

Absolute Dose Values in Computed Tomography

SOMATOM Scope (16-slice configuration / 32-slice configuration)

Reference values		Switzerland ¹	Germany ²	European Union ³	USA ⁴
Head Routine	CTDI _{vol} [mGy]	65	60	60	75
Thorax Routine	CTDI _{vol} [mGy]	15	10	30	21
Abdomen Routine	CTDI _{vol} [mGy]	15	15	35	25

Default Siemens Protocol		Standard values*	Standard IR values ^{**/**/**}	Put your current values here
Head Routine	CTDI _{vol} [mGy]	51.58	44.54	
Thorax Routine	CTDI _{vol} [mGy]	6.89	5.9	
Abdomen Routine	CTDI _{vol} [mGy]	11.81	9.84	

1 Bundesamt für Gesundheit (Merkblatt R-06-06, Diagnostische Referenzwerte in der Computertomographie, 01.04.2010).

2 Bundesamt für Strahlenschutz (Diagnostische Referenzwerte für diagnostische und interventionelle Röntgenanwendungen vom 22. Juni 2016).

3 European Guidelines on Quality Criteria for Computed Tomography (<http://www.dr.dk/guidelines/ct/quality/htmlindex.htm>).

4 American College of Radiology (CT Accreditation Program Requirements, Clinical Image Quality Guide, Amended 2014).

*Values are based on the default protocols of the SOMATOM Scope with syngo CT VC30 – easyIQ version and an average sized patient of 1.75 m and 75 kg

**Iterative Reconstruction SAFIRE is used

***In clinical practice, the use of SAFIRE may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. The following test method was used to determine a 54 to 60% dose reduction when using the SAFIRE reconstruction software. Noise, CT numbers, homogeneity, low-contrast resolution and high contrast resolution were assessed in a Gammex 438 phantom. Low dose data reconstructed with SAFIRE showed the same image quality compared to full dose data based on this test. Data on file.

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