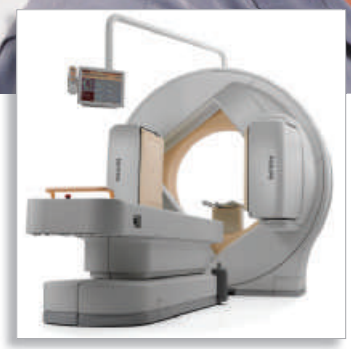


Patients first performance

Philips BrightView SPECT specifications

The BrightView SPECT system is a "purely Philips" nuclear medicine product with a wide range of innovations to help healthcare providers manage patient care. Designed from the ground up to put patients first, the system is easy to use, fast, and reliable with exceptional image quality. Surprisingly compact given its capabilities, BrightView is a fully featured variable angle camera differentiated by exclusive CloseUp technologies – enabling increased resolution by reducing the distance between its advanced detector electronics and the patient. The system's customizable yet automated acquisition capabilities make it excellent for streamlining workflow today, and also provide the means for leveraging the molecular imaging agents of tomorrow. Fully supported by the resources of Philips services, BrightView SPECT is designed to be easily upgradeable to future configurations.

PHILIPS

BrightView technical specifications

Camera characteristics	
Gantry dimensions	221.5 cm H x 198 cm W x 174 cm D
Weight (without collimators)	3,862 lbs (1,755 kg)
Power requirements	30A 208-240V, 50/60 Hz single phase
Total heat dissipation (typical)	800 Watts/hr.
Gantry aperture	38" (96.5 cm)
Caudal-cephalic tilt	+/- 15" (not available on BrightView Value)

Patient table	
Dimensions	243 cm L x 47.5 cm W
Pallet type	Aluminum
Thickness	0.1" (2.5 mm)
Attenuation	<7% @ 140 keV
Pallet dimensions	83.5" L x 15" W (212 cm x 38.1 cm)
Height (from floor)	23" to 36.5" (58.4 cm – 92.7 cm)
Weight capacity	450 lbs (205 kg)

Total body	
Scan length + UFOV	78.7" + 16" (200 cm + 40.6 cm)
Scan speed	1 – 190 cm/min.

Emission tomography	
ECT rotation	540°
Angular sampling	1.4° to 90°
Speed of rotation	5.0 rpm (relative 180°)
Scan diameter (with LEGP)	<4"– 31.5" (<10.2 cm – 80 cm)
ECT manual rotation speeds	0.5 and 1.33 rpm
Detector relative positions	90° and 180°

JETStream acquisition	
Mobile acquisition console	18" flat panel monitor, keyboard, and trackball /mouse
Spectrum analyzers	16 (with overlap)
Energy range	56 – 920 keV
Window adjustment	1% to entire energy range
Spectrum display	Color-coded, graphical, fully interactive
Preset count and/or time	1 ct. to 2 billion cts., 1 sec. to >1,000 min.
Image orientation	0°, 90°, 180°, and 270°
Patient position display	2 sec. to infinity, decay-based persistence or fixed refresh
Concurrent imaging	Basic: up to three simultaneous data sets Advanced: up to 15 simultaneous data sets

Collimator exchange system and storage	
Exchanger type	Semi-automatic
Collimator storage	Cart based up to 11 units (five pairs and one Pinhole)
Collimator types	LE, ME, HE, Pinhole

Detector	
True energy independence	Fixed high voltage
Universal flood calibration	One flood for all radionuclides (up to 300 keV)
Non-anger digital detector	1 ADC/PMT
Field of view (rectangular)	16" x 21.25" (40.6 x 54 cm)
Crystal thickness	0.375" (9.5 mm) or 0.75" (19.1 mm)
Photomultiplier tubes	59
Lead shielding	364 keV
Brain reach	2.9" (7.4 cm)

Note: Specifications subject to change.

