

### Introduction

This document contains the technical elements necessary for the graphic design on a recordable disc. The elements provided must be ready for printing without any prior corrections. Sending documents that do not respect these specifications slows down the processing of your order and may incur additional costs.

### Printing technics

Only in silkscreen, up to 6 runs :

- From 1 to 6 colours **PMS in the Pantone colour Chart only**
- 4 colour process CMYB + 1 or 2 supplementary runs

### Film quality

- **Positive films, right reading** (emulsion up) in **120 LPI**.
- Elliptical dots.
- Separate films for each colour, including colour name on each film.
- Frame angle recommended : minimum of 30° difference between each film.

Four colour process :

- Black : 45°    Cyan : 105°    Magenta : 75°    Yellow : 90° or 0°
- Spot tones

**minimum of 30° distance between each film**

- In 4 colour process, supply a colour proof with an analogical reference (cromalin, match print, etc.), accompanied by it's Brunner range.
- Each film must be outlined (without trimming) and accompanied by the central cut-out of the chosen printing area : see pages 3, 4, 5 and 6.
- The following registration marks must appear on each film (with a thickness of 0.35 pt = 0.12 mm) :

- 1 central cross
- 4 registration marks, with their centres placed at a distance of 1 cm from the area of the disc. see fig 2 with the example of a printing area STD 1.

With QuarkXPress, except for the central cross, the registration marks are automatically generated during output. Therefore your document measures 120 mm x 120 mm, the main picture box measures 116 mm x 116 mm, and is positioned at 2 mm on X and Y.

Templates available in file form.QXD on request from our services

The technical lines (physical diameters) must not appear on the films.

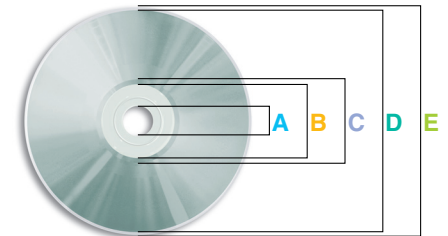
### Printing constraints

- Reflectivity

The area of the disc has a metallic and reflective appearance very different from white paper. A white background may therefore be necessary before the printing of the colours. see fig. 3 with the example of a 4 colour process. To be specified with your quotation demand : **with** or **without background**.

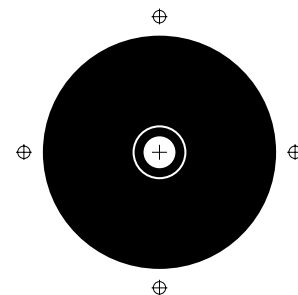
Please note that although the white background lessens the difference in appearance between the metallic and the plastic zone it does not eliminate it completely.

### 1 The appearance of the CDR



- A** Physical hole diameter of 15 mm
- B** Transparent plastic areas diameter of 34 mm
- C** Non recordable metallic area diameter of 40 mm
- D** Recordable metallic area diameter of 118mm
- E** Physical exterior diameter of 120 mm

### 2 The registration marks



### 3 The white is a colour !



4 colour process without white background



4 colour process with white background STD CDR 1

- Character and line thickness
  - Minimum character size : at least **4 points in positive**, at least **5 points in negative** (example for a font without serif in standard type).
  - It is best to use basic process colours for texts in small size.
  - Line thickness : at least 0.10 mm in positive (= 0,3 point), at least 0.25 mm in negative (= 0,7 point).

- Density and tolerance of halftones

**More than 15% in highlights, less than 85% in shades.**

- Gradients see fig. 4

Using gradients in silkscreen printing accentuate the "density surge" phenomenon which lies between 50 and 60 %. This physical phenomenon (a break in the gradient regularity) can be attenuated during output by using a lower screen ruling (ie. 85 LPI).

Please consult us for more information.

### Do not forget to incorporate...

- The logo(s) wanted, to chose according to the exact type of your product. see fig. 5.
- These logos are available from our services in the form of EPS files .ai, MAC & PCcompatible
- The note "Fabriqué en France par MPO" or "Made in France by MPO"
- An alphanumerical reference allows for the identification of your product, do not exceed 16 characters.

### The CARBON CD (only CD)

CD-R with special anti-UV protection, the appearance of it's printed face is identical to that of the CDR, except the non-metallic plastic zone starting from 34 mm which is black -see figure 6.

You have the choice of placing your graphic design in one of three standards of printing : **STD 1**, **STD 2**, **STD 3** or **STD 4**, described in the following pages.

