

ideas direct to your door



THE INDUSTRY STANDARD

# GUIDE TO CUSTOM GOBOS

LLOW



## THE HISTORY

Rosco has long been involved in the production of custom metal and glass gobos, but the acquisition of DHA Lighting in 2005 added an unsurpassed wealth of custom gobo experience and expertise to the mix.

No other gobo company can offer the level of knowledge or the production history that Rosco and DHA bring to the marketplace. With many thousand custom gobos to our credit and with 25 years of combined experience, the Rosco Art Department is uniquely qualified to ensure that the integrity of your design, your deadline and your budget are maintained.

## THE SERVICE

It has always been true that when buying a custom gobo your need for exceptional service is as, if not more, important than your need for the perfect gobo. At Rosco we recognized that a long time ago and so it is our mission to provide a first class service as well as a high quality product.

- Where possible gobos are manufactured in-house enabling us to offer the fastest turnaround times.
- We use a range of delivery services depending on your location and deadline.
- We have a number of different manufacturing techniques at our disposal.
- We have manufacturing facilities in the UK and the USA effectively lengthening our available production time.
- We have a team of people who are dedicated to getting it right.

## THE PEOPLE

Rosco's custom gobo production facility spans two continents and hosts 15 full time graphic artists and imaging technicians. In addition we have a team of experienced customer services consultants who can take you through every step of your order.



*Rosco's UK graphic artists and imaging technicians.*



*Rosco's customer service team.*

## THE PRODUCTS

The specific type of the product you should use will be determined by the nature, complexity and colour of your design, the lantern you are using and the length of time for which you will be using the gobo.

Images that are not adversely affected by the addition of 'tags', to hold the metal in place, can be manufactured economically by a process of chemical metal etching.

Alternatively, intricate or colourful designs can be reproduced on glass, without the need for tagging.

## METAL CUSTOM GOBOS

Metal gobos are usually produced on hard rolled stainless steel for a clean-etched, high quality image while glass gobos are produced on fused silica for maximum temperature tolerance.

Rosco also manufactures custom gobos in alternative metals (eg. aluminium or phosphor bronze), to any size, and makes gobo wheels suitable for most available moving lights.

Rosco custom metal gobos are produced to the highest quality on the most suitable material for the purpose. This can vary between lighting fixtures and your customer service consultant will advise you if any special metals or finishes are recommended.

## BLACK AND WHITE CUSTOM GLASS GOBOS

Over the years the optics of many luminaires have greatly improved, whilst heat output has dropped, making it possible to use high resolution glass gobos with photographic, half tone or intricate images in spite of the heat generated by the lantern.

As a result it is possible to project designs where light surrounds dark 'island areas' without the 'tagging' required on metal gobos.

Rosco monochrome glass gobos are produced to high resolution, 3560dpi as standard, with a half tone ruling of 400lpi. They are produced on heat resistant fused silica glass within 24 hours of receipt of your order and artwork.

## COLOUR CUSTOM GLASS GOBOS

Dichroic glass gobos are ideal for coloured artworks ranging from simple line art to full colour photographic images. Multi-coloured graphic style images, such as logos, can be produced from a range of dichroic colours to match the original artwork as closely as possible.

For less complex line artworks, with just one or two colours, the imaging technicians will almost certainly opt for a laser ablation technique, producing crisp images on saturated colours chosen from the wide range of standard Rosco dichroic filters.

However, if your image contains a range of colours or tones a chemical etching process will provide an almost perfect reproduction of your artwork.

Full colour dichroic images, such as complex logos or photographs will be split into yellow, magenta, cyan and black layers, in the same way images are split for printing. They will then be reproduced via chemical etching, onto 4 separate pieces of glass and precision assembled in perfect registration.

It is worth remembering that gobos cannot always be exact copies of printed artwork simply because of the different substrate and the limitations of the manufacturing process.....However, we usually manage to get pretty close.

