Steps for height:

Wrap black tape around them

Measure the height of the transistor and record it - check

Record height at which increment is possible

Write down the resistor value for detector and led and Connect the correct resistor to the led and detector - check

Check pin connections of gnd, 5V and pins to the detector and emitter

Take a picture of the setting of the place of measurement - check

Turn on 5V and measure resistor of led voltage - check

Measure the background illumination with led off, on the black area and white area – check

Check if theres saturation

Measure the illumination from external source

Measure the dark current by covering the transistor.

Take measurements at white area and black area and at two heights and see if they match previous measurements or If they make sense – check

Take all measurements for middle of the black area and middle of white area

Plot the graph and observe results

Line spread function:

Measure the height of the transistor and record it - check

Record height at which increment is possible

Write down the resistor value for detector and led and Connect the correct resistor to the led and detector - check

Check pin connections of gnd, 5V and pins to the detector and emitter

Take a picture of the setting of the place of measurement - check

Turn on 5V and measure resistor of led voltage - check

Measure the background illumination with led off, on the black area and white area – check

Measure the illumination from external source – check

Measure the dark current by covering the transistor. – check

Mark the center of white line

Place stripboard at fixed height and measure height to check and record height - check

Fix the stripboard to 50mm from white center and then the sensor will be at 27 from white line – check

Drag the transistor across and then check if results make sense with previous results – check

Start taking measurements

Check list for height measurement:

Measure the height of the transistor and record it

Check pin connections of gnd, 5V and pins to the detector and emitter

Take a picture of the setting of the place of measurement - check

Turn on 5V and measure resistor of led voltage - check

Measure the background illumination with led off, on the black area and white area – check

Measure the illumination from external source

Measure the dark current by covering the transistor.

Take measurements at white area and black area and at two heights and see if they match previous measurements or If they make sense – check

Check list for spread measurement:

Measure the height of the transistor and record it

Check pin connections of gnd, 5V and pins to the detector and emitter

Take a picture of the setting of the place of measurement - check

Turn on 5V and measure resistor of led voltage - check

Measure the background illumination with led off, on the black area and white area – check

Measure the illumination from external source

Measure the dark current by covering the transistor.

Place stripboard at fixed height and measure height to check and record height - check

Fix the stripboard to 50mm from white center and then the sensor will be at 27 from white line – check

Drag the transistor across and then check if results make sense with previous results – check