsed Nd:Yag laser;
d. photodynamic therapies combined with the application of phototoxic substances or medicaments;
e. laser lipolysis.

3 Knowledge and skills required for the certificate of competence

3.1 General knowledge and skills

To obtain the certificate of competence for each treatment according to Number 1, the following knowledge and skills must be acquired:

3.1.1 knowledge of the biological and physiological effects of optical radiation, radiofrequency, cold, shockwaves and ultrasound;

3.1.2 general knowledge of the anatomy, physiology and pathophysiology of human skin and hair, and specific knowledge of changes in skin, vessels, nails and tissue for treatments specified in Annex 2 Number 1;

3.1.3 fundamental knowledge of benign and malignant changes of the skin;

3.1.4 fundamental knowledge of the assessment of skin, hair, vessels, tissue and nails with regard to specific treatments;

3.1.5 recognition of a medical treatment indication and the need for referral to a physician;

3.1.6 knowledge of treatment site preparation and aftercare, hygiene and auxiliaries;

3.1.7 knowledge of the applicable legal provisions; in particular, those treatments which may only be carried out by a physician.

3.2 Technical knowledge

To obtain the certificate of competence for each treatment in accordance with Number 1, the following specifically required technical knowledge from the following list must be acquired:

3.2.1 knowledge of the principles and design of an IPL or laser device, laser classes, risks of reflective surfaces and health risks (eye damage, dazzling);

3.2.2 knowledge of the physical fundamentals of optical radiation, radiofrequency, cold, shockwaves or ultrasound;

3.2.3 knowledge of the technology of the devices that function with optical radiation, radiofrequency, cold, shockwaves or ultrasound;

3.2.4 knowledge of protective measures for operators as well as for clients.

3.3 Treatment-specific knowledge and skills

To obtain the certificate of competence for each treatment according to Number 1, the following specifically required technical knowledge from the following list must be acquired:

3.3.1 knowledge of exclusion criteria, possible adverse effects, risks and alternative methods and technologies for the treatments listed in Annex 2 Number 1;

3.3.2 knowledge of the treatment schedule for the treatments listed in Annex 2 Number 1;

3.3.3 knowledge of suitable and unsuitable technologies used for the treatments listed in Annex 2 Number 1;

3.3.4 specific practical experience of the treatments listed in Annex 2 Number 1;

3.3.5 recognition and management of undesirable side effects and complications, in particular recognising those requiring treatment by a physician;

3.3.6. recognition of incorrect settings and equipment defects.

Annex 3
(Art. 12–16)

Events involving laser radiation

1 Requirements

1.1 Requirements for an event with no laser radiation in the audience zone

1.1.1 During the scheduled performance of the event or even in the case of malfunction, the laser radiation must not attain the audience area. This requires that the laser device is appropriately positioned or that physical or electronic devices contain or switch off the laser radiation.

1.1.2 Laser radiation must not strike reflective surfaces or objects in an uncontrolled manner.

1.1.3 Laser devices, mirrors and targets must be securely mounted and capable of withstanding shocks, vibrations and wind forces.

1.1.4 Laser radiation must neither endanger performers nor event staff. This requires that the event is appropriately planned, and the persons in question, if necessary, must wear protective glasses or protective clothing.

1.1.5 The laser radiation must not endanger third parties.

1.1.6 Compliance with Numbers 1.1.1–1.1.5 must be successfully tested before the event.

1.2 Requirements for an event involving laser radiation in the audience zone

1.2.1 During the scheduled performance of the event as well as in the case of malfunction, the laser radiation that attains the audience area:

a. must not exceed the maximum permissible exposure (MPE) for the cornea, as specified in SN EN 60825–1:2014[14], «Safety of laser products – Part 1: Equipment classification and requirements»;

b. must not exceed the level of 0.02 x MPE for the cornea, if the organiser cannot ensure that no instruments such as binoculars are used by the audience.

1.2.2 Laser radiation must not strike reflective surfaces or objects in an uncontrolled manner.

1.2.3 Laser devices, mirrors and targets must be securely mounted and capable of withstanding shocks, vibrations and wind forces.

14 This standard can be consulted free of charge and purchased from the Swiss Association for Standardization, Sulzerallee 70, 8404 Winterthur, www.snv.ch

1.2.4 The person with a certificate of competence or the person instructed by him/her with a certificate of expertise must ensure visual contact with all laser devices at all times and be able at all times to interrupt the laser event.

