up to DVDate?

MANUAL – DVD ROM & DVD VIDEO

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DVD-MANUAL 02/E

Sony DADC

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mini DVD

small disc. big content.

big adventure

big feeling

big thrill

big love

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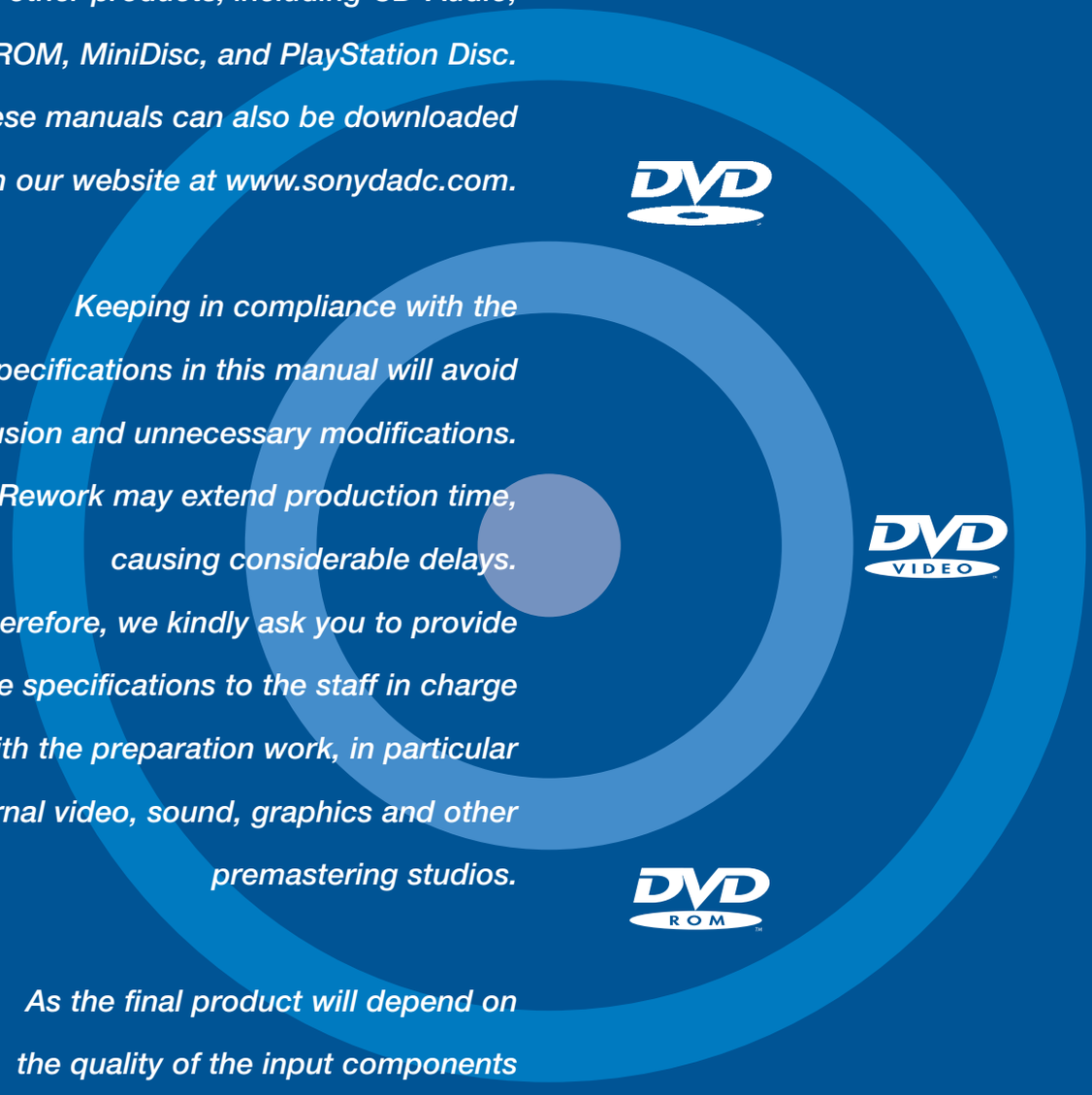
Outward appearances can be deceptive. The Sony miniDVD offers you all the benefits of the conventional DVD. It's just that it's smaller, lighter and cheaper to send as a result. With almost 1.5 GB storage capacity it's virtually three times as powerful as conventional CD-ROMs. Ideal for sending videos, presentations, film trailers and much more. Our experience means your benefit: we know no limits to capacity. Even in the case of large production volumes we keep our fast delivery times. Innovation comes from Sony DADC – your best partner for DVDs and miniDVDs: **Press here!**

Sony DADC

The objective of this manual is to facilitate the correct preparation of input components for DVD productions with Sony DADC. Similar manuals are available for our other products, including CD-Audio, CD-ROM, MiniDisc, and PlayStation Disc. These manuals can also be downloaded from our website at www.sonydadc.com.

Keeping in compliance with the specifications in this manual will avoid confusion and unnecessary modifications. Rework may extend production time, causing considerable delays. Therefore, we kindly ask you to provide these specifications to the staff in charge with the preparation work, in particular external video, sound, graphics and other premastering studios.

As the final product will depend on the quality of the input components supplied, the adherence to the manual specifications represents an essential contribution to the total quality of the product and service that we provide to you as our customer.



Introduction

WHAT'S NEW

From CD to DVD

DVD, which stands for Digital Versatile Disc, is the next generation of optical disc storage technology. It is essentially an optical disc that can hold video as well as audio and computer data. This new optical disc can reach a capacity of up to 24 times the capacity of a CD-ROM and encompasses pre-recorded read only discs like DVD-Video, DVD-ROM, DVD-Audio, SACD, as well as recordable formats like DVD-R, DVD-RAM, DVD+RW, and DVD-R/W.

For movie applications, a DVD can store full length movies in a high-quality digital video with surround sound in several languages and a wide range of interactivity, as well as subtitles. All DVD players and DVD-ROM drives are equipped with an additional laser diode or a special lens for playback capability of existing Audio CDs and CD-ROMs.

Format and Specifications

The DVD standard defines a disc that maintains the overall dimensions of the current Compact Disc. Therefore, the backwards compatibility with existing Audio CDs and CD-ROMs was easier to realize. The table on the right demonstrates similarities and differences between CD and DVD.

DVD Types and Formats

A DVD consists of two halves, where each half disc is 0.6 mm thick, holding one or two layers of information. The DVD format provides multiple configurations of data layers. Each layer provides additional data capacity.

Disc Type		Capacity 12 cm
DVD-5	single sided, single layer	4.7 GB
DVD-9	single sided, dual layer	8.5 GB
DVD-10	double sided, single layer	9.4 GB
DVD-18	double sided, dual layer	17.1 GB

	Mini DVD	DVD
Disc diameter	80 mm	120 mm
Disc thickness	1.2 mm	1.2 mm
Disc structure	two bonded 0.6 mm substrates	two bonded 0.6 mm substrates
Laser Wave-Length	650/635 nm	650/635 nm
Numerical aperture	0.6	0.6
Track pitch	0.74 µm	0.74 µm
Shortest pit/land lenght	0.4 µm	0.4 µm
Data layers	up to 2	up to 4
Data capacity	1.46 GB–2.66 GB	4.7 GB–17.1 GB

1.7 ColourDVD

The ColourDVD by Sony DADC Austria AG is available in six different colours. The bright red, yellow, and violet are real eye-catchers, whereas the three discrete colours (orange, pink, and gold) are designed for subtle applications. Regardless of the specific colour used, the real thrill of the ColourDVD is the special appearance of the former silver disc. Sony DADC Austria AG is proud to have developed this special look, which brings out different moods. Apart from different emotions, the ColourDVDs are well suited to resemble various themes.

Technically speaking, the secret behind the ColourDVD is coloured polycarbonate. Throughout many trials Sony DADC Austria AG found the right colours with the right tint, which can be used without loosing

application-quality.

1.8 SniffleDVD

Since Sony DADC Austria AG has already been producing the SniffleCD, there was no major development step necessary in applying this to the SniffleDVD.

The aroma can be placed on all or parts of the label print of the DVD 5 and DVD 9. Technically speaking, the unique scents are mixed to the colour of the prints and are released by rubbing the label. The duration of the scent of the SniffleDVD lasts for about one year. Sony DADC Austria AG is pleased to be able to offer the five most popular aromas from stock, which are rose, strawberry, green apple, lemon, and mint. In addition to these standard scents, a further 95 aromas are available (like chocolate, coffee, vanilla, different fruits,

or technical scents, etc).

Moreover, since the perfume is mixed with the labelprint, it is also possible to get your own aroma onto the disc.
Of course, the perfume has to fulfill certain requirements, such as

- It must not be water soluble
- Minimum 20 ml of perfume oil is needed for capsule-check (which takes about 3 to 4 days within Sony DADC Austria AG).
- For the production, a minimum of 1 litre (1 kg) of perfume oil is needed (even if a DVD sample production is ordered), which will be sufficient to produce approximately 30,000 discs, if 100% of the DVD-top-surface is covered.

In case you supply your own scent, please keep in mind, that Sony DADC Austria AG needs about 3 to 4 weeks to produce the scent-capsules required to mix the aroma with the colours. For the standard order turnaround time you can assume that it will take an additional 3 to 4 days (depending on the size of the order).

2. DVD-Video

2.1 General

DVD-Video is a new media for the distribution of home videos. The digital nature of this new media offers several new features to the consumer.
Amongst these features are:

- High video quality, based on MPEG2 compression, and the ability to playback both aspect ratios of 4:3 and 16:9.
- A DVD-Video can hold up to 8 different audio tracks (streams). Each track can be used for a different language. It can also be utilized for high quality stereo audio, with a resolution of 16 bit and 48 kHz, or for theatre quality surround audio, like Dolby Digital AC-3 or multichannel 5.1.
- Up to 32 different streams of subtitles can be placed on a DVD-Video, used as language subtitles, as menu highlights, or as instructions for interactive functions.
- Digital copy protection via CSS and analogue copy protection via Macrovision.
- Multibranching is another feature of DVD-Video that simply offers the possibility to playback one title with different parts of this title, which can be interactively selected by the viewer. In addition, the multi-angle option allows a scene of a movie title to be viewed in different angles.
- Most of the DVD-Video players imply a region code, corresponding to one of the six regions in the world where it is sold. This regional coding optionally enables playback of a DVD-Video title in certain regions only.
- DVD-Video discs can be prepared with a ”Parental Lock” in order to restrict the playback only by using a correct password.

2.2 Input media for DVD-Video

Sony DADC prefers a DLT4000 or (DLT7000/DLT8000) format as standard input source. The tape should be recorded in DDP 2.0. If different systems are applied (such as e.g. ”DLT 1” or ”HP V80”), reading problems will occur. If you have no adequate DLT-recorder, please send the content on DVD-R (Remark: a DVD-R can only be used, if a DVD 5 is replicated; if a DVD 9 is to be pressed, there is no other way than a DLT.)
However, for complete authoring services, Sony DVD Center Europe will be happy to assist you further. (please contact us at +43/(0)6246/880-1610 or visit our Web-Page ”www.sonydvdcenter.com”.

2.3 Details on DVD Authoring Possibilities

2.3.1 Video

DVDs can be produced for both PAL and NTSC video standards. The aspect ratio of the source material can either be 4:3 or 16:9. The viewer has the choice of several output options on most players, according to the monitor. For example, in the case of a widescreen source, the viewer can select between letter-boxed and – if encoded during authoring – pan/scan playback on a 4:3 screen.

