Figure S1 The fitting curves of the CT number linearity for the GE Healthcare and Philips CT scanners reconstructed with DLIR (L/M/H) and IMR [2] at (A) 0.25 mGy and (B) 0.75 mGy. CT, computed tomography; DLIR (L/M/H), deep learning image reconstruction, level low, medium, and high; IMR [2], iterative model reconstruction, level 2; HU, Hounsfield unit; mGy, milligray.
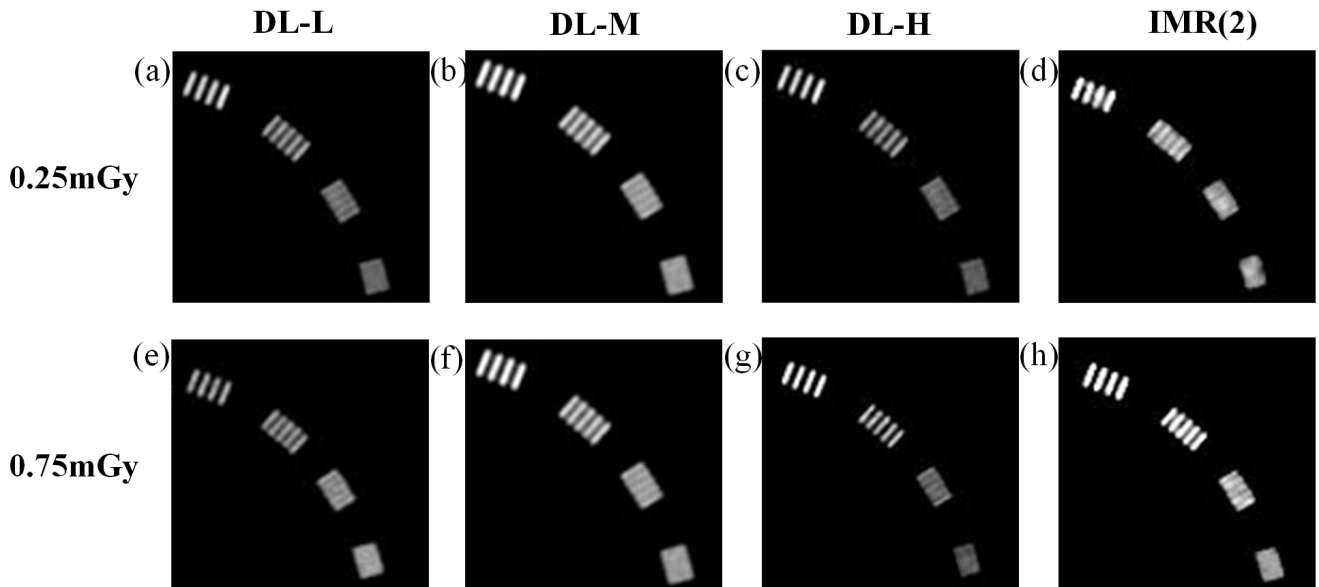

