

The Spirit Barcode Colour Guide

We are often called on to resolve barcode problems which turn out to be caused by low contrast barcodes. The human eye is many times more sensitive than the best barcode scanner - what appears to be a good barcode by eye may be barely perceptible by the scanner.

Barcode scanners virtually always use an almost monochromatic light source at the red end of the spectrum. Sometimes the light source is in the infra red and invisible to humans.

The best contrast is obtained when the background reflects all the light and the bars reflect none. This is never fully achieved in practice but there must be a significant difference between the bars and background if the code is to be read reliably.

Wherever possible barcodes should be printed in black ink on a white background. This will give the best possible contrast over the widest range of conditions. If the barcode is likely to be scanned with an infra red scanner then the black ink must be carefully chosen. Some blacks are transparent to infra red - particularly those based on vegetable dyes. A black ink based on a carbon pigment is likely to be suitable. Note that the ribbons of many dot matrix printers use a vegetable dye based ink. Barcodes printed with such printers are often unreadable with infra red scanners even though the barcodes appear to have excellent contrast to the eye.

Infra red and far red scanners also have difficulty reading barcodes printed on thermal paper. These days most thermally printed barcodes use a 'thermal transfer' ribbon. This consists of a carbon black based pigment in a wax matrix. Thermal transfer barcodes usually have excellent contrast with all types of scanner.

Spirit is often faced with a situation where for some reason or other it is necessary to use either a coloured substrate for the background or a coloured ink for the barcode. Such situations are best solved on an individual basis.

If you must use colours stick to the following general rules. Use light coloured substrates towards the red end of the spectrum for the background. For the bars use dark coloured inks towards the blue end of the spectrum. Never rely on a coloured product inside a transparent wrapper to provide either the light background or the dark bar colour. It is possible to print a white or very pale reddish background over a dark substrate which form the bars. However this is not recommended unless absolutely necessary- the problems for your printer will be considerable.

The following colour guide will help but you are strongly advised to test samples of any proposed colour combinations before making a large commitment. Spirit Data Capture is always ready to advise on suitable barcode colours.

The following colour combinations will scan



The following colour combinations will NOT scan

