

YOU NEED TO PRINT :

FOR THE BASE :

2pcs infragates [infragate.stl]
2pcs sensor caps [sensor_cap.stl]
1pc simple end [end.stl]
1pc lifter end [end_lifter.stl]

FOR THE GRADIENT :

1pc simple gradient bar holder
[gradient_bar_holder.stl]
1pc catcher gradient bar holder
[gradient_bar_holder_catcher.stl]
Different types of lifters, 10-15-20
degree [lifter_xxdegree.stl]

FOR THE PLAIN BOARD :

1pc beginner panel holder
[panel_holder_begin.stl]
1pc panel holder to the pulley
[panel_holder_pulley.stl]
1pc pulley [pulley.stl]
1pc axcle [pulley_axcle.stl]
2pcs stopper [panel_holer_stopper.stl]
1pcs pulling weight
[pulling_weight.stl]
1pcs moving weight [moving_weight.stl]
1pcs cap of the moving weight
[moving_weight_cap.stl]

FOR THE CASE OF THE LOGGER :

1pcs bottom part [case_bottom.stl]
1pcs upper part [case_upper.stl]

ELSE IF YOU WANT :

2pcs to connect the four bars, when
they are not used [bar_holder.stl]

OTHER THINGS YOU 'LL NEED :

4pcs steel rod 8 mm x 400 mm [\[link\]](#)
2pcs plywood ~ 6 mm x 60 mm x 380 mm
Sticker sheet ~ 60 mm x 380 mm [\[link\]](#)
Sandpapers ~ 60 mm x 380 mm [\[1\]](#) [\[2\]](#) [\[3\]](#)
8pcs metric screws [\[link\]](#)
4pcs wood screws [\[link\]](#)
1pcs nodemcu board [\[link\]](#)
2pcs infraled [\[link\]](#)
2pcs infrasensor [\[link\]](#)
2pcs RJ11 plug [\[link\]](#)
The [logger] PCB [\[link\]](#)
Some wire

YOU HAVE TO DO :

Print out all the objects with the 3D printer. You have to glue some pieces together, the number [746420] to the [746421] and the other [746420] to the [746422]. From these you will get the number [746413] and [746414].

You have to glue the sandpapers and the plastic sticker sheet to the plywood board. You can glue it anyway to want, the best if you have many different surfaces.

You have to cut smaller two pieces of the steel rods. Those come to the base.

To the case you have to screw the nodemcu panel to the case bottom part, and the PCB to the upper part. Than you have to put the two parts together. Than you also have to screw them to each other.

[logger]

print manual

You also have to prepare the infragates, you have to take the infraled to the first side, the resistor to the other side, and you have to wire them. To the other side you have to wire the RJ11 connector. The important, is the pins should be the following order: Led +, Led -, Resistor +, Resistor -. You also can make a little plug between the wire and the rj11, but it is not necessary.

After this you just can start to use the logger. You can get help from the user manual. [\[link\]](#)