Programmable and low-cost ultraviolet room disinfection device

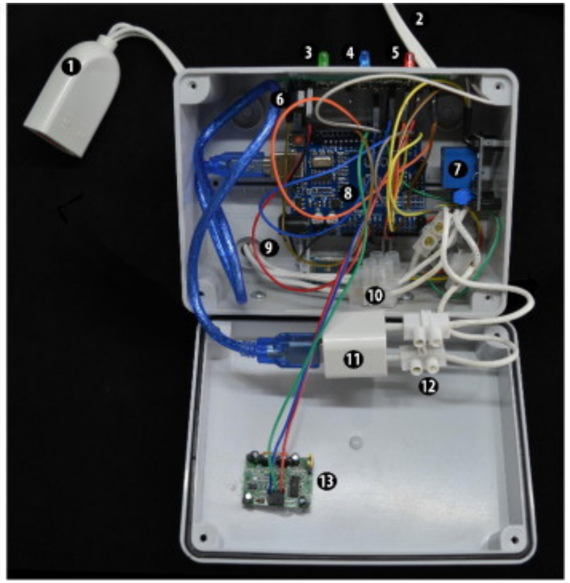
By Marcel Bentancor, Sabina Vidal

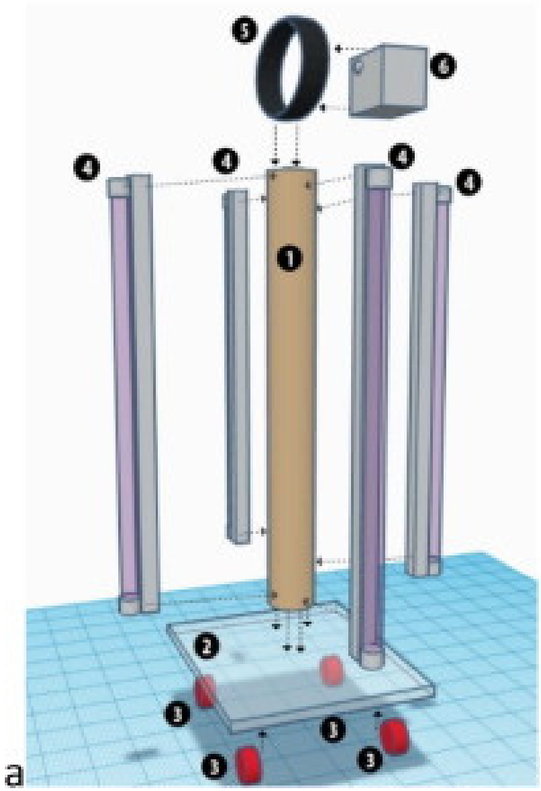
Materials:

- Arduino UNO board
- Bluetooth module HC06
- LEDs
- UV-C lamp (Phillips TUV-T8 30 W) with holder
- Holder or light fixture for the UV-C lamps
- Wheels
- Wooden base (56 cm × 46 cm × 2 cm)
- Plastic box (15 cm × 12 cm × 7 cm)
- PIR sensor

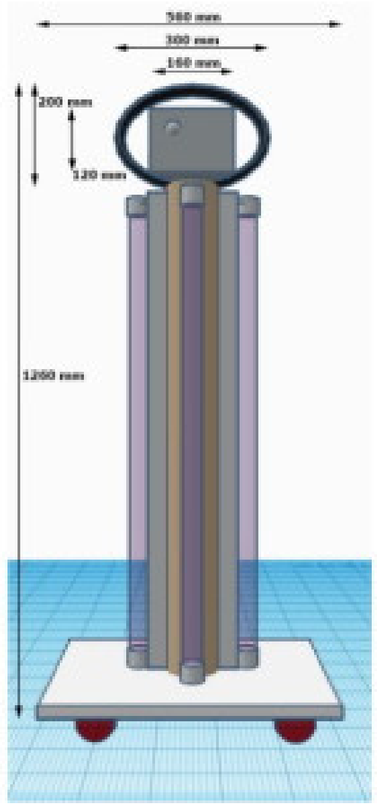
Total cost: USD 176.40.

Build instructions:





