

WHAT IS CLAIMED IS:

1. An end effector monitoring apparatus comprising:an end effector measuring module being installed at through holes formed between an Equipment Front End Module (EFEM) equipped with an end effector and a semiconductor processing apparatus for processing a wafer
5 and measuring a position according to a movement path of a target passing the through holes,

wherein:

the measurement target is the end effector;

the measurement of the movement path of the end effector is whether or not the end effector is shifted and changed in direction;

10 whether or not the end effector is shifted and changed in direction is performed through a sensing unit comprising a light emitting unit and a light receiving unit disposed orthogonally to the movement path of the end effector; and

the light receiving unit outputs an electrical signal that is higher or lower than a reference value in response to shifting of the end effector, or outputs an electrical signal
15 increasing or decreasing along a time axis in response to a directional change of the end effector; and

a controller comparing the electrical signal outputted from the end effector measuring module with a preset reference value and determining according to the comparison result whether or not a movement path of the end effector is changed, wherein the controller
20 determines whether or not a change occurs in the electrical signal along a time axis; and

determines a shift direction of the end effector using whether the electrical signal higher or lower than the reference value and determines a directional change of the end effector using whether the electrical signal increases or decreases along the time axis.

2. The end effector monitoring apparatus of claim 1, wherein the light emitting unit is disposed such that a measurement light is irradiated from a lower side of the end effector in an upward direction, and the light receiving unit outputs the electrical signal in response to the amount of received light changed according to the movement of the end effector.

5

3. The end effector monitoring apparatus of claim 2, wherein the end effector measuring module further comprises a measuring module body which supports the light emitting unit and the light receiving unit such that the light emitting unit and the light receiving unit are fixed to face each other.

10

,