2.3.2 Audio

A DVD may contain up to eight different soundtracks, for example, a feature film in different languages, each of which can be in one of the following formats:

- Linear PCM mono or stereo (equivalent to the CD format)
- DTS (Digital Television Standard)
- MPEG1 mono or stereo
- MPEG2 multichannel
- Dolby Digital AC-3 mono, stereo, or multichannel 5.1

Any stereo track can be encoded Dolby Pro Logic Surround to extend the compatibility with existing home entertainment equipment.

Please note that this encoding is not implemented during DVD premastering, but has to be completed during preparation of the mastertape.
The sampling frequency on a DVD is 48 kHz.

2.3.3 Subpictures

Subpictures can be keyed into the videosignal and are used for several applications on the disc, for example:

- as menu highlights
- as logo
- as instructions for an interactive function
- for language subtitling, display of karaoke lyrics etc.

2.3.4 Subtitles

Subtitle companies are usually capable of handling subtitles in almost any language. They usually require a VHS copy of the program master with VITC or LTC time code and, preferably, with a visual TC at the top of the picture, as well as a script of the dialog or lyrics.

2.3.5 Still Pictures

Still pictures can be utilized as a background for menus in full colour and full resolution, or as a still/slide show.

2.3.6 Regional Coding

Most DVD players imply a certain code, which corresponds to one of the six defined regions where they are sold. Such a code, or several codes, can be applied to the discs. However, the number of both the player and the disc must match in order to enable disc playback.

If regional code ”0” is applied, this DVD can be played on every DVD-Player – no matter which regional code is adjusted.

2.3.7 Multi-Branching

The DVD offers the function of playing alternative blocks with different contents within one title. Using this feature, different versions of a movie can be created.

For example, it would be possible to create a movie, which consists of an identical main block and an end block with two alternatives, enabling the user to choose between a happy or perhaps a tearful ending. In general, it will be useful to set the changeover of such blocks matching chapter points, if chapter points exist.

Please note that there are technical restrictions for seamless playback in the creation of multiple alternatives. For example, the playtime variation of the different alternatives within one block is limited. Due to the complexity of these features, please contact us at +43/(0)6246/880-1610 or visit our Web-Page: ”www.sonydvdcenter.com”

2.3.8 Parental Lock

DVD Video Discs can be coded with a number from 1-5. DVD Players can only playback DVDs with a code number lower than the password protected code set on the player.

2.3.9 Multi-Angle

Multi-Angle allows the creation of different viewing alternatives within the same contents of a title. Using this feature, the user can select between different camera views ”on the fly”.

2.3.10 Aspect Ratio

The video source material may either be of 4:3 or 16:9 anamorphic aspect ratio. Please define the corresponding parameter on the Mastertape Info.

To maintain the maximum vertical resolution, 16:9 anamorphic is preferred for widescreen sources. However, the aspect ratio must be consistant within one title of a DVD, otherwise different titles will have to be created on the disc.

2.3.11 Audio Masters

All audio masters must be recorded with a 48kHz sampling rate, Linear PCM according to AES/EBU standard. The use of emphasis is not recommended. For Mono-, Stereo- or encoded Dolby ProLogic programs, the audio tracks of the video mastertape should be used. As these mastertapes contain four audio tracks, a maximum of four different versions in mono or two stereo soundtracks can be provided with the videotape. The video and audio parts of the mastertape must be synchronised.

2.3.12 Separate Audio Masters, Digital Multichannel Audio Programs

For DVDs with digital multichannel sound, a separate audio mastertape is required for each soundtrack. These should either be of Sony PCM-3324 format, Sony PCM-800 format, or an equivalent, and must contain the final mix of the 5.1 channels – front left, front right, left surround, right surround, centre low frequency channel – as discrete tracks. The encoding of these tracks to the specified digital multichannel data-stream is carried out during the DVD premastering process.

2.3.12.1 General

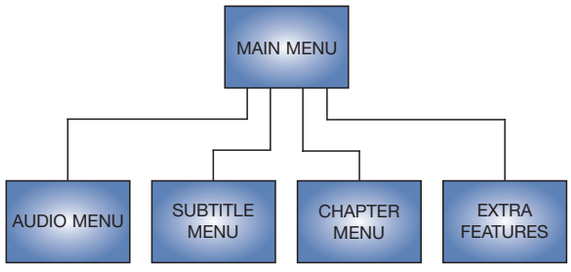
Menus are the key to navigation on a DVD disc. They allow the user to locate any chapter point on the disc, change the language for the movie, or display subtitles in any of the languages provided.

Basic menu structure:

Sony DCE has all the equipment and skills required to prepare menu screens from scratch or by using references, such as existing artwork (e.g. LD or VHS packaging) for graphics, movie captures for animations, 3D modelling, internet convergence, eCommerce integration and other multimedia applications for DVD.
Therefore we will readily accept your order to design the menu screens for you.

Mastertape Channel Content

1	Front left
2	Front right
3	Left Surround
4	Right Surround
5	Center
6	Low frequency channel

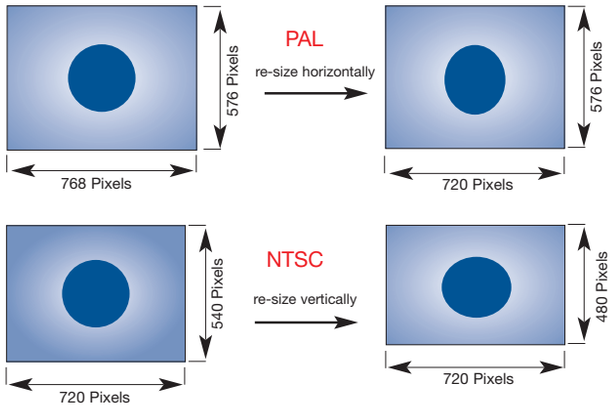


2.3.12.2 Backgrounds

When designing backgrounds, six major issues need to be addressed. These are image size, safe area, colour depth, interlacing, file format, and naming convention.

2.3.12.3 Image Size

Computer pixels have an aspect ratio of 1:1. However, NTSC pixels are 0.9:1 and PAL pixels are 1.0667:1. This discrepancy causes the menu background to look distorted when exported to D-1 video; NTSC D-1 menus are compressed horizontally and PAL D-1 menus are compressed vertically. The menus should be distorted at the time of design to counter the effects of TV distortion. For NTSC, the menus should be pre-compressed vertically and for PAL, the menus should be pre-compressed horizontally. To accomodate PAL and NTSC requirements and to compensate for these known distortions, the menus for NTSC should be designed at 720x540 pixels and for PAL at 768x576 pixels. For NTSC, re-size the image to a height of 480 pixels, keeping the width at 720 and for PAL, re-size the image to a width of 720, keeping the height at 576. At this point, the menus will look distorted on a computer screen, but this will be compensated for when they are exported to D-1 or DigiBeta.

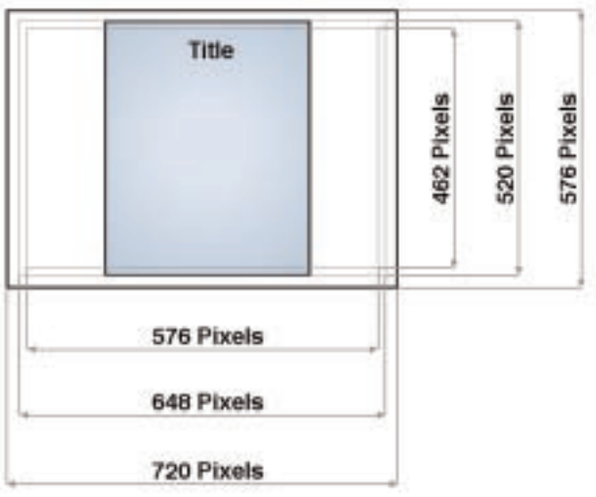


2.3.13 Safe Area

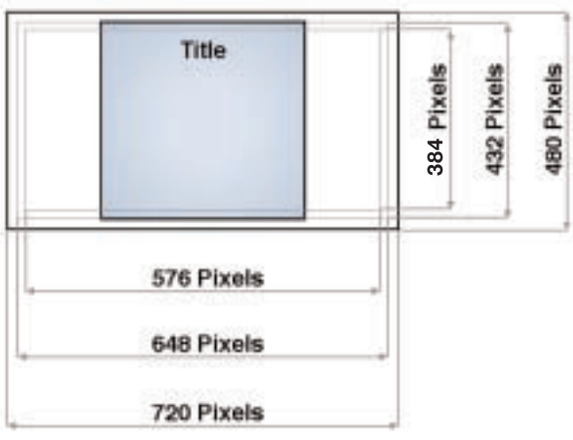
DVD Menus should be designed in accordance to standard Title Safe and TV Safe areas. All graphic elements of significance should be within TV Safe and all text should be within Title Safe. TV Safe is a 5% margin from the edges of the video image and Title Safe is 10% from the edges.

These areas should be applicable in the last stage shown above. This translates to the following margins for PAL and NTSC:

PAL



NTSC



Margins in Pixels for TV and Title Safe areas:

	Edge	TV Safe Margin	Title Safe Margin
PAL	Left / Right Each Top / Bottom Each	36 Pixels 28 Pixels	72 Pixels 57 Pixels
NTSC	Left / Right Each Top / Bottom Each	36 Pixels 24 Pixels	72 Pixels 48 Pixels

For menus in 16:9 format, please contact Sony DVD Center Europe

2.3.14 Colour Depth

A 24bit colour palette can be used, as long as NTSC/PAL colour limits are not exceeded. CCIR-601 (or ITU-R 601 as it is known, now) recommends, that the nominal range for RGB signals should be 16-235 on a scale of 0-255. The extra headroom, from 0-15 and 236-255, is occasionally needed to accommodate overshoot and other out-of-bounds signals that can be generated by analog video processing. A good reference for colours that work well with NTSC and PAL colour systems, are their 75% Colour Bar test signals. For conservative design, the RGB values of these Colour Bars can be used as the upper/lower limits for their respective colours.

PAL / NTSC 75 % colour bar RGB values (Gamma corrected) :

	Range	White	Yellow	Cyan	Green	Magenta	Red	Blue	Black
		PAL / NTSC							
R	0-255	255 / 191	191	0	0	191	191	0	0
G	0-255	255 / 191	191	191	191	0	0	191	0
B	0-255	255 / 191	0	191	191	191	0	0	0

2.3.15 Interlacing (Flicker/Jitter)

A video frame is made up of two video fields. These two fields are interlaced, and each contains half of the information required to display the frame. Due to timing drifts in video equipment, the two fields do not interlace perfectly, causing the flicker/jitter commonly seen on sharp edges and fine lines.
This is more evident in horizontal lines than vertical ones. This problem is not evident on computer displays, because they are usually non-interlaced.

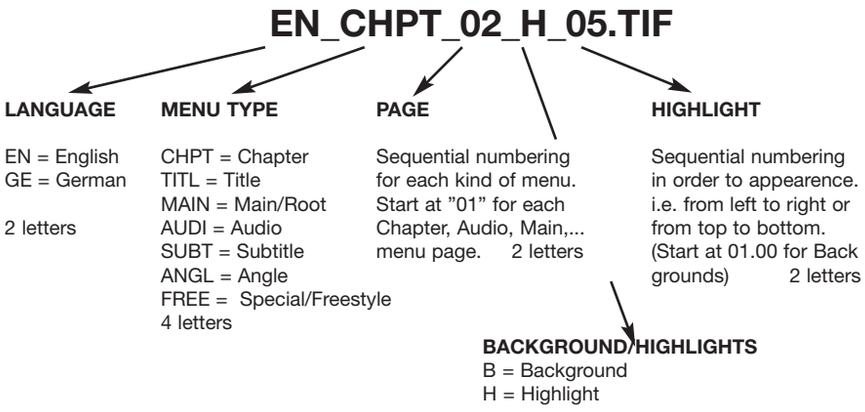
To avoid these flicker/jitter problems, thin (e.g. single pixel) horizontal lines should be avoided and the overall image should be blurred, using either Gaussian or other suitable methods.

