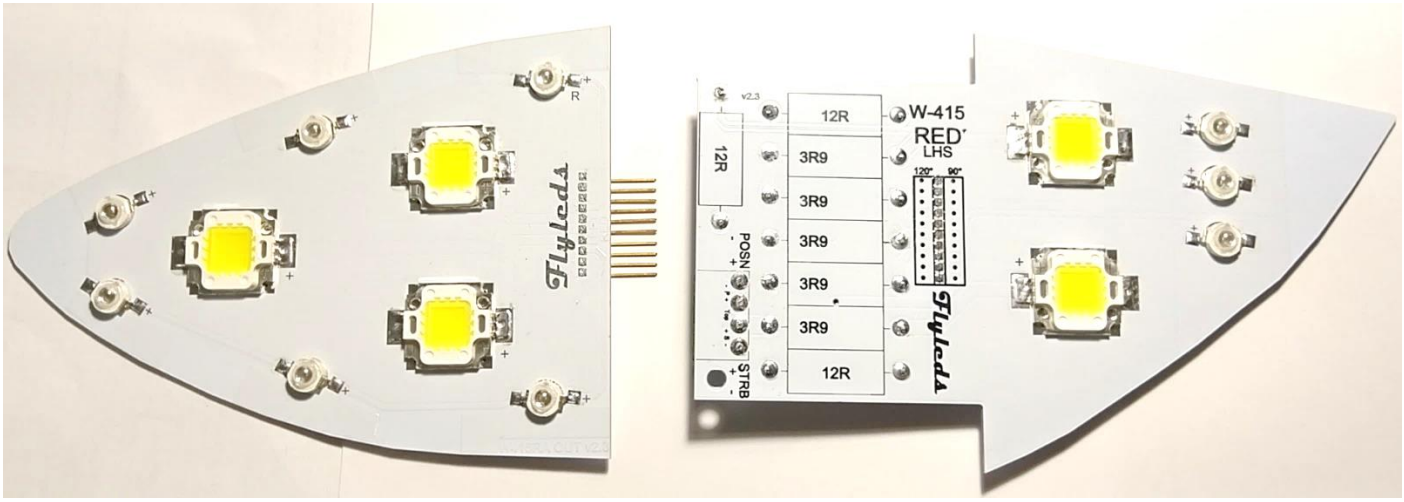
Building the W-415 boards

The W-415 Hoerner wing has a significantly smaller light cove to work with, so these boards have a different design to our other kits. The current limiting resistors for the LEDS on both boards are located inside the wing space on the extended circuit board. This kit is also designed so that the outward facing board plugs into the forward facing board.

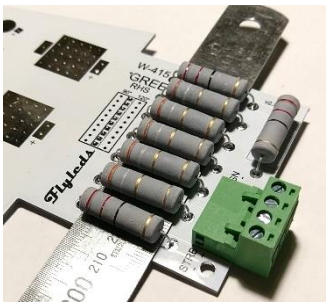
The forward facing board only has two strobe LEDs, and room for only three red or green position LEDs. This is less than our other kits, but still exceeds minimum strobe and position lighting requirements in all directions.
And you'll still need eye protection when they are on!



- Please read through the guide **Part 1: Building the Wing Boards** first, noting the differences for your kit.
- Mount the white strobe LEDs as per the main instructions, not forgetting the thermal paste! Observe the + symbols on the LEDs and on the boards. Take your time with the soldering iron to ensure that both the *board and the LED* gets hot enough to make the solder melt and flow nicely. Don't worry, they can handle the heat!
- Mount the small position LEDs. They have a + and - stamped on each leg. Orient them as marked on the board.

