Claims

1. A method for improving inspection resolution comprising
providing a camera having a flat plane (90);
providing a specific curved surface (80);
providing a series of optical elements (10, 20, 30, 40, 50, 60, 70) and placing the series of optical elements between the specific curved surface (80) and the flat plane (90) of the camera;
projecting an image of the specific curved surface (80) onto the flat plane (90) of the camera;
characterized in that
the step of providing a camera having a flat plane (90) comprises providing a digital camera, and the step of providing a series of optical elements comprises providing a series of optical elements which narrows the depth of field of the digital camera along the specific curved surface,
wherein the step of providing the series of optical elements (10, 20, 30, 40, 50, 60, 70) comprises providing a series of seven optical elements, wherein:

a front surface radius of a first optical element (10) of the series of seven optical elements is about 51.9mm;
a back surface radius of the first optical element (10) of the series of seven optical elements is about -32.0mm;
a front surface radius of a second optical element (20) of the series of seven optical elements is about 98.4mm;
a back surface radius of the second optical element (20) of the series of seven optical elements is about - 15.8mm;
a front surface radius of a third optical element (30) of the series of seven optical elements is about -15.8mm;
a back surface radius of the third optical element (30) of the series of seven optical elements is about -29.9mm;
a front surface radius of a fourth optical element (40) of the series of seven optical elements is about 40.5mm;
a back surface radius of the fourth optical element (40) of the series of seven optical elements is about 11.1 mm;

a front surface radius of a fifth optical element (50) of the series of seven optical elements is about 11.1 mm;
a back surface radius of the fifth optical element (50) of the series of seven optical elements is about -58.1mm;
a front surface radius of a sixth optical element (60) of the series of seven optical elements is about 23.5mm;
a back surface radius of the sixth optical element (60) of the series of seven optical elements is about -13.5mm;
a front surface radius of a seventh optical element (70) of the series of seven optical elements is about -13.5mm; and
a back surface radius of the seventh optical element (70) of the series of seven optical elements is about -16.9mm.

2. The method of claim 1, wherein the flat plane (90) of the digital camera is a flat CCD plane and wherein an image of the specific curved surface is recorded and projected onto the flat CCD plane.

3. The method of claim 1 or claim 2, wherein the step of providing the series of optical elements (10, 20, 30, 40, 50, 60, 70) comprises providing a series of optical elements made from a material selected from the group consisting of: FK3 type glass and SFL6 type glass.

4. The method of any one of the preceding claims, wherein in the step of providing the series of seven optical elements (10, 20, 30, 40, 50, 60, 70):

a spacing between a back of the first optical element (10) and a front of the second optical element (20) is about 0.5mm;
a spacing between a back of the second optical element (20) and a front of the third element (30) is about 0.0mm;
a spacing between a back of the third optical element (30) and a front of the fourth optical element (40) is about 18.3mm;
a spacing between a back of the fourth optical element (40) and a front of the fifth optical element (50) is about 0.0mm;

a spacing between a back of the fifth optical element (50) and a front of the sixth optical element (60) is about 1.9mm; and
a spacing between a back of the sixth optical element (60) and a front of the seventh optical element (70) is about 0.0mm.

5. The method of any one of the preceding claims,
wherein in the step of providing the series of seven optical elements:

a diameter of the first optical element (10) is about 16.0mm;
a diameter of the second optical element (20) is about 16.0mm;
a diameter of the third optical element (30) is about 17.2mm;
a diameter of the fourth optical element (40) is about 19.2mm;
a diameter of the fifth optical element (50) is about 19.2mm;
a diameter of the sixth optical element (60) is about 21.0mm;
and a diameter of the seventh optical element (70) is about 22.0mm.

6. The method of any one of the preceding claims,
wherein in the step of providing a series of seven optical elements (10, 20, 30, 40, 50, 60, 70):

a thickness of the first optical element (10) is about 3mm;
a thickness of the second optical element (20) is about 4mm;
a thickness of the third optical element (30) is about 1.7mm;
a thickness of the fourth optical element (40) is about 2mm;
a thickness of the fifth optical element (50) is about 6.7mm;
a thickness of the sixth optical element (60) is about 8.5mm; and
a thickness of the seventh optical element (70) is about 2mm.

7. The method of any one of the preceding claims,
wherein the step of providing the specific curved surface (80) comprises providing a contact lens having the specific curved surface.