2.3.16 File Format

The preferred file formats for menu background delivery are uncompressed TIFF or as video on a separate tape. If the artwork is made in Adobe Photoshop, it must be saved in PC format with no compression. Some graphics packages save an alpha channel with a 24bit file. DO NOT save the alpha channel.

2.3.17 Naming Convention

For efficient and clear processing of the menu items, the following naming convention should be applied:



2.3.18 Registration and Alignment

To facilitate positioning and alignment of highlights/overlays on the backgrounds at Sony DADC, a file with registration marks should also be supplied with the main background file. This file should contain clearly visible registration marks, in addition to artwork in the menu background file.
The registration marks can be of any type, as long as they are accurate to one pixel width and height. They should also be of a colour that makes them stand out from the background.
The accompanying highlights/overlays should have a matching registration mark in a colour of the palette which has not yet been used. This is discussed in detail later.

2.3.19 Image Size

Each highlight on any page should be contained in its own separate TIFF file. Each image should only be as big as the text or graphic itself and should not have any white space around the graphic. It should also be big enough to include the registration mark. Please make sure to always supply two images of the same dimensions per highlight, one with and one without registration mark.This allows closer placement of highlights on the page, as highlight files cannot overlap in a DVD menu.

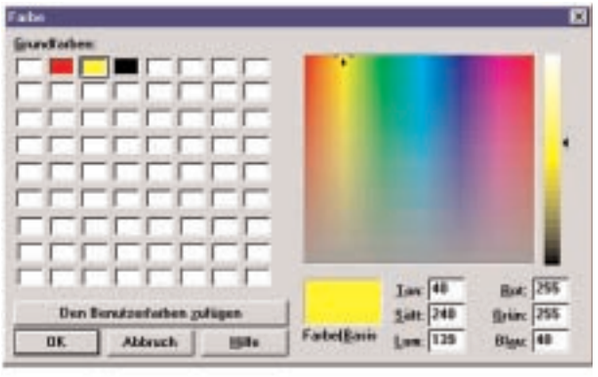
One file that contains all the highlights for a page should also be provided. The colour depth and file format for this file should be the same as the other highlight files. Sample below.

Menu background without…

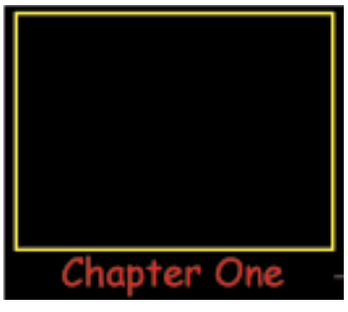
…and with registration marks

2.3.20 Colour Depth

The highlight must be an indexed, 8 bit, 256 color TIFF file. Since DVD specifications allow 4 colours in a highlight at any given time, even though this file has 256 colors in its palette, the actual graphic can only have 4 colours. One of these colours is keyed out to show transparency. The remaining one can be any three colours in the spectrum. The figure below is a screen shot of the palette of a highlight file. If you can't access this option in your graphic program, the file is probably not indexed or has the wrong colour depth. Note that only the first 4 colours of the palette are in use and the remaining are blank. This is the only acceptable format of the highlight palette.



The DVD specification also allows any menu page to have a palette of 16 colours. This allows for different "not highlighted state", "highlighted state" and "activated state" colours. The figure below shows two images, a "highlighted state" and an "activated state".

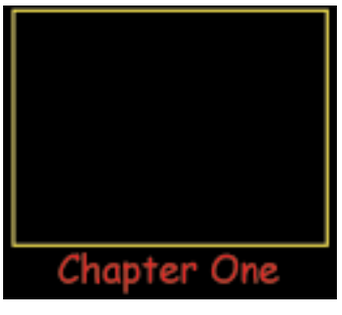


Please note that the total number of colours (including black and the registration mark) is more than four. However, at any given time the image only has four colours.

2.3.21 User Interface and Delivery

2.3.21.1 Printouts

Colour printouts of all backgrounds must be provided for reference. One printout should be provided to demonstrate the effect of the highlighted state, and one to demonstrate the activated state. If these are different for the Main Menu, Audio Menu, Subtitle Menu, Scene Selection Menus and Special Menus, then two printouts must be provided for every unique colour combination, demonstrating both highlight and active colours.



A hard copy of the text or PDF files should also be provided, along with a printout of the disc contents.

2.3.21.2 Navigation

Non-standard navigation must be explained on paper and a text or PDF file. For complex navigation, it will be necessary to contact Sony SDCE.

2.3.21.3 Media

PC formatted ZIP or CD-R

4. Label Printing

The following pages contain important specifications for DVD printing and the film material required.

Please transmit this information to your graphics artist or designer.

We recommend to put the product specification logo (DVD, DVD-ROM, DVD-VIDEO) on every piece of packaging and labels. This ensures your customer using a product which complies with the DVD-Specifications. Sony DADC requires the customer to place the product catalogue number on the DVD and on every piece of the packaging.

4.1 Printing Processes

Sony DADC uses offset printing processes for DVDs as the standard print. On special request, simple screen prints can be done as well.

The following types of print can be processed:

- line prints with up to 4 colours
  (3 colours for DVD-10)
- half-tone prints
- duplex and triplex prints
- Four-colour prints
  (picture disc: offset/screen printing)

For particular requirements with respect to printing quality in four-colour print, we offer the High Definition Picture Disc. This is particularly recommended for applications including photographs, faces, landscapes, or designs which are similar to photographs.

A specific offset process is used.

4.2 Printing Areas

The following pages illustrate the three possible printing areas on a DVD label (specifications F, G and H).

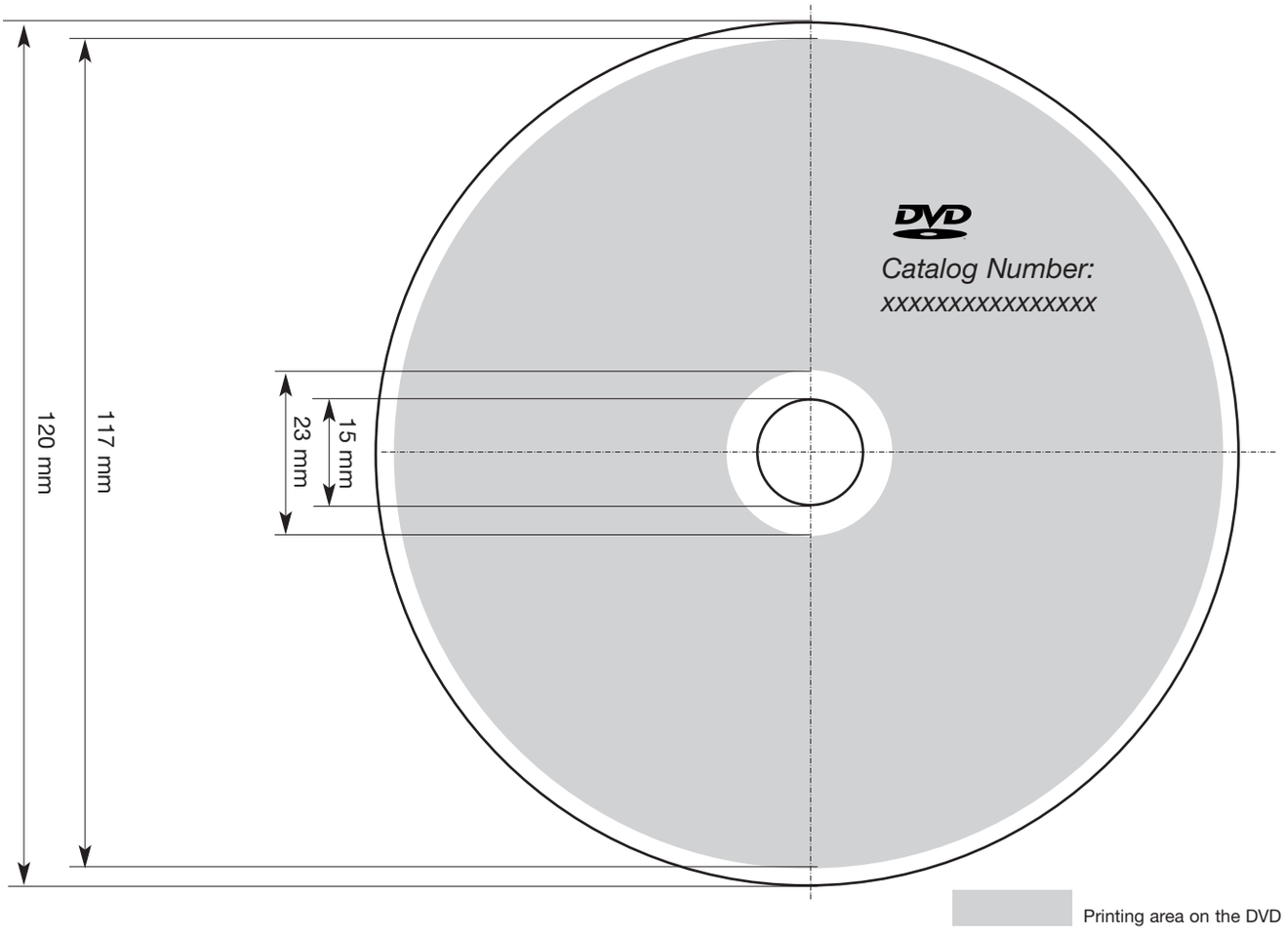
Please bear in mind, that there may be colour deviations between the print on the aluminium coated part and the non-aluminium coated interior parts. Therefore, we advise to pre-print an entirely white base to minimize colour deviations with specifications F, G, H.

