



KONICA MINOLTA

REGIUS model 370

28-November-2005

KONICA MINOLTA

MEDICAL & GRAPHIC IMAGING EUROPE G.m.b.H

1. R&D Policy

R&D Policy (Improvements form REGIUS model 350)

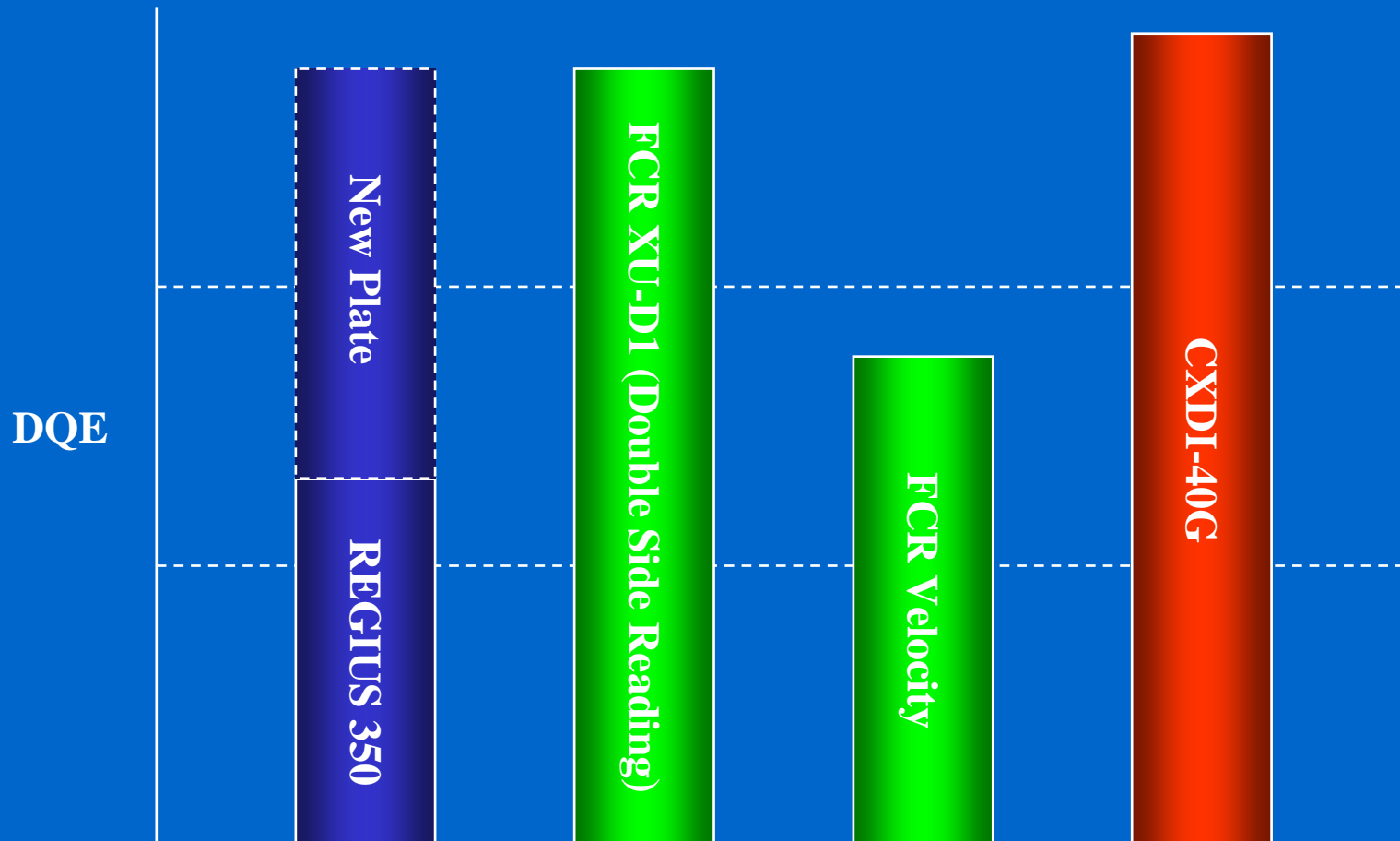
Improvement of Image Quality
(New Plate , Scatter Protection)

Improvement of Performance
(Erasing Speed)

Improvement of User Operability
(New Design)

