Claims:

1. An apparatus for substrate processing suitable for use in semiconductor manufacturing, comprising:

a transfer chamber;

a factory interface coupled to a first side of the transfer chamber;

one load lock chamber disposed between the transfer chamber and the factory interface to provide substrate transfer access through the one load lock chamber from the factory interface to the transfer interface, wherein a first valve is disposed between the one load lock chamber and the factory interface and a second valve is disposed between the one load lock chamber and the transfer chamber and the one load lock chamber is disposed between a first pre-clean process module and a second pre-clean process module such that a maintenance passage is disposed between at least the first pre-clean process module and the factory interface and the second pre-clean process module and the factory interface;

a plurality of process chambers coupled to a plurality of second sides of the transfer chamber;

the first pre-clean process module coupled to a second side of the transfer chamber between the one load lock chamber and at least one of the plurality of process chambers, wherein the first pre-clean process module is in direct communication with the transfer chamber, the first pre-clean process module comprising a pre-clean chamber and a gas panel disposed below the pre-clean chamber;

a first pre-clean control module disposed separate from the first pre-clean process module and adjacent to one of the plurality of process chambers, the first pre-clean control module comprising a power source and a controller; and

a cable conduit disposed between the first pre-clean process module and the first pre-clean control module, wherein:

the first pre-clean control module is spaced in a separate tower from the first pre-clean process module,

one or more power cables pass from the power source through the cable conduit to the first pre-clean process module, and

one or more signal cables pass from the controller through the cable conduit to the first pre-clean process module.

2. The apparatus of claim 1, wherein the cable conduit comprises a plurality of shielded compartments, the plurality of shielded compartments configured so that the one or more power cables pass through a different shielded compartment than the one or more signal cables.

3. The apparatus of claim 1 or 2, wherein the cable conduit comprises a metal, a metal alloy, or a polymer.

4. The apparatus of claim 1, wherein the pre-clean chamber further comprises a remote plasma source, a substrate support pedestal, and a plate stack configured to deliver a gas or a plasma to the substrate support pedestal.

5. The apparatus of claim 1, wherein the pre-clean chamber is coupled to the transfer chamber at an inward side and further comprises a lid with an axis of rotation adjacent to the transfer chamber, such that the lid rotates towards the transfer chamber when opening.

6. The apparatus of claim 5, wherein each of an isolation valve, a manometer, and a throttle valve extend from an outward side of the pre-clean chamber opposite the inward side of the pre-clean chamber.

7. The apparatus of claim 1, wherein the gas panel further comprises a purge gas panel and a process gas panel.

8. The apparatus of claim 1, wherein the maintenance passage comprises a width of greater than about 400 mm.

9. A pre-clean assembly suitable for use in semiconductor manufacturing, comprising:

a pre-clean process module configured to be in direct communication with only a transfer chamber comprising:

a pre-clean chamber comprising a lid, a substrate support pedestal, and a plate stack, wherein the plate stack is disposed within the lid and wherein the lid is rotatable about an axis of rotation;

a gas panel disposed below the pre-clean chamber;

an isolation port disposed on a first side of the pre-clean process module and extending in a first direction;

a manometer disposed on the first side and extending in the first direction;

a pre-clean control module disposed separate from the pre-clean process module and comprising:

a power source; and

a controller; and

a cable conduit disposed between the pre-clean process module and the pre-clean control module, the cable conduit having a length of greater than about 400 mm, wherein the pre-clean control module is spaced in a separate tower from the pre-clean process module, wherein one or more power cables pass from the power source through the cable conduit to the pre-clean process module, and wherein one or more signal cables pass from the controller through the cable conduit to the pre-clean process module.

10. The pre-clean assembly of claim 9, wherein the lid rotates away from the first side when opening.

11. The pre-clean assembly of claim 9 or 10, wherein the cable conduit comprises a plurality of shielded compartments, such that the one or more power cables pass through a different shielded compartment than the one or more signal cables.

12. The pre-clean assembly of claim 9 or 10, wherein the cable conduit comprises a metal or a metal alloy.

13. The pre-clean assembly of claim 9, wherein the pre-clean chamber further comprises a remote plasma source configured to supply plasma to a process volume formed between the lid and the substrate support pedestal.

14. The pre-clean assembly of claim 9, wherein a plurality of supports are disposed between the pre-clean chamber and the gas panel.

15. The pre-clean assembly of claim 14, wherein one of the plurality of supports is a removable leg disposed between the pre-clean chamber and the gas panel.

16. An apparatus for substrate processing suitable for use in semiconductor manufacturing, comprising:

a transfer chamber:

a factory interface coupled to a first side of the transfer chamber;

one load lock chamber disposed between the transfer chamber and the factory interface to provide a substrate transfer access through the one load lock chamber from the factory interface to the transfer chamber, wherein a first valve is disposed between the one load lock chamber and the factory interface and a second valve is disposed between the one load lock chamber and the transfer chamber;

a first process chamber, a second process chamber, a third process chamber, and a fourth process chamber coupled to the transfer chamber;

a first pre-clean process module coupled to a second side of the transfer chamber between the load lock chamber and the first process chamber, wherein the first pre-clean process module is in fluid communication with the transfer chamber, the first pre-clean process module comprising a first pre-clean chamber and a first gas panel disposed below the first pre-clean chamber, the first pre-clean chamber coupled to the transfer chamber and further comprising a lid with an axis of rotation adjacent to the transfer chamber, such that the lid rotates towards the transfer chamber when opening;

a first pre-clean control module disposed separate from the first pre-clean process module and adjacent to the first process chamber, the first pre-

clean control module comprising a first power source and a first controller configured to control a pre-clean process within the first pre-clean chamber;

a first cable conduit disposed between the first pre-clean process module and the first pre-clean control module and configured to hold one or more electric cables and one or more control cables therein, wherein the first pre-clean module is spaced in a first separate tower from the first pre-clean process module, and wherein one or more power cables pass from the first power source through the first cable conduit to the first pre-clean process module, and wherein one or more signal cables pass from the first controller through the first cable conduit to the first pre-clean process module;

a second pre-clean process module coupled to a seventh side of the transfer chamber between the load lock chamber and the fourth process chamber, wherein the second pre-clean process module is in fluid communication with the transfer chamber, and wherein the second pre-clean process module comprises a second pre-clean chamber and a second gas panel disposed below the second pre-clean chamber;

a second pre-clean control module disposed separate from the second pre-clean process module and adjacent to the fourth process chamber, the second pre-clean process module comprising a second power source, and a second controller configured to control the pre-clean process within the second pre-clean chamber;

a second cable conduit disposed between the second pre-clean process module and the second pre-clean control module and configured to hold one or more power cables, and one ore more signal cables therein, wherein the second pre-clean control module is spaced in a second separate tower from the second pre-clean process module and wherein one or more power cables pass from the second power source through the second cable conduit to the second pre-clean process module, wherein one or more signal cables pass from the second controller through the second cable conduit to the second pre-clean process module, and wherein the one load lock chamber is disposed between the first pre-clean process module and the second pre-clean process module.

17. The apparatus of claim 16, wherein a distance between the first pre-clean control module and the load lock chamber is greater than about 500 mm.