4.3 Label Film Dimensions

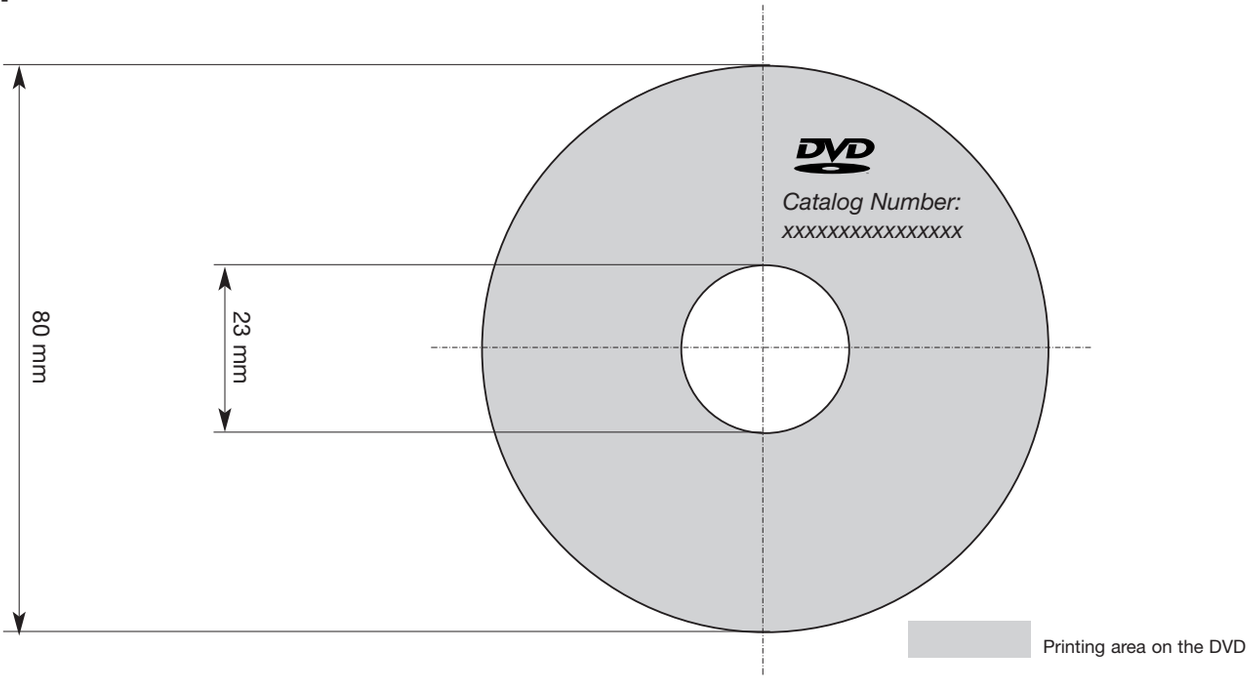
Please ensure that your label films comply with the required specifications F to H. Any necessary label film corrections are charged according to our price list.

4. Label Printing

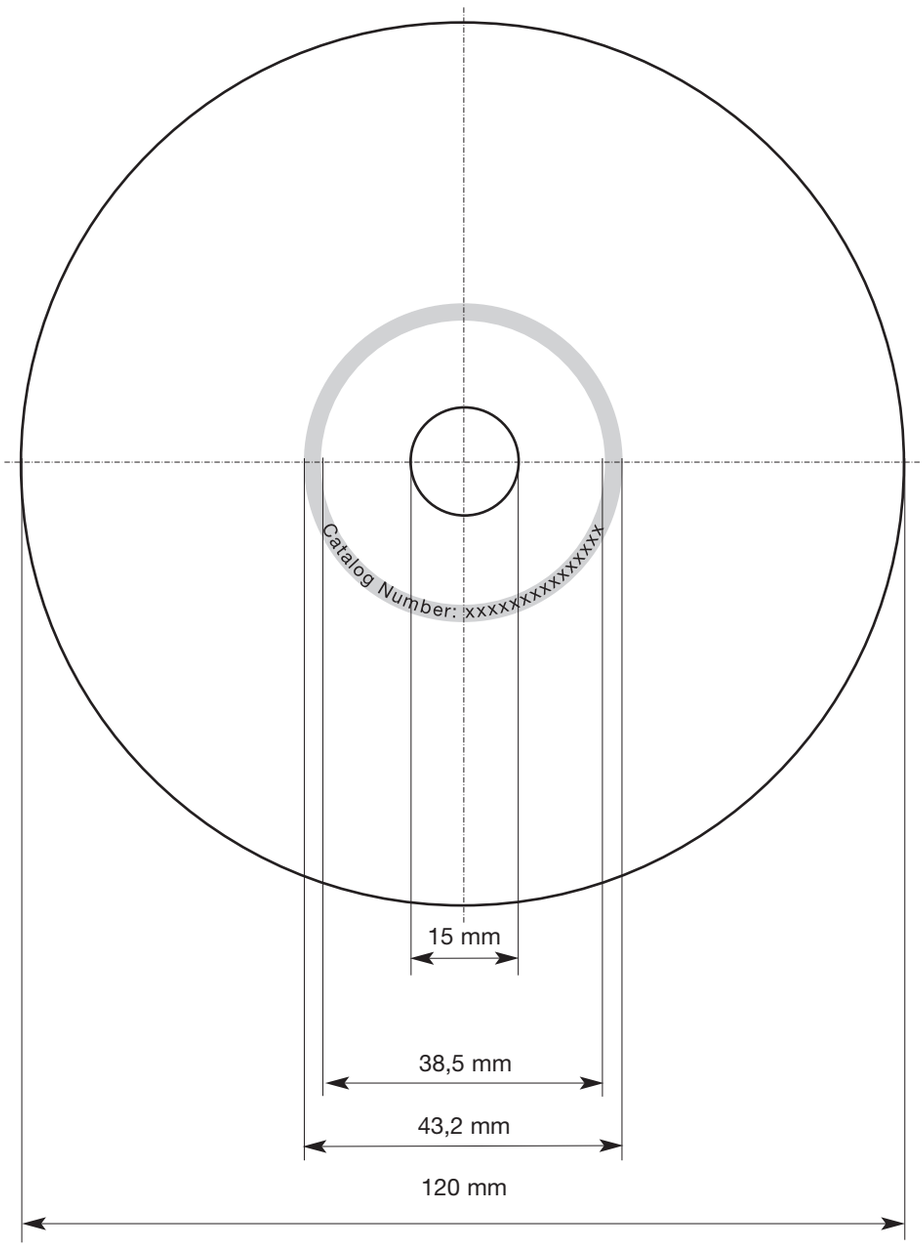
Specification F - Label Print ø 12 cm DVD 5 / DVD 9



MiniDVD
Specification F - Label Print ø 8cm



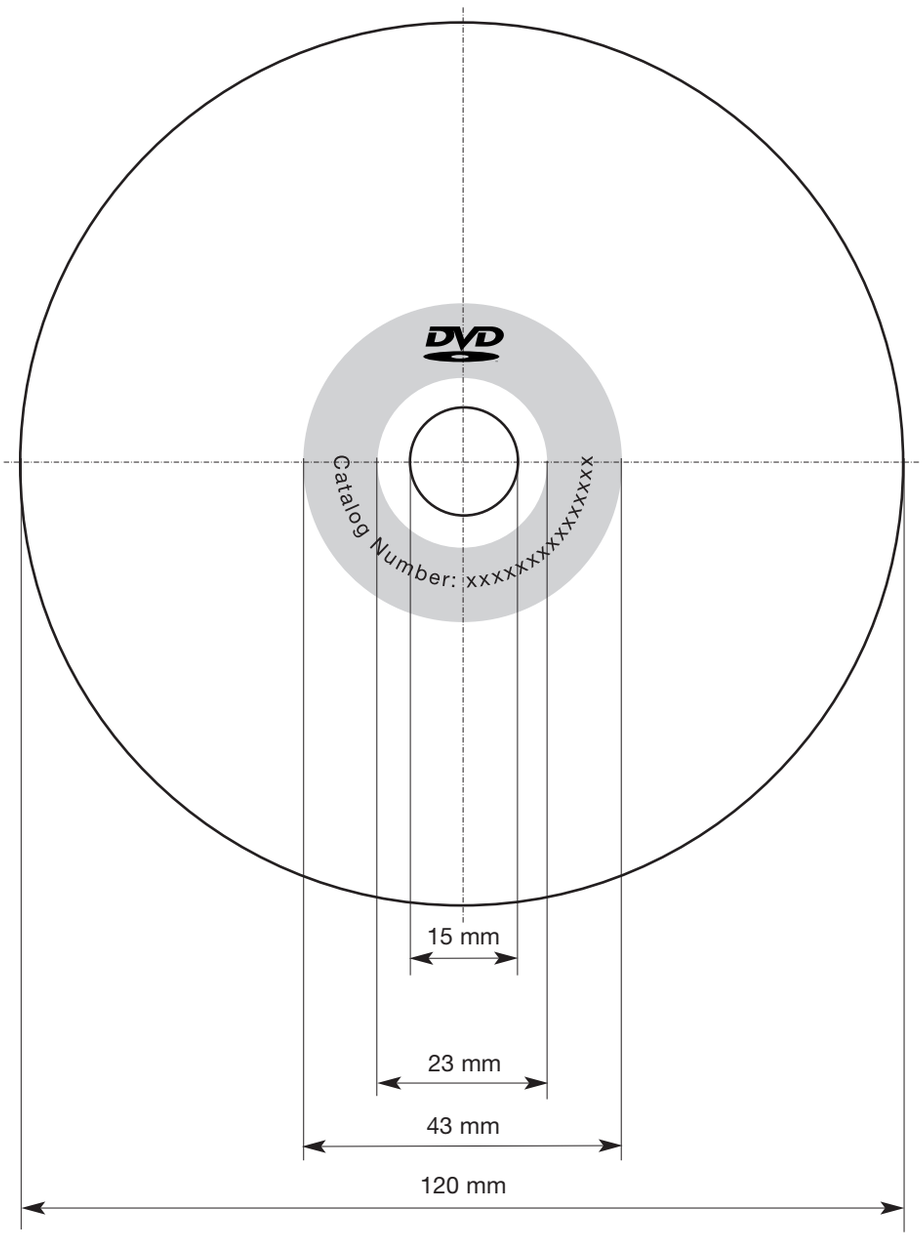
Specification G - Label Print DVD 10 Side A and B



Printing area on the DVD

4. Label Printing

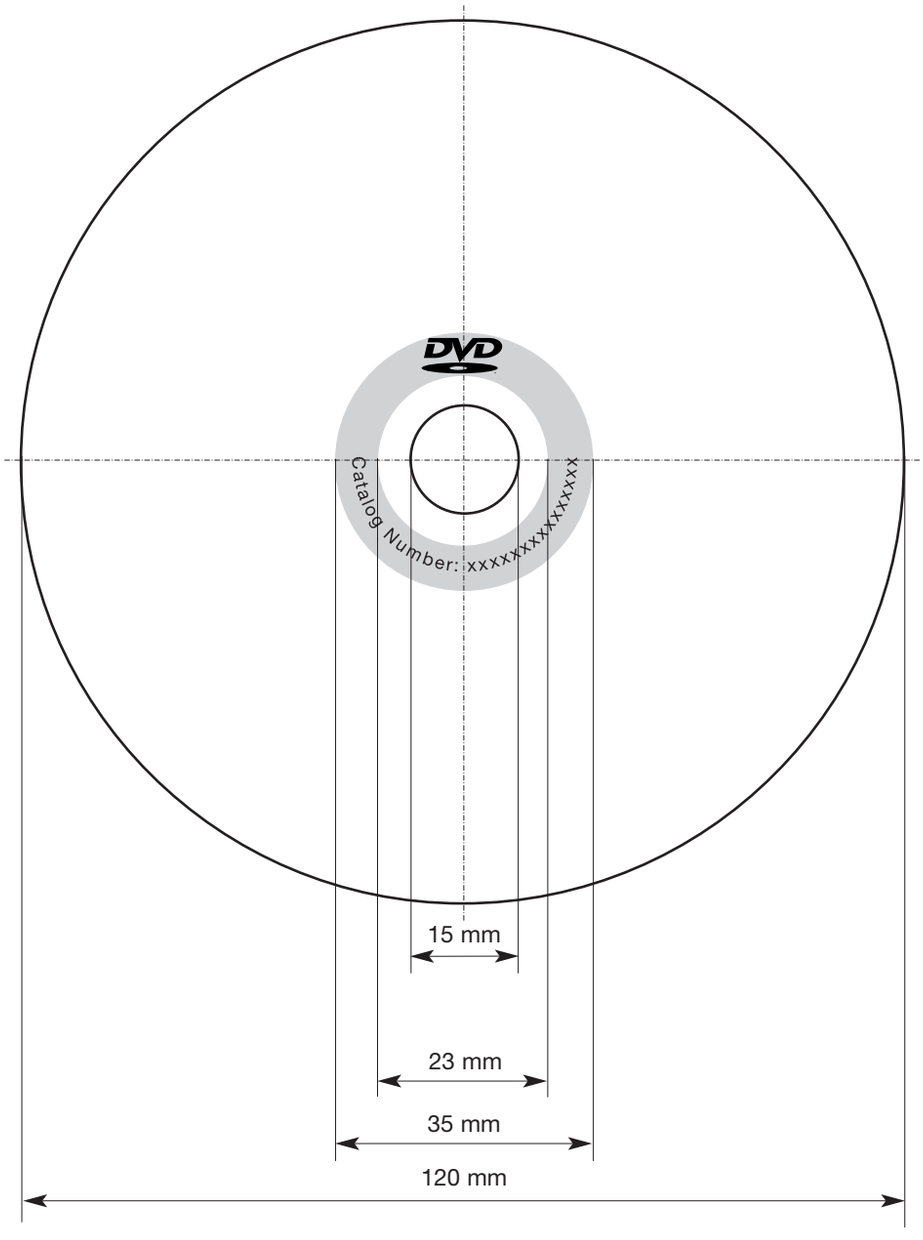
Specification H - Label Print DVD 10 Label Side A



Alternatively, Sony DADC offers an extended printing area for DVD 10. Please note, that Label Side A and Label Side B of specification H hold different printing areas. This is required, in order to be able to machine-read the bar code of the product.