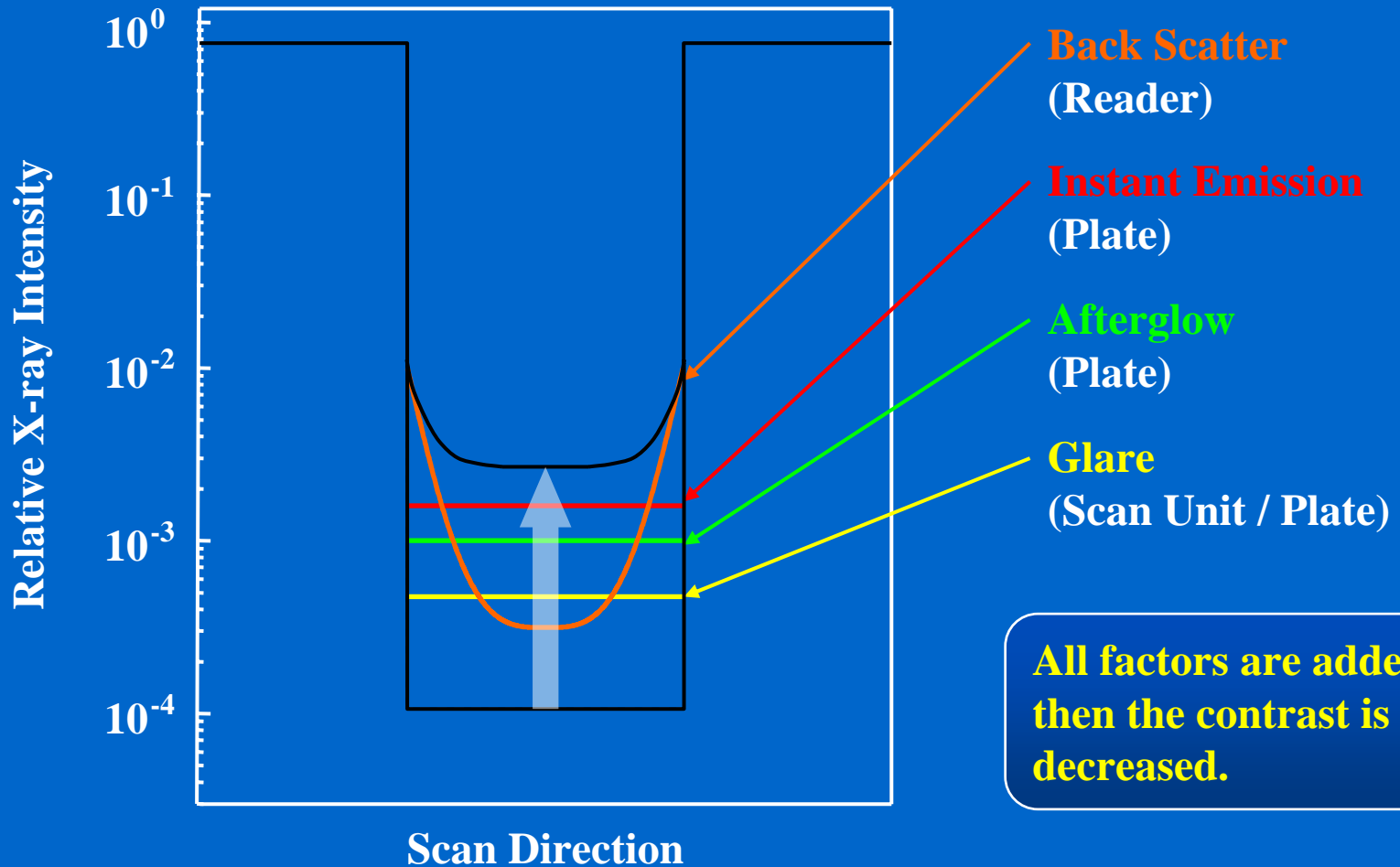
2. Improvement of Image Quality

Image Quality Comparison in DQE



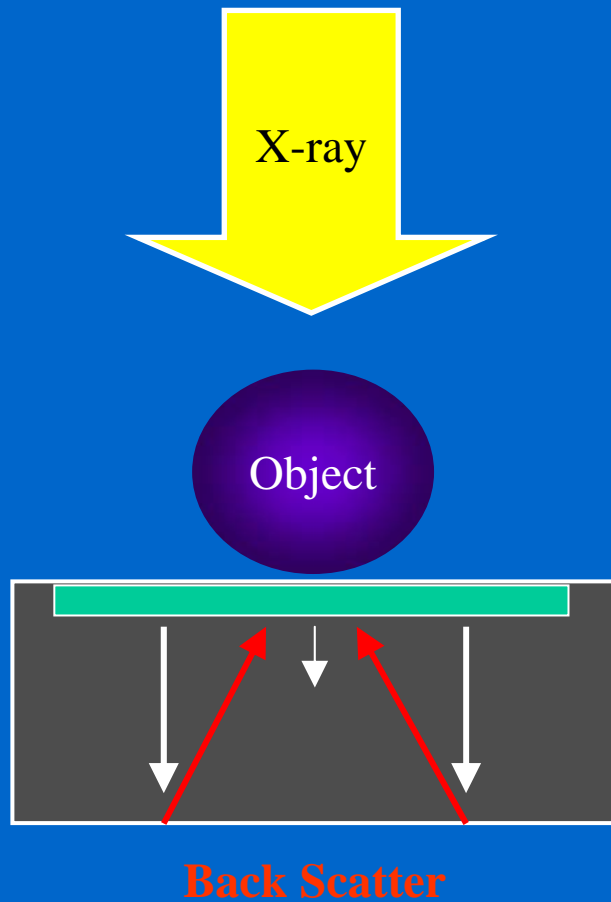
2. Improvement of Image Quality

Factors of Decrease in Contrast

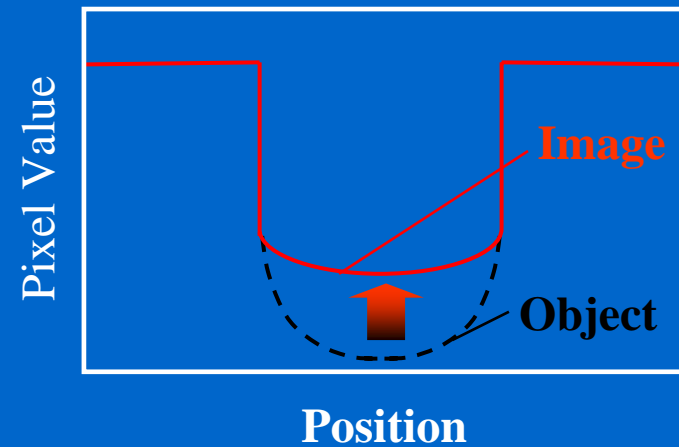


2. Improvement of Image Quality

Decrease of Contrast for Back Scatter



The contrast is decreased due to the scattered X-ray inside of reader device.

