CLAIMS

~~What is claimed is:~~

1. An apparatus, comprising:

a system, including:

a reagent cartridge receptacle;

a non-contact temperature controller; and

a processor operatively coupled to the temperature controller;

a reagent cartridge receivable within the reagent cartridge receptacle, the reagent cartridge, comprising:

a flow cell assembly;

a plurality of reagent reservoirs; and

a manifold assembly, comprising:

a common fluidic line; and

a plurality of reagent fluidic lines, each of the plurality of reagent fluidic lines being adapted to be fluidically coupled to a corresponding reagent reservoir and selectively couplable to the common fluidic line,

wherein the processor is to cause the temperature controller to change a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines.

2. The apparatus of claim 1, wherein the reagent cartridge comprises a body having a window to enable the temperature controller to change a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines.

3. The apparatus of claim 2, wherein the reagent cartridge further comprises a waste reservoir having a second window that is aligned with the window of the body.

4. The apparatus of claim 1, wherein the temperature controller is spaced from the manifold assembly.

5. The apparatus of claim 1, wherein the temperature controller comprises a temperature sensor positioned to determine a temperature associated with at least one of the common fluidic line or one or more of the reagent fluidic lines and, the processor is configured to compare the determined temperature to a reference temperature, and wherein in response to the determined temperature being outside of a threshold of the reference temperature, the processor causes the temperature controller to change a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines.

6. The apparatus of claim 1, wherein the temperature controller comprises a heater and a temperature sensor, the heater being positioned to heat at least one of the common fluidic line or one or more of the reagent fluidic lines and the temperature sensor

being positioned to determine a temperature associated with at least one of the common fluidic line or one or more of the reagent fluidic lines, and wherein the processor is adapted to control the heater based on the temperature determined by the temperature sensor.

7. The apparatus of claim 6, wherein the heater comprises at least one of a non-contact heater, ~~.~~

~~8. The apparatus of claim 7, wherein the heater comprises~~ an infrared heater, and/or ~~.~~

~~9. The apparatus of claim 7, wherein the heater comprises~~ a LED heater.

~~10~~8. The apparatus of claim ~~9~~ 7, wherein the heater comprises a LED heater and the apparatus further comprising an orifice positioned to direct a beam emitted by the LED heater toward the at least one of the common fluidic line or one or more of the reagent fluidic lines.

~~11~~9. The apparatus of claim 1, wherein the temperature controller further comprises a cooler, ~~.~~

~~12. The apparatus of claim 11,~~ wherein the cooler comprises a nozzle, a valve, and an air source fluidically coupled to the nozzle by the valve.

~~13~~10. The apparatus of claim 1, wherein the manifold assembly comprises a body and a membrane coupled to a surface of the body and the common fluidic line is defined between the membrane and the body, the body being on a first side of the common fluidic line and the membrane being on a second side of the common fluidic line.

~~14~~11. The apparatus of claim 10~~13~~, wherein the temperature controller is positioned on at least one of the first side or the second side of the common fluidic line to change a temperature of the common fluidic line.

~~15~~12. The apparatus of claim 10~~13~~, wherein the reagent fluidic lines of the manifold assembly are defined between the membrane and the body, wherein each of reagent fluidic lines comprises a membrane valve and a corresponding actuator disposed within the manifold assembly adapted to move the opposing membrane away from a valve seat of the corresponding membrane valve.

~~16~~13. The apparatus of claim 12~~15~~, wherein the temperature controller is positioned on at least one of the first side or the second side of the common fluidic line to change a temperature of the corresponding reagent fluidic line.

~~17~~14. An apparatus, comprising:

a reagent cartridge comprising:

a plurality of reagent reservoirs;

a temperature controller; and

a manifold assembly, comprising:

a common fluidic line; and

a plurality of reagent fluidic lines, each of the plurality of reagent fluidic lines being adapted to be fluidically coupled to a corresponding reagent reservoir,

wherein the temperature controller is positioned to apply at least one of heat or cold to the common fluidic line.

