

Power Budget

| | |
|---------------------------|---|
| Team Number: | 204 |
| Project Name: | Team 204 – Sensor Front End (Roshan) |
| Team Member Names: | Caleb Yuen, Roshan Roy Geoffrey Joe, Aaron Kiem, Quinn Maness |
| Version: | v1.0 |

| All Major Components | | | | | | |
|------------------------|---------------------------------------|----------------------|------|-------------------------------|--------------------|------|
| Component Name | Part Number | Supply Voltage Range | Qty. | Absolute Maximum Current (mA) | Total Current (mA) | Unit |
| Microcontroller Board | PIC18F57Q43 Curiosity Nano (DM182029) | +5V | 1 | 50 | 50 | mA |
| Ambient Light Sensor | Vishay TEMT6000 | +3.3V to +5V | 1 | 10 | 10 | mA |
| Op-amp (non-inverting) | TI LM358N | +5V | 1 | 5 | 5 | mA |
| Status LED (PWM) | Broadcom HLMP-4700 (Red) | +5V | 1 | 20 | 20 | mA |
| 5V Regulator | 5V Regulator (500 mA available) | +8V to +24V → +5V | 1 | 500 | 500 | mA |

| +5V Power Rail | | | | | | |
|--|---------------------------------------|----------------------|------|-------------------------------|---|-----------------|
| Component Name | Part Number | Supply Voltage Range | Qty. | Absolute Maximum Current (mA) | Total Current (mA) | Unit |
| Microcontroller Board | PIC18F57Q43 Curiosity Nano (DM182029) | +5V | 1 | 50 | 50 | mA |
| Op-amp (non-inverting) | TI LM358N | +5V | 1 | 5 | 5 | mA |
| Status LED (PWM) | Broadcom HLMP-4700 (Red) | +5V | 1 | 20 | 20 | mA |
| | | | | | Subtotal | 75 mA |
| | | | | | Safety Margin | 25 % |
| | | | | | Total Current Required on +5V Power Rail | 93.75 mA |
| Regulator | Component Name | Part Number | Qty. | Absolute Maximum Current (mA) | Total Current (mA) | Unit |
| Regulator | +5V regulator | 500 mA capable | 1 | 500 | 500 | mA |
| Total Remaining Current Available on +5V Power Rail | | | | | 406.25 mA | |