a



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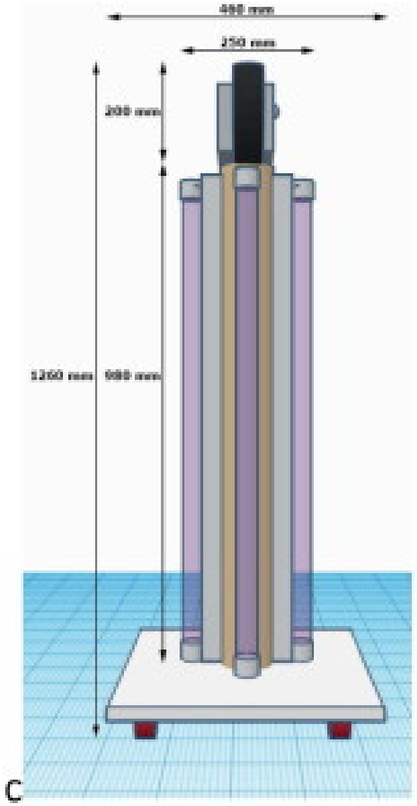
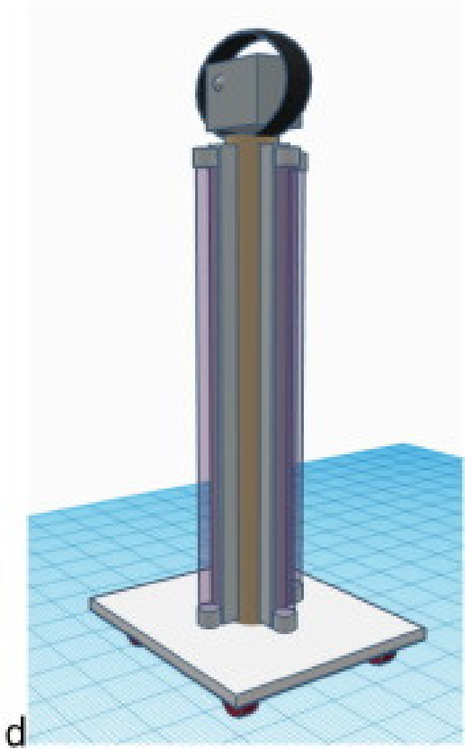


c



d

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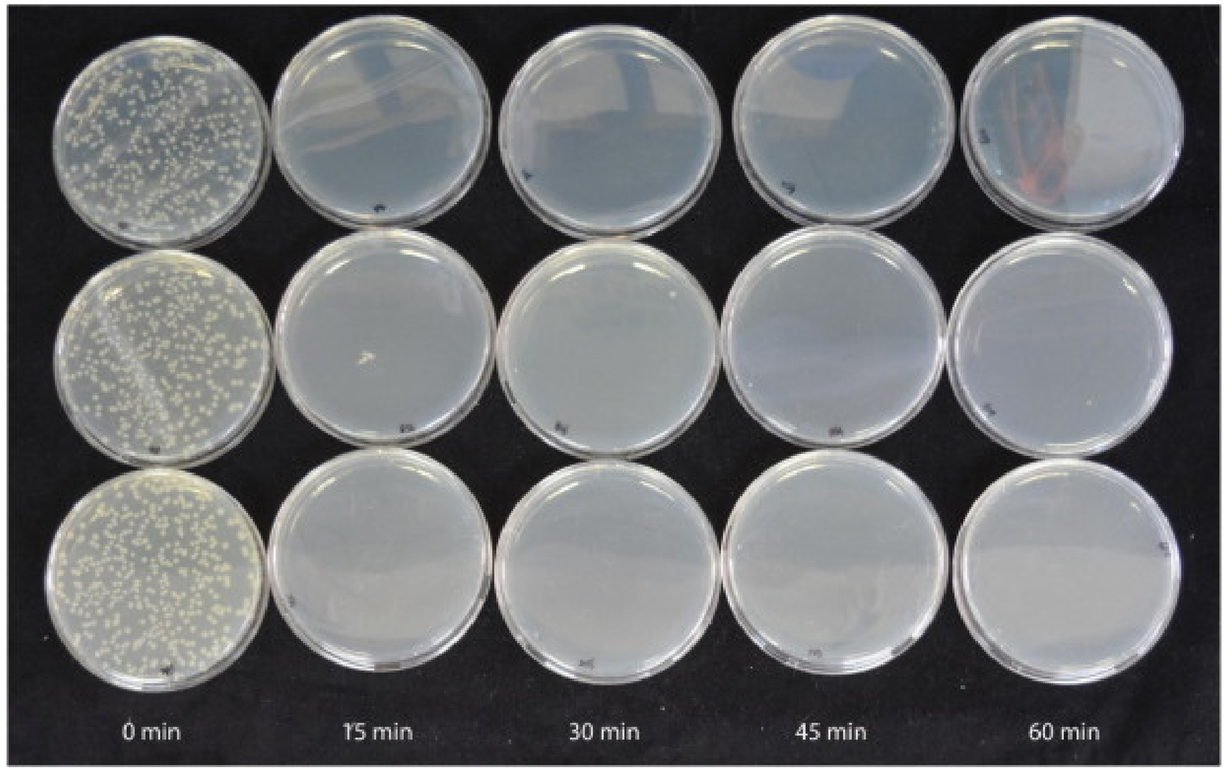
15 min exposure is enough to eliminate the inoculum



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Bioluminescencefor efficiency of cleaning [3]

(HOSPITAL DR. HERNÁN HENRÍQUEZ ARAVENA, 2015)

Potential application

References:

[1] Marcel Bentancor, Sabina Vidal, (2018), **Programmable and low-cost ultraviolet room disinfection device**, https://doi.org/10.1016/j.ohx.2018.e00046.

[2] Hospital DR. Hernán Henríquez Aravena, 2015, **UNIDAD DE INFECCIONES ASOCIADAS A LA ATENCIÓN DE SALUD**, https://www.hhha.cl/wp-content/plugins/wp_quiz/files/Manual%20Curso%20de%20prevencioin%20y%20Control%20de%20IAAS%202018.pdf

[3] Sanna, T., Dallolio, L., Raggi, A. et al., 2018, **ATP bioluminescence assay for evaluating cleaning practices in operating theatres: applicability and limitations**, https://doi.org/10.1186/s12879-018-3505-y