~~18~~15. The apparatus of claim ~~17~~14, wherein the temperature controller is coupled to a surface of the reagent cartridge~~.~~, ~~.~~

~~19. The apparatus of claim 18, wherein the temperature controller is coupled to the surface of the cartridge using adhesive.~~

~~20. The apparatus of claim 17, wherein~~ the temperature controller ~~comprises~~ comprising a heater and a temperature sensor, the heater being positioned to heat the common fluidic line and the temperature sensor is positioned to determine a temperature associated with the common fluidic line.

~~21~~16. The apparatus of claim ~~20~~15, wherein the heater comprises a flexible heater and the temperature sensor comprises a thermocouple.

17~~22~~. A method, comprising:

flowing reagent through at least one of a reagent fluidic line or a common fluidic line and toward a flow cell assembly;

determining a temperature associated with the reagent fluidic line or the common fluidic line;

comparing the determined temperature to a reference temperature; and

in response to the determined temperature being outside of a threshold of the reference temperature, changing a temperature of the reagent as the reagent is flowing through the at least one of the reagent fluidic line or the common fluidic line.

18~~23~~. The method of claim 17~~22~~, wherein changing the temperature of the reagent comprises heating the at least one of the reagent fluidic line or the common fluidic line.

19~~24~~. The method of claim 18~~23~~, wherein heating the at least one of the reagent fluidic line or the common fluidic line comprises heating the common fluidic line and substantially not heating the reagent fluidic line.

20~~25~~. The method of claim 17~~22~~, wherein the heating comprises heating using at least one of a flexible heater~~.~~,

~~26. The method of claim 22, wherein the heating comprises heating using~~ an infrared heater, and/or ~~.~~

~~27. The method of claim 22, wherein the heating comprises heating using~~ a LED heater.

28. The method of claim 22, wherein changing the temperature of the at least one of the reagent fluidic line or the common fluidic line comprises cooling the at least one of the reagent fluidic line or the common fluidic line.

29. The method of claim 28, wherein cooling the at least one of the reagent fluidic line or the common fluidic line comprises flowing compressed air toward the at least one of the reagent fluidic line or the common fluidic line.

30. An apparatus, comprising:

a system, including:

a reagent cartridge receptacle;

a non-contact heater; and

a processor operatively coupled to the heater;

a reagent cartridge receivable within the reagent cartridge receptacle, the reagent cartridge, comprising:

a flow cell assembly;

a plurality of reagent reservoirs; and

a manifold assembly, comprising:

a common fluidic line; and

a plurality of reagent fluidic lines, each of the plurality of reagent fluidic lines being adapted to be fluidically coupled to a corresponding reagent reservoir and selectively couplable to the common fluidic line,

wherein the processor is to cause the heater to change a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines.

31. The apparatus of claim 30, wherein the reagent cartridge further comprises a temperature sensor.

32. The apparatus of claim 31, wherein the temperature sensor is positioned to determine a temperature associated with at least one of the common fluidic line or one or more of the reagent fluidic lines.

33. The apparatus of claim 32, wherein the processor compares the determined temperature to a reference temperature, and in response to the determined temperature being outside of a threshold of the reference temperature, the processor causes the heater to change a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines.

34. The apparatus of claim 30, wherein the system further comprises a temperature sensor operable to detect a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines of the reagent cartridge.

35. An apparatus, comprising:

~~a temperature controller; and~~

~~a reagent cartridge comprising:~~

~~a reagent reservoir; and~~

~~a fluidic line fluidically coupled to the reagent reservoir; and~~

~~wherein the temperature controller is positioned to change a temperature of the fluidic line.~~

~~36. The apparatus of any one of claims 1 – 3, wherein the temperature controller is spaced from the manifold assembly.~~

~~37. The apparatus of any one of claims 1 – 4, wherein the temperature controller comprises a temperature sensor positioned to determine a temperature associated with at least one of the common fluidic line or one or more of the reagent fluidic lines and, the processor is configured to compare the determined temperature to a reference temperature, and wherein in response to the determined temperature being outside of a threshold of the reference temperature, the processor causes the temperature controller to change a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines.~~

~~38. The apparatus of any one of claims 1 – 10, wherein the temperature controller further comprises a cooler.~~

