CLAIMS

1. A virtual reality (VR) head-mounted apparatus, comprising:

an apparatus body, the apparatus body comprising a convex lens, a camera and a partial-reflection partial-transmission lens for reflecting infrared light, the partial-reflection partial-transmission lens being located on a side of the convex lens away from a user, the camera being located between the convex lens and the partial-reflection partial-transmission lens, and a lens surface of the partial-reflection partial-transmission lens being disposed obliquely, such that an infrared image of an eye of the user is obliquely reflected to the camera; and

one or more infrared light sources provided in the apparatus body, the one or more infrared light sources being located on a side of the convex lens close to the user, and providing infrared light compensation for an eye of the user,

wherein the one or more infrared light sources are distributed at a periphery of the convex lens, and the partial-reflection partial-transmission lens is located on a side of the convex lens away from the user, and

wherein all of the one or more infrared light sources are located within a coverage area of a circumscribed rectangle of the convex lens and outside the convex lens when viewed along a direction parallel with an optical axis of the convex lens, and the circumscribed rectangle has a same horizontal width and a same vertical height as those of the convex lens.

2. The apparatus according to claim 1, wherein the partial-reflection partial-transmission lens has a high transmittance for visible light and a low transmittance for infrared light.

3. The apparatus according to claim 1, wherein the partial-reflection partial-transmission lens comprises an infrared dichroic mirror.

4. The apparatus according to claim 1, wherein the camera is located outside a display area of a VR display component in the VR head-mounted apparatus with respect to the convex lens.

5. The apparatus according to claim 1, wherein the partial-reflection partial-transmission

lens has a plate shape, the lens surface of the partial-reflection partial-transmission lens is inclined obliquely downward, the camera is located at a bottom of the apparatus body, and a lens of the camera is disposed obliquely upward.

6. The apparatus according to claim 1, wherein the partial-reflection partial-transmission lens has a plate shape, the lens surface of the partial-reflection partial-transmission lens is inclined obliquely upward, the camera is located at a top of the apparatus body, and a lens of the camera is disposed obliquely downward.

7. The apparatus according to claim 1, wherein the apparatus body comprises two convex lenses, the partial-reflection partial-transmission lens is provided for at least one of the two convex lenses, and the partial-reflection partial-transmission lens has a plate shape, the lens surface of the partial-reflection partial-transmission lens is horizontally inclined towards the two convex lenses, and the camera is located between the two convex lenses.

8. The apparatus according to claim 7, wherein the apparatus body comprises a baffle, the baffle is located on a side of the convex lens away from the user, and located between the two convex lenses in the apparatus body; the partial-reflection partial-transmission lens is rectangular, two side edges of the partial-reflection partial-transmission lens in a horizontal direction abut against the baffle and an inner wall of the apparatus body respectively; and the camera is installed on a side surface of the baffle.

9. The apparatus according to claim 1, further comprising:

an apparatus interface provided on the apparatus body, the apparatus interface being electrically connected to an electronic device installed in the apparatus body, the electronic device being used to play VR display content,

the camera and the infrared light source being connected to the apparatus interface through a data line, wherein the camera is configured to, upon receiving a switch control instruction transmitted by the electronic device through the apparatus interface and the data line, transmit an acquired infrared image to the electronic device through the apparatus interface and the data line.