ELECTRICAL UNIT

- The electrical unit plays a crucial role in **controlling** and **managing** the device’s components, ensuring accurate and reliable **intraocular pressure** (IOP) measurement.
- It consists of

1. **Power supply**
2. **Controller**
3. **Display**
4. **Transistor**
5. **Mosfet**
6. **Buttons**

POWER SUPPLY:

Rechargeable lithium-ion battery

- **Output voltage** - 12v
- **Capacity** -1200mAH
- **Time taken to charge** - 24 minutes.
- **Battery life** - 1 hour 30 minutes
- **Dimensions** - 6.8 x 5.5 x 2 cm
- **Weight** - 150g

CONTROLLER:

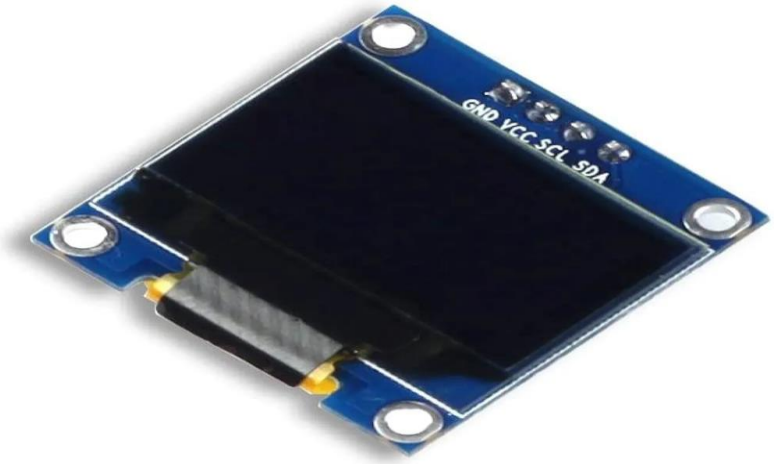
ESP32 WROOM

- **Type** - ESP-32 with Wi-Fi 802.11 b/g/n
- **Operating voltage** - 5V.
- **Output voltage** - 3.3-5V.
- **Dimensions** - 5 x 2.8 x 1.5 cm
- **Weight** - 80g

ESP32 will be responsible for controlling the logic for the air pump, solenoid valve, IR emitter, and reading data from the photodiode.

DISPLAY:

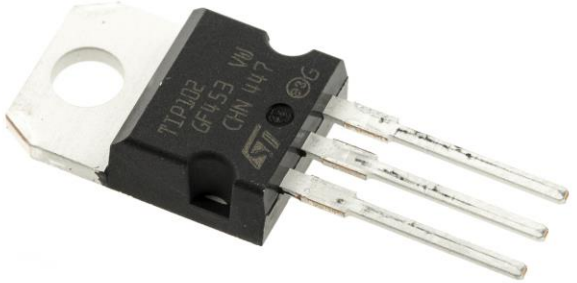
- **Type** - OLED Module
- **Protocol -** I2C
- **Support Voltage** : 3.3 - 5V.
- **Viewing angle** - >160°
- **Dimensions** - 27mm x 27mm x 4mm
- **Weight** - 10g



Delivers a better view of output to the user.

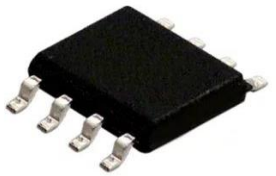
TRANSISTOR:

- It is used for switching and amplification purpose
- **Switching**: Control **solenoid valves** for **air release**
- **Amplification**: Boost weak **sensor signals** for better processing
- **Control**: Enable precise regulation of components like air pumps
- Using **TIP102** transistor



5.MOSFET:

- The purpose of the MOSFET in this design is mainly related to **power management**, **switching**, and **precise control** of the electrical components such as the solenoid valve, air pump, or sensor circuitry.
- Using **MP1584 MOSFET**



6.BUTTONS :

- It consists of **Power button and Push button**

Medical-Grade Plastics:

ABS (Acrylonitrile Butadiene Styrene):

Properties: Durable, impact-resistant, and relatively lightweight.

Advantages: Easily molded into different shapes, cost-effective, and used in medical devices.

Applications: Commonly used in enclosures for medical instruments due to its strength and ease of processing.

Power button:

- It is used for on /off purpose to perform the operation
- **Operating voltage:**12V DC
- **Operating current:**2A MAX
- It is of **12mm**
- It is used to on the device and for releasing of **air puff**

Push button:

- It is used for adjusting the value of CCT
- It uses 2 push buttons of **5mm**