Optima CT520 Series with DoD16

Pre-Installation Manual

OPERATING DOCUMENTATION

5447459-1EN
Rev 6

Chapter 10
Radiation Protection Requirements

Section 1.0: Shielding Requirements

NOTICE **Engage a QUALIFIED RADIOLOGICAL HEALTH PHYSICIST to review your scan room shielding requirements, taking into consideration:**

- **Scatter radiation levels within the scanning room (see Figure 10-1).**
- **Equipment placement.**
- **Weekly projected work-loads (number of patients/day technique (kvp*ma))**
- **Materials used for construction of walls, floors, ceiling, doors, and windows.**
- **Activities in surrounding scan room areas.**
- **Equipment in surrounding scan room areas (e.g., film developer, film storage)**

Figure 10-1 to depict measurable radiation levels within the scanning room while scanning a 32 cm CTDI phantom (body) and a 20 cm water phantom (head) with the technique shown. The mAs, kV and aperture scaling factors shown in Table 10-1 can be used to adjust exposure levels to the scan technique used at the site.

Note: Actual measurements can vary. All measurements have an accuracy of ± 20% because of measurement equipment, technique, and system-to-system variation.

Use the correction factors shown in Table 10-1 to adjust exposure levels to the usual scan technique at your site.

Changed Parameter	Multiplication Factor
mAs	new mAs/100
80 kV	0.21
120 kV	0.71
140 kV	1.0
4 x 3.75mm images	0.82
16 x 0.625 LD 8 x 1.25 LD Fluro 5mm	0.59
4 x 1.25 LD 5mm (1i) Fluro 2.5 mm	0.40
1 x 1.25mm images	0.20
2 x 0.625 LD 1 x 1.25	0.10
20 mm aperture	1.00

Table 10-1 Shielding Requirements Scaling

NOTICE **The units of measure used for radiation levels have been changed in this publication, from mR (millirads) to μGy (micrograys). The conversion factor is:**