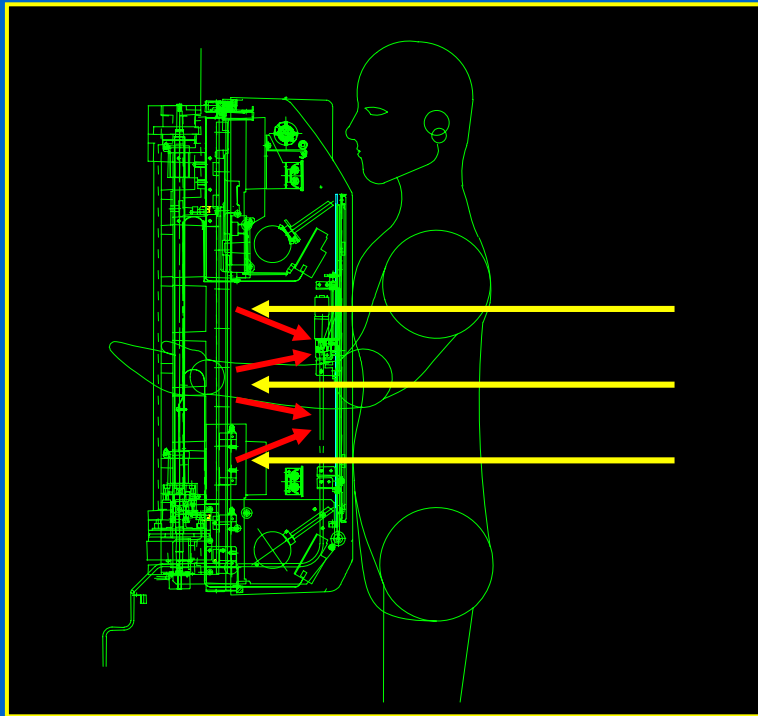


2. Improvement of Image Quality

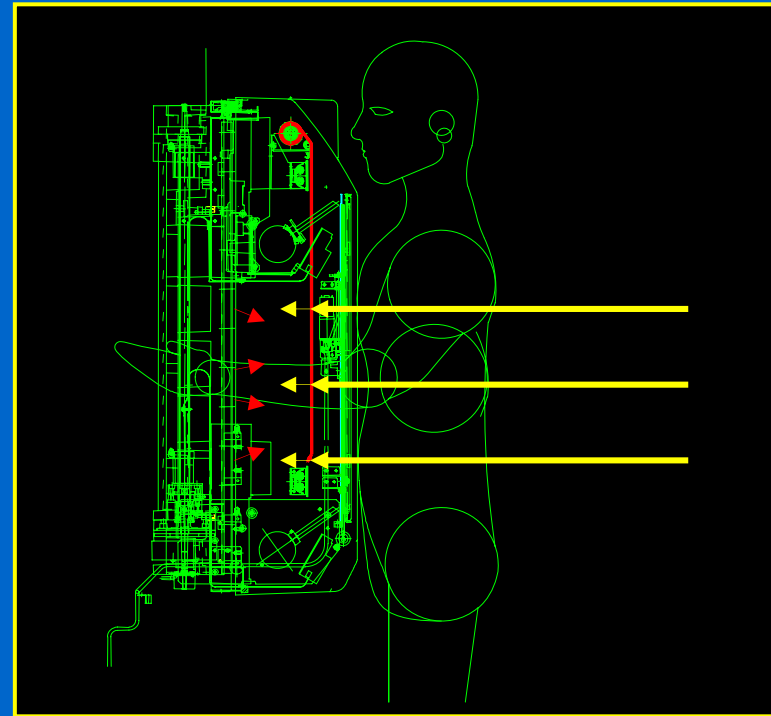


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Reduction of Back Scatter by Lead Sheet