BrightView detector specifications 3/4" (19.1 mm) crystal					
		NEMA[1]		Typical[2]	
Intrinsic spatial resolution		**UFOV**	**CFOV**	**UFOV**	**CFOV**
	FWHM	4.3 mm	4.3 mm	4.0 mm	4.0 mm
	FWTM	8.2 mm	8.2 mm	7.8 mm	7.2 mm
Intrinsic energy resolution		**UFOV**		**UFOV**	
		9.8%		9.5%	
Intrinsic spatial linearity		**UFOV**	**CFOV**	**UFOV**	**CFOV**
	Absolute	0.6 mm	0.4 mm	0.25 mm	0.13 mm
	Differential	0.2 mm	0.2 mm	0.04 mm	0.04 mm
Intrinsic flood field uniformity[3]		**UFOV**	**CFOV**	**UFOV**	**CFOV**
	Integral	± 2.5%	± 2.2%	± 2.0%	± 1.7%
	Differential	± 2.0%	± 1.5%	± 1.4%	± 1.3%
System spatial resolution (LEHR) @ 10 cm		**NEMA**		**Astonish****	
	FWHM without scatter	7.9 mm		5.8 mm	
	FWTM without scatter	14.8 mm		10.3 mm	
	FWHM with scatter	8.3 mm		5.8 mm	
	FWTM with scatter	17.2 mm		11.0 mm	
SPECT reconstructed spatial resolution (LEHR) without scatter @ 15 cm radius		**NEMA**		**Astonish***	
	Central transaxial	10.7 mm		5.2 mm	
	Central axial	11.3 mm		5.4 mm	
	Peripheral radial	10.9 mm		5.0 mm	
	Peripheral tangential	9.4 mm		5.1 mm	
	Peripheral axial	11.2 mm		5.4 mm	
Whole body system spatial resolution @ 10 cm without scatter, 10 cm/min scan speed		**FWHM**	**FWTM**	**Astonish****	**Astonish****
	Parallel LEHR	8.4 mm	15.5 mm	5.9 mm	10.9 mm
	Perpendicular LEHR	8.3 mm	15.3 mm	5.9 mm	10.9 mm
Volume sensitivity per axial centimeter (LEHR)		**UFOV**		**UFOV**	
	± 7%	12900 (cts/sec) (MBq/cm^2)		12900 (cts/sec) (MBq/cm^2)	
Intrinsic spatial resolution @ 75 Kcps		**UFOV**		**UFOV**	
	FWHM	4.8 mm		N/A	
	FWTM	9.1 mm		N/A	
Intrinsic detector count rate performance +/- 10%				**UFOV**	
	Output 20% loss			300 Kcps	
	Max count rate			350 Kcps	
System sensitivity (LEGP) ± 7%		**UFOV**		**UFOV**	
		311 cpm/µCi		311 cpm/µCi	
Multiple window spatial registration		**UFOV**		**UFOV**	
		0.8 mm		0.6 mm	
Detector-detector sensitivity variation (LEHR,TC-99m)		**UFOV**		**UFOV**	
		5%		1%	

* Astonish – Reconstruction method with 2 iterations and 32 subsets. Values subject to change.

** Planar Astonish – calculated values

1. Specifications are NEMA NUI – 2001 method of measurement with a 20% energy window. Values to be used for acceptance testing.
2. Represents calculated values derived from measured 3.8" (9.5 mm) crystal values and/or limited sampling 3/4" (19.1 mm) crystal values. Values not to be used for acceptance testing.
3. Measured using a pixel size of 9.3 mm.

Note: Specifications subject to change.