We advise you however to favour the standard 1, with white background (or on all other basic pantone colours)

**⚠** Some differences in appearance can exist on the black plastic zone according to the colours used. Do not hesitate to contact us if you need advice on the concept of your design.

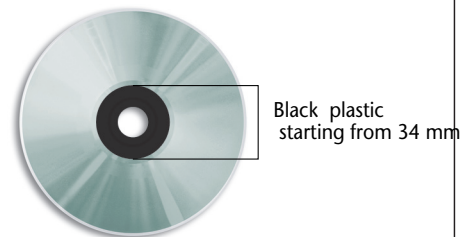
#### 4 The gradients in Silk Screen



#### 5 Logos



#### 6 The appearance of the Carbon CD

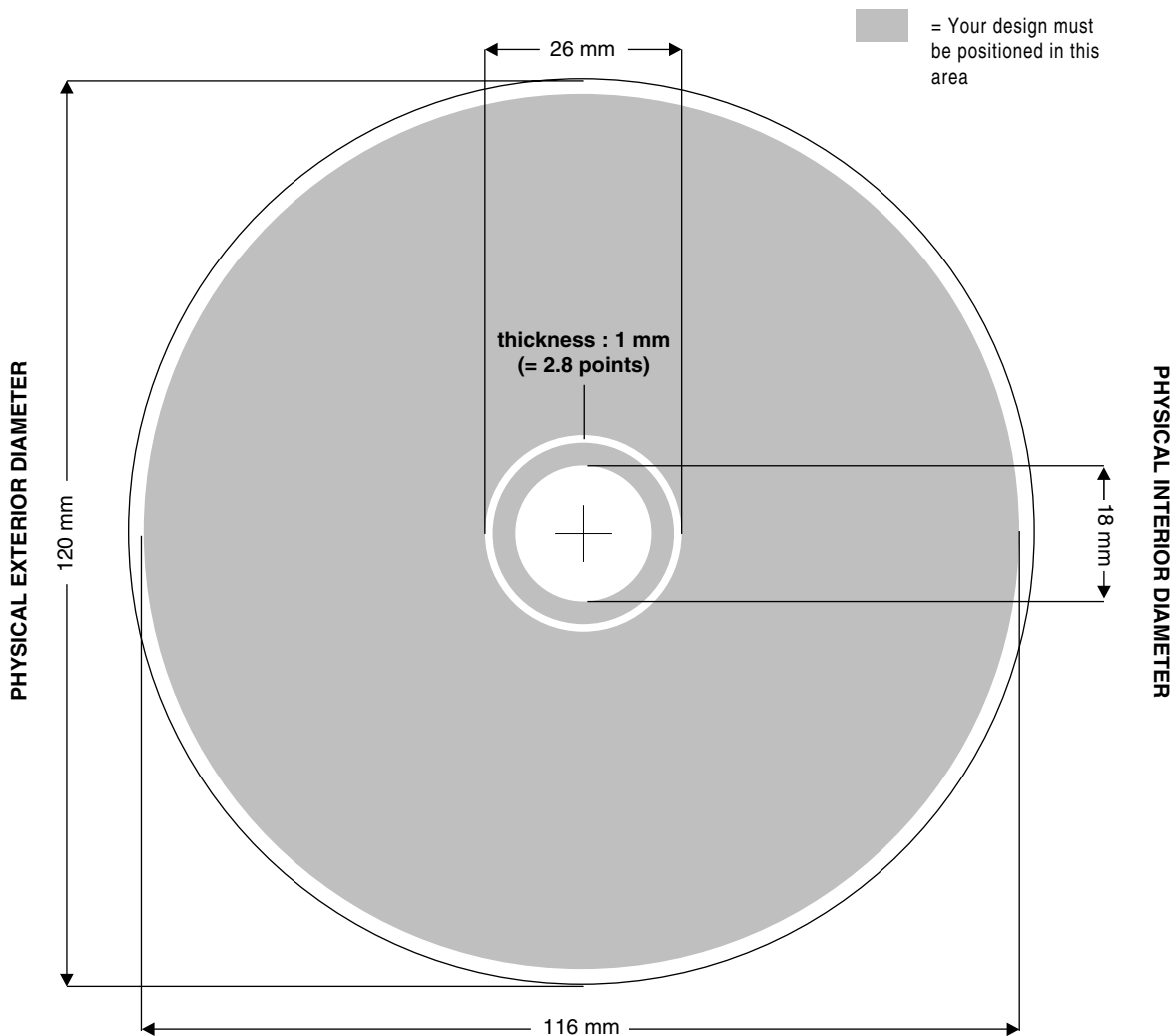


## STD 1

Total printing area : **116 mm / 18 mm**

Printing area suitable for graphic design with background.