REGIUS model 350

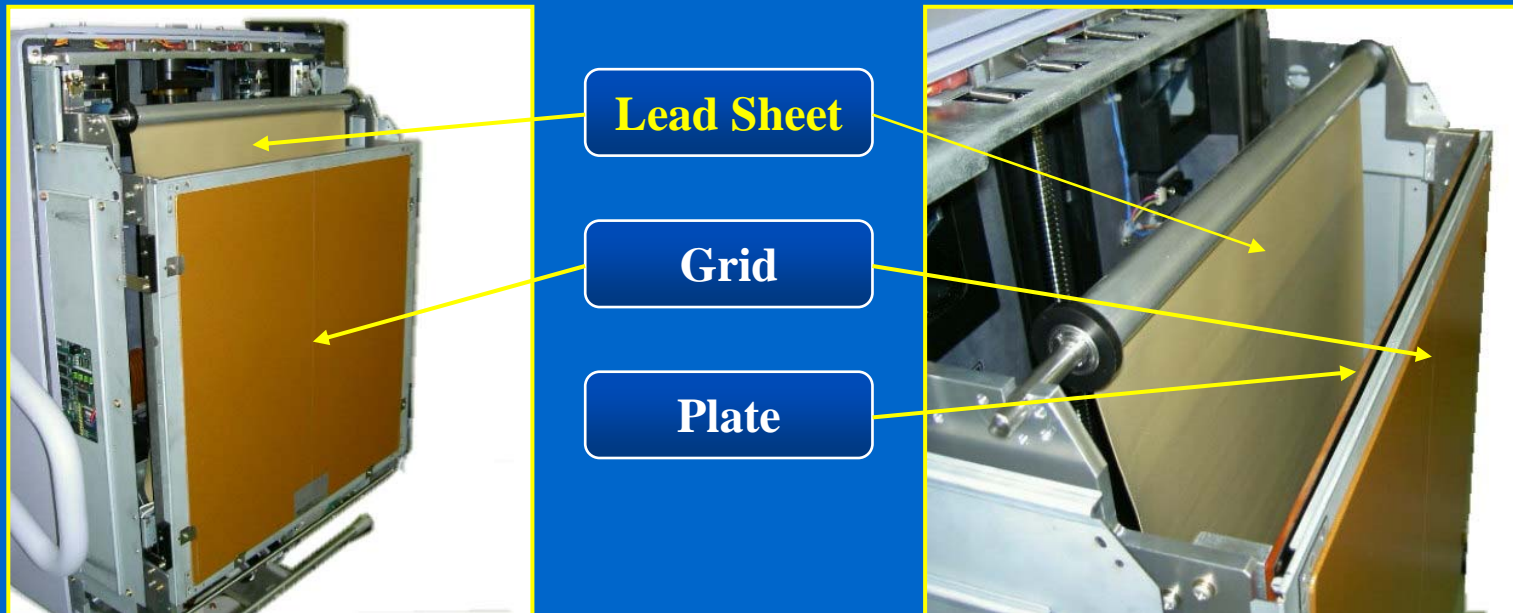


REGIUS model 370

2. Improvement of Image Quality

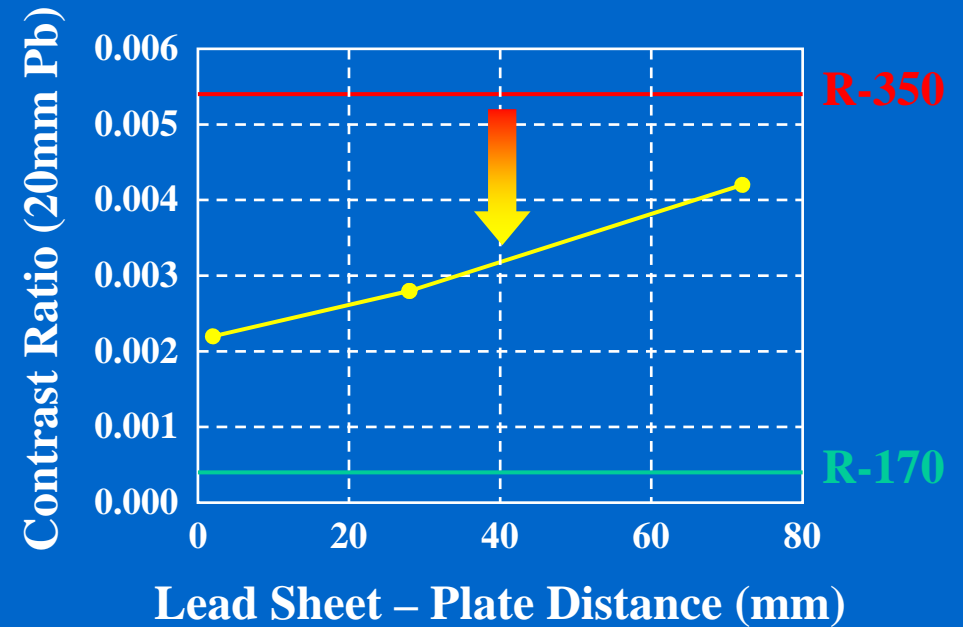
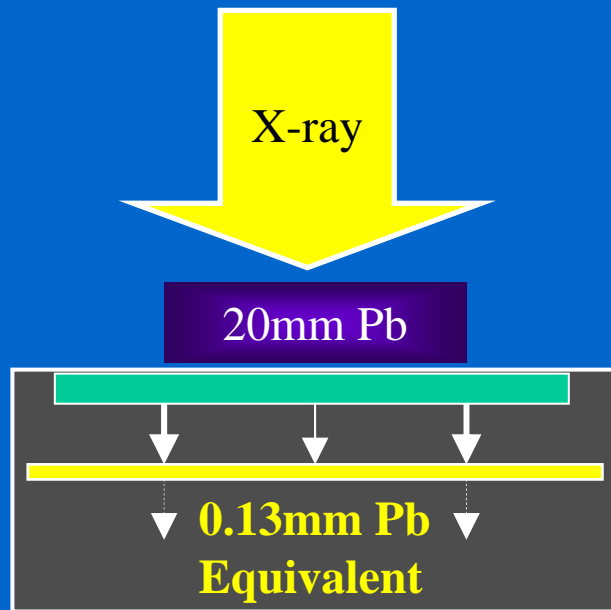
Reduction of Back Scatter by Lead Sheet

Integration of **Lead Sheet** behind the Plate.