BrightView detector specifications 3/8" (9.5 mm) crystal					
		NEMA[1]		Typical[2]	
Intrinsic spatial resolution		**UFOV**	**CFOV**	**UFOV**	**CFOV**
	FWHM	3.3 mm	3.3 mm	3.2 mm	3.1 mm
	FWTM	6.3 mm	6.3 mm	6.1 mm	6.0 mm
Intrinsic energy resolution		**UFOV**		**UFOV**	
		≤ 9.6%		9.2%	
Intrinsic spatial linearity		**UFOV**	**CFOV**	**UFOV**	**CFOV**
	Absolute	0.50 mm	0.35 mm	0.18 mm	0.10 mm
	Differential	0.10 mm	0.09 mm	0.03 mm	0.03 mm
Intrinsic flood field uniformity[3]		**UFOV**	**CFOV**	**UFOV**	**CFOV**
	Integral	± 2.5%	± 2.2%	± 2.0%	± 1.6%
	Differential	± 2.0%	± 1.5%	± 1.4%	± 1.2%
System spatial resolution (LEHR) @ 10 cm		**NEMA**		**Astonish****	
	FWHM without scatter	7.4 mm		5.1 mm	
	FWTM without scatter	14.0 mm		9.0 mm	
	FWHM with scatter	7.8 mm		5.1 mm	
	FWTM with scatter	16.5 mm		9.8 mm	
SPECT reconstructed spatial resolution (LEHR) without scatter @ 15 cm radius		**NEMA**		**Astonish***	
	Central transaxial	10.3 mm		4.3 mm	
	Central axial	10.9 mm		4.3 mm	
	Peripheral radial	10.5 mm		3.8 mm	
	Peripheral tangential	9.0 mm		3.7 mm	
	Peripheral axial	10.8 mm		3.7 mm	
Whole body system spatial resolution @ 10 cm without scatter, 10 cm/min scan speed		**FWHM**	**FWTM**	**Astonish****	**Astonish****
	Parallel LEHR	8.0 mm	14.7 mm	5.3 mm	9.7 mm
	Perpendicular LEHR	7.9 mm	14.5 mm	5.3 mm	9.7 mm
Volume sensitivity per axial centimeter (LEHR)		**UFOV**		**UFOV**	
	± 7%	11500 (cts/sec) (MBq/cm^2)		11500 (cts/sec) (MBq/cm^2)	
Intrinsic spatial resolution @ 75 Kcps		**UFOV**		**UFOV**	
	FWHM	3.8 mm		3.6	
	FWTM	7.3 mm		6.9	
Intrinsic detector count rate performance +/- 10%				**UFOV**	
	Output 20% loss			300 Kcps	
	Max count rate			350 Kcps	
System sensitivity (LEGP) ± 7%		**UFOV**		**UFOV**	
		277 cpm/µCi		277 cpm/µCi	
Multiple window spatial registration		**UFOV**		**UFOV**	
		0.6 mm		0.4 mm	
Detector-detector sensitivity variation (LEHR,TC-99m)		**UFOV**		**UFOV**	
		5%		1%	

* Astonish – Reconstruction method with 2 iterations and 32 subsets. Values subject to change.

** Planar Astonish – calculated values

1. Specifications are NEMA NUI - 2001 method of measurement with a 20% energy window. Values to be used for acceptance testing.
2. Same test conditions as NEMA specifications. Represents average factory test values. Values not to be used for acceptance testing.
3. Measured using a pixel size of 9.3 mm.

Note: Specifications subject to change.

BrightView system performance

BrightView camera and collimator specifications										
Type	Hole Shape	Size (mm)	Septa (mm)	Length (mm)	Construction	Septa Penetration (%)	(keV)	Sensitivity	Spatial Resolution Cpm/μCi @ 0 cm	System[6] @ 10 cm
LEGP	HEX	1.40	0.180	24.7	Foil	2.1	140	277[1]	3.9	8.9
LEHR	HEX	1.22	0.152	27	Foil	1.7	140	168[1]	3.7	7.4
CHR	HEX	2.03	0.152	48	Foil	1.1	140	165[1]	4.2	7.8
MEGP	HEX	3.4	0.86	58.4	Cast	6.1	300	212[2]	5.3	10.9
HEGP	HEX	3.81	1.73	58.4	Cast	4.2	364	106[3]	5.7	12.1
HEPH	ROUND	3.0	25.4	220.0	Cast	—	—[4]	83[5]	—	—
		4.0	25.4	220.0	Cast	—	—[4]	139[5]	—	—
		5.0	25.4	220.0	Cast	—	—[4]	222[5]	—	—

[1] +Sensitivity is for Tc-99m with 20% window, 9.5 mm thick crystal.

[2] Gallium-67 with 20% window 93 keV, 184 keV, 300 keV photo peaks.

[3] Sensitivity is for I-131.

[4] The pinhole collimator is rated for 364 keV and has 25.4 cm F.O.V. at the crystal.

[5] Relative sensitivity is for Tc-99m at 10 cm from the pinhole.