1.2.5 Laser radiation must neither endanger performers nor event staff. This requires that the event is appropriately planned, and the persons in question, if necessary, must wear protective glasses or protective clothing.

1.2.6 The laser radiation must not endanger third parties.

1.2.7 Compliance with Numbers 1.2.1–1.2.6 and the emergency procedures must be successfully tested before the event.

2 Notifications

2.1 Contents of notifications

Each notification must include the following information:

2.1.1 Details of the organiser: name, address, contact information (telephone number and e-mail address);

2.1.2 Details of the competent person: name, address, contact information (telephone number and e-mail address), certificate of competence or certificate of expertise;

2.1.3 Details of the event: venue, type, date of a single event/dates of series of events, beginning and duration, plan of the event location with marked laser device;

2.1.4 Details for testing the laser device: date and time;

2.1.5 Indication of whether the laser device will project into airspace.

2.2 Supplementary notification content for events with no laser radiation in the audience zone

The notification must include the following details in addition to those of Number 2.1:

2.2.1 Confirmation that the event does not involve laser radiation in the audience zone, and that the requirements specified in Annex 3 Number 1.1 will be complied with.

2.3 Supplementary notification contents for events involving laser radiation in the audience zone

The notification must include the following details in addition to those of Number 2.1:

2.3.1 Specifications for each individual laser device:

a. manufacturer and type designation,
b. precise description of the planned laser figures,
c. wavelengths,
d. beam diameter at the output port of the laser product,
e. minimum beam divergence,

f. peak output power for exposure of the audience zone,
g. energy distribution within the laser beam,
h. repetition rate of the laser beam (repetition rate of pulsed or modulated lasers and frame repetition rate),
i. minimum beam velocities,
j. maximum laser-pulse exposure duration for the audience,
k. shortest distance to the audience zone,
l. output power of the laser beam,
m. in the event of failure: maximum reaction time of automatic shutdown, or reference to manual shutdown,
n. calculated maximum irradiance in the audience zone and comparison with MPE,
o. emergency procedures;

2.3.2 Confirmation that the requirements specified in Annex 3 Number 1.2 will be complied with.

3 Training curriculum and examination contents for obtaining the level of competence

Training and examinations shall comprise the following modules:

3.1 Laser technology and safety:
a. principle and structure of a laser product,
b. laser classes and the associated precautions and safety signs,
c. optimum laser power level in relation to room dimensions and beam divergence,
d. risks of reflective surfaces,
e. secure installation,
f. protective measures and clothing;

3.2 Health effects:
a. eye and skin injury,
b. dazzling,
c. hazards for third parties and persons performing safety-critical activities;

3.3 Legal foundations:
Explanation of legal foundations, in particular the requirements for:
a. events involving laser radiation, in accordance with Annex 3 Number 1,
b. notifications of events involving laser radiation, in accordance with Annex 3 Number 2;

3.4 Theoretical and practical foundations:
a. Laser show programming,
b. Calculating MPE.

Annex 4[15]
(Art. 20 and 21 para. 1)

Events involving sound

1 Notifications

1.1 Notifications must include the following information:

a. venue, type, date, beginning and duration of the event;

b. name and address of the organiser;

c. a declaration that, for events involving electroacoustically amplified sound, the maximum average sound level will be less than or equal to 96 dB(A), or less than or equal to 100 dB(A);

d. the measurement and determination point, as specified in Annex 4 Number 5.1, for events involving electroacoustically amplified sound.

1.2 In addition, for events as specified in Article 20 paragraph 1 letter c number 2, a plan of the event venue must be submitted, indicating the location, size and marking of the respite area.

2 Events with an average sound level greater than 93 dB(A) and less than or equal to 96 dB(A)

Any person who organises an event involving electroacoustically amplified sound with an average sound level greater than 93 dB(A) and less than or equal to 96 dB(A) must ensure that:

2.1 sound emissions are limited to such an extent that exposures do not exceed the average sound level of 96 dB(A);

2.2 notices are prominently displayed at the entrance to the event, informing the audience of the risk of hearing impairment associated with high sound levels;

2.3 hearing protectors complying with SN EN 352–2:2002[16], «Hearing protectors – General requirements – Part 2: Ear-plugs» are available free of charge;

2.4 the average sound level is monitored during the event with a sound level meter, as specified in Number 5.2;

2.5 the measuring equipment is operated with the settings specified under Number 5.4.