2. Improvement of Image Quality

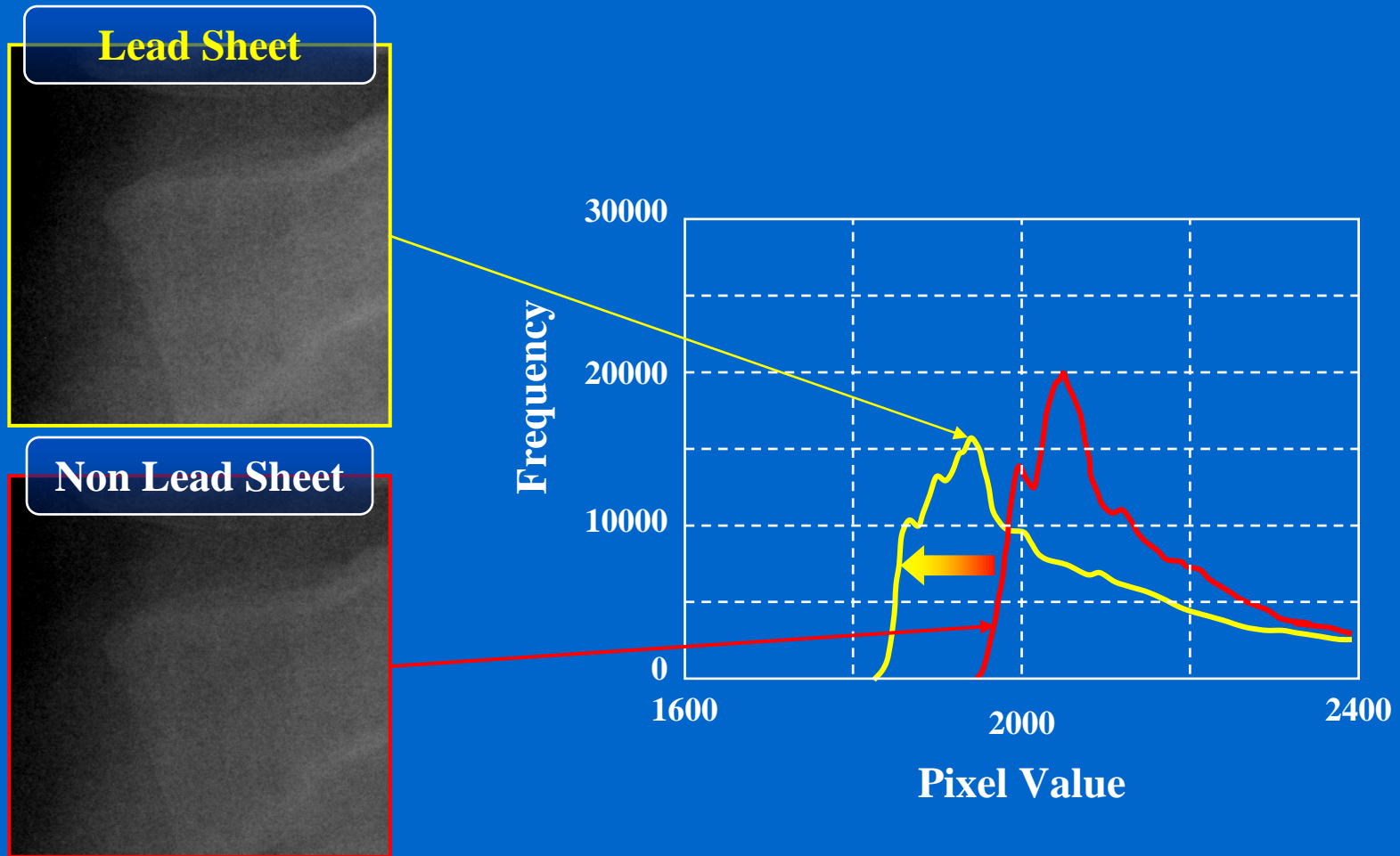
Reduction of Back Scatter by Lead Sheet



Contrast Ratio can be reduced to 55% at 40 mm distance.

2. Improvement of Image Quality

Reduction of Back Scatter by Lead Sheet



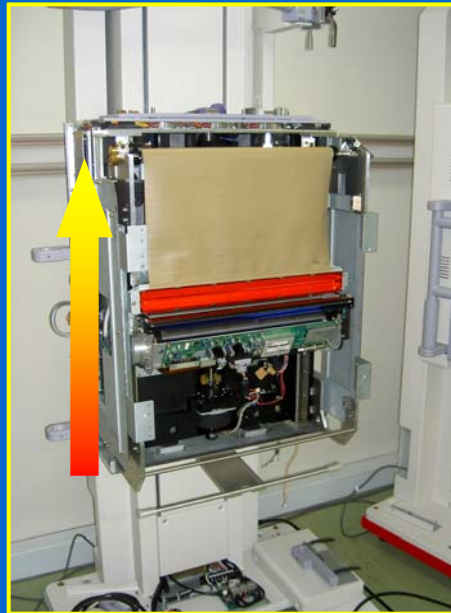
2. Improvement of Image Quality

Reduction of Back Scatter by Lead Sheet

Movement of Lead Sheet.



Exposure



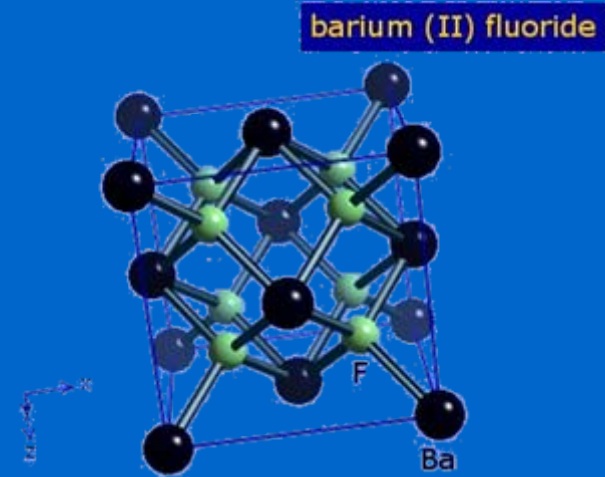
Reading



Erasing

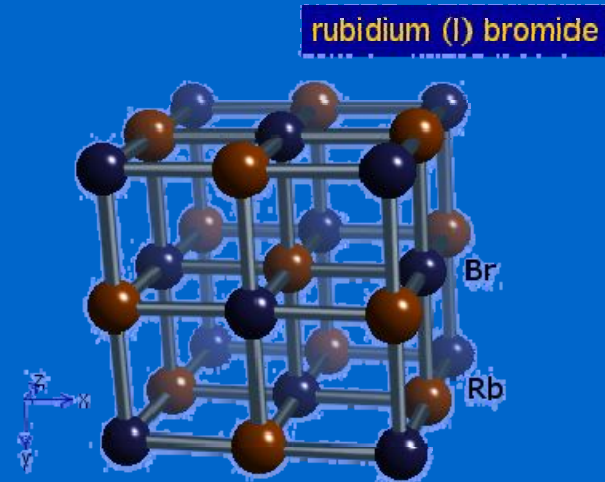
BaF₂ = Barium Fluoride

Colour: white
Appearance: crystalline solid
Melting point: 1368°C
Boiling point: 2260°C; 2137°C
Density: 4890 kg m⁻³