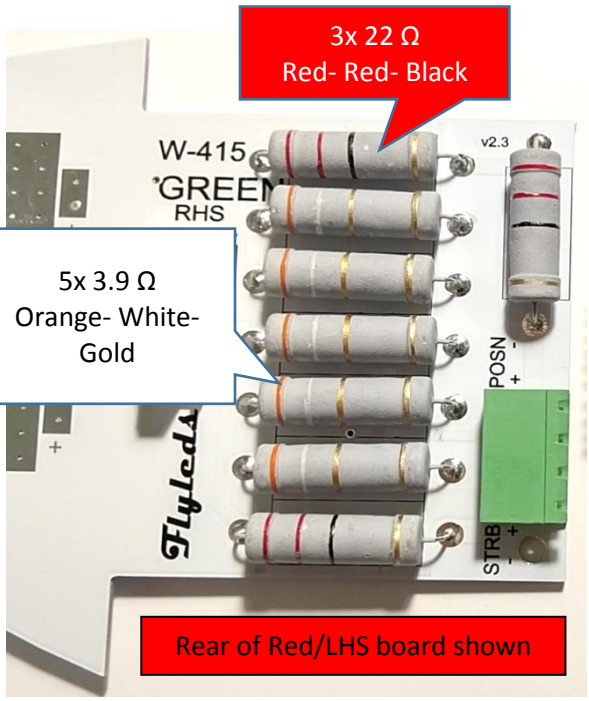
Turning the forward facing board over, mount the current limiting resistors in their allocated places.

- For the **red** or left hand side board, as pictured here, the three 22 ohm resistors supplied in the red LED bag go in the positions marked **22R** on the board.
- Mount five 3.9Ω resistors for the white strobe LEDs in the middle positions as marked.



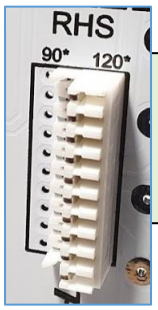
We use a steel ruler as a guide to keep the resistors a nice consistent 1mm or so height above the board to allow for air flow.

Turn the boards back over and solder them in!



For the **green** or right hand side board, mount the three 12 ohm resistors supplied in the green LED bag in the positions marked **12R** on the board.

- The forward facing board is designed to mate with two versions of outward facing boards. The white board interconnect or "header" socket needs to be mounted one of two ways to suit:



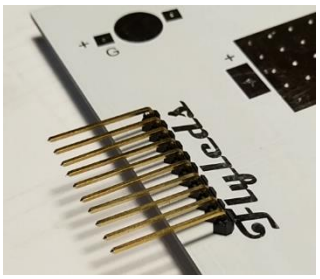
If you are building the W415-FG kit to suit your ***fibreglass*** light bay, which has a ~120° opening, the white header socket is mounted with its body oriented closer to the resistors, covering the holes below the 120° marking.

(First version boards pictured here!)

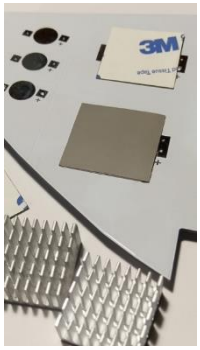
If you are building the W415-RA version, which is designed to suit the Vans wing modification kit made from ***aluminium*** and is a 90° opening, mount the header socket with its body oriented away from the resistors, as pictured at left.

Solder one pin of the header socket, and check that it is still sitting flat on the board. Continue to solder the other pins, noting that these joints may take a few seconds more to heat up and make a good connection.

- Mount the green wiring loom connector as shown, noting again that it may take a little more heat and time from your soldering iron to make a good connection.



- On the **rear** of the outward facing board, insert the edge connector pins as shown. Turn the board over and solder one pin.
Check that the pin connector is still sitting squarely. Reheat the joint to move the connector flat again if required. Solder the remaining pins.
Trim the excess pin length on the front (LED) side of the board.



- If you have the Van's aluminium light bay, fit the small rubber-like heat transfer pads to the rear of the PCB behind the power LEDs. We also supply some double sided equivalents that you could apply first and stack with the grey ones if your metalwork is not perfectly flat. These pads conduct the heat generated by the strobe LEDs into the aluminium plate behind your board.
- If you have fibreglass or other DIY light coves in your wingtips, fit the self-adhesive square heatsinks to the board behind the LEDs. Cut holes in your fibreglass light cove to clear these.
- When using screws to mount the boards to your plane, position the nutplates or similar in places that will avoid drilling through any track lines on the PCB. Choose either an 'open' or solid area of copper instead.

Don't forget to *remove any red and green dots* once you've mounted the boards to your wings. And if you have a nice shiny red/lime green/purple plane, you can always mask up each LED with low-tack tape and spray paint the circuit board to match. Liquid Latex can also be used to mask the LEDs.
Be careful when removing the tape from the position LEDs as it is possible to damage the dome of the LED.

Please send us a picture of your finished work!