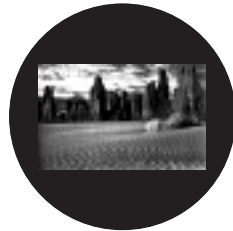




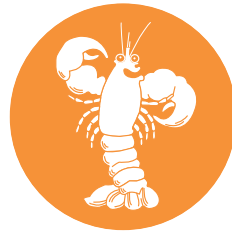
## EXAMPLES OF CUSTOM GOBOS



METAL



BLACK & WHITE



ONE  
COLOUR



TWO  
COLOUR



FULL  
COLOUR

## DICHROIC COLOUR REFERENCE



**6500**  
Primary Red  
pantone 485C



**6100**  
Flame Red  
pantone 185C



**5900**  
Orange  
pantone 1655C



**5600**  
Medium Orange  
pantone 021C



**5401**  
Amber  
pantone 116C



**5200**  
Yellow  
pantone 108C



**4959**  
Light Yellow Green  
pantone 375



**5156**  
Fern Green  
pantone 361C



**5055**  
Primary Green  
pantone 3405C



**4853**  
Turquoise  
pantone 339C



**5700**  
Sea Blue  
pantone 3125C



**5590**  
Cyan  
pantone 312C



**5400**  
Sky Blue  
pantone 638C



**5100**  
Light Blue Green  
pantone 639C



**3202**  
CTB Blue  
pantone 279C



**1065**  
Mediterranean Blue  
pantone 3005C



**1080**  
Primary Blue  
pantone 300C



**4600**  
Medium Red Blue  
pantone 286C



**4200**  
Deep Purple  
pantone violet C



**4965**  
Lavender  
pantone 265C



**4640**  
Vivid Magenta  
pantone 2395C



**4763**  
Deep Magenta  
pantone 2385C



**4630**  
Hot Pink  
pantone rhodamine red C



**4758**  
Medium Pink  
pantone 224C



**1033**  
Light Pink  
pantone 705C

### LASER DICHROIC COLOURS



**Dark Red R00**  
pantone 194C



**Red 008**  
pantone 032C



**Orange 059**  
pantone 021C



**Light Cyan 045**  
pantone 3115C



**Cyan 006**  
pantone process  
cyan C



**Blue 028**  
pantone 293C



**Medium Blue 047**  
pantone reflex blue



**Dark Blue 001**  
pantone 072C



**Turquoise C49**  
pantone 327C



**Green 089**  
pantone 354C



**Lime Green 147**  
pantone 375C



**Yellow 002**  
pantone 102C



**Amber 052**  
pantone 116C



**Magenta 056**  
pantone 2415C



**Pink 063**  
pantone 232C

NB. These colours are intended as a guide only as matching printed colours with dichroic glass is not possible. Colour subject to availability and suitability within certain fixtures.

## THE PROCESS

Your first port of call will be one of our customer services consultants. They have an exclusive phone number and email address so that you can be sure of reaching them as quickly as possible.

It is very important to us that you are assured that your order is being dealt with and that you have confidence in the process. Therefore we will contact you within 2 hours of receiving your email, phone call or fax with a rough price and order acknowledgement or to discuss your order in more detail. Your customer services consultant will also discuss the exact nature of your artwork and any technical difficulties they can foresee.

Artwork supplied should always be the best available to ensure the most accurate end result. On custom metal gobos 'tagging' is necessary to prevent 'island areas' of metal dropping away so if you have a preference for where tags should be positioned, this should be indicated on a sketch accompanying the original artwork. Otherwise our graphic artists will place tags as discreetly as possible to maintain the integrity of the design. Time spent working on your artwork in preparation for production is considered part of the service and rarely incurs any additional cost.

Your image can be sent to Rosco in a variety of forms, although the most common is via email to [customgobo@rosco-europe.com](mailto:customgobo@rosco-europe.com). Artwork is processed the day it is received in readiness for etching. These artworks are subsequently kept on file to enable you to re-order as quickly and efficiently as possible.