1 mR = 8.76 μGy

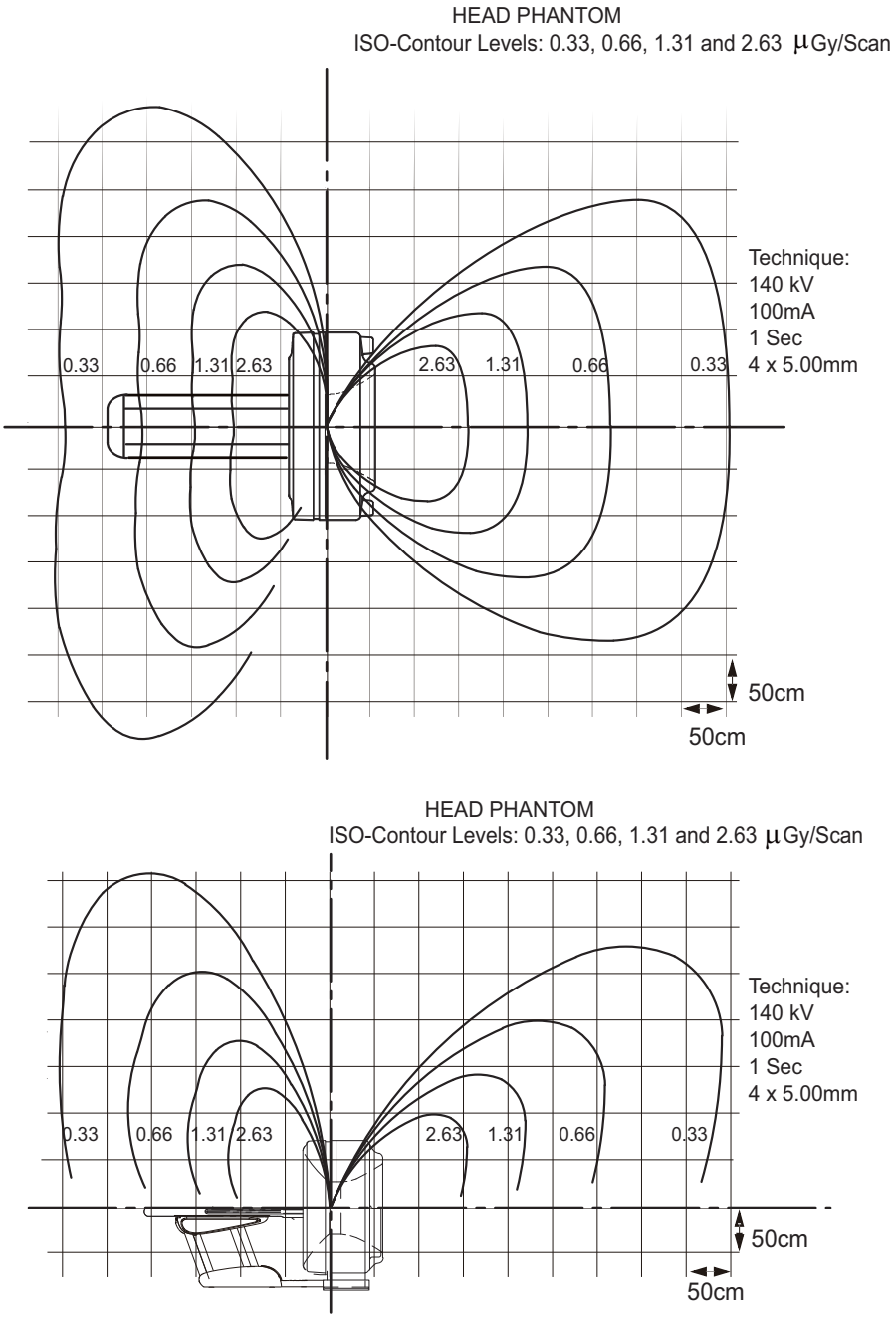

Figure 10-1 Typical Scatter Survey (Head Filter)