Printing area on the DVD

Specification H - Label Print DVD 10 Label Side B



Printing area on the DVD

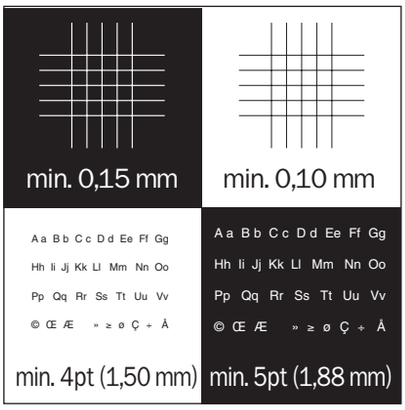
4.4 Film Specifications for Label Print

Unless otherwise indicated in one of the special printing processes below, we require smooth, full-page screen printing films (positive, right side reading, emulsion up).

4.4.1 Line Widths and Letter Sizes

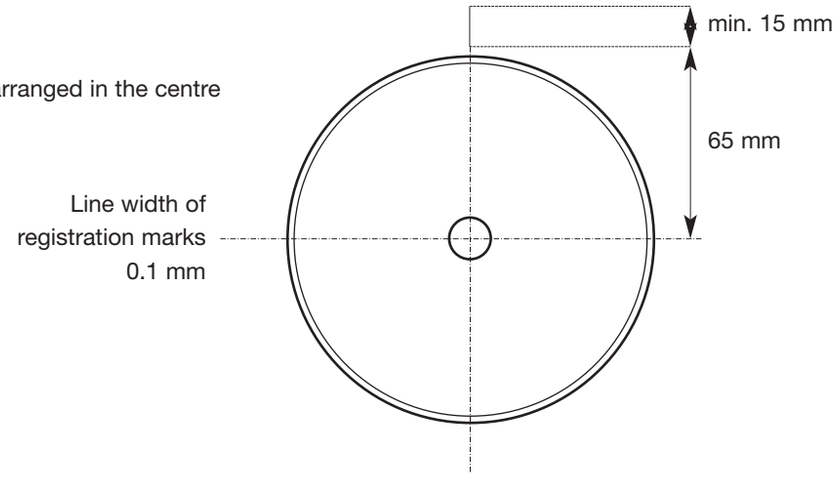
- The line width has to be at least 0.10 mm in positive print.
- The line width has to be at least 0.15 mm in negative print.
- The letter size has to be at least 4 pt. (1.50mm) in positive print.
- The letter size has to be at least 5 pt. (1.88mm) in negative print.

Please note that with serif type fonts (e.g. Times) and with type faces such as ”light”, with letter sizes of 4 and/or 5 pt., the minimum line width of 0.10 and 0.15 mm is not achieved and, thus, an adequately larger letter size has to be selected.

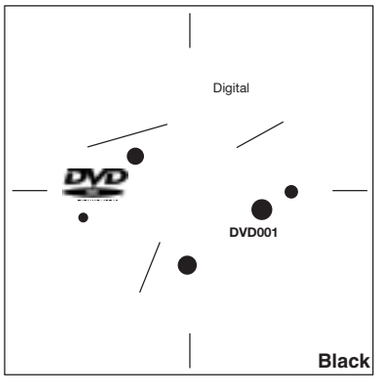


4.4.2 Registration Marks for Screen Printing

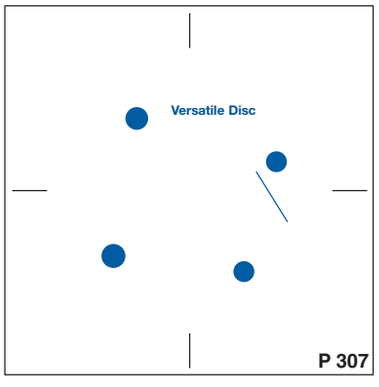
The registration marks have to be arranged in the centre of the label film.



Film 1



Film 2



Printing pattern

4.4.3 Density

To be able to process your label films optimally, the minimum film density has to be 3.0 in full tone.

4.4.4 Print

Sony DADC requires smooth, full-page screen printing films (positive, right side reading, emulsion up) prepared as follows:

4.4.4.1 Duplex/Triplex Print (Half-Tone Print) With Pantone Colours

- Line width 34 l/cm
- Angle code 45°
- Max. density 15–85%
- Elliptic dot shape

For duplex and triplex prints, please use the following angle codes: 0°, 15°, 45° or 75°. With other angle codes a 'moiré-free print' is not provided.

4.4.4.2 Four-Colour Print – Picture Disc

- Line width 54 l/cm
- Angle codes:
  cyan 75°
  magenta 45°
  yellow 0°
  black 15°
  or angle codes similar to the Hell and Crossfield system.
- Density 15–85%
- Elliptic dot shape

In order to achieve favourable printing results, we need a compulsory colour copy, such as Cromalin, Matchprint, Pressmatch or test print.

Please take into account, that there may be colour deviations from the original copies due to the different consistency of the base.

4.4.4.3 Four-Colour Print – High Definition Picture Disc

- Line width 80 l/cm
- Angle codes:
  cyan 75°
  magenta 45°
  yellow 0°
  black 15°
  or angle codes similar to the Hell and Crossfield system.
- Registration marks to be centered only as shown in diagram page 18/chapter 4.5.

In order to achieve favourable printing results, we need a compulsory colour copy such as Cromalin, Matchprint, Pressmatch or test print.

However, for all colour prints, please bear in mind that the base of the DVD consists of polycarbonate with a reflective aluminium coating and, therefore. there may be colour differences compared to the printwork (paper/carton). If you need absolute conformity of colours of printed matter (printwork) and the DVD label print, we advise you to pre-print a full white base on the DVD.

For Picture and/or High Definition Picture Disc printing, Sony DADC can prepare four-colour separation/litho production of the label films for you.

4.5 Standard Contents

4.5.1 Catalogue Number

A catalogue number has to be printed on the DVD.

4.5.2 DVD Logo

Generally speaking, it is recommended to put the DVD logo onto the DVD. However, if the DVD logo is placed on the DVD, the disc must comply to the DVD-specifications. In accordance to the specifications, the DVD logo should be seen clearly on the disc. Therefore, it has to be shown in the highest possible contrast, i.e. the contrast between the logo and the background colour must not be less than 50%.

4.5.3 ”Made in EU”

A designation of origin is not necessary on the DVD. However, if such designation is requested, it has to be ”Made in EU”.

4.5.4. Side Indication

For DVD 10, Sony DADC recommends indicating the front and the back side of the DVD with ”Side A” and ”Side B”. This simplifies the handling of the DVD for consumers.

4.5.5 Company Address, Label Address

To protect your product against piracy and to clearly state the copyright holder, we ask you to indicate the company name and address on the label film or on the printwork.

Contrast between DVD logo and background not admissible

Contrast between DVD logo and background admissible

The generic DVD logo in accordance to the DVD specification

DVD-ROM logo

DVD-Video logo

Deviations from the standardised DVD logo are not permitted. The DVD logo must not be distorted, squeezed, decomposed, framed, or composed of parts with different colours.

4.6 Colours

Sony DADC uses the Pantone Matching System (PMS).

Please mark each label film with the Pantone colour number requested by you. Please select your colour from the Pantone Colour Selector 1000, except for double impression (2x) colours.

When using Pantone colours 801 to 814, pre-printing should be carried out with white colour, in order to achieve the luminescent effect similar to the Pantone Colour Selector 1000.

When producing your films, please note that a base of polycarbonate with a reflective aluminium coating is printed and, therefore, colour deviations may occur.

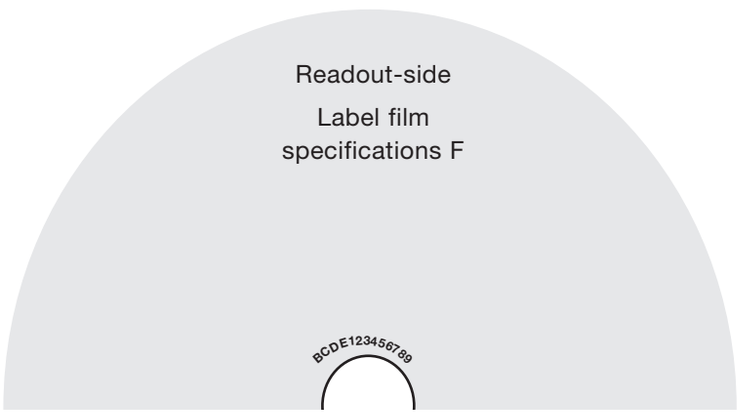
To provide (as much as possible) a compliance of the printwork colours (e.g. of booklets) with the DVD label printing, we advise to pre-printing a full white base on the DVD.

4.10 Disc Serialisation

Sony DADC Austria offers the possibility of applying an individual code number to every disc of the DVD-ROM production, e.g. for identification purposes. Your preselected code number is printed on to the disc during the ink-jet process.

The code number is printed in arc form, approximately 5 mm from the centre hole of the disc.
The number will be printed on the read-out side and can only be seen from the read-out side.
(see drawing below)
Please note, that this service may result in slightly longer turn around time for your DVD-ROM order.

Example



Serialisation Specification:

- Print image: 6 x 9 dot matrix, 3 mm high, 5 characters per 10 mm.
- The series or code number may consist of a maximum of 28 characters using numbers, letters, and symbols. Of the maximum 28 characters, 9 characters can be changed automatically (e.g. increasing order of numbers).
- Admissible characters of the series or code number are: letters ”a-z”, ”A-Z”, numbers ”0-9”, and symbols (selected characters of the ISO 8859-1 set of characters). In case you need to use symbols, please get in touch with our Customer Service.
- It is not possible to underline characters.
- A series or code number that changes, can only be printed once on the same disc.
- Due to limitation of space on the disc surface, the series or code number can be applied in one line only.
- The selected numbers of a series or code number can be increased or reduced by any consistant value. Other characters, such as letters or symbols, remain unchanged.
- A maximum of 9 characters can be increased or reduced.