## CUSTOM GOBOS TURNAROUND TIMES

<b>STEEL GOBOS</b> 1 or 2 Days	Artwork and Purchase Order with Rosco <u>before</u> 11am Day 1 Gobos ready for collection/despatch Sameday
	Artwork and Purchase Order with Rosco <u>after</u> 11am Day 1 Gobos ready for collection/despatch 5.30pm Day 2
<b>BLACK &amp; WHITE GLASS</b> 1 or 2 Days	Artwork and Purchase Order with Rosco <u>before</u> 12pm Day 1 Gobos ready for collection/despatch Sameday
	Artwork and Purchase Order with Rosco <u>after</u> 12pm Day 1 Gobos ready for collection/despatch 5.30pm Day 2 (Sameday available upon request)
<b>COLOUR GLASS</b> 1 - 3 Days <small>Depending on complexity of artwork.</small>	Artwork and Purchase Order with Rosco by 12pm Day 1 Gobos ready for collection/despatch 5.30pm Day 1,2 or 3

These prices include all tooling costs, the first gobo and a reasonable amount of studio time. When possible we will always endeavour to meet your deadline even when the official cut-off time has passed.

## CUSTOM GOBO SIZES

Rosco can provide you with any gobo size to fit most mainstream lanterns. In order to do this we require the following details when the order is placed: manufacturer and lantern type, and/or the overall diameter and image area of the gobo. If however you are unsure of the gobo size you require our customer services consultants will be happy to advise.



## SUBMITTING ARTWORKS

Artwork can be supplied in almost any format: paper, fax, or digitally. However to ensure faithful reproduction of your imagery here are some guidelines:

### QUALITY

It might sound obvious but the better the quality of artwork the better we can serve you. Quality artwork supplied in the appropriate format reduces the need for intervention by our graphic team, thus improving response time and reproduction fidelity.

### FORMATS

**Digital;** Almost any format can be opened and used: .pdf, .tiff, .eps, .ai, .psd, .bmp, .jpg, .dpx, .gif, .png etc. Consideration should be given to the most appropriate format.

**Logos** are often better processed using vector based applications such as Adobe Illustrator and can be saved & transmitted as Adobe native files (.ai), encapsulated postscript files (.eps or .epsf) or Adobe Acrobat (.pdf). For faithful reproduction of text, all fonts should be converted to outline before submission.

**Photographic** (or "contone") imagery may be processed using Adobe Photoshop or a similar photo processing application and may be submitted as Photoshop native (.psd), encapsulated postscript (.eps or .epsf), Tagged image file format (.tif or .tiff) Adobe Acrobat (.pdf), Jpeg (.jpg), bitmap (.bmp).

Images should be at least 900 pixels in diameter (i.e. 3inches diameter at 300dpi) and graphic compression should be kept to a minimum (this does not include file compression such as stuffit or zip compression which does not affect the image quality).

If your artwork doesn't conform to these preferences, don't worry, we will accept artwork in almost any format. If it's all too confusing, feel free to call and discuss with any member of our gobo team.

**Paper;** (or slide); original artwork or photography should be no larger than A4. It is best for photographic or shaded imagery. If supplying original artwork please indicate if you want it returned — Rosco can accept no responsibility for loss or damage of originals in the post.

**Fax;** if your artwork is simple, purely black and white, you must have it tomorrow and you only have access to fax, we can do that as well. But be aware this is the least accurate method of transmission and should only be used as a last resort.

## ARTWORK PREPARATION GUIDELINES:

**Background;** gobo projection works best when projecting images "out of black", that is, the image should be projected rather than the background. Thus whilst most graphics are produced for printing on paper (on white), projected artwork is optimal when produced on a black (opaque) background. For most artwork this is not problematic but consideration should be given to how drop-shadows should be used – bright shadows can look odd.

**Size v Resolution;** the smaller the gobo the lower the effective resolution.

A small gobo might have an image diameter of as little as 15mm — at 3556 dots per inch, this would equate to around 2100 "dots" in diameter. A large format gobo such as a "B" size can have an image area of 64mm in diameter which would achieve a diameter of 8960 dots.

