PROJECT

Heat Detection System

TEAM 5

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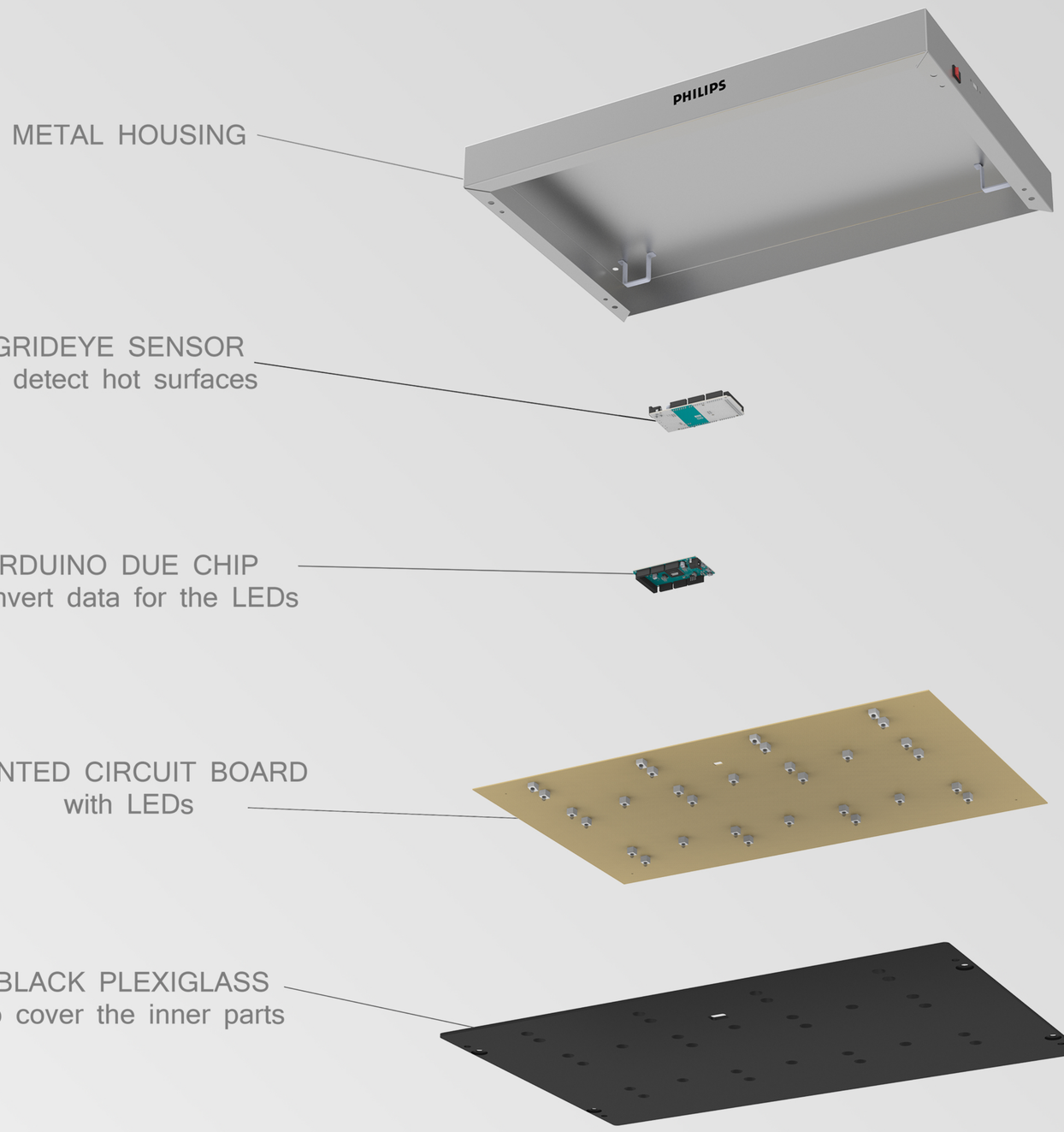
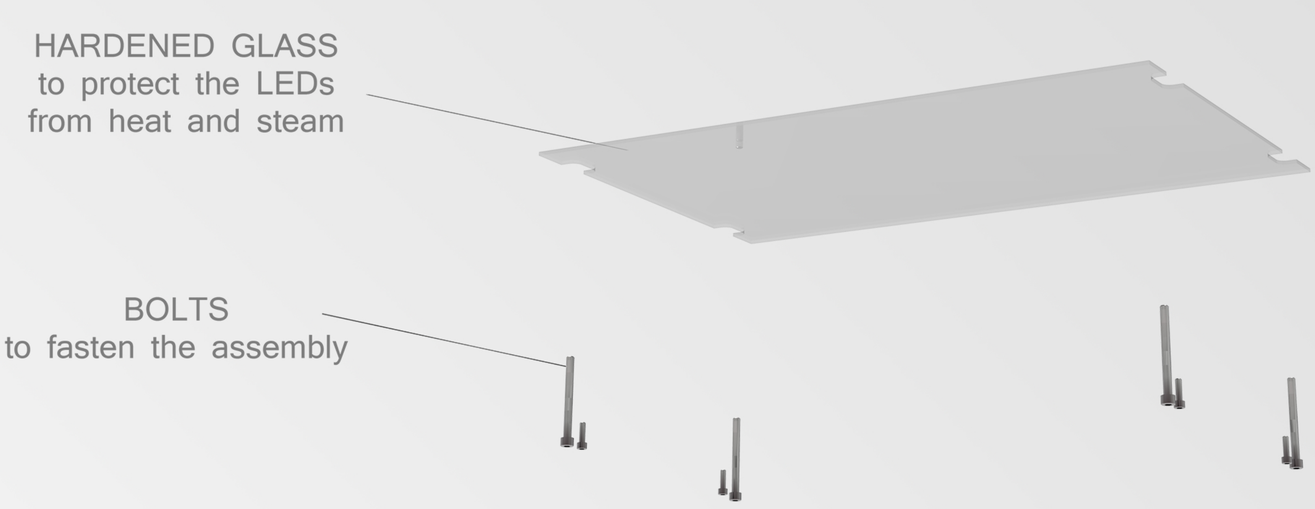


