CLAIMS

1. An apparatus for disinfection comprising

a cylindrical housing;

a plurality of ultra-violet light emitting diode (UV-LED) modules disposed on the circumference of the cylindrical housing, each UV-LED module comprising a heat sink; and

a heat dissipation module disposed along the central axis of the cylindrical housing, the heat dissipation module arranged in thermal contact with the heat sink of each of the plurality of UV-LED modules;

wherein each of the plurality of UV-LED modules is pivotably mounted onto the circumference.

2. The apparatus of claim 1, wherein at least one of the plurality of UV-LED modules is configured to emit an UV-C radiation.

3. The apparatus of claim 1 or 2, wherein the UV-C radiation has a wavelength of 200 to 280 nanometers (nm).

4. The apparatus of any one of claims 1-3, further comprises a safety cover assembly, the safety cover assembly comprises a belt positioned parallel to the circumference of the cylindrical housing, and a slidable cover is arranged to slide in a direction parallel to the circumference of the cylindrical housing.

5. The apparatus of any one of the preceding claims, further comprises at least one end cap, the at least one end cap adapted to accommodate an UV-LED module.

6. The apparatus of any one of the preceding claims, wherein the heat dissipation module comprises a plurality of fans positioned to direct air from a first end of the cylindrical housing to a second end of the cylindrical housing.

7. The apparatus of any one of the preceding claims, wherein the heat dissipation module further comprises a plurality of ventilation columns, each ventilation column

arranged to be positioned between two ultra-violet light emitting diode (UV-LED) modules.

8. The apparatus of claim 6 and 7, wherein at least one fan of the plurality of fans is positioned along the longitudinal axis of the central axis to direct air along the central axis.

9. The apparatus of any one of the preceding claims, wherein the apparatus is an automated guided vehicle (AGV) or an autonomous mobile robot (AMR).

10. The apparatus of claim 9, wherein the AGV is equipped with at least one of the following sensors: image sensor, sound sensor, temperature sensor, electrical voltage sensor, electrical current sensor, light sensor, location sensor.

~~11. A system for disinfection comprising~~

~~at least one AGV configured to provide disinfection to a predetermined area; the at least one AGV equipped with at least one ultra-violet light emitting diode (UV-LED) module and a location sensor; and~~

~~a processor configured to receive location data from the AGV, the processor further configured to provide a route to the at least one AGV for disinfecting the area.~~

~~12. The system of claim 11, wherein the AGV is further equipped with at least one of the following sensors: image sensor, sound sensor, temperature sensor, electrical voltage sensor, electrical current sensor, light sensor.~~

~~13. The system of claim 12, wherein the at least one sensor is arranged in signal or data communication with a safety module, the safety module arranged in signal or data communication with the processor, the safety module configured to receive input from the at least one sensor to determine if a living being is present and if so, the safety module is arranged to send an output to the processor to minimize or block radiation emitted from the at least one UV-LED module.~~

~~14. The system of any one of claims 11 to 13, further comprises a fleet management module to manage a plurality of AGVs, wherein the fleet~~

management module is configured to receive an operation status input from the plurality of AGVs and receive a configuration input from a user device.

15. The system of any one of claims 10 to 13, wherein the user device is a mobile device.

16. A method for providing disinfection to a designated area comprising the steps of:

(a.) providing at least one mobile apparatus for disinfection, the at least one mobile apparatus having at least one UV-LED module, the UV-LED module capable of being tilted with respect to a longitudinal axis of the mobile apparatus;

(b.) receiving from the at least one UV-LED module at least one of the following data: a location of the mobile apparatus, an image, and/or an operation status;

(c.) scheduling a disinfectant task;

(d.) sending the disinfectant task to the at least one mobile apparatus; and

(e.) receiving an update of task completion from the at least one mobile apparatus.