Claims

1. An LED street light, comprising:

an enclosure having:

a first compartment having an LED array configured to illuminate an area beneath the street light;

a second compartment, coupled to the first compartment, having a camera directed toward the area beneath the street light, the second compartment also having a window covering the camera such that the camera can receive light from area beneath the street light, but passers-by in the area beneath the street light do not see the camera;

a third compartment, coupled to the second compartment, and configured to attach the street light to a vertical support; and

a passive air channel disposed between the first compartment and the second compartment, enhancing thermal insulation between the first compartment and the second compartment, and configured to direct air from outside of the enclosure and from the area beneath the street light to an area above the street light, each of the first compartment and the second compartment being weatherproofed, at least with respect to the air channel.

2. The LED street light according to Claim 1, wherein a power supply for the LED array is disposed in one or more of the second compartment and the third compartment.

3. The LED street light according to Claim 1, further comprising an anti-glare device mounted to a bottom of at least one of the first compartment and the second compartment, and configured to shield the camera from light glare and/or reflections from the LED array.

4. The LED street light according to Claim 3, wherein the anti-glare device is further configured to direct air into the passive air channel.

5. The LED street light according to Claim 1, further comprising at least one antenna coupled to the second compartment and configured to transmit one or more images from the camera.

6. The LED street light according to Claim 1, further comprising at least one antenna coupled to the attachment structure and configured to transmit one or more images from the camera.

7. The LED street light according to Claim 1, wherein the camera comprises a pan-tilt-zoom camera.

8. An LED streetlight, comprising:

an enclosure having

an LED light compartment having an array of LED lights disposed to direct light to an area to be observed;

a camera compartment coupled to but thermally insulated from the LED light compartment, the camera compartment having a camera with a lens that is (i) disposed vertically below said array of LED lights, and (ii) disposed to capture an image from the area to be observed;

a power supply compartment coupled to at least one of the LED light compartment and the camera compartment, the power supply compartment configured to support a power supply of said array of LED lights; and

a passive cooling air channel disposed between the LED light compartment and the camera compartment, enhancing thermal insulation therebetween, and configured to direct air from outside of the enclosure and from the area beneath the street light to an area above the street light, each of the LED compartment and the camera compartment being weatherproofed, at least with respect to the air channel.

9. The LED street light according to Claim 8, wherein the cooling air channel slopes at an angle from a bottom of the streetlight to a top thereof.

10. The LED street light according to Claim 8, further comprising a shield device vertically oriented between the LED light compartment and the camera compartment, and configured to (i) block light from the array of LED lights from reaching the camera lens, and (ii) direct air into the cooling air channel.

11. The LED street light according to Claim 8, wherein the camera compartment is disposed between the LED light compartment and the power supply compartment, and further comprising a light pole connection mechanism configured to couple the LED streetlight to a vertical light pole.

12. The LED street light according to Claim 8, further comprising a light control unit disposed in at least one of the camera compartment and the power supply compartment.

13. The LED street light according to Claim 8, wherein the power supply compartment is heavier than the camera compartment, and wherein the camera compartment is heavier than the LED light compartment.

14. The LED street light according to Claim 8, further comprising at least one antenna configured to (i) receive commands from a remote center, and (ii) transmit plural captured images from the camera to the remote center.

15. Streetlight-mounted camera apparatus, comprising:

an enclosure having an LED light module, a camera module, and a power supply module, the camera module being separated from the LED light module by at least one passive air cooling channel extending from a bottom of the enclosure to a top thereof~~;~~ , the passive air cooling channel enhancing thermal insulation between the LED light module and the camera module, and configured to direct air from outside of the enclosure and from the area beneath the street light to an area above the street light, each of the LED light module and the camera module being weatherproofed, at least with respect to the air channel;

the LED light module having an array of LED lights disposed to provide light onto an area below the streetlight, an LED light power supply being disposed in at least one of the camera module and the power supply module;

the camera module supporting a camera having a lens disposed to capture light from the area below the streetlight, the camera lens being disposed vertically below a plane of the LED array;

the power supply module having mounting structure configured to mount the enclosure on a streetlight post; and

shield structure mounted on the bottom of the enclosure and configured to prevent light from the LED array from entering the camera lens, and to guide air into the passive air cooling channel.

16. Streetlight-mounted camera apparatus, comprising:

an enclosure having an LED light module, a camera module, and a power supply module, the camera module being separated from the LED light module by at least on passive air cooling channel extending from a bottom of the enclosure to a top thereof, and configured to direct air from outside of the enclosure and from the area beneath the street light to an area above the street light;

the LED light module having an array of LED lights disposed to provide light onto an area below the streetlight, an LED light power supply being disposed in at least one of the camera module and the power supply module;

the camera module supporting a camera having a lens disposed to capture light from the area below the streetlight, the camera lens being disposed vertically below a plane of the LED array;

the power supply module having mounting structure configured to mount the enclosure on a streetlight post; and

shield structure mounted on the bottom of the enclosure and configured to prevent light from the LED array from entering the camera lens, and to guide air into the passive air cooling channel, and wherein the shield comprises at least one antenna.

17. The apparatus according to Claim 14, further comprising an antenna mounted on the top of the enclosure and configured to transmit and receive signals, the transmitted signals including image signals and the received signal including control signals.

18. The apparatus according to Claim 14, further comprising a radio transmitter, a radio receiver, at least one processor, and at least one memory disposed within at least one of the camera module and the power supply module.

19. The apparatus according to Claim 14, further comprising a camera lens shield configured to pass incoming light to the camera lens but to render the camera lens substantially invisible from outside of the enclosure.

20. A kit comprising the apparatus of Claim 15.

21. A method of imaging a lighted area from a streetlight, comprising:

illuminating an area below the streetlight with an LED light array disposed in an LED light compartment of an enclosure;

capturing an image of the illuminated area below the streetlight with a camera mounted in a camera compartment coupled to the LED light compartment;

cooling the LED light compartment by providing at least one passive cooling air channel between the LED light compartment and the camera compartment, and configured to direct air from outside of the streetlight and from an area below a bottom of the enclosure to an area above a top thereof, the at least one passive cooling air channel enhancing thermal insulation between the LED light compartment and the camera compartment, each of the LED light compartment and the camera compartment being weatherproofed, at least with respect to the air channel;

shielding light from the LED array from entering a lens of the camera using a shield device;

providing power to the LED light array and to the camera from circuitry disposed in a power supply compartment of the enclosure; and

supporting the enclosure on a streetlight support structure.