WHAT IS CLAIMED IS:

1. An imaging system for radiographic inspection, comprising:

an inspection area, wherein an object under inspection can be transported through the inspection area in a travelling direction;

a first ray source assembly, comprising a plurality of ray sources, each ray source of the first ray source assembly comprises a separate shell to define a vacuum space and comprises a plurality of target spots enclosed in the shell, the target spots of all the ray sources of the first ray source assembly are arranged in a first ray source plane;

a second ray source assembly, comprising a plurality of ray sources, wherein each ray source of the second ray source assembly comprises a separate shell to define a vacuum space and comprises a plurality of target spots enclosed in the shell, and the target spots of all the ray sources of the second ray source assembly are arranged in a second ray source plane;

a plurality of first detector units, adapted for receiving X-rays emitted from the first ray source assembly and passing through the inspection area, the plurality of first detector units being arranged in a first detector plane;

a plurality of second detector units, adapted for receiving X-rays emitted from the second ray source assembly and passing through the inspection area, the plurality of second detector units being arranged in a second detector plane; and

a single detector bracket, wherein the plurality of first detector units and the plurality of second detector units are both installed on the single detector bracket,

wherein the first ray source plane, the first detector plane, the second detector plane, and the second ray source plane are spaced apart from each other and distributed in sequence in the travelling direction.

2. The imaging system according to claim 1, wherein the first ray source plane, the first detector plane, the second detector plane, and the second ray source plane are substantially perpendicular to the travelling direction and parallel to each other.

3. The imaging system according to claim 1 or 2, wherein the imaging system is further

configured to reconstruct a three-dimensional scanning image of the object under inspection based on detection data from the plurality of first detector units and the plurality of second detector units.

4. The imaging system according to claim 3, further comprising a ray source control device for controlling ray emission of the first ray source assembly and the second ray source assembly, wherein the ray source control device is configured so that at the same moment, at most one target spot in the first ray source assembly emits X-rays and at most one target spot in the second ray source assembly emits X-rays.

5. The imaging system according to claim 1 or 2, wherein the plurality of first detector units cover at least a ray emission range of the first ray source assembly, and the plurality of second detector units cover at least a ray emission range of the second ray source assembly.

6. The imaging system according to claim 5, wherein the plurality of first detector units are configured to extend completely around the inspection area to form a first detector ring; and/or

the plurality of second detector units are configured to extend completely around the inspection area to form a second detector ring.

7. The imaging system according to claim 1 or 2, wherein when observed in the travelling direction, distribution positions of the target spots in the first ray source assembly do not completely coincide with distribution positions of the target spots in the second ray source assembly.

8. The imaging system according to claim 7, wherein when observed in the travelling direction, the distribution positions of the target spots in the first ray source assembly are staggered from those of the target spots in the second ray source assembly.

9. The imaging system according to claim 1 or 2, wherein when observed in the travelling

direction, a projection of each ray source of the first ray source assembly does not completely fall within a projection of any ray source of the second ray source assembly, and the projection of each ray source of the second ray source assembly does not completely fall within the projection of any ray source of the first ray source assembly.

10. The imaging system according to claim 9, wherein when observed in the travelling direction, projections of the plurality of ray sources of the first ray source assembly are staggered from those of the plurality of ray sources of the second ray source assembly.

11. The imaging system according to claim 1 or 2, wherein,

all the target spots of each ray source of the first ray source assembly are arranged to deflect towards the plurality of first detector units in the travelling direction by a first deflection angle, so that the X-rays emitted by each ray source of the first ray source assembly will not be blocked by the plurality of first detector units before passing through the inspection area; and/or

all the target spots of each ray source of the second ray source assembly are arranged to deflect towards the plurality of second detector units in the travelling direction by a second deflection angle, so that the X-rays emitted by each ray source of the second ray source assembly will not be blocked by the plurality of second detector units before passing through the inspection area.

12. The imaging system according to claim 1 or 2, wherein,

the first ray source assembly further comprises a first collimator adapted for deflecting a direction of the X-rays emitted by the first ray source assembly towards the plurality of first detector units in the travelling direction by a first deflection angle; and/or

the second ray source assembly further comprises a second collimator adapted for deflecting a direction of the X-rays emitted by the second ray source assembly towards the plurality of second detector units in the travelling direction by a second deflection angle.

13. The imaging system according to claim 1 or 2, wherein when observed in the travelling direction, the first ray source assembly and the second ray source assembly have a

combined scanning angle greater than 120 degrees relative to the inspection area.

14. The imaging system according to claim 13, wherein when observed in the travelling direction, the first ray source assembly and the second ray source assembly have a combined scanning angle greater than 180 degrees relative to the inspection area.

15. The imaging system according to claim 4, wherein at least one target spot in the first ray source assembly and the second ray source assembly is a digital radiographic (DR) target spot, and the ray source control device is configured so that a ray emission frequency of the digital radiographic target spot is higher than that of other target spots.

16. The imaging system according to claim 1 or 2, wherein the first detector unit comprises a single row of detector crystals or multiple rows of detector crystals, and/or the second detector unit comprises a single row of detector crystals or multiple rows of detector crystals.