What you need to know about selecting the right type of laser projector

Laser projectors can project lines, crosses, circles with crosses and points. The choice for a particular application will depend on the following factors:-

What type of projection do I need?

For many applications such as straight line cutting in woodworking for example you will only need a straight line projection. You should consider the length of line you need and the angle at which you can place the laser in relation to the object you are projecting the laser onto. The optimum angle of projection is 45 deg to the flat face of the object but this is not mandatory. You can work with a shallower angle but remember although the line may become longer the line will become weaker particularly at the ends. A steeper angle of incidence gives you a shorter but stronger line.

- **So consider the line length you need?**

- **The angle of incidence required? (remembering that 45 deg is the best)**

Are all laser projectors just available with straight line projection?

No.

There are many different types available. We have a choice of:-

- Crosses
- Crosses with circles
- Dots
- Adjustable crosses
- Adjustable L shaped lasers

When would I use these different types of projection?

Crosses can be used the textile industry for example for positioning button holes to ensure the maker of garments makes the button hole in exactly the right place.

Dots can be useful in any type of alignment where one part needs to be accurately aligned with a second part.

Adjustable crosses have been used in the textile and the car industry for ensuring parts are correctly aligned

Adjustable L shaped lasers have been used in the car industry for the attaching of labels to car panels to make sure they are put in the correct place and also aligned in the correct position.

What colour of lasers are available?

Generally most laser lines are only available in red, however there are some available in green.

Should I use a green or red laser for my application?

The choice is down to price, line length required, illumination and type of material onto which the line is being projected.

1) The price of red lasers is very much cheaper than green by a factor of least 4 fold.
2) If you want a line length no greater than 15-20 meters use a red laser. Only consider green lasers for maximum line length or intensity. The exception to this rule is if you are working in very light conditions. The green lasers can be easier to see than red lasers because the green part of the spectrum is more easily seen by the naked eye.
3) If you do have difficulties seeing the red lines being projected you can use red enhancing goggles which certainly do intensify the line for the operator and make them easier to see.
4) Also it depends on the colour of the material the light is projecting onto. Generally the lighter the material the better for red lines as you go to the black the red is absorbed by the darker materials and therefore more difficult for the operator to see.

How do I mount my laser?

We offer a very comprehensive range of mounting brackets for the lasers and they can be mounted on machines, on the wall or from the ceiling. Just indicate to our sales staff where you want to mount the laser and they will offer you a total mounting solution.

Can I vary the focus of the laser?

Most lasers have fixed focus and nominally unless you tell us otherwise the focus distance will be between 500mm and 1 meter depending on the type of laser. If you want a fixed point outside these limits please indicate this when talking to our sales staff.
If you want an adjustable focus laser we can offer this in both 12V and 24V laser versions. Just let us know the minimum and maximum focus distances and we will select a suitable laser projector for you.

How do I power the laser?

Some lasers are powered from batteries but these are only the simple low power lasers and the battery life is limited to about 20 hrs. It is better to use mains powered lasers. We offer plug in wall transformers for 3.5Volt and 12 volt lasers. 24 Volt lasers can normally be powered from machines and 220-380 volt power rated lasers are available for the more robust and demanding applications. In some cases multiple lower power lasers can be powered from the same power supply. Power supply distribution boxes are offered.

If I buy a straight line laser now can I change the optic to a cross or a dot later?

Generally the answer to this question is NO.
If you are likely to want to do this I suggest you try and work with the Z5T series lasers these have “screw on” interchangeable optics? So if you buy the laser with a straight line optic you can later retrofit a cross or dot just by screwing off the old optic and screwing on the new one.

What are the typical applications for laser projectors?

The following applications benefit from the use of laser projectors by saving time, money and material.

- Woodworking
- Stone cutting
- Textile production
- Car part assembly
- Tyre production
- Plus any type of alignment application where two parts need to remotely aligned.

I have these guide lines have been helpful. If you need further advice please contact our sales staff on 01635 30345.