



**PHILIPS**

**CombiDiagnost R90**

Digital radiography and  
fluoroscopy solutions

Release 1.1

# Combine all your needs in one room

## Key advantages

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- High room performance for radiography and fluoroscopy

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- Confident diagnosis with a UNIQUE image quality

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- Automated workflow with real-time dose adjustment

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- Lower cost of care<sup>1</sup>

CombiDiagnost R90 is a remote controlled fluoroscopy system in combination with high-end digital radiography, designed to improve room utilization in a cost effective manner.

Save up to 30 % initial equipment cost by combining radiography and fluoroscopy applications in one room.<sup>1</sup>

A fully digital workflow, UNIQUE image quality and excellent dose management make the versatile system suitable for a wide range of examinations from pediatric to bariatric imaging.

# Benefits of CombiDiagnost R90

## Cost effective

Facilitate high room utilization with the ability to perform high-quality radiography as well as fluoroscopy examinations in one room. You can further lower the costs of ownership by sharing SkyPlate wireless detectors with other compatible Philips systems.

## Superb image quality

Flat detector technology provides wide body coverage and distortion free images. Image quality is further enhanced with advanced de-noising, brightness stabilization, and real-time fluoroscopy image processing using Philips dynamic UNIQUE. Fluoroscopy images can also be recorded at any time to document findings.

"What I like best about our CombiDiagnost R90 is that we have all functions in one room, so we don't have to change rooms when we switch back and forth between fluoroscopic and radiographic images."

Claude Scholtes, Head of Radiology, Centre Hospitalier du Nord (CHdN), Ettelbrück, Luxembourg

## High flexibility with a true 2-in-1 system



Chest examination at table with source image distance (SID) of 183 cm (72")



Stitching examination at table with max. body coverage of 150 cm (59")



Perform Digital Subtraction Angiography (DSA) examinations with the ease of Eleva



Experience fast workflow with ceiling suspended Eleva Tube Head with optional Live Camera Package

### Intuitive

Philips Eleva user interface allows a smooth, patient-focused workflow with customizable presets and automation for excellent efficiency. The touch screen monitor allows technologists to work fast with a minimum number of clicks.

### Versatile

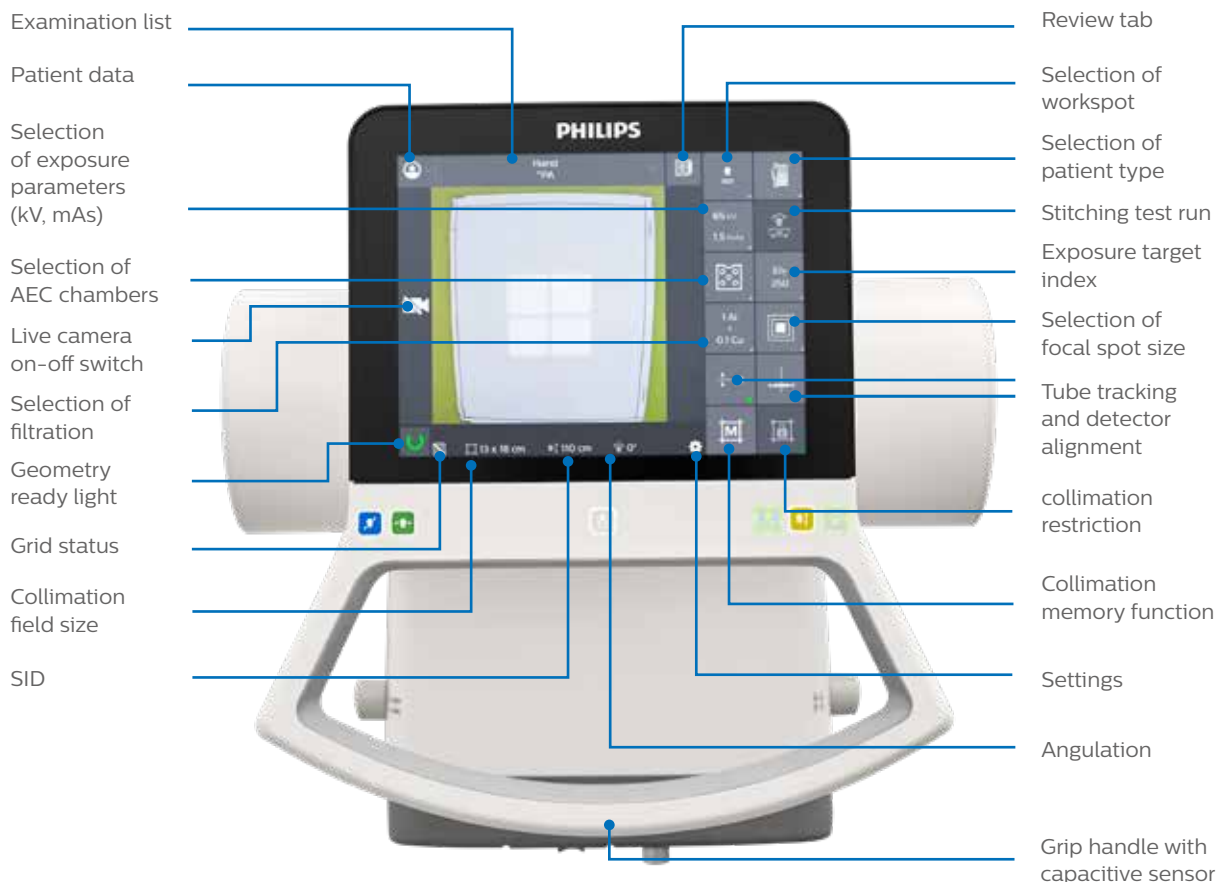
Featuring a table weight capacity of 284 kg (626 lbs.), without limitations in movement, even the most challenging patients can benefit

