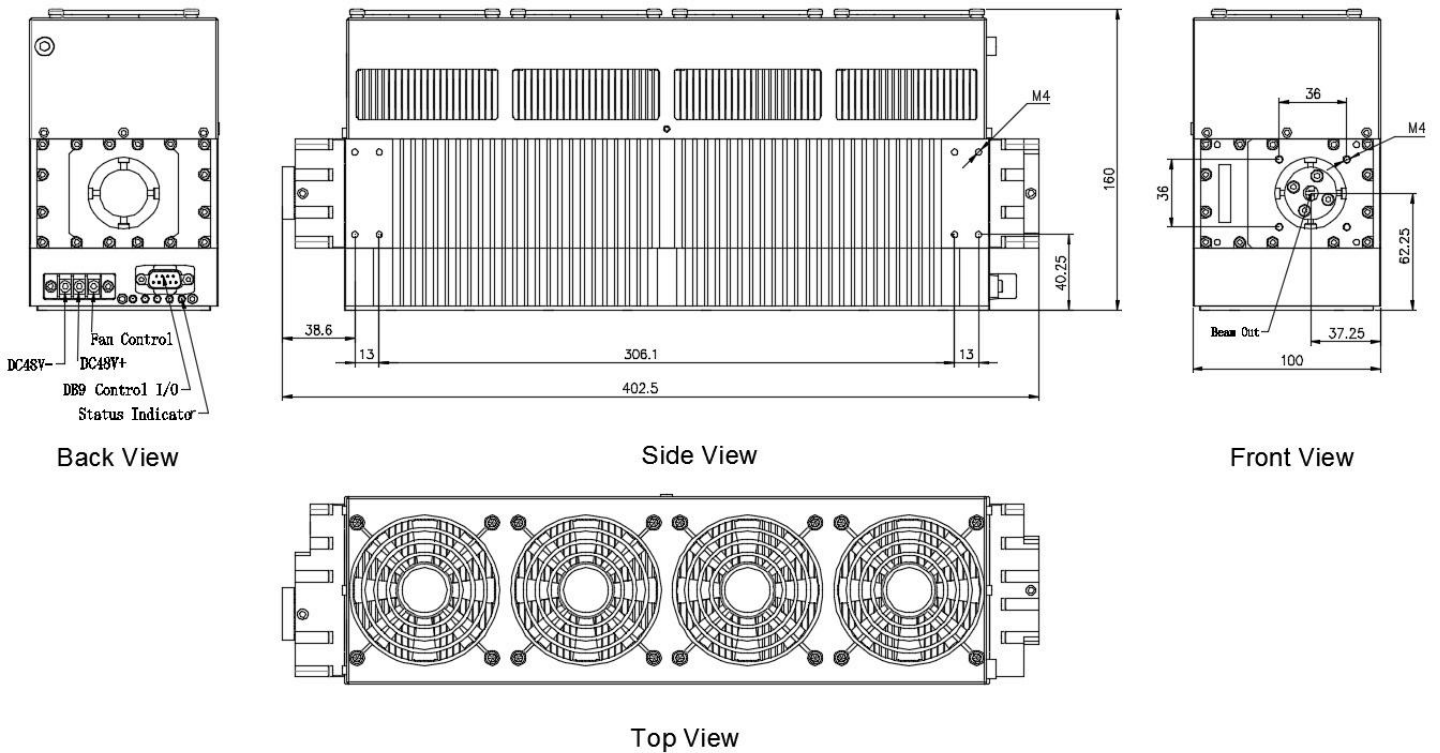


ET-60 Laser Parameters

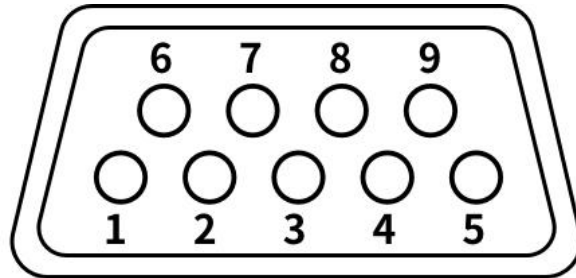
Model	ET-60
Excitation Mode	RF
RF Frequency	81.36MHz
Central Wavelength	10.6μm
Average Power	60W
Output power range	1~60W
Beam Quality(M ²)	<1.2
PWM Duty Cycle	1~100%
Modulation	0~50kHz
Power stability	≤±7%
Beam diameter (1/e ²)	2.1±0.3mm
Beam Divergence (full)	≤7.5mrad
Beam Ellipticity	<1.2
Polarization	Linear,Parallel to the base
Wavelength Range	10.3~10.8μm
Dimensions	402.5*100*160mm
Weight	7.5kg
Input	48VDC±0.5VDC/18A (Max.)
Cooling	Air-cooled
Ambient Temperature	5~35°C (41~86°F)
Humidity	≤95%, No condensation

Mechanical specification

Laser Head



Control signal interface description (DB)

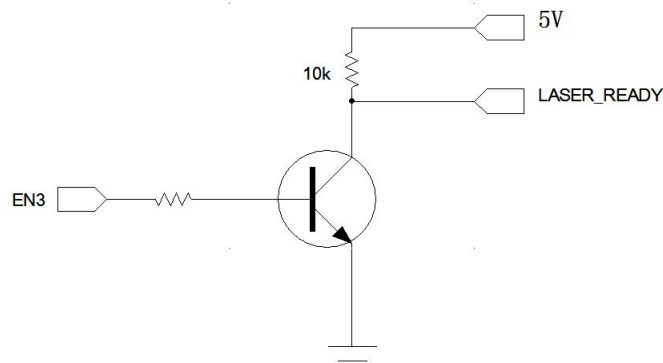


Pin No.	Signal	Description
Pin 1	Control Enable	TTL logic input, high level effective (5V /12V). 20s later to input PWM signal to fire when the laser OK.See also in pin 3.
Pin 2	Error 1	TTL logic output. Normally outputs 5V, output 0V when the fault occurs. Further detail refers to pin 5.①
Pin 3	Laser OK	TTL logic output, 5V= Laser OK, 0V= Laser Fault (It is also 0V when the laser is at Pre-ionization state, no laser fire). Output is asserted when no faults are detected.②
Pin 4	Undefined	Undefined
Pin 5	Error 2	TTL logic output, connects to the LED2 on the laser. TTL= 3.3V. ③
Pin 6	PWM+	TTL logic input, Laser emission signal (PWM), high level effective
Pin 7	PWM-	
Pin 8	5V	5V output, 200mA (Max.), can be used to power other external components.
Pin 9	GND	Customer logic Ground for all interface signals

Remark:

①The internal circuit design of the laser is a pull-up 10k Ω impedance.

②The internal circuit design of the laser is a pull-up 10kΩ impedance, refers to the diagram as below:



③LED 2: Blue, error output. Output from the MCU, 1kΩ impedance, 3.3V high level. When flashing, each flashing interval is 200ms, and the light stays on for 200ms each time.

Off: No fault.

Flash once, off 1s: voltage fault, input VDC < 46V;

Flash twice, off 1s: voltage fault, input VDC > 50V;