The printing area corresponds to the metallic areas of the disc and the plastic non metallic area at the center of the disc except a notch, non printable, of 1 mm thickness and found at 13 mm from the center.

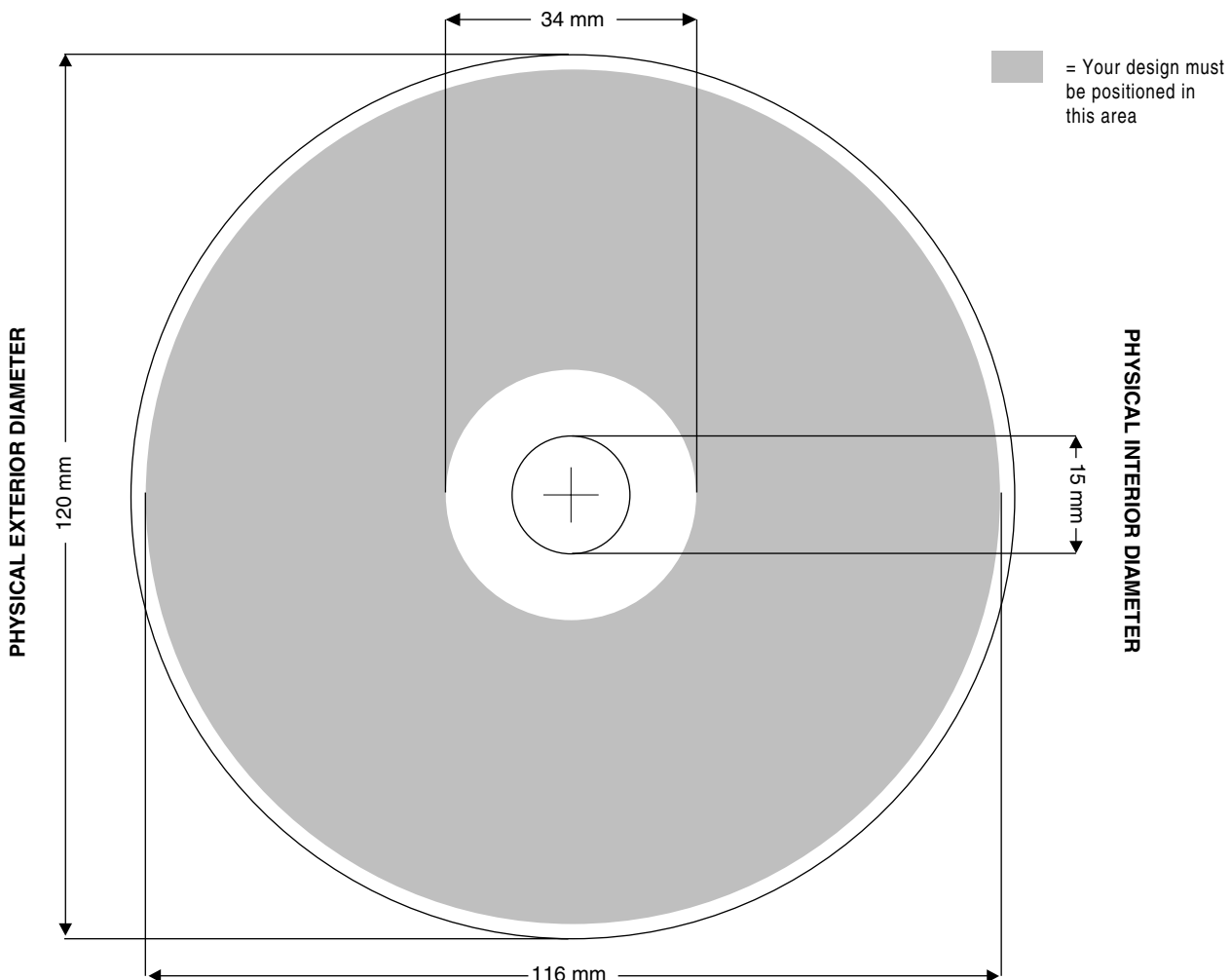


## STD 2

Total printing area : **116 mm / 34 mm**

Printing area suitable for graphic design with or without background

The printing area corresponds to the metallic areas of the disc. Attention, the metallisation is of a different appearance in the central zone (from 40 mm to 34 mm).