from CombiDiagnost R90. Comprehensive dose management provides dedicated bariatric and pediatric settings for efficient penetration and high image quality.

### Dose management

Innovative features like Grid-Controlled Fluoroscopy (GCF), Intelligent Exposure (IQX), real-time dose adjustment via in-pulse control, automatic filters and collimation on last image hold (LIH), benefit both patient and staff.

Utilizing the ceiling suspended Eleva Tube Head speeds up the radiography workflow by 28 seconds per examination.<sup>2,3</sup>



Eleva Tube Head touch display with relevant data clearly structured



For pediatric examinations, Philips Grid-Controlled Fluoroscopy (GCF), enables a dose rate<sup>4</sup> reduction of up to 68 %<sup>5</sup> compared to Pulse-Controlled Fluoroscopy (PCF), depending on patient type and clinical application.

## Benefits many stakeholders

### For the radiologist:

- ✓ Confident diagnosis with dynamic flat detector technology and dynamic UNIQUE image processing
- ✓ Easy readability with virtually distortion-free images from flat detector
- ✓ Quick exams with digital workflow and fewer steps
- ✓ Peace of mind thanks to in-pulse control for automatic adjustment of exposure parameters to body thickness

### For the hospital administrator:

- ✓ Excellent room utilization due to fully featured 2-in-1 system and fast workflow
- ✓ Fits needs and layout through flexible room concepts
- ✓ Lower costs by combining Rad and Fluoro rooms and sharing SkyPlate detectors with other compatible Philips products

### For the technologist:

- ✓ Fast exams with Eleva's automatic patient exposure parameters
- ✓ Easy patient focused workflow through interface harmonization between Philips radiography and fluoroscopy solutions

### For the patient:

- ✓ Wide range of patient types due to excellent dose management and a high table load capacity of 284 kg (626 lbs) without limitations in movement
- ✓ Confident diagnosis due to exceptional image quality and comprehensive dose management

# Design your room according to your needs



## Classic Room

Dynamic detector in table, optional portable SkyPlate detector



## High Performance Room

Dynamic detector in table, 2<sup>nd</sup> tube, fixed or SkyPlate detector in vertical stand, optional portable SkyPlate detector

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- 1 Large 43 cm x 43 cm (17" x 17") dynamic detector

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  - 2 Large 43 cm x 43 cm (17" x 17") fixed detector (option)

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  - 3 35 cm x 43 cm (14" x 17") SkyPlate tray (option)

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  - 4 35 cm x 43 cm (14" x 17")/24 cm x 30 cm (10" x 12") SkyPlate detector for free exposure (option)

