WHAT IS CLAIMED IS:

1. A reflectance detection method in which a workpiece is irradiated with a laser beam and reflectance is detected, the reflectance detection method comprising:

a first detection step of irradiating, with a light amount H0, the workpiece with a laser beam having a first wavelength X1 shorter than a detection-target wavelength X and detecting a light amount H1 of reflected return light;

a second detection step of irradiating the workpiece with a laser beam having a second wavelength X2 longer than the detection-target wavelength X with the light amount H0 and detecting a light amount H2 of reflected return light; and

a reflectance calculation step of employing H, which is calculated based on an expression shown below as a light amount of return light obtained when the workpiece is irradiated with a laser beam having the detection-target wavelength X and calculating reflectance obtained when the workpiece is irradiated with the laser beam having the detection-target wavelength X based on H/H0,

$$H = H1 + (H2 - H1) \times (X - X1)/(X2 - X1).$$

2. A reflectance detection method in which a workpiece is irradiated with a laser beam and reflectance is detected, the reflectance detection method comprising:

a reflectance calculation step of causing a laser

beam having a first wavelength X1 shorter than a detection-target wavelength X and a laser beam having a second wavelength X2 longer than the detection-target wavelength X to coalesce by a coupler, to irradiate the workpiece with a resulting laser beam with a light amount H0, and detecting a light amount H of reflected return light to calculate reflectance obtained when the workpiece is irradiated with a laser beam having the detection-target wavelength X based on H/H0,

wherein

if an output power that generates the light amount H0 of the irradiation of the workpiece is defined as W0, an output power of the laser beam having the first wavelength X1 is defined as W1, and an output power of the laser beam having the second wavelength X2 is defined as W2, the output power of the laser beams when the irradiation is carried out in the reflectance calculation step is set based on an expression shown below,

$$W1 = W0 \times (X2 - X)/(X2 - X1)$$

$$W2 = W0 \times (X - X1)/(X2 - X1).$$

3. A reflectance detection apparatus that irradiates a workpiece with a laser beam and detects reflectance, the reflectance detection apparatus comprising:

holding means for holding the workpiece;

laser beam irradiation means for irradiating the workpiece held by the holding means with a laser beam;

a light receiving element that receives reflected light reflected from the workpiece; and

reflectance calculation means for comparing a light amount of the light received by the light receiving element and a light amount of the laser beam with which the workpiece is irradiated and calculating reflectance,

wherein

the laser beam irradiation means includes:

a first laser oscillator that oscillates a first laser beam having a first wavelength X1 shorter than a detection-target wavelength X,

first output power adjusting means for adjusting output power of the first laser beam having the first wavelength X1,

a second laser oscillator that oscillates a second laser beam having a second wavelength X2 longer than the detection-target wavelength X,

second output power adjusting means for adjusting output power of the second laser beam having the second wavelength X2,

a coupler that causes the first laser beam adjusted by the first output power adjusting means and the second laser beam adjusted by the second output power adjusting means to coalesce, and

a condenser that condenses a laser beam that results from the coalescence by the coupler to irradiate the workpiece held by the holding means with the laser

beam, and

wherein output power W1 of the first laser beam and output power W2 of the second laser beam when output power that generates a light amount H0 of the laser beam with which the workpiece is irradiated and that results from the coalescence by the coupler is defined as W0 are set based on an expression shown below, and a laser beam having the detection-target wavelength X is generated in a pseudo manner by adjusting the first output power adjusting means to cause the output power of the first laser beam to become W1 and adjusting the second output power adjusting means to cause the output power of the second laser beam to become W2,

$$W1 = W0 \times (X2 - X)/(X2 - X1)$$

$$W2 = W0 \times (X - X1)/(X2 - X1).$$

4. The reflectance detection apparatus according to claim 3, wherein

the laser beam irradiation means further includes a beam splitter disposed between the coupler and the condenser and the light receiving element is disposed on a side to which an optical path of return light reflected by the workpiece is changed by the beam splitter.

5. The reflectance detection apparatus according to claim 4, wherein

the laser beam irradiation means further includes a collimator disposed on a downstream side of the coupler and the laser beam that results from the coalescence by

the coupler is converted to collimated light by the collimator.

6. The reflectance detection apparatus according to claim 1, further comprising a bandpass filter, wherein the reflected return light is passed through the bandpass filter.

7. The reflectance detection apparatus according to claim 6, further comprising a pinhole mask having a pinhole where a portion of the reflected return light passes through the pinhole.

8. The reflectance detection method according to claim 2, further comprising passing the reflected return light through a bandpass filter.

9. The reflectance detection method according to claim 8, further comprising directing the reflected return light at a pinhole mask having a pinhole where a portion of the reflected return light passes through the pinhole.

10. The reflectance detection apparatus according to claim 3, further comprising a bandpass filter, wherein the reflected return light is passed through the bandpass filter.

11. The reflectance detection apparatus according to claim 10, further comprising a pinhole mask having a pinhole where a portion of the reflected return light passes through the pinhole.