~~39 . The apparatus of any one of claims 1 – 12, wherein the manifold assembly comprises a body and a membrane coupled to a surface of the body and the common fluidic line is defined between the membrane and the body, the body being on a first side of the common fluidic line and the membrane being on a second side of the common fluidic line.~~

~~40. The apparatus of any one of claims 13 – 14, wherein the reagent fluidic lines of the manifold assembly are defined between the membrane and the body, wherein each of reagent fluidic lines comprises a membrane valve and a corresponding actuator disposed within the manifold assembly adapted to move the opposing membrane away from a valve seat of the corresponding membrane valve.~~

41. The apparatus of any one of claims 17 – 19, wherein the temperature controller comprises a heater and a temperature sensor, the heater being positioned to heat the common fluidic line and the temperature sensor is positioned to determine a temperature associated with the common fluidic line.

42. The method of any one of claims 22 – 24, wherein the heating comprises heating using a flexible heater.

43. The method of any one of claims 22 – 25, wherein the heating comprises heating using an infrared heater.

44. The method of any one of claims 22 – 26, wherein the heating comprises heating using a LED heater.

45. The method of any one of claims 22 – 27, wherein changing the temperature of the at least one of the reagent fluidic line or the common fluidic line comprises cooling the at least one of the reagent fluidic line or the common fluidic line.

46. The apparatus of any one of claims 30 – 33, wherein the system further comprises a temperature sensor operable to detect a temperature of at least one of the common fluidic line or one or more of the reagent fluidic lines of the reagent cartridge.

47. An apparatus, comprising:

a system, comprising:

a flow cell support to receive a flow cell; and

an imaging system including:

an imaging device;

an optical assembly; and

a light source assembly to emit a beam that is received by the optical assembly; and

a non-contact heater; and

a processor operatively coupled to the non-contact heater,

wherein the processor is to cause the non-contact heater to change a temperature of the flow cell.

48. The apparatus of claim 47, further comprising a temperature control device for the flow cell support.

49. The apparatus of claim 48, wherein the temperature control device comprises a thermoelectric cooler.

50. The apparatus of claim 47, wherein the non-contact heater comprises a LED heater.

51. The apparatus of claim 47, wherein the non-contact heater is carried by the imaging device.

~~52. The apparatus of claim 47, wherein the imaging system comprises the non-contact heater.~~

~~53. The apparatus of claim 47, wherein the non-contact heater emits a beam that is received by the optical assembly.~~

~~54. The apparatus of claim 52, wherein the optical assembly comprises a directional optical element and a focusing objective and wherein the directional optical element redirects the beam of the non-contact heater to the focusing objective.~~

~~55. A method, comprising:~~

~~flowing reagent through a fluidic line toward a flow cell on a flow cell support;~~

~~receiving the regent within the flow cell;~~

~~heating the reagent within the flow cell using a non-contact heater; and~~

~~controlling a temperature of the flow cell support using a temperature control device.~~

~~56. The method of claim 55, wherein heating the reagent within the flow cell using the non-contact heater comprises the non-contact heater emitting a beam and directing the beam to the flow cell.~~

~~57. The method of claim 56, wherein heating the reagent within the flow cell using the non-contact heater comprises the non-contact heater emitting a beam, redirecting the beam to an optical assembly, and projecting the redirected beam onto the flow cell.~~

~~58. The method of claim 56, wherein heating the reagent within the flow cell using the non-contact heater comprises the non-contact heater emitting a beam, receiving the beam at an optical assembly, and projecting the beam onto the flow cell.~~

~~59. The method of any one of claims 55 – 59, wherein the temperature control device comprises a thermoelectric cooler.~~

~~60. The apparatus of any one of claims 47 – 49, wherein the non-contact heater comprises a LED heater.~~

~~61. The apparatus of any one of claims 47 – 50, wherein the non-contact heater is carried by the imaging device.~~

~~62. The apparatus of any one of claims 47 – 49, wherein the imaging system comprises the non-contact heater.~~

~~63. The apparatus of any one of claims 47 – 52, wherein the non-contact heater emits a beam that is received by the optical assembly.~~