  Example:
  BCDE123456789
  ABC-123456789gh0m
  123456789abcdef
  00000-123456789-0000000
  The numbers 123456789 are the characters that can be changed.
- Please do not use ”bold” or ”italic” characters.

Special requests (e.g. printing random numbers, which can be supplied on a DOS compatible 3.5” floppy disc) should be addressed directly to our Customer Service department.

5. Packaging Services

As part of our full service philosophy, we can provide you with printwork and any special packaging request. Due to high annual volumes we order with our qualified printwork suppliers, Sony DADC can offer competitive prices. If you wish to utilize this service, we request that your graphic studio provides components according to chapter 5.2., with chapter 5.3. being valid for the printwork carried out by us.

5.1 Printing Process

Generally, the printwork is manufactured by qualified printers in four-colour offset print, and the use of additional special colours and varnishing is possible.

5.2 Physical Films

Film specification
We need full-page film positives, wrong-side reading, emulsion up for the offset print of packagings. Optimum screen width for these printwork films: 70 l/cm (180 lpi).

All printwork must have a catalogue number.

Page numbers on all films.

Please do not indicate origin details except ”Made in EU”. Other data with regard to origin are not admissible and will be removed.

Please mark each film with the correct colour specification (e.g. black, P100C, etc).

Please arrange films in such a way, that the booklet is closed on the left. With special products, such as leporello, posters, etc., please enclose a confirmed folding sample.

Films must have a bleed of 3 mm. The cutting marks have to be positioned outside of the bleed.

To avoid mismatches, please supply a compulsory print target (like Cromalin, Matchprint, or similar) with the films. However, please note that there may still be slight colour differences between your proof and the produced printwork.

The films should not be damaged and must be packed in a roll container or carton to prevent folding.

If you request a colour match between printwork and DVD label print, spot colours have to be specified in the same colour system (Pantone is preferred).

To protect your product against piracy and to clearly identify the copyright holder, we ask you to indicate the name and address of the music company on the label and on the printworks films.

When producing your films, please note that a base of polycarbonate with reflective aluminium coating is printed and, therefore, colour differences between the printwork and the DVDs may occur.

To provide (as much as possible) a compliance of the printwork colours (e.g. booklet) with the DVD label print, we recommend pre-printing a full white base on the DVD.

Non-compliance with the specifications and any additional expenses caused, will be charged separately.

For artwork specifications, please refer to our manuals. You can download templates from the Sony DADC homepage or request a DTP-Service disc from our Customer Service department.

5.3 Digital Films

5.3.1 Data Sources

Sony DADC can handle the following sources for graphic data input:

- 3.5" Floppy Disc
- SyQuest Cartridge; 44, 88, 200 MB
- MO 3,5" – Magneto Optical Disc (up to 1.3 GB)
- ZIP – 100, 250 MB
- JAZ – 1 GB
- CD-R, CD-RW, DVD-R
- ISDN for large volume data transfer (more than 20 MB) with use of 4-Sight ISDN
- Manager, Leonardo Pro or EasyTransfer v3.2 software
- Internet FTP Transfer – ftp.sonydadc.com (username, password required – will be given to you on request)

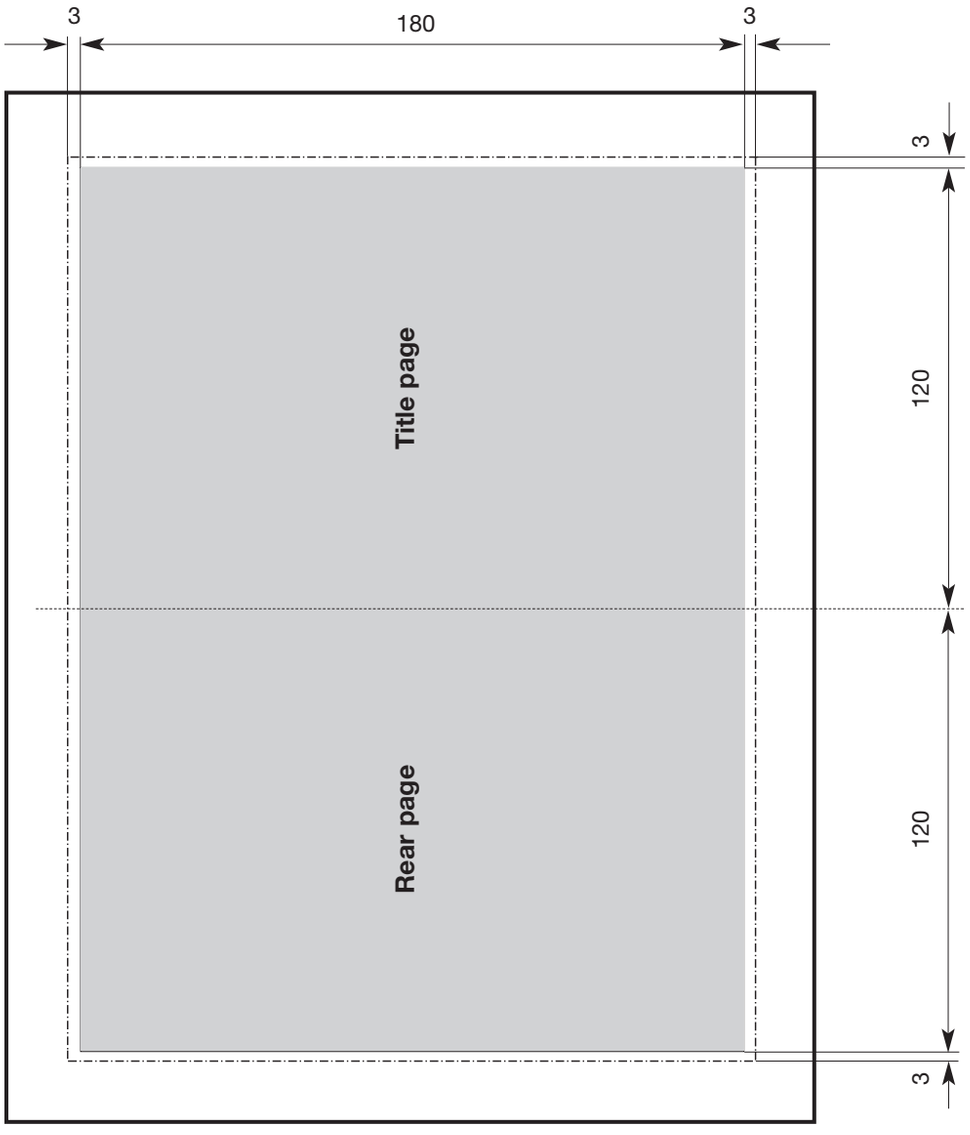
Sony DADC will be happy to assist you in all kinds of data transfer. Please contact our Customer Service.

Please transmit all files in one folder with a distinct name (e.g. catalogue number), including an ”info.txt” file. This file must contain the following information:

- Contact address
- Customer Service contact at Sony DADC
- Catalogue number
- Product, format
- Type of artwork, number of pages, colours
- Requested packaging

5.5 Film Specifications

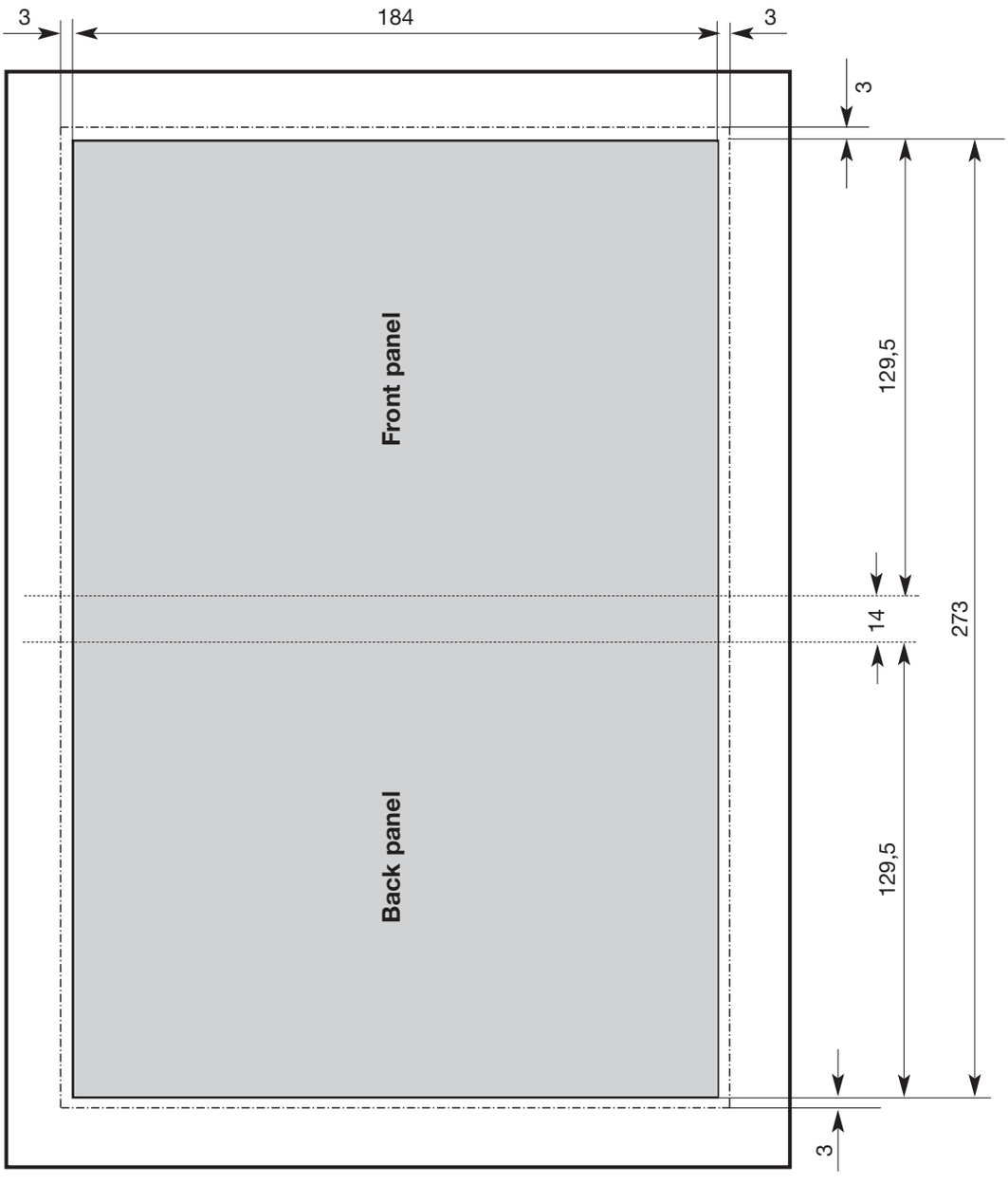
Booklet for AMARAY STYLE BOX



Explanation: All dimensions in mm

- Area to be printed
- Final dimension
- Bleed
- Minimum of blank film dimension (at least 20 mm distance to final dimension)