Figure S2 High-contrast images of the GE Healthcare and Philips CT scanners reconstructed with DLIR (L/M/H) and IMR [2] at 0.25 mGy (a, b, c, d) and 0.75 mGy (e, f, g, h). CT: computed tomography; DLIR (L/M/H): deep learning image reconstruction, level low, medium, and high; IMR [2]: iterative model reconstruction, level 2; mGy: milligray.
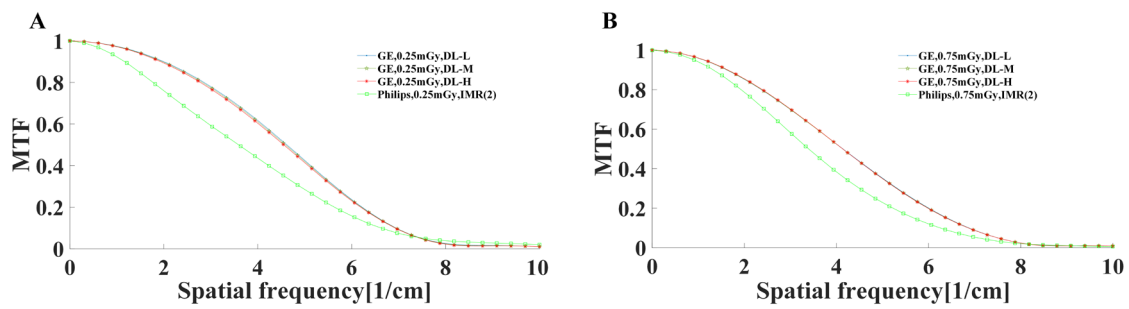
Figure S3 In-plane MTF curves of the GE Healthcare and Philips CT scanners reconstructed with DLIR (L/M/H) and IMR [2] at 0.25 mGy (A) and 0.75 mGy (B). CT, computed tomography; MTF, modulation transfer function; DLIR (L/M/H), deep learning image reconstruction, level low, medium, and high; IMR [2], iterative model reconstruction, level 2; mGy, milligray.
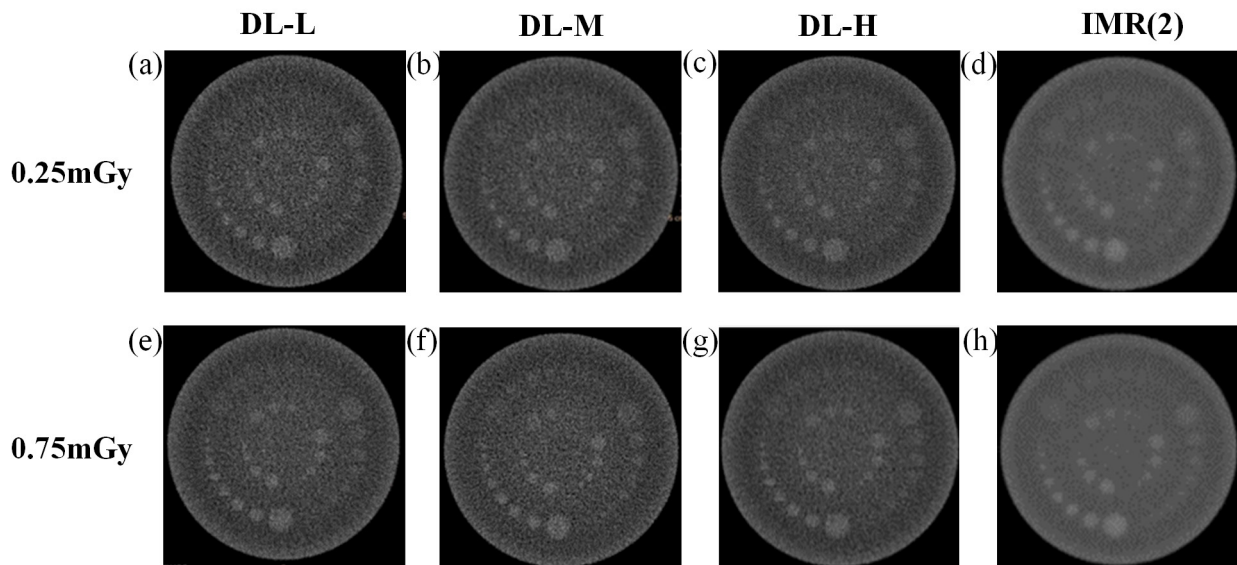