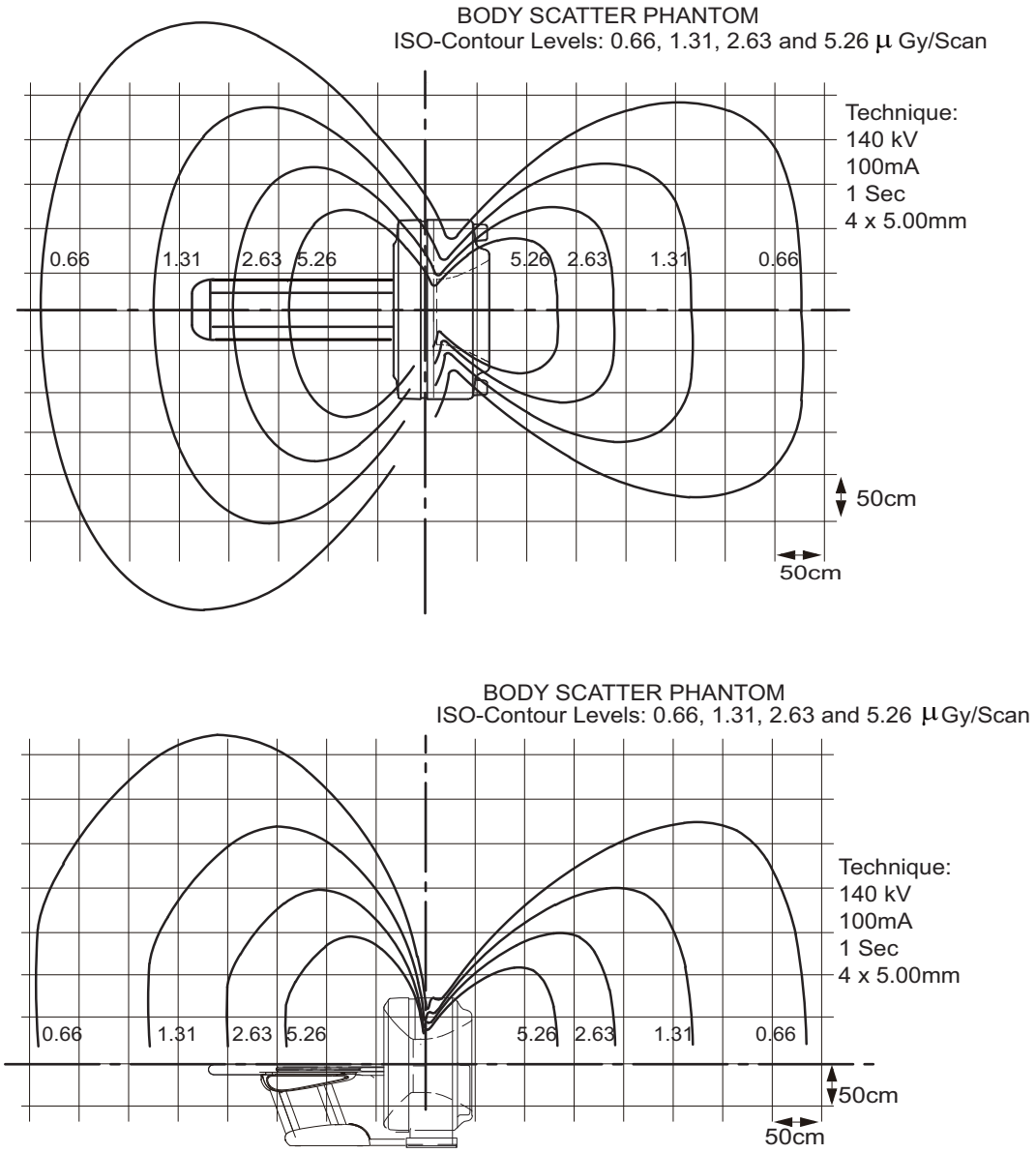

Figure 10-2 Typical Scatter Survey (body Filter)