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# Specifications

## Table Geometry

Table height	65.0 cm - 130.0 cm (25.6" - 51.2"),
Table tilt angle	-90°/+90°
Maximum patient weight	284 kg (626 lbs) without limitations
Footrest weight capacity	284 kg (626 lbs)
Tube column movement range	148 cm (58.3")
Source to Image Distance (SID)	113 cm - 183 cm (44" to 72")
Motorized compressor	3 kg - 15 kg compression force

## Dynamic Flat Detector

Type	Cesium Iodide (CsI)
Detector size	43 cm x 43 cm (17" x 17")
Active area	42 cm x 42.5 cm (16.5" x 16.7")
Pixel size	148 µm
Image matrix size	2840 x 2874 pixel
Acquisition mode continuous fluoroscopy	Up to 30 fps
Acquisition mode pulsed fluoroscopy with Grid-Controlled Fluoroscopy (GCF)	0.5 - 30 fps

## Optional vertical stand (VS)

Vertical travel	30 cm - 180 cm (11.8" - 5'11")
Detector	Fixed 43 cm x 43 cm (17" x 17") or SkyPlate 35 cm x 43 cm (14" x 17")
Motorized tilting	Optional, -20° to +90°

## Optional SkyPlate Detector

	Small	Large
Type	Digital CsI (Cesium Iodide) flat detector	Digital CsI (Cesium Iodide) flat detector
Detector size	24 cm x 30 cm (app. 10" x 12")	35 cm x 43 cm (14" x 17")
Active area	22.2 cm x 28.4 cm (8.7" x 11.2")	34.48 cm x 42.12 cm (13.6" x 16.6")
Image matrix size	1,500 x 1,920 pixel	2,330 x 2,846 pixel
Weight (incl. battery)	1.6 kg (3.5 lbs)	2.8 kg (6.2 lbs)

## Generator

Power	65 kW, 80 kW optional
Exposure techniques	<ul style="list-style-type: none"> <li>Manual: kV-mAs or kV-mA-s</li> <li>Automatic Exposure Control (AEC)</li> <li>Intelligent Exposure (IQX),</li> <li>In-Pulse Control</li> <li>Automatic kV reduction techniques</li> </ul>
Fluoroscopy techniques	<ul style="list-style-type: none"> <li>Pulse-Controlled Fluoroscopy (PCF), in-pulse controlled</li> <li>Grid-Controlled Fluoroscopy (GCF), in-pulse controlled</li> </ul>
Tube voltage exposure	40 - 150 kV
Tube voltage fluoroscopy	40 - 125 kV

## Tube

	SRO 33100 ROT380	SRM 0608 ROT GS 505	SRO 33100 ROT380 (for CS)
Focal spot	0.6 / 1.2	0.6/0.8	0.6 / 1.2
Anode heat storage capacity	300 kHU (220 kJ)	800 kHU (593 kJ)	300 kHU (220 kJ)
Maximum voltage	150 kV	125 kV (110 kV in GCF)	150 kV

## Optional ceiling suspension (CS) with Eleva Tube Head

Type	Four-part telescopic column
Ceiling height at SID 110 cm (44")	2.83 m to 3.21 m (8' 8.3" - 10' 5.9")
Collimator	Motorized, automatic
Data displayed at the Eleva Tube Head amongst others:	Patient data, Preview images, Collimation field size, Generator setting, Live Camera image (optional)

<sup>1</sup> World reference prices for CombiDiagnost R90 High Performance Room compared to a dedicated fluoroscopy and a dedicated radiography room

<sup>2</sup> Based on 4 images on average per examination

<sup>3</sup> Validation with participants in test environment

<sup>4</sup> Dose rate determined according to IEC 60601-2-54, 203.5.2.4.5.102, System set up: detector format 43 x 43 cm (17 x 17"), patient type children, 0.1 mm Cu + 1 mm Al filter, reduced dose and pulsed slow fluoroscopy mode with 2 pulses/s, Phantom: 5 cm (2 in) PMMA 2

<sup>5</sup> Relative difference of two reference air kerma rates between system with GCF and system with PCF

Not available for sale in greater China region.