RbBr = Rubidium Bromide

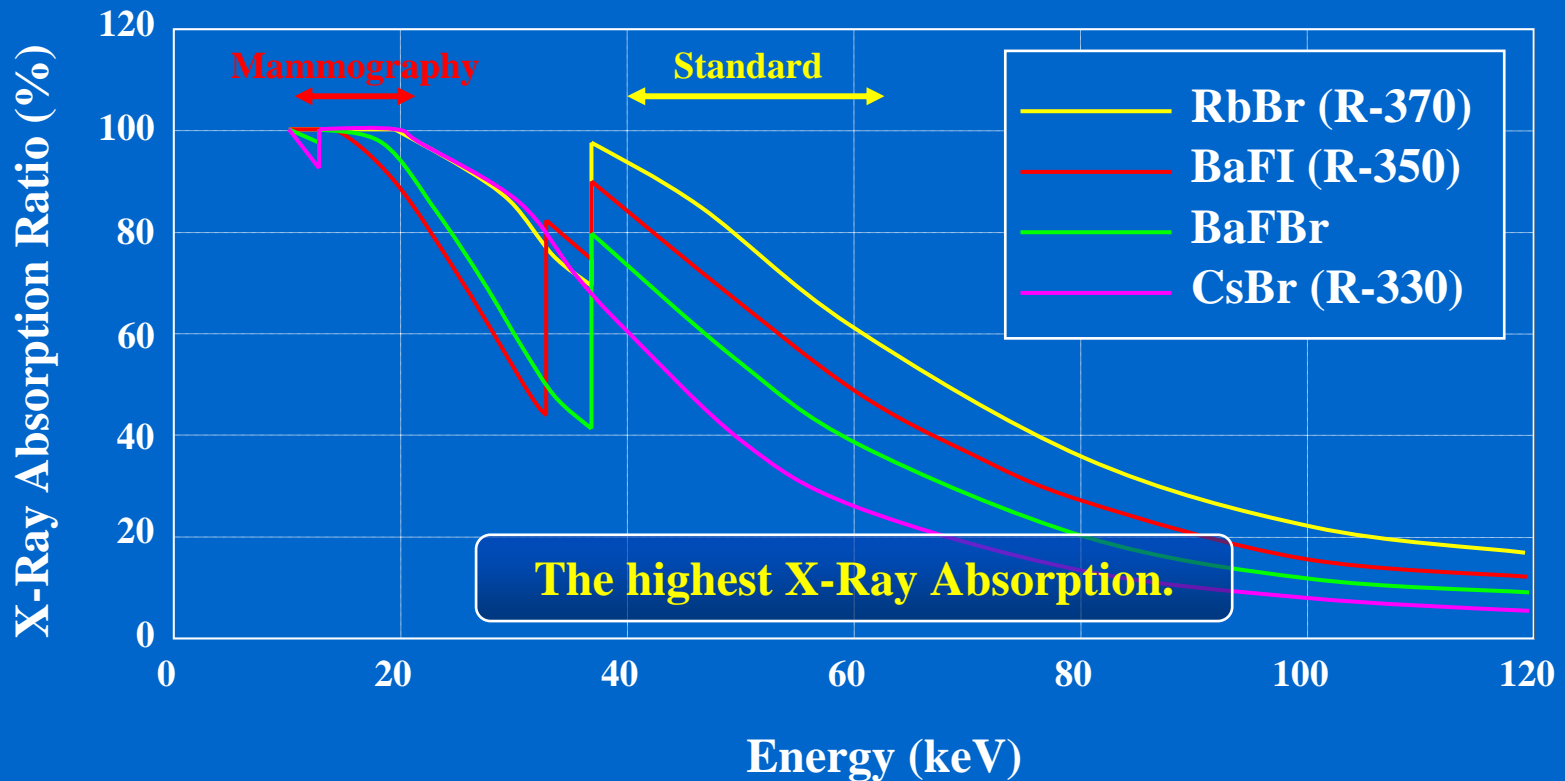
Colour: white
Appearance: crystalline solid
Melting point: 693°C; 682°C
Boiling point: 1340°C
Density: 3350 kg m⁻³



2. Improvement of Image Quality

High X-Ray Absorption (New Plate)

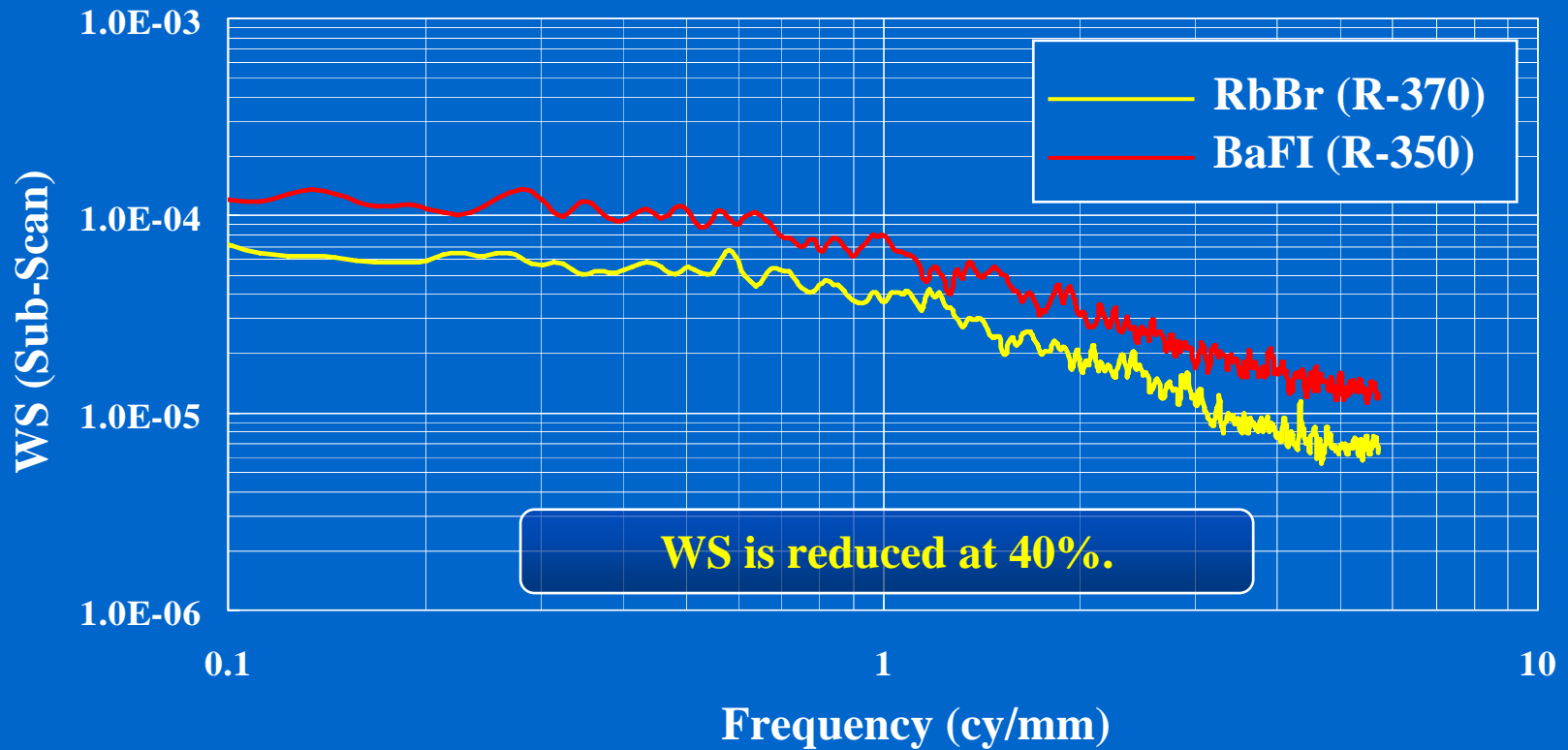
X-Ray Absorption Characteristics of each Plate.