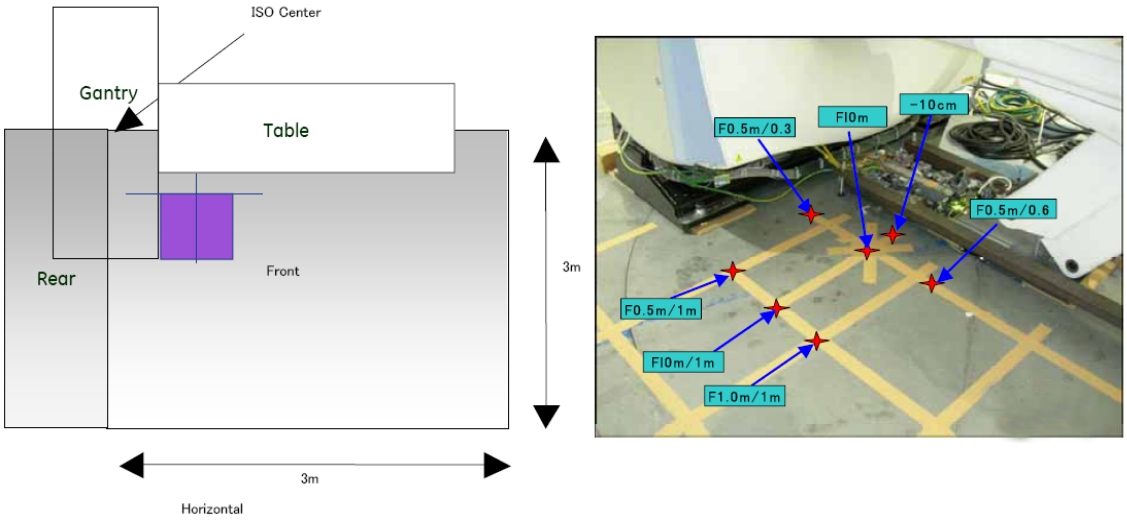

Figure 10-3 Fluoro Stand Position

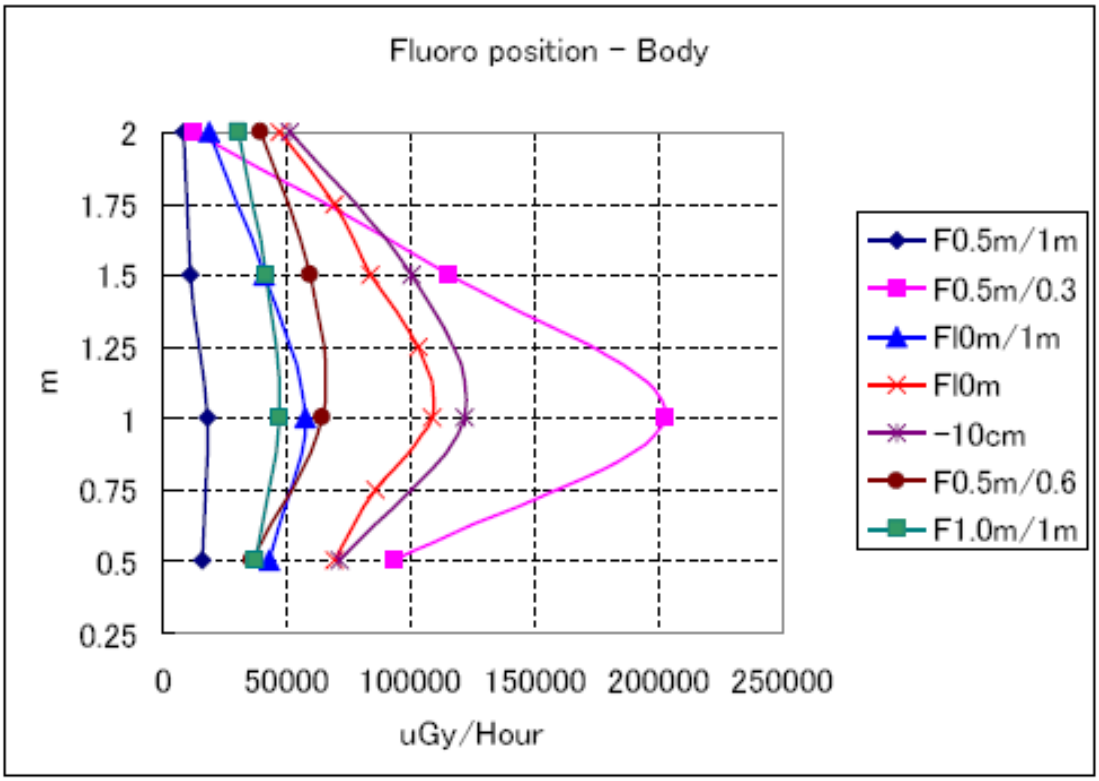

Figure 10-4 Scatter Plot of Fluoro - Body

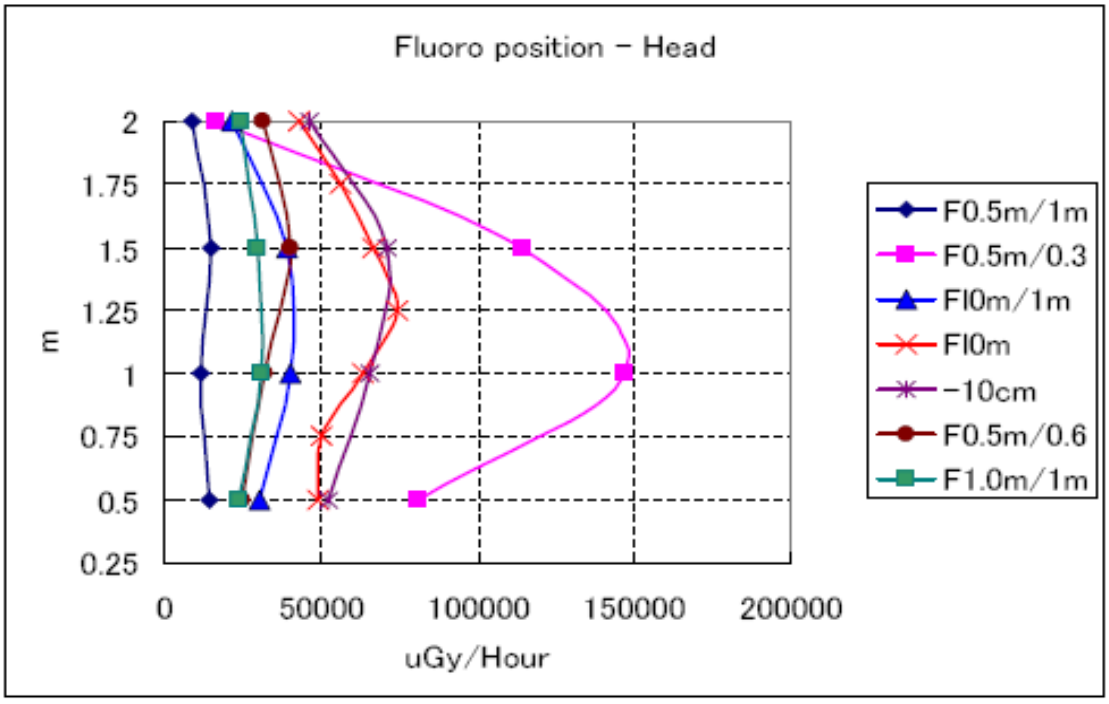

Figure 10-5 Scatter Plot of Fluoro - Head

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