Figure S4 Low-contrast images of the GE Healthcare and Philips CT scanners reconstructed with DLIR (L/M/H) and IMR [2] at 0.25 mGy (a, b, c, d) and 0.75 mGy (e, f, g, h). CT, computed tomography; DLIR (L/M/H), deep learning image reconstruction, level low, medium, and high; IMR [2], iterative model reconstruction, level 2; mGy, milligray.
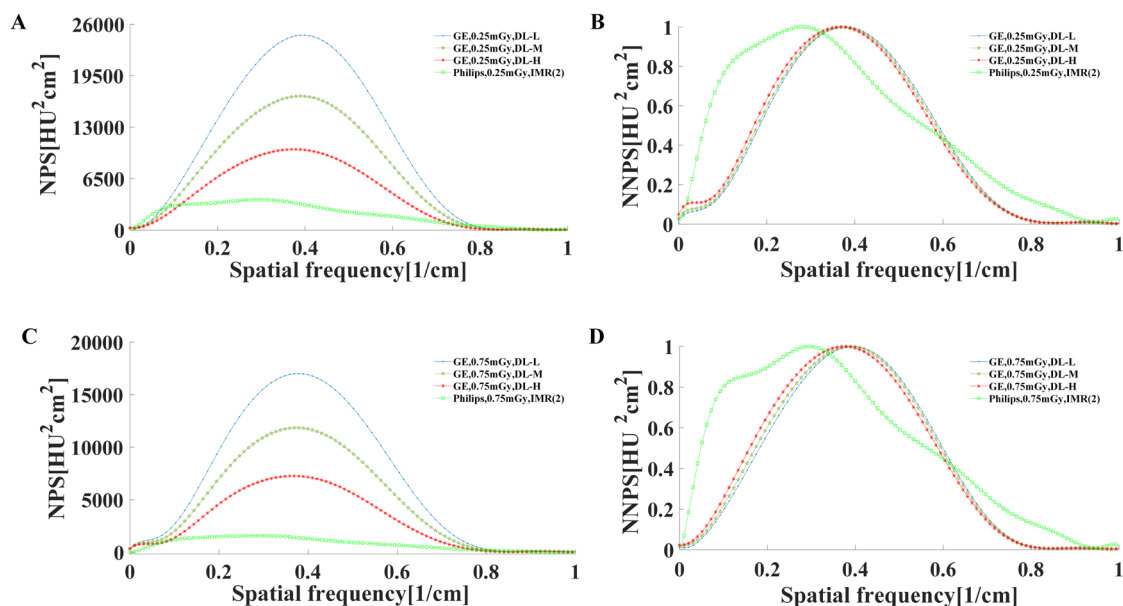
Figure S5 The NPS and NNPS curves of the GE Healthcare and Philips CT scanners reconstructed with DLIR (L/M/H) and IMR [2] algorithm at 0.25 mGy (A,B) and 0.75 mGy (C,D). CT, computed tomography; NPS, noise power spectrum; NNPS, normalized noise power spectrum; HU, Hounsfield unit; mGy, milligray; DLIR (L/M/H), deep learning image reconstruction, level low, medium, and high; IMR [2], iterative model reconstruction, level 2.

Table S1 The CT number linearity of 4 insert materials using the GE Healthcare CT scanner

Radiation dose (mGy)	Algorithms	Acrylic	LDPE	Air	Teflon
0.25	FBP	115.65±0.78	−101.25±0.35	−997.20±0.42	874.40±4.25
0.25	ASiR-V50%	116.95±2.19	−99.95±0.50	−999.15±1.06	874.35±4.17
0.25	DL-L	113.20±1.84	−97.75±0.78	−996.75±1.06	872.10±5.93
0.25	DL-M	117.45±1.48	−98.55±1.48	−997.85±1.06	866.13±4.96
0.25	DL-H	113.45±2.76	−99.75±0.50	−998.25±0.64	868.00±0.14
0.75	FBP	117.20±0.14	−99.70±0.57	−996.85±0.92	867.60±1.13
0.75	ASiR-V50%	118.15±2.33	−99.15±0.64	−998.10±0.14	871.70±3.35
0.75	DL-L	112.55±0.92	−99.30±0.57	−995.79±0.30	870.15±3.32
0.75	DL-M	116.95±0.78	−99.35±0.35	−993.65±4.87	864.30±4.38
0.75	DL-H	117.30±0.85	−99.80±0.42	−998.15±0.50	867.90±0.01

CT, computed tomography; mGy, milligray; LDPE, low-density polyethylene; FBP, filtered back projection; ASiR-V50%, adaptive statistical iterative reconstruction 50%; DLIR (L/M/H), deep learning image reconstruction, level low, medium, and high.

Table S2 The CT number linearity of 4 insert materials using the Philips CT scanner

Radiation dose (mGy)	IR	Acrylic	LDPE	Air	Teflon
0.25	FBP	122.00±2.55	−93.25±0.50	−986.75±4.60	939.20±1.05
0.25	iDose[4] [3]	122.45±1.77	−91.50±1.41	−989.10±1.79	940.40±4.80
0.25	IMR [2]	124.20±0.57	−94.00±0.14	−994.15±3.60	946.15±1.20
0.75	FBP	120.40±1.70	−90.85±1.00	−986.40±4.37	928.45±3.04
0.75	iDose[4] [3]	122.00±1.13	−91.80±1.84	−988.75±0.78	923.00±1.70
0.75	IMR [2]	120.70±0.71	−92.95±1.91	−991.65±0.07	931.00±0.29

CT, computed tomography; mGy, milligray; IR, iterative reconstruction; LDPE, low-density polyethylene; FBP, filtered back projection; iDose[4] [3], fourth-generation hybrid iterative reconstruction, level 3; IMR [2], iterative model reconstruction, level 2.