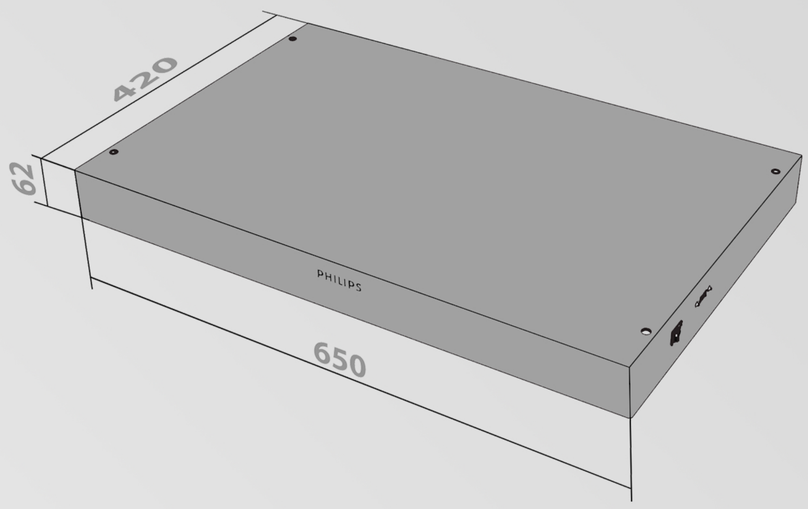
The HOTplate heat detection system consists of several layers.

At first, the GridEye sensor detects the temperature of the area under it. The angle that GridEye is scanning the surface is 60°, so the scanned area depends on the height of the sensor. The scanned surface is separated to an 8x8 matrix (64 pixels). The sign from the sensor is converted through a microcontroller, Arduino Due, which controls the connected LED lights. Each LED is covering 4 squares of the pixels that the GridEye senses.

The LEDs are soldered to a printed circuit board, and they have a 3D printed base for positioing the LEDs to the correct angle of the beam (75°, 85°, 90°). The objects whose temperature is above 50°C will be highlighted by red LEDs frome above. The PCB and the LEDs are covered by the black plexiglass, that is under them. Hardened glass secures the inner parts from steam and heat, and a metal housing covers the whole structure.

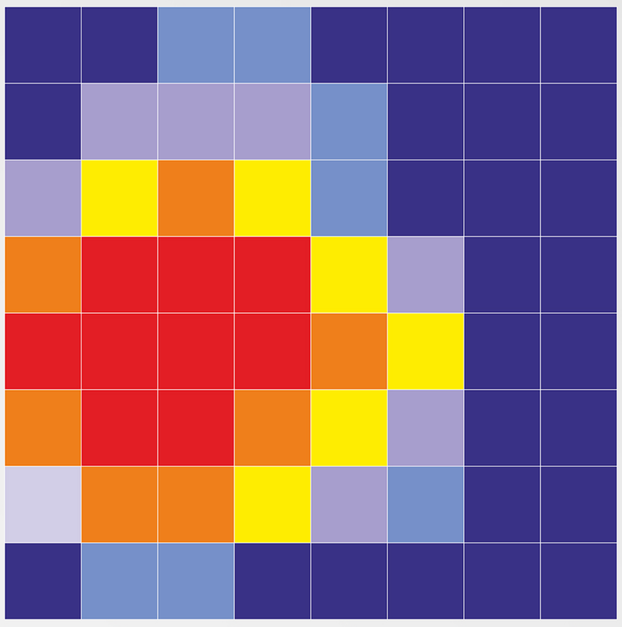
The product also has white lights to illuminate the whole working area of the kitchen table.



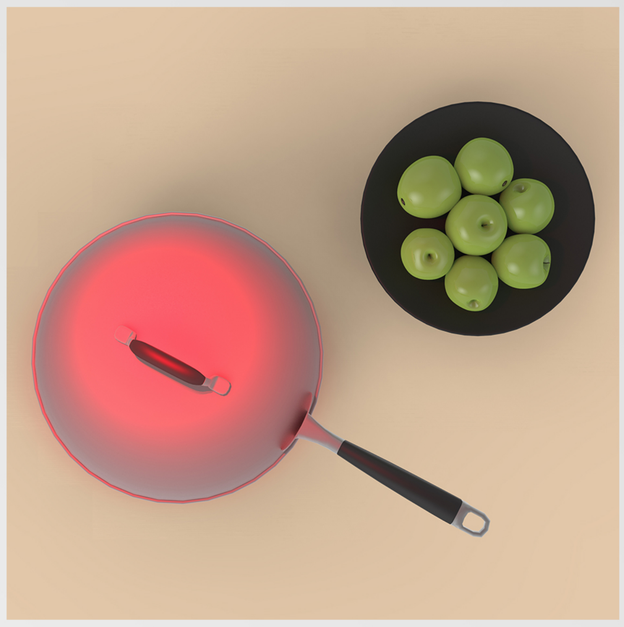


The GridEye sensor detects the temperature of the objects.

The sensor forwards the information towards the Arduino Due.



Red LEDs enlight the hot objects to attract users' attention.



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