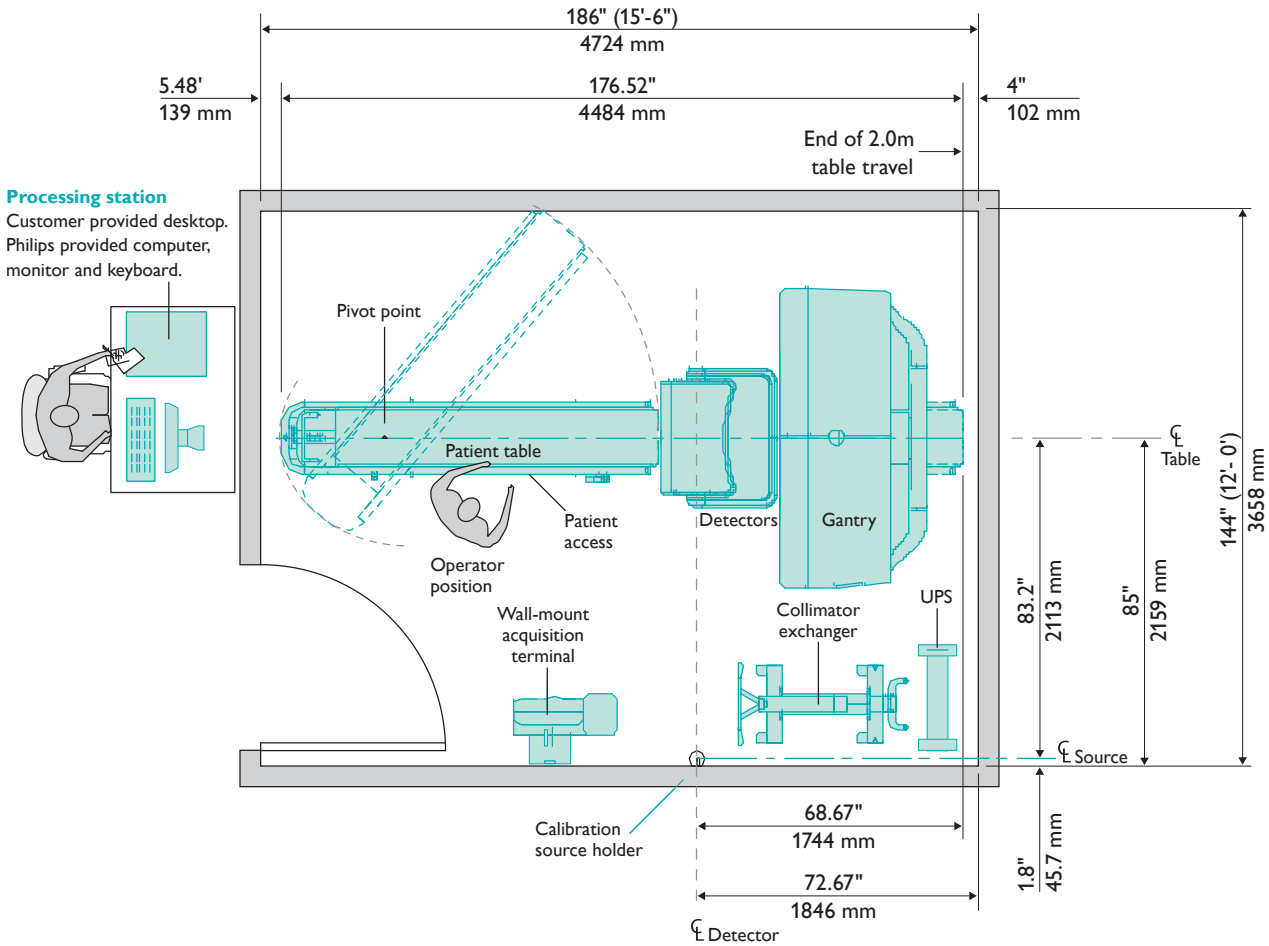
[6] For 9.5 mm thick crystal.

Note: Sensitivity numbers are NEMA Class Standards and are ±7%.

Collimators		Mass (kg)*
LEGP	Low Energy General Purpose	30
LEHR	Low Energy High Resolution	35
CHR	Cardiac High Resolution	29
MEGP	Medium Energy General Purpose	88
HEGP	High Energy General Purpose	128
HEPH	High Energy Pinhole	131

Note: Specifications subject to change.

BrightView preferred room layout



Environmental requirements for general equipment locations

Throughout the SPECT suite, the HVAC system must maintain the temperature between 60 degrees F (16 degrees C) to 75 degrees F (24 degrees C) with less than 10 degrees F (5 degrees C) variation per hour. Humidity must be between 20% to 75%. These requirements are 24 hours per day, 7 days per week.

Please visit www.philips.com/brightview

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