Table S3 The CT number linearity of 4 insert materials using the Siemens CT scanner

Radiation dose (mGy)	IR	Acrylic	LDPE	Air	Teflon
0.25	FBP	122.45±1.77	−98.20±1.84	−1011.15±1.49	967.50±2.55
0.25	ADMIRE [3]	119.30±2.35	−98.50±2.12	−1014.40±0.57	970.65±3.57
0.75	FBP	122.15±0.50	−97.15±1.77	−1012.10±1.84	964.15±3.43
0.75	ADMIRE [3]	121.80±0.29	−97.95±1.63	−1015.50±0.83	96.340±2.20

CT, computed tomography; mGy, milligray; IR, iterative reconstruction; LDPE, low-density polyethylene; FBP, filtered back projection; ADMIRE [3], advanced modeled iterative reconstruction, level 3.

Table S4 The CT number linearity of 4 insert materials using the Minfound CT scanner

Radiation dose (mGy)	IR	Acrylic	LDPE	Air	Teflon
0.25	FBP	125.20±2.55	−89.00±0.71	−960.85±1.77	951.90±4.52
0.25	NDI [3]	124.40±2.26	−88.15±0.92	−953.80±1.31	952.25±4.74
0.75	FBP	124.70±1.91	−90.20±1.56	−960.40±3.82	951.90±2.21
0.75	NDI [3]	123.70±1.13	−90.00±0.28	−960.20±0.28	951.40±2.23

CT, computed tomography; mGy, milligray; IR, iterative reconstruction; LDPE, low-density polyethylene; FBP, filtered back projection; NDI [3], nano dose iterative, level 3.

Table S5 The CT number linearity of 4 insert materials using the Neusoft CT scanner

Radiation dose (mGy)	IR	Acrylic	LDPE	Air	Teflon
0.25	FBP	123.50±2.26	−94.55±1.62	−995.55±1.96	930.75±2.15
0.25	CV50%	122.75±2.05	−93.75±3.18	−991.45±2.90	926.35±2.67
0.75	FBP	122.75±2.90	−94.95±2.76	−999.20±1.93	937.70±4.61
0.75	CV50%	122.40±2.26	−93.40±3.25	−984.90±4.38	939.80±0.42

CT, computed tomography; mGy, milligray; IR, iterative reconstruction; LDPE, low-density polyethylene; FBP, filtered back projection; CV 50%, clear view 50%.

Table S6 A summary of the image uniformity of the 5 different CT scanners

Radiation dose (mGy)	Algorithms	The CT number values of 5 different CT scanners (HU)				
		GE Healthcare	Philips	Siemens	Minfound	Neusoft
0.25	FBP	3.60±2.55	3.10±2.19	1.40±0.99	3.40±2.40	3.80±2.69
0.25	ASiR-V50%	3.70±2.62	–	–	–	–
0.25	DL-L	3.90±2.76	–	–	–	–
0.25	DL-M	3.70±1.56	–	–	–	–
0.25	DL-H	3.70±2.62	–	–	–	–
0.25	iDose^4 [3]	–	3.50±2.47	–	–	–
0.25	IMR [2]	–	2.90±2.05	–	–	–
0.25	ADMIRE [3]	–	–	3.50±2.47	–	–
0.25	NDI [3]	–	–	–	2.70±1.91	–
0.25	CV50%	–	–	–	–	3.60±2.55
0.75	FBP	3.70±2.61	3.90±2.76	2.70±1.91	2.60±1.84	3.90±2.76
0.75	ASiR-V50%	3.90±2.76	–	–	–	–
0.75	DL-L	3.10±2.19	–	–	–	–
0.75	DL-M	2.80±1.98	–	–	–	–
0.75	DL-H	3.30±2.33	–	–	–	–
0.75	iDose^4 [3]	–	3.10±2.19	–	–	–
0.75	IMR [2]	–	2.80±1.27	–	–	–
0.75	ADMIRE [3]	–	–	2.72±1.27	–	–
0.75	NDI [3]	–	–	–	3.30±2.33	–
0.75	CV50%	–	–	–	–	2.70±1.91

All continuous variables are presented as mean ± standard deviation (SD) and expressed in HU. CT, computed tomography; mGy, milligray; HU, Hounsfield unit; FBP, filtered back projection; ASiR-V50%, adaptive statistical iterative reconstruction 50%; DLIR (L/M/H), deep learning image reconstruction, level low, medium, and high; iDose4 [3], fourth-generation hybrid iterative reconstruction, level 3; IMR [2], iterative model reconstruction, level 2; ADMIRE [3], advanced modeled iterative reconstruction, level 3; NDI [3], nano dose iterative, level 3; CV 50%, clear view 50%.