

## Appendix (1) daily, weekly, monthly and annual frequency QC test with tolerances

<i>Frequency</i>	<i>Procedure</i>	<i>Tolerance<sup>a</sup></i>
Daily	Safety	
	Door interlock	Functional
	Radiation room monitor	Functional
	Audiovisual monitor	Functional
	Mechanical	
	Lasers	2 mm
	Distance indicator (ODI)	2 mm
Weekly	Check of source positioning	3 mm
Monthly	Dosimetry	
	Output constancy	2%
	Mechanical checks	
	Light/radiation field coincidence	3 mm
	Field size indicator (collimator setting)	2 mm
	Gantry and collimator angle indicator	1°
	Cross-hair centering	1 mm
	Latching of wedges, trays	Functional
	Safety interlocks	
	Emergency off	Functional
	Wedge interlocks	Functional
Annual	Dosimetry	
	Output constancy	2%
	Field size dependence of output constancy	2%
	Central axis dosimetry parameter constancy (PDD/TAR)	2%
	Transmission factor constancy for all standard accessories	2%
	Wedge transmission factor constancy	2%
	Timer linearity and error	1%
	Output constancy vs. gantry angle	2%
	Beam uniformity vs. gantry angle	3%
	Safety interlocks	
	Follow test procedures of manufacturers	Functional

Mechanical checks	
Collimator rotation isocenter	2mm diameter
Gantry rotation isocenter	2mm diameter
Couch rotation isocenter	2mm diameter
Coincidence of collimator, gantry, couch axis with isocenter	2mm diameter
Coincidence of radiation and mechanical isocenter	2mm diameter
Tabletop sag	2 mm
Vertical travel of table	2 mm
Field-light intensity	Functional

ODI, optical distance indicator; PDD, percent depth dose; TAR, tissue-airratio.

<sup>a</sup>The tolerances listed in the tables should be interpreted to mean either that (a) if a parameter either exceeds the tabulated value (e.g., the measured isocenter under gantry rotation exceeds 2 mm diameter) or (b) the change in the parameter exceeds the nominal value (e.g., the output changes by more than 2%), then an action is required. The distinction is emphasized by the use of the term *constancy* for the latter case. Moreover, for constancy, percent values are  $\pm$  the deviation of the parameter with respect to its nominal value; distances are referenced to the isocenter or nominal source to surface distance.

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