2. Improvement of Image Quality

Granularity (New Plate)

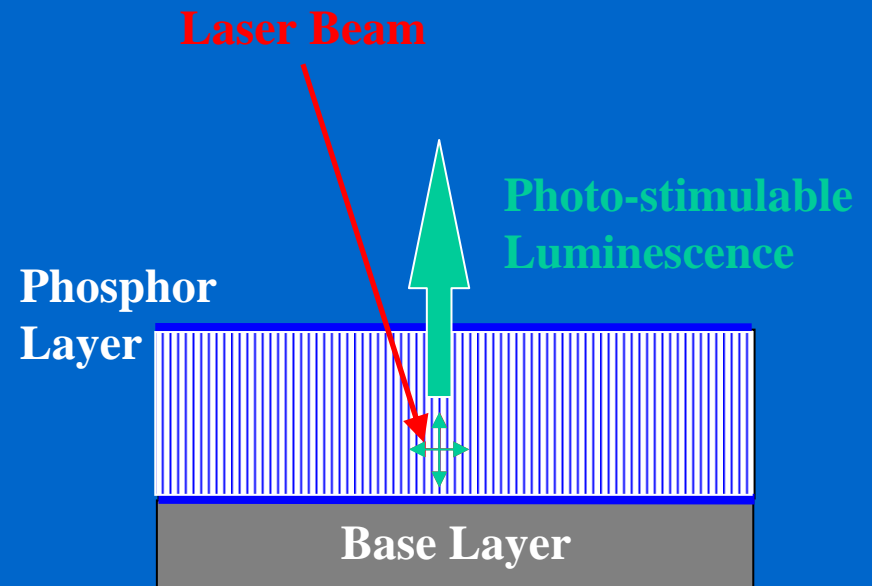
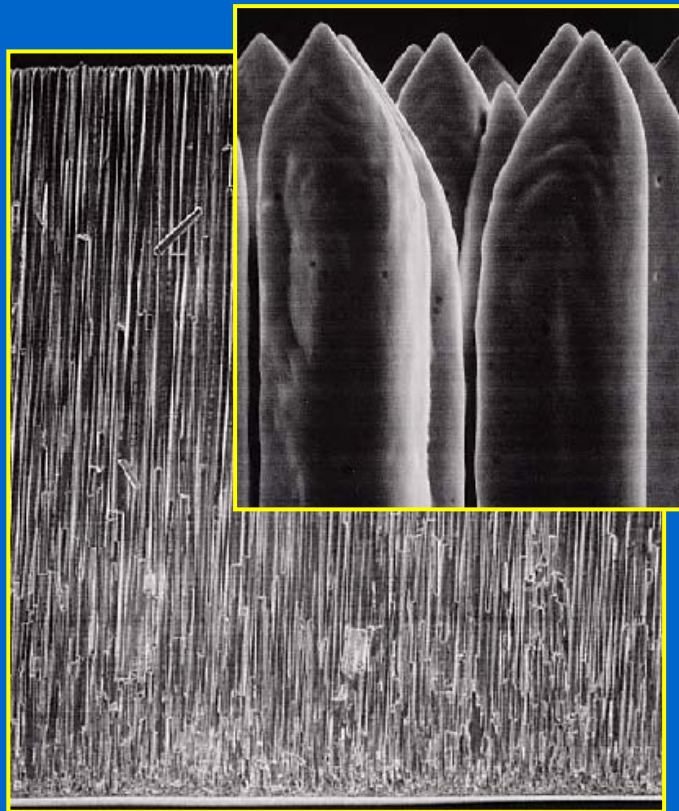
Granularity between **BaFI (R-350)** and **RbBr (R-370)**.