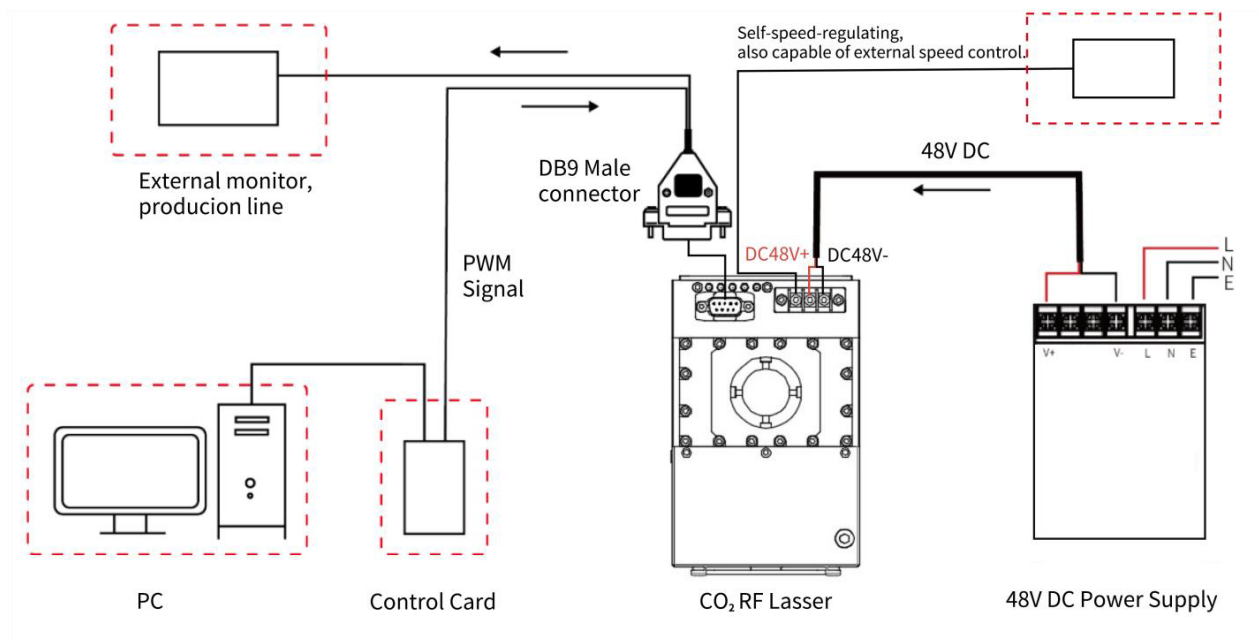
Flash three times, off 1s: Temperature fault, the temperature inside laser is > 80°C;

Flash four times, off 1s: PWM+ fault;

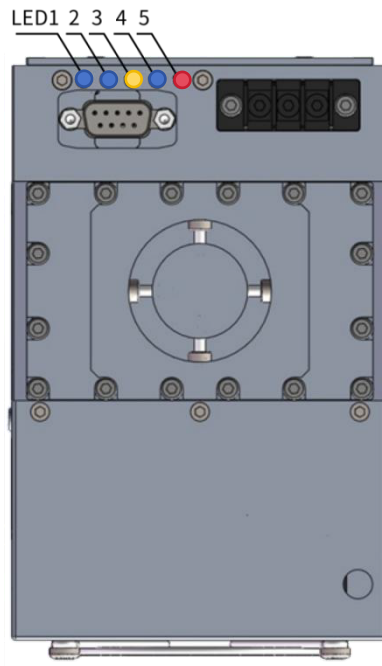
Flash five times, off 1s: PWM- fault;

Long flash without off, input current alarm, input > 18A.

ET-60 Wiring Diagram



ET-60 LED Indicators instruction



LED Indicators		
NO.	Color	Function
LED1	Blue	Always OFF
LED2	Blue	Off: No fault. Flash once, off 1s: voltage fault, input VDC < 46V; Flash twice, off 1s: voltage fault, input VDC > 50V; Flash three times, off 1s: Temperature fault, the temperate inside laser is > 80°C; Flash four times, off 1s: PWM+ fault; Flash five times, off 1s: PWM- fault; Long flash without off, input current fault, input >18A.
LED3	Yellow	Always ON: The laser is ready to fire. Flashing: The laser self-check or faulty,tell the actual fault in LED2.
LED4	Blue	Always ON: Control Enable. OFF: No external control enable input.
LED5	Red	Always ON: laser firing. OFF: No laser fire.