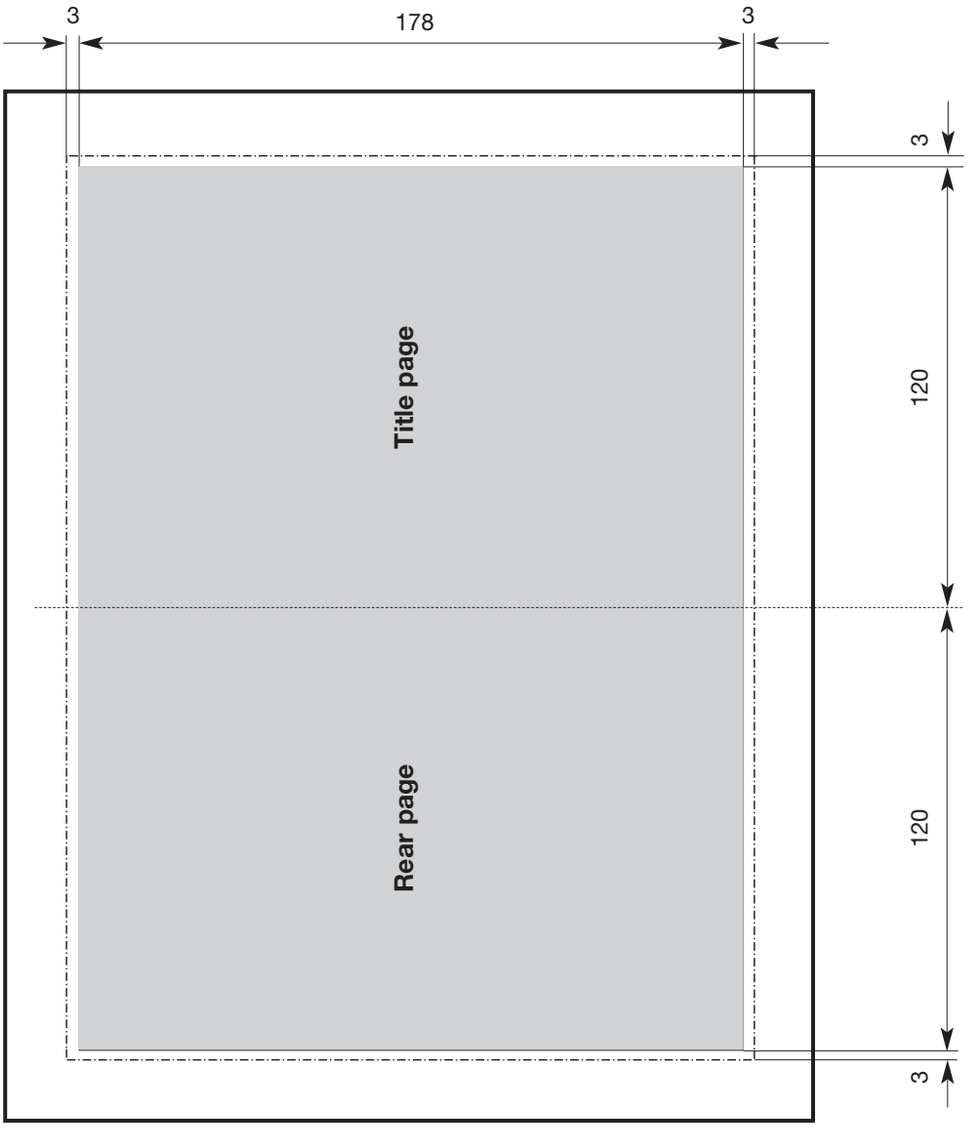
Film Specifications: Inlay Sheet for AMARAY STYLE BOX



Explanation: All dimensions in mm

- Area to be printed
- Final dimension
- Bleed
- Minimum of blank film dimension (at least 20 mm distance to final dimension)

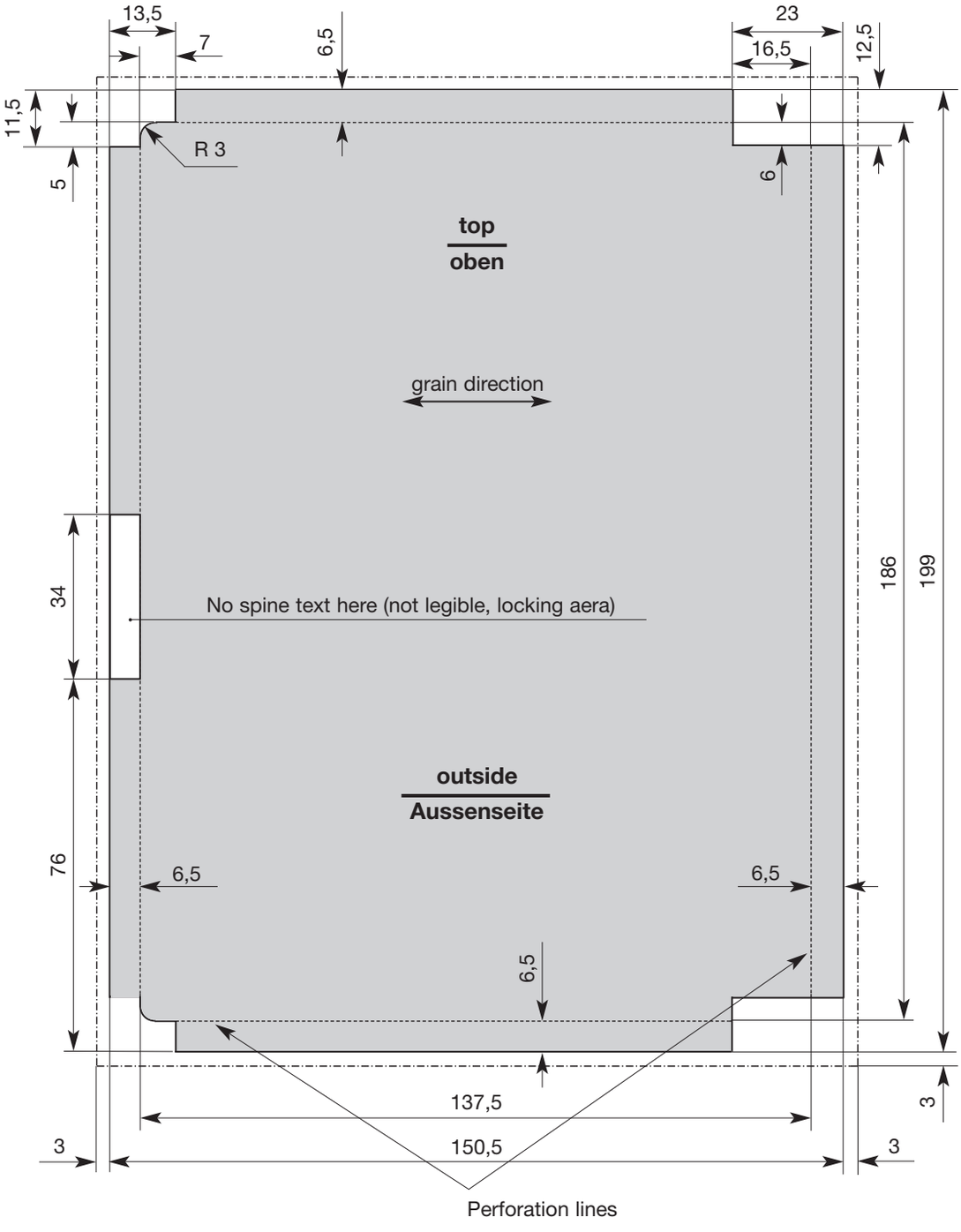
Film Specifications: Booklet for SUPER JEWEL BOX



Explanation: All dimensions in mm

- Area to be printed
- Final dimension
- Bleed
- Minimum of blank film dimension (at least 20 mm distance to final dimension)

Film Specifications: Inlay Card for SUPER JEWEL BOX



Explanation: All dimensions in mm

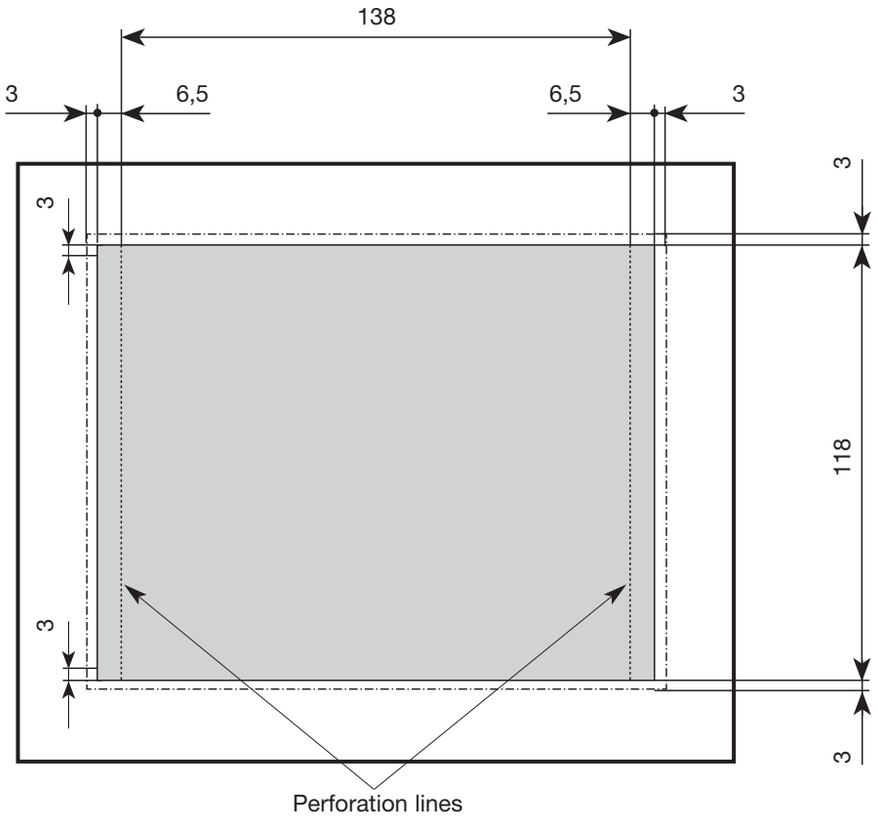
Area to be printed

Final dimension

Bleed

Minimum of blank film dimension (at least 20 mm distance to final dimension)

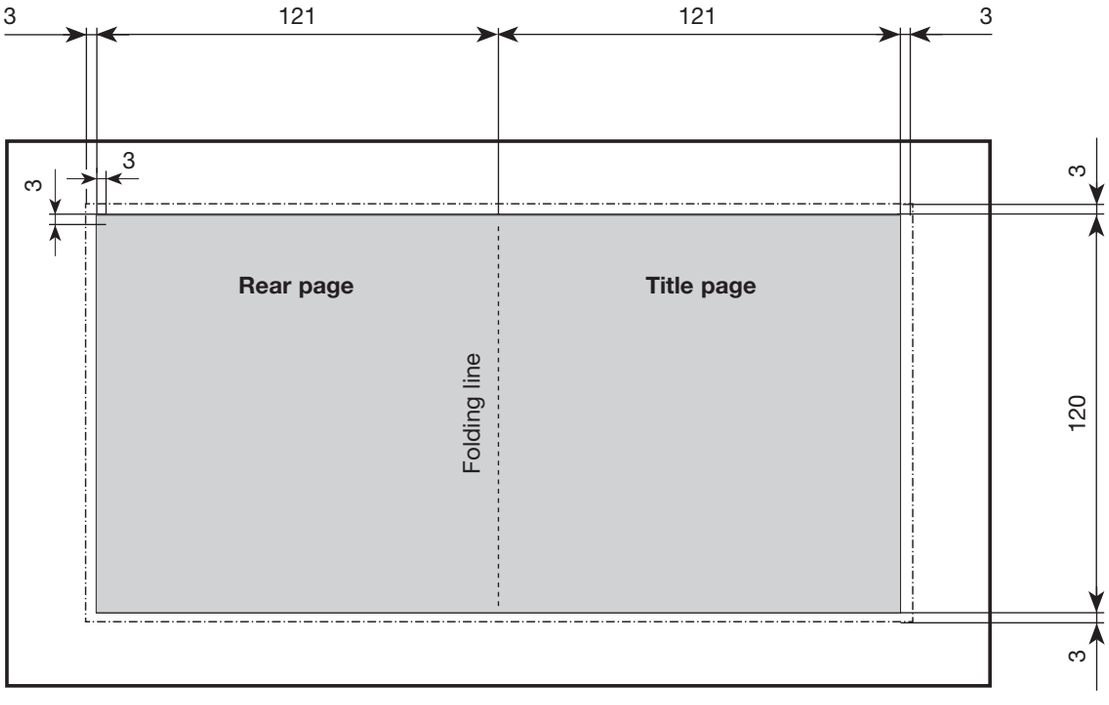
Film Specifications: **Inlay Card for JEWEL CASE**
(also back-liner, inlay card with perforations on the back)



