

**Annexes Attached to Cabinet Resolution No. (41) of 2013
Regarding the UAE System for the Control of Laser Products**

Annex (1)

Approved Standard Specifications

#	Standard Number	Standard Title
1.	UAE.S GSO IEC 60825-1	Safety of Laser Products - Part 1: Equipment Classification and Requirements
2.	UAE.S GSO IEC 60825-3	Safety of Laser Products - Part 3: Guidelines for Laser Displays and Shows
3.	UAE.S GSO IEC 60825-4	Safety of Laser Products - Part 4: Laser Guards
4.	UAE.S GSO IEC 60825-8	Safety of Laser Products - Part 8: Guidelines for the Safe Use of Laser Beams on Humans

Annex (2)

List of Technical Terms

SN	Technical Term	Definition
1	Laser Radiation	Electromagnetic radiation emitted from a laser device with wavelengths ranging from (180) nanometers (ultraviolet) to (12) micrometers (infrared), as a result of stimulated emission.
2	Laser Beam	The emitted laser radiation described by its direction, divergence angle, and diameter.
3	Beam Divergence	The increase in the diameter of a laser beam as it travels over a distance, measured by the corresponding angular spread of the laser beam, expressed in radians.
4	Laser Intensity	The laser power per unit area, measured in watts per square meter (W/m ²).

SN	Technical Term	Definition
5	Visible Radiation	Any light that can be seen by the naked eye and may cause immediate visual disturbance upon exposure to the retina, such as the visible spectrum colors.
6	Beam Stop	A device that prevents the transmission and emission of the laser beam from the device.
7	Intrabeam Viewing	Exposure of the eye to a laser beam directly or through the reflection of laser radiation from smooth mirror-like surfaces.
8	Restricted Devices	High-power laser devices falling under classes (3R, 3B, 4).
9	Protective Housing	The part that contains the laser components (including associated components forming an integral part thereof) and is designed to prevent human access to laser radiation when such radiation exceeds the Accessible Emission Limit (AEL).
10	Safety Interlock	An automatic safety device associated with the protective housing of a laser device to prevent human access to laser radiation emitted from laser devices classified as Classes (3R, 3B, 4) when the Protective Housing of the laser device is removed, replaced, or displaced.
11	Invisible Radiation	Any light that cannot be seen by the naked eye and may cause direct effects on the cornea of the eye, such as infrared radiation at long wavelengths and ultraviolet region at short wavelengths.
12	Exposure Duration	The period of time during which the human body is exposed to laser radiation, whether pulsed or continuous.
13	Accessible Emission	The level of laser radiation at a point beyond the aperture of the laser device, measured in watts, joules, or, where applicable, watts per square meter, and used for the classification of laser devices and the assessment of their risk to public safety.

SN	Technical Term	Definition
14	Accessible Emission Limit (AEL)	The maximum amount of radiation permitted to be emitted within that class of laser devices (3R, 3B, 4).
15	Collimated Beam	A laser beam that propagates in parallel rays with a small diameter and low divergence.
16	Beam Expander	A set of optical lenses used to increase the diameter of the laser beam.
17	Stray Laser Beam	Deviation of the laser beam from its straight path due to reflection from one of the components of the laser device or from external surfaces.
18	Diffuse Reflection	Reflection of the laser beam from rough surfaces in multiple directions.
19	Emission Duration	The time period of a pulse, a sequence of pulses, or continuous wave laser to which a person is exposed during the operation or maintenance of the laser device.
20	Pulse Wave	Emission of laser radiation in pulses and for short durations, where the emitted energy is measured in joules.
21	Continuous Wave (CW)	Emission of laser radiation continuously over extended periods, where the emitted power is measured in watts.
22	Access Panel	An opening in the protective housing of a laser device that allows access to the laser beam when opened.
23	Thermal Hazard Limit	The maximum permissible exposure to laser radiation to protect persons from the harmful thermal effects of such radiation.
24	Photo Chemical Hazard Limit	The maximum permissible exposure to a laser beam to protect persons from the harmful photochemical effects, particularly at short wavelengths within the ultraviolet region.
25	Radiant Power	The power emitted or received by a laser device in the form of radiation, measured in watts.

SN	Technical Term	Definition
26	Specular Reflection	Reflection of the laser beam from smooth mirror-like surfaces.
27	Reflectance	The ratio of the reflected power of a laser beam to the incident radiant power on a surface.
28	Nominal Ocular Hazard Area (NOHA)	The area within which the irradiance of the laser beam exceeds the Maximum Permissible Exposure for the eye cornea.
29	Pulse Duration	The time measured between the points at which the pulse rises to and falls from its peak energy.
30	Nominal Ocular Hazard Distance (NOHD)	The minimum distance from the laser aperture at which the irradiance of the laser beam equals the Maximum Permissible Exposure for the eye cornea.
31	Maximum Permissible Exposure (MPE)	The level of laser radiation to which a person may be exposed to (under normal conditions) without suffering an adverse effect.

Annex (3)

General Safety Conditions to be Observed when Using Laser Products

SN	General Safety Condition
1	Laser radiation shall be directed towards the intended target and shall not be directed towards the eye or skin directly.
2	Batteries shall be removed from laser pointers when not in use, and such pointers shall be kept out of the reach of children.
3	Protective eyewear appropriate for laser radiation shall be used