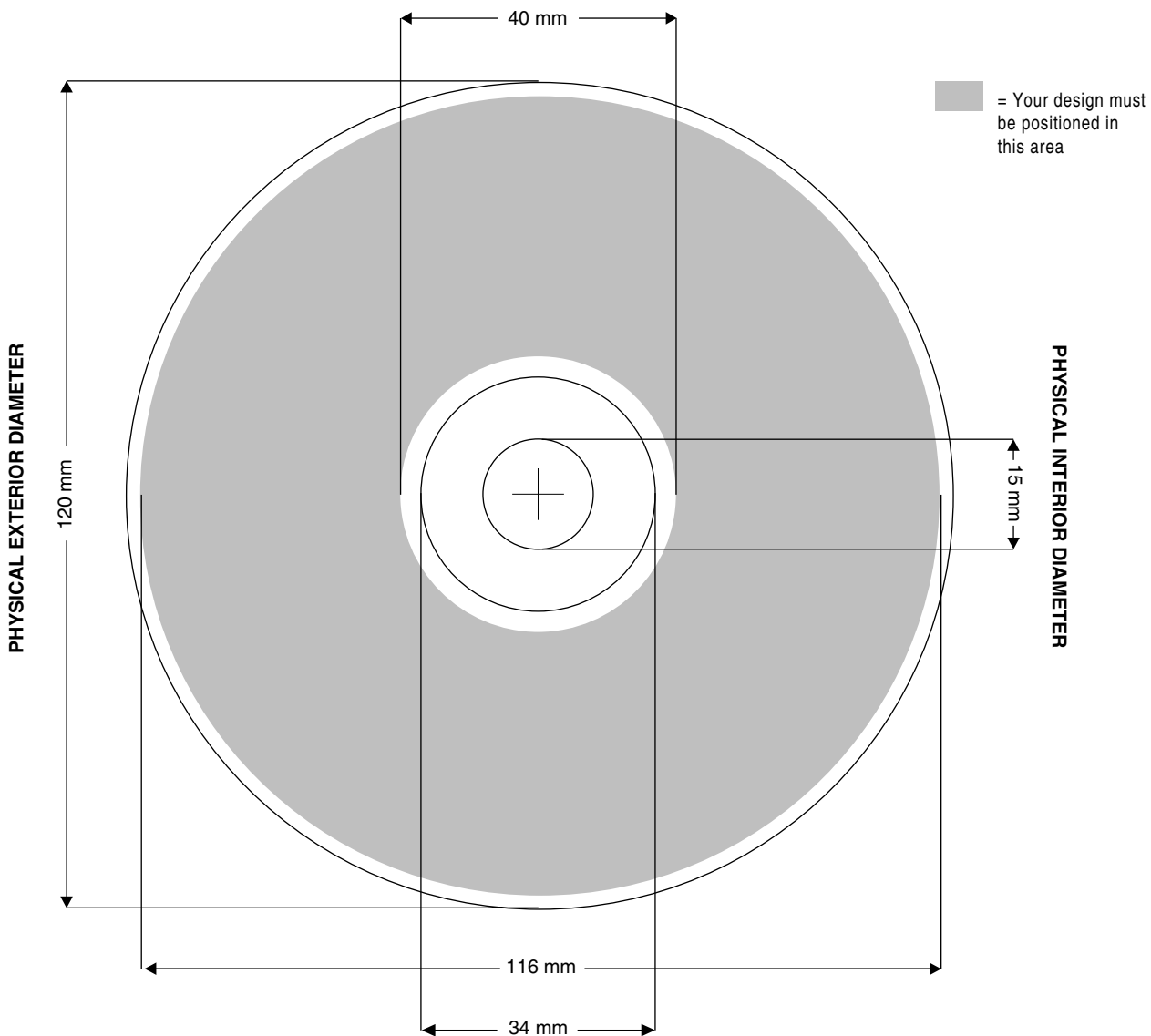


## STD 3

Total printing area : **116 mm / 40 mm**

Printing area suitable for graphic design without background

The printing area corresponds to the metallic areas of the disc, moins l'anneau de métallisation d'aspect différent, à la périphérie du centre du disque.



## STD 4

Total printing area : **116 mm / 18 mm**

Printing area suitable for graphic design without background