15 The correction of 31 Aug. 2022 concerns the French text only (AS **2022** 478).
16 This standard can be consulted free of charge and purchased from the Swiss Association for Standardization, Sulzerallee 70, 8404 Winterthur, www.snv.ch

3 Events with an average sound level greater than 96 dB(A) and less than or equal to 100 dB(A)

3.1 Exposure for no longer than 3 hours

Any person who organises an event involving electroacoustically amplified sound with an average sound level greater than 96 dB(A) and less than or equal to 100 dB(A) that lasts for no longer than 3 hours must:

3.1.1 comply with Numbers 2.2–2.5;

3.1.2 ensure that sound emissions are limited to such an extent that exposures do not exceed the average sound level of 100 dB(A).

3.2 Exposure for more than 3 hours

Any person who organises an event involving electroacoustically amplified sound with an average sound level greater than 96 dB(A) and less than or equal to 100 dB(A) that lasts for more than 3 hours must:

3.2.1 comply with Numbers 2.2–2.5 and 3.1.2;

3.2.2 record the sound level during the whole event in accordance with Number 5.3;

3.2.3 retain the data on the recorded sound level as well as the information in accordance with Number 5.1 on the measurement location, place of determination and level difference for a period of six months, and submit the data when requested by the cantonal enforcement body;

3.2.4 make available to the audience one or more audition respite areas:

a. in which the average sound level must not exceed 85 dB(A),

b. which make up at least 10 per cent of the total area provided for the audience at the event,

c. which must be clearly marked and readily accessible to members of the audience throughout the event and, pursuant to the Ordinance of 28 October 2009[17] on Protection against Passive Smoking, include a smoke-free zone of adequate size.

4 Events not involving electroacoustically amplified sound

Any person who organises an event involving sound that is not electroacoustically amplified with an average sound level greater than 93 dB(A) must:

4.1 inform the audience of the risk of hearing impairment associated with high sound levels;

4.2 make available to the audience, free of charge, hearing protectors complying with SN EN 352–2:2002, «Hearing protectors – General requirements – Part 2: Ear-plugs».

17 SR **818.311**

5 Measurements and calculations

5.1 Measurement and determination point

5.1.1 Sound exposures shall be determined at ear level at the point where the audience is exposed to the highest sound levels (determination point).

5.1.2 In the case of measurements made at the determination point, the limit applicable for the event is deemed to be complied with if the reading is less than or equal to the limit.

5.1.3 If the measurement point is not the same as the determination point, the exposures must be corrected accordingly, taking the following into account:

a. the difference in sound level between the measurement point and the determination point is calculated by means of a defined wide band signal (pink noise/programme simulation noise in accordance with IEC 60268–1:1985[18], «Sound system equipment – Part 1: General») or by an equivalent method;

b. the determination point and sound level difference, and the method used, is recorded in writing;

c. in the case of measurements not performed at the determination point, the limit applicable for the event is deemed to be complied with if the reading at the measurement point plus the sound level difference is less than or equal to the limit.

5.2 Measuring instruments

5.2.1 For the cantonal enforcement bodies, the requirements for measuring instruments and for the accuracy classes of sound level meters are based on the FDJP Ordinance of 24 September 2010[19] on Instruments for Sound Measurement.

5.2.2 The measuring instruments of the organisers must be capable of:

a. measuring the A-weighted sound level LA;

b. the direct or indirect determination of the equivalent continuous sound level L_{Aeq} and the settings in accordance with Number 5.4;

c. for events in accordance with Number 3.2, recording a sound level in accordance with Number 5.3.

5.3 Sound level recording

The sound level recording must meet the following requirements:

5.3.1 The equivalent continuous sound level averaged over a period of 5 minutes $L_{Aeq5min}$ must be recorded at least every 5 minutes during the event.

18 This standard, available in English and French, can be purchased from Electrosuisse, Luppmenstrasse 1, CH-8320 Fehraltorf, www.electrosuisse.ch, or consulted free of charge at the Federal Office of Public Health, Schwarzenburgstrasse 157, CH-3097 Liebefeld.

19 SR **941.210.1**

5.3.2 The measurement data, together with the exact time of measurement, must be recorded in electronic form.

5.4 Measuring instrument settings

The measuring equipment used to measure the sound level shall be operated with the following settings:

a. frequency weighting A;

b. time weighting Fast (F) (time constant t = 125 ms for the determination of the maximum sound level).