

9

"

"

2017

4

,

51

2016

71

2016

2017

38

68

91750

30%

X-

- 1.
- 1.1
- 1.1.1

1

/ 2  
2017-2019  
3

(

)

1 1

- 1.1.2

1

2

/ 2  
2017-2019

3

(

)

1 1

1.2

1.2.1

1

/ 2  
2017-2019

4

(

)

1 1

1.2.2

1

/

2

2017-2019

2

(

)

1 1

1.3

1.3.1

2

20%

1

4

10%  
2  
6  
/  
1  
2  
2017-2019  
1-2

(  
1 1  
)

1.3.2

2  
20%  
1

10%

2

6

2

/

1

2017-2019

1-2

(

)

1 1

1.4

1.4.1

/

1

2017-2019

2

(

)

1 1

2.

2.1

2.1.1

3T

64

3

/

10

2017-2020

2

,

(

)

2 1

2.1.2

3.0T  
200mT/m/ms

80mT/m,  
32

/ 10

2017-2020  
1-2

,

(

)

2 1

2.1.3

3.0T  
200mT/m/ms

80mT/m,  
32



/ 1  
2017-2020  
1-2

,

(

) 2 1

2.2 X-

2.2.1 DSA X-

DSA X-

X

ECG

/ FOV CT

3D 3D 7

55° /s 200°

30cm× 30cm 60f/s

X

3.3MHU DSA 40%

/ 10

2017-2020

2

,

(

)

2 1

2.2.2

X-

X

X

,

2D

3D

10 lp/mm

85%

40%

/ 5  
2017-2020

2

,

(

)

2 1

2.3

2.3.1

### CCD/CMOS

140° CCD /170° CMOS

40 CCD /100 CMOS 1080i HDTV

1920× 1080

60

50μ m

12

μ m

/

1

2017-2020

2

,

2.3.2 ) ( 2 1 /

1.0mm 0.5mm  
7.5-25MHz / 1

2017-2020  
2

2.3.3 ) ( 2 1 ,

2.8mm 1.0-2.0μm  
500× 500μ m

1

2017-2020

2

,

(

)

2 1

2.4

2.4.1

/

STORM/SIM

/

STORM/SIM

EMCCD

SIM

100

/

90 nm

SIM

20 nm

STORM

80 nm

100

1.45 EMCCD

$10^{-3}$   $10^4$  lux

1000

70 dB

/

3

2017-2020

2

,

(

)

2 1

2.4.2

-

(STED)

-

(STED)

CMOS

600μ m

60nm(STED)

)

110μ m

4mm

400 nm

1100 nm

0.7

150 fs

700 1000 nm

600mW

CMOS

13 mm× 13 mm

1.4 e-

2048× 2048

/

3

2017-2020

2

2.5  
2.5.1

75°  
15%  
1.5mm  
3000cm<sup>3</sup>  
300°  
500Hz  
150ms  
20  
/ 10  
5 PCT  
2017-2020  
2

2 1

## 2.5.2

700mm  
1mm  
0.2mm  
/ 10  
5 PCT  
2017-2020  
2  
,  
(  
) 2 1

## 2.5.3

22mm

3



6

1mm

1%

1.5mm

3°

2.6

2.6

/

1

2017-2020

2

,

(

)

2 1

2.6.2

1

60

20k

0.05-12.8ms

0.2-10ms

0-1.28mA

/

1

2017-2020

2

,

(

)

2 1

2.7

2.7.1

;

1.0mm

- /

5mm

0.5mm

;

/

1

2017-2020

1-2

,

(

)

2 1

2.8

2.8.1

CT

CT

8MHU

0.6×0.7/1.1×1.2mm<sup>2</sup>      60/100kW  
220rpm                      200ksec

/                      1

2017-2020

1-2

(

)

1 1

2.8.2

CT

CT

0.9

mm

70%

0.3 fc.

/

1

2017-2020

1-2

(

) 1 1  
2.8.3 X  
X X  
X X  
X 1.5MW X  
800cGy/min@1m  
400mm /  
1  
2017-2020  
1-2  
(  
) 1 1  
3.  
3.1  
3.1.1  
X-

1

2017-2019

2

(

)

1 1

3.1.2

CT MRI DSA

1

3cm

10cm

90%

3

10%

2017-2019

1-2

(

)

1 1

3.1.3

,

1000  
50% 3  
90%  
80% 2  
10%  
92% 2  
3%  
18% 3  
2

2017-2019

2



3.1.4

)

(

1 1

1

2017-2019

5

) ( 1 1

3.2

3.2.1

,

DR CT MRI US 2 ( 1

24

1-2

2017-2019

2

(

)

1 1

3.2.2

DSA X-

,

1

2

1-2

2017-2019

1-2

(

)

1 1

3.2.3

TPS

,

1 TPS

24

1-2

2017-2019

2

(

)

1 1

4.

4.1

#### 4.1.1 PET-CT

PET-CT

PET-CT  
5 , 3 3  
PET-CT

30  
2017-2019  
1-2

,  
1  
(  
) 1 1  
4.1.2 CT X  
CT X

5

3

3

,

CT

X

30

2017-2019

1-2

,

1

(

1 1

)

4.1.3

5

3

3

,

30

2017-2019

1-2

,

1

(

1 1

)

4.1.4

C

X



30

2017-2019

1-2

,

1

(

)

1 1

4.1.5

5

5

,

3

5

3

2

1

100

2017-2019

1-2

,

2

1000

(

)

1 1

1.  
5  
“1.” ” 5  
10  
2.  
3. 1-2  
1  
2