What is claimed is:

1. A fully automated microfluidic system for detecting multiple different analytes in a single run comprising:

a remote computer system;

a microfluidic analyzer connected with the remote computer system having an illumination source and a detection module; and

a cartridge having a plurality of lightbulbs, a sample tank and at least one reagent tank, wherein each lightbulb comprises:

an inlet microfluidic channel,

a first chamber connected to the inlet microfluidic channel, wherein the first chamber is configured to receive liquid and perform thermal-controlled amplification reactions; and

a second chamber connected to the first chamber, the second chamber is configured to hold and retain compressed air from the first chamber;

wherein each lightbulb is sealable by the microfluidic analyzer.

2. The fully automated microfluidic system of claim 1, wherein the detection module comprises a camera.

3. The fully automated microfluidic system of claim 1, wherein the cartridge comprises spaces to hold up to 40 respiratory pathogens.

4. The fully automated microfluidic system of claim 1, wherein the first chamber is round shaped to prevent bubble trapping, and wherein the second chamber is upside down spade shaped to maximize compartment and to prevent bubbles generation.

5. A fully automated microfluidic system for detecting 40 different analytes in a single run comprising:

a remote computer system;

a microfluidic analyzer connected with the remote computer system having an illumination source and a detection module; and

a cartridge having a plurality of lightbulbs, a sample tank and at least one reagent tank, wherein each lightbulb comprises:

an inlet microfluidic channel,

a first chamber connected to the inlet microfluidic channel, wherein the first chamber is configured to receive liquid and perform thermal-controlled amplification reactions; and

a second chamber connected to the first chamber, the second chamber is configured to hold and retain compressed air from the first chamber.

6. The fully automated microfluidic system of claim 5, wherein the detection module comprises a camera.

7. The fully automated microfluidic system of claim 5, wherein the cartridge comprises spaces to hold up to 40 respiratory pathogens.

8. The fully automated microfluidic system of claim 7, wherein the first chamber is round shaped to prevent bubble trapping, and wherein the second chamber is upside down spade shaped to maximize compartment and to prevent bubbles generation.

9. A fully automated microfluidic system for detecting multiple analytes with different biological contents comprising:

a remote computer system;

a microfluidic analyzer connected with the remote computer system having an illumination source and a detection module;

a cartridge having a plurality of lightbulbs, a sample tank and at least one reagent tank, wherein each lightbulb comprises:

an inlet microfluidic channel,

a first chamber connected to the inlet microfluidic channel, wherein the first chamber is configured to receive liquid and perform thermal-controlled amplification reactions; and

a second chamber connected to the first chamber, the second chamber is configured to hold and retain compressed air from the lightbulb chamber;

wherein each lightbulb is sealable by the microfluidic analyzer; and

wherein the remote computer system is configured to analyze the multiple analytes associated with the cartridge while all of the analytes are being processed.

10. The fully automated microfluidic system of claim 9, wherein the detection module comprises a camera.

11. The fully automated microfluidic system of claim 9, wherein the cartridge comprises spaces to hold up to 40 respiratory pathogens.

12. The fully automated microfluidic system of claim 9, wherein the first chamber is round shaped to prevent bubble trapping, and wherein the second chamber is upside down spade shaped to maximize compartment and to prevent bubbles generation.

13. A method for detecting multiple analytes, the method comprising :

loading a sample into a sample apparatus;

inserting the sample apparatus into a cartridge having a plurality of lightbulbs, a sample tank and at least one reagent tank, wherein each lightbulb comprises:

an inlet microfluidic channel,

a first chamber connected to the inlet microfluidic channel, wherein the first chamber is configured to receive liquid and perform thermal-controlled amplification reactions; and

a second chamber connected to the first chamber, the second chamber is configured to hold and retain compressed air from the first chamber;

loading the cartridge into a microfluidic analyzer, wherein the microfluidic analyzer is connected with a remote computer system having an illumination source and a detection module;

controlling the microfluidic analyzer to perform an assay operation, wherein performing the assay operation comprises sealing each of the plurality of lightbulbs by the microfluidic analyzer.