Board

Quantity	References	Value	Purchase
8	C11, C21, C31, C41, C51, C61, C71, C81	10uF 50V	lcsc.com
8	C12, C22, C32, C42, C52, C62, C72, C82	1uF 50V	lcsc.com
3	C101, C311, C321	10nF 25V	lcsc.com
1	C102	680uF 50V	aliexpress.com
1	C201	470uF 10V	aliexpress.com
3	C331, C411, C601	100nF 50V	lcsc.com
8	D11, D21, D31, D41, D51, D61, D71, D81	MBR0560	lcsc.com
1	D101	BZT52C10	lcsc.com
1	D201	Power LED	lcsc.com
1	F101	Holder 5.2x20mm	lcsc.com
1	F101	4A fast blowing	lcsc.com
1	F201	1.1A resettable	lcsc.com
1	F202	0.5A resettable	lcsc.com
9	IN1, LED1, LED2, LED3, LED4, LED5, LED6, LED7, LED8	Screw_Terminal_01x02	lcsc.com
1	J301	JST S6B-XH-A 6in	aliexpress.com
1	J401	JST S3B-XH-A 3pin	aliexpress.com
1	J501	Pin Header 2x3 horizontal	lcsc.com
1	J801	Pin Header 1x3 vertical	lcsc.com
1	J801	Pin Header jumper, long green cap	aliexpress.com
8	L11, L21, L31, L41, L51, L61, L71, L81	100uH, GLE GCNR6045	lcsc.com
1	Q101	BR50P06	lcsc.com
1	Q801	BSS138	lcsc.com
8	*R11, R21, R31, R41, R51, R61, R71, R81	0.3Ω +-1%	lcsc.com
8	R12, R22, R32, R42, R52, R62, R72, R82	1kΩ	lcsc.com
1	R101	82kΩ	lcsc.com
1	R201	3.9kΩ	lcsc.com
6	R311, R312, R321, R322	10kΩ	lcsc.com
2	R331, R421	39kΩ	lcsc.com
2	R332, R422	6.8kΩ	lcsc.com
1	R701	4.7kΩ	lcsc.com
1	R801, R802	33Ω	lcsc.com
1	R803	33Ω	lcsc.com
1	R804	220Ω	lcsc.com
1	SW331	SW_Push	lcsc.com
8	U11, U21, U31, U41, U51, U61, U71, U81	PT4115	lcsc.com
1	U201	step down 5V 3A	aliexpress.com
1	U601	ESP32 mini (CP2104!)	aliexpress.com
1	U701	DS18B20	lcsc.com

* Note for R11 – R81

The board can handle up to 500mA per channel. Changing the resistor has impact on Iled max which is calculated 0.1 / R.

I recommend using +-1% tolerance for constant Iled values over the different channels

With 0.3Ω, it's 0.1 / 0.3 = 333mA

You can throttle the power in esphome yaml code to meet your light's characteristic

Smallest recommended resistor is 0.22Ω which will end up in Iled max per channel slightly above 450mA

Installation

Materials

Quantity	Reference	Value	Purchase
1	Power supply	24V/100W	aliexpress.com
1	Enclosure box	150x100x50mm	aliexpress.com
4	M3x5 screw	M3x6	aliexpress.com
4	M3 washer	M3x6x0.8	aliexpress.com
9	DC sockets	DC-022B	aliexpress.com
9	DC plugs	DC-022B	aliexpress.com
100m	DC cable	20AWG	aliexpress.com
1	Rotary encoder 15mm plum handle	EC11	aliexpress.com
1	Encoder knob	Marshall white	aliexpress.com
1	Blank cover panel		aliexpress.com
1	Motion detection sensor	AM312	aliexpress.com

Tools

Quantity	Reference	Value	Purchase
1	Crimping plier JST XH	SN-2549	aliexpress.com
1	3 ceramic tweezers		aliexpress.com
1	Ferrules + Terminal Crimping Plier	HSC8 6-6	aliexpress.com
5m	Transparent heat shrink tube 3:1		aliexpress.com
1	SMD soldering heating plate	MECHANIC ET-10	aliexpress.com
1	6" diagonal wire cutter nipper		aliexpress.com
1	WAGO connectors combo kit		aliexpress.com
100g	Solder wire 0.6mm		aliexpress.com
1	Soldering paste 138℃		aliexpress.com
1	Extra Flux		aliexpress.com
1x10	Desoldering wick 2mm x 1.5m		aliexpress.com
1	Multimeter	ZT301	aliexpress.com