2. Improvement of Image Quality

Sharpness (New Plate)

Columnar Crystal Structure

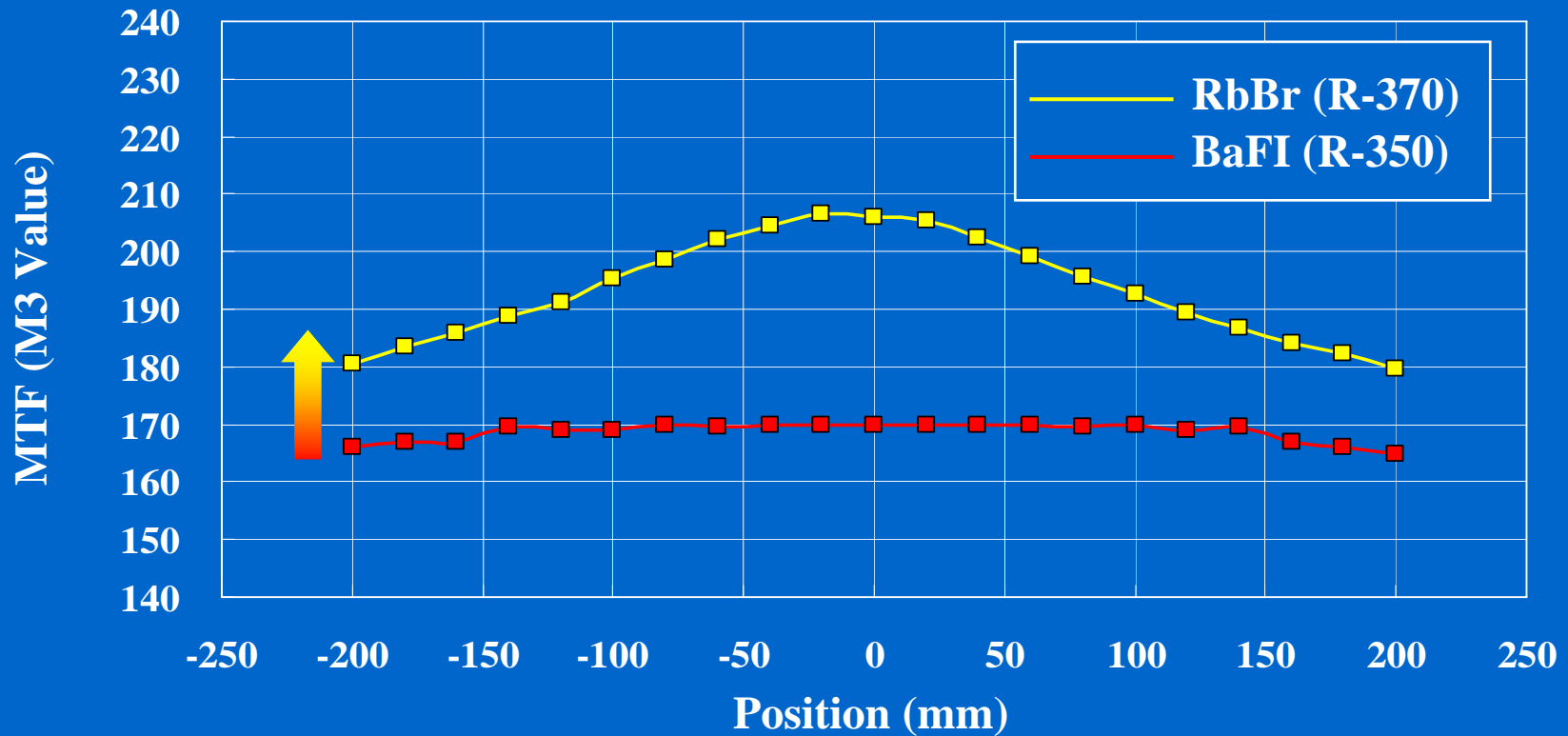


$$\text{Luminance} = \text{BaFI} \times 1.8$$

2. Improvement of Image Quality

Sharpness (New Plate)

Difference of MTF between **BaFI (R-350)** and **RbBr (R-370)**.



2. Improvement of Performance

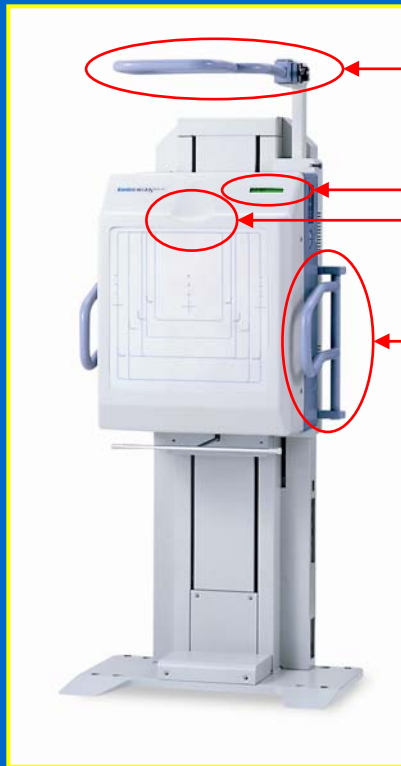
Processing Capacity (Erasing Speed with New Plate)

	REGIUS 350	REGIUS 370
Erasing Speed	40mR = 105mm/s ~ 320mR = 15mm/s	105mm/s
Average Process Capacity *1)	144 shots/h	210 shots/h
Power Consumption	1200W	900W
Erasing Lamp Lifetime	10000times	20000times or more

*1) Clinical Test Data.

3. Improvement of Operability

New Design



REGIUS model 350



REGIUS model 370

4. I/F for X-Ray Machine

I/F for X-Ray Machine

I/F	Option / Standard
Exposure Synchronization	Option
Auto Collimation / Center Synchronization	Option
Tube Synchronization	Standard

5. Specification

Main Specification

Exposure Size	17"x17", 14"x17", 17"x14", 14"x14, 11"x14, 14"x11", 10"x12", 12"x10", 8"x10", 10"x8"
Sampling Pitch	175um, 87.5um
Exposure Cycle Time	Approx. 16sec (All Size in 175um)
Processing Capacity	Approx. 210 Shots/h (All Size in 175um)
Maximum Resolution	4860 x 4860 (17"x17")
Gradation Level	4096 Levels (12bits)
Dimensions / Weight	W800 x D560 x H1700 / Approx. 350kg
Power Consumption	Approx. 1.0kW
Operating Condition	Temperature = 15~30 degree Humidity = 40~80%



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END