

## CLAIMS:

1. A light display system, comprising:
  - a light source configured to emit a plurality of light patterns that correspond to multiple frames of an image, wherein the light source is configured to sequentially emit the plurality of light patterns based on instructions from a control system such that the multiple frames are presented in a sequence at a first rate; and
  - a head-mounted device, comprising:
    - an image expander configured to reflect the plurality of light patterns toward a user of the head-mounted device, wherein at least a portion of the image expander is configured to rotate relative to the light source at a second rate that is coordinated with the first rate by the control system to thereby display the image for visualization by the user.
2. The light display system of claim 1, wherein the portion of the image expander comprises a first reflective surface configured to reflect at least a portion of light emitted by the light source toward the user of the head-mounted device, wherein the first reflective surface is configured to rotate relative to the light source at the second rate.
3. The light display system of claim 2, wherein the image expander comprises a second reflective surface configured to reflect at least the portion of the light toward the first reflective surface.
4. The light display system of claim 3, wherein the first reflective surface is configured to rotate relative to the second reflective surface.
5. The light display system of claim 1, wherein the light source is configured to emit the plurality of light patterns that correspond to all of the multiple frames of the image within one sixteenth of a second.
6. The light display system of claim 1, wherein each frame of the multiple frames of the

image corresponds to a single line of pixels associated with the image.

7. The light display system of claim 1, comprising a motor configured to drive the portion of the image expander to rotate relative to the light source.

8. A light display system, comprising:

a light source configured to emit a plurality of light patterns that correspond to multiple frames of an image, wherein the light source is configured to sequentially emit the plurality of light patterns based on instructions from a control system such that the multiple frames are presented in a sequence at a first rate;

a first reflective surface configured to rotate relative to the light source at a second rate that is coordinated with the first rate by the control system to thereby display the image for visualization by a user; and

a motor configured to be controlled by the control system to drive the first reflective surface to rotate relative to the light source.

9. The light display system of claim 8, comprising a second reflective surface that is configured to rotate relative to the light source at the second rate, wherein the first reflective surface and the second reflective surface are supported within a head-mounted device that is configured to be worn by the user, the first reflective surface is configured to align with and reflect a first portion of the plurality of light patterns toward a first eye of the user, and the second reflective surface is configured to align with and reflect a second portion of the plurality of light patterns toward a second eye of the user.

10. The light display system of claim 9, comprising a third reflective surface supported within the head-mounted device, wherein the third reflective surface is configured to reflect at least the first portion of the plurality of light patterns toward the first reflective surface and at least the second portion of the plurality of light patterns toward the second reflective surface.

11. The light display system of claim 10, wherein the first reflective surface and the second

reflective surface are configured to rotate relative to the third reflective surface.

12. The light display system of claim 8, comprising a sensor configured to detect a starting light emitted by the light source, wherein the sensor is configured to transmit a signal to the control system in response to detecting the starting light.

13. The light display system of claim 12, wherein the sensor is configured to sense infrared light, and the light source is configured to emit the starting light as infrared light.

14. The light display system of claim 8, wherein the first reflective surface is a semi-silvered mirror.

15. A light display system, comprising:

- a light source configured to emit a plurality of light patterns that correspond to multiple frames of an image, wherein the light source is configured to sequentially emit the plurality of light patterns for the multiple frames such that the multiple frames are presented in a sequence;

- a reflective surface configured to rotate relative to the light source to thereby display the image for visualization by a user;

- a motor configured to drive the reflective surface to rotate relative to the light source;

- a sensor configured to detect a starting light and to transmit a first signal in response to detecting the starting light, wherein the first signal is indicative of operation of the light source to emit the plurality of light patterns that correspond to the multiple frames of the image;

- at least one processor communicatively coupled to the sensor and the motor; and

- at least one non-transitory computer-readable media communicatively coupled to the at least one processor, the at least one non-transitory computer-readable media storing instructions which, when executed, cause the processor to perform operations comprising:

- receiving, via the sensor, the first signal; and

- in response to receiving the first signal, transmitting a second signal to the motor to cause the motor to drive the reflective surface to rotate relative to the light source.

16. The light display system of claim 15, wherein the light source is configured to emit the plurality of light patterns for the multiple frames such that the multiple frames are presented in the sequence at a first rate, the first signal is indicative of the first rate, and the instructions, when executed, cause the processor to perform operations comprising transmitting the second signal to the motor to cause the motor to drive the reflective surface to rotate relative to the light source at a second rate that is based on the first rate.

17. The light display system of claim 15, wherein the light source is a light bar formed of a plurality of light emitting diodes arranged in a single line.

18. The light display system of claim 15, wherein the reflective surface is supported within a head-mounted device that is configured to be worn by the user.

19. The light display system of claim 15, wherein the light source is configured to emit additional light patterns that correspond to multiple respective frames of a second image, wherein the light source is configured to emit the additional light patterns for the multiple respective frames of the second image such that the multiple respective frames are presented in a respective sequence.

20. The light display system of claim 15, wherein the light source is configured to emit the plurality of light patterns that correspond to the multiple frames of the image in a repetitive manner to thereby repeatedly display the image for visualization by the user.