If each gobo was used to project a one metre image it is clear that the effective resolution of the larger gobo would be much greater. So the quality of the artwork should be measured against the size of the gobo: The smaller the gobo the simpler the image should be.

## PROOFS

Rosco are always happy, if requested, to supply proof artwork for customer approval. This can be via fax or email (as an Adobe Acrobat .pdf file). It is recommended that you take advantage of this service to ensure problems can be overcome before you are at the venue and it's too late!

## SPECIAL SERVICES

- **NON STANDARD IMAGES / GOBO SIZES**

There are many occasions on which designers need their final projected image to be of a certain size irrespective of how far the light source is from the projection surface. Should you require a particular size of projected image, Rosco can make the necessary calculations to produce an accurately sized gobo image to achieve this. In order to do this we require the following details when the order is placed: gobo size, lantern type, focal length of the lens, throw and projected image size. There is no additional charge for this service.

- **DISTORTION CALCULATIONS/CORRECTIONS**

Often your projector will not be sited in a direct line with your projection surface so the image reproduced on your gobo needs to be distorted in order to counteract the effects of off-centre projection. Distortion Correction or Keystone Correction are the technical terms we use to describe the process of ensuring that an image projects squarely even if the projector is positioned vertically and/or horizontally off-centre. The degree to which the image needs to be corrected will depend on how far the light source is from the projection surface and the obliqueness of the angle(s) at which the image will be projected. To make the calculations we require details of the gobo size, lantern type, focal length of the lens, throw and projected image size, plus the position of the lantern with respect to the projected image.



Standard image  
projected square on



Standard image  
projected off  
horizontal axis



Standard image  
projected off  
horizontal & vertical axis



**CORRECTED**  
image projected  
off axis

As you might expect this can be a time consuming process, depending on the complexity of the image, so we do make a nominal charge per design.

- **CONSULTANCY**

Rosco is pleased to be able to offer technical advice and support to all our customers over the phone, but we can also attend site when necessary. There may be an additional charge for this service but the expertise and experience of our technical team can often be invaluable.

- **OEM (Own Equipment Manufacture)**

Rosco is an OEM supplier of gobos and gobo wheels for lantern manufacturers such as Robe, Martin Professional, Clay Paky and Abstract. Information on this special service including advice on etching substrates and competitive quotations can be obtained directly from us.

- **MISCELLANEOUS ETCHED PRODUCTS**

Rosco's etching experience extends far beyond just that of gobos. Recent work includes the manufacture of gobo wheels with multiple images for moving lights, dimmer wheels and fader cards for fibre optics units, effects discs for animation units, business cards, stencils, folder covers, miniature sculptures, jewellery and architectural model components. Such projects can be quoted on a job by job basis.

- **i-PRO SLIDES**

Recognizing that there are many circumstances in which a designer's requirements may not sit comfortably with the budget, Rosco developed the i-Pro, a slide projection unit that sits in the lens of an ETC Source Four. Being a cool running lantern, the Source Four enables full colour images to be reproduced on acetate and projected for short periods of time without colour degradation or burn-out. So, when a full colour gobo is beyond your pocket an i-Pro slide, produced in house on the day of order, could be the answer.





## CUSTOM GOBO CHECKLIST

To ensure Rosco makes your gobos to your exact requirements gobo orders will only be processed once Rosco has received a clearly written purchase order and reference number, preferably using the form provided in this booklet. Rosco cannot be held responsible for misunderstandings arising from verbal orders or subsequent verbal changes.

- **QUANTITY**

State the quantity of each design.

- **LANTERN**

Specify the make and model of the fixture to be used as some gobos will need special sizing. If this is not given, the gobo will be made to the default catalogue size.

- **GOBO SIZE**

Include the gobo size, code or specify in millimeters.

- **IMAGE SIZE**

Include the gobo image diameter or specify in millimeters. If you are in any doubt about these details Rosco's Customer Services Team is more than happy to advise you. Don't guess as there are too many variables.

- **ARTWORK DESCRIPTION**

Supply the best reference possible for the most accurate representation on the gobo whether for metal or glass gobos. Indicate which parts of the design are required to be projected as light ie. areas cut away on a metal gobo will equal light. Specify whether any of the designs are to be used as part of a composite or, if in a series, if the images are to be 'per pro' eg. the same point size (height) of font on each gobo.

- **METAL, MONOCHROME OR FULL COLOUR GLASS**

State which type of gobo is required but note that not all lanterns are suitable for glass gobos or full colour gobos.

- **FAX FOR APPROVAL**

Rosco is happy to fax artwork for approval prior to production but does not do so unless you have requested this service. Therefore, please state if artwork approval is required at the time of your order and whether Rosco should risk missing a deadline if approval is not forthcoming.

- **DEADLINE**

Indicate a delivery deadline specifying when the gobos need to reach you or your customer.

- **DELIVERY DETAILS**

State full delivery address details, preferred method of despatch, contact name and phone number at the delivery address. Rosco can only guarantee to meet deadlines if the purchase order (with complete instructions) and quality artwork is received by the time stated for each service.

Rosco cannot be held responsible for delays caused by incomplete instructions or late submission of artwork – whether by couriers or file transmission delays via e-mail or ISDN.

**NOTE:** When sending a faxed purchase order for custom gobos, but sending a hard copy of the artwork, please also fax a copy of the artwork for reference.

Alternatively, if you are emailing the order please attach the artwork or make clear reference to how we will receive it. Once we have an order from you, you will receive an order acknowledgement with a unique reference number which you should refer to at all times. When contacting us please have the name of the artwork and the order to which it relates to hand. Rosco receives many orders a day, by many different methods and this will help us to process your order efficiently.

When sending designs intended for use in a rotating effect you must indicate the preferred center of rotation so we can position the image correctly. Where a design is to be split over two gobos (composite) a sketch should be supplied to show the preferred division of image on each gobo. Similarly, if a series of gobos is being produced, an indication should be given as to whether the maximum image area should be used or whether the image sizes should be consistent (per pro).

When creating artwork for reproduction there are limitations on the amount of detail which can be etched within a restricted space. The smaller the gobo, the less detail it can hold/take. For example, an A size (100mm) gobo can hold up to 36 letters of uppercase Helvetica Bold text across its centre, an E size (37.5mm) gobo can only hold 16 letters of the same. Rosco will advise on the possibilities or limitations of an artwork on receipt and can help adapt unsuitable artwork when necessary. Glass gobos are capable of holding much greater detail than metal and do not require tagging.



www.rosco.com

INVOICE DETAILS\* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*Payment required with order if you do not hold a credit account with Rosco.

# CUSTOM GOBO ORDER FORM

CONTACT NAME: \_\_\_\_\_

TEL No: \_\_\_\_\_

Should Rosco use this as your purchase order? (please tick)

If no, how will you confirm your order (please specify)

YES

PO No: \_\_\_\_\_

NO

\_\_\_\_\_

QTY	GOBO TYPE Metal, B&W or Colour	LANTERN	GOBO SIZE (mm)	IMAGE SIZE (mm)	PROJECTION Front / Rear	MIRROR Y / N	HOLDER REQUIRED? Y / N	GOBOS NEEDED BY**	ARTWORK DESCRIPTION (Email artwork preferably as illustrator eps file)	ARTWORK EMAILED DATE

\*\* Rosco will use the relevant service to meet your deadline. This may incur a surcharge.

Please tick here if you would prefer our standard service

Do you require artwork for approval? (please tick)

YES

Email address or fax number to send artwork to:

NO

\_\_\_\_\_

Should Rosco await your approval even if this compromises your deadline? (please tick)

YES

NO

Preferred despatch method (please tick)

Next Day

AM

Collection

Other (please specify)

\_\_\_\_\_

Delivery to:

Invoice Address

Other (please specify)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Additional comments:

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