Explanation: All dimensions in mm

- Area to be printed
- Final dimension
- Bleed
- Minimum of blank film dimension (at least 20 mm distance to final dimension)

Film Specifications: Booklet for JEWEL CASE

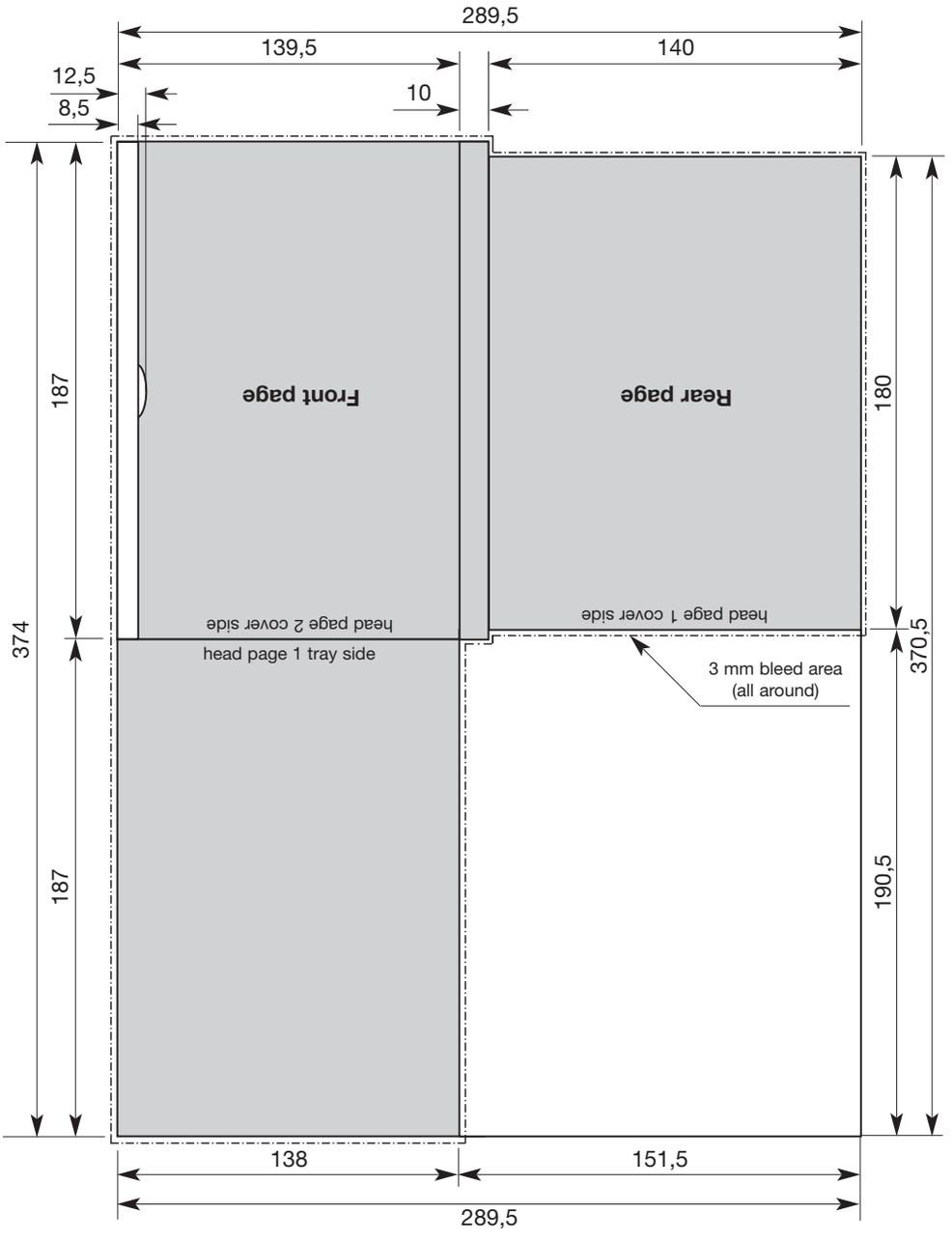


Explanation: All dimensions in mm

- Area to be printed
- Final dimension
- Bleed
- Minimum of blank film dimension (at least 20 mm distance to final dimension)

5. Packaging Services

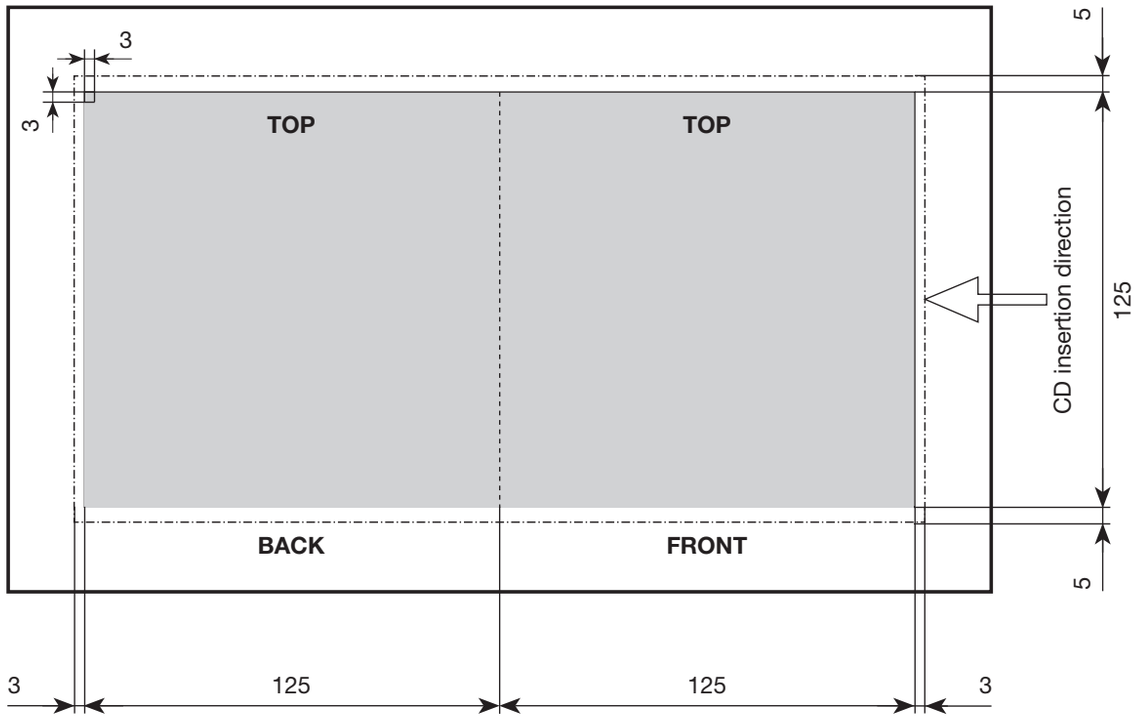
Film Specifications: ECOPAK



Explanation: All dimensions in mm

- Area to be printed
- Final dimension
- Bleed
- Minimum of blank film dimension (at least 20 mm distance to final dimension)

Film Specifications: 12 cm CD CARTON SLEEVE



Explanation: All dimensions in mm

Area to be printed

Final dimension

Bleed

Minimum of blank film dimension (at least 20 mm distance to final dimension)

5.6 Packaging Specifications

Booklet for AMARAY STYLE BOX

Automatic Assembly

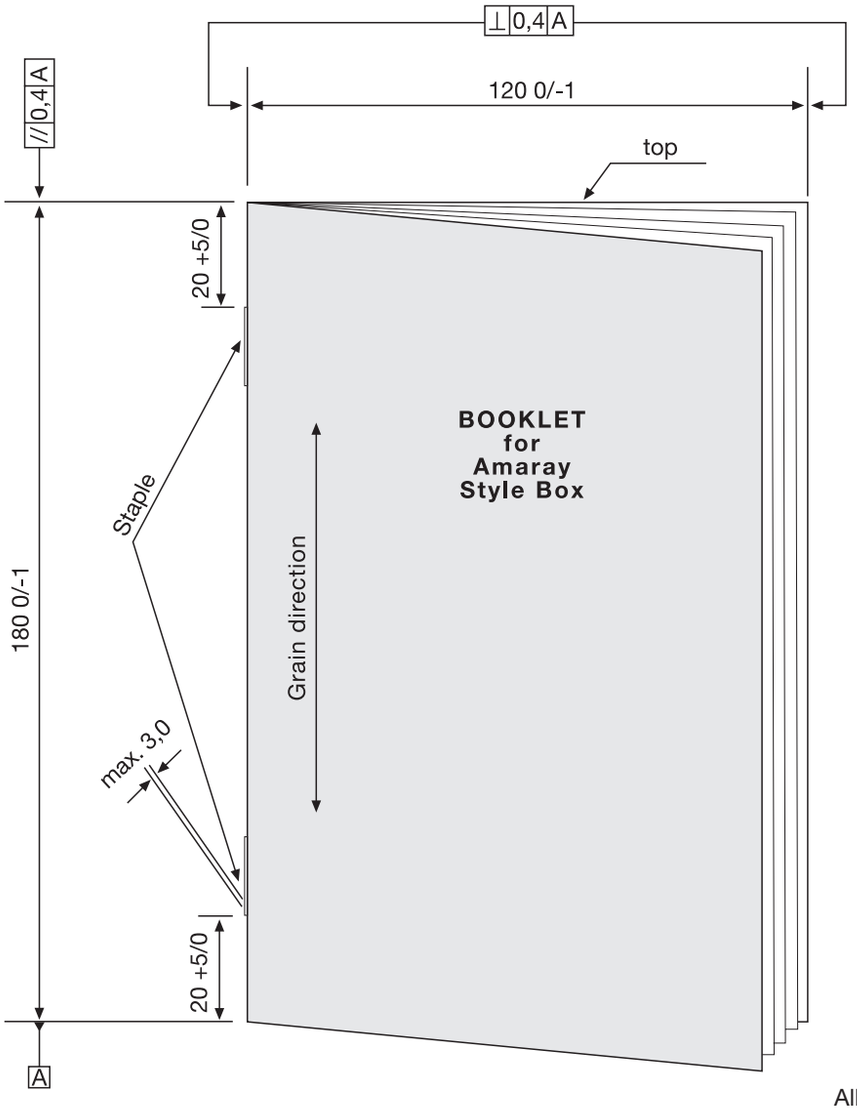
Note: only Booklets which are closed on the LEFT side (see drawing), can be assembled automatically.

Max. Thickness of all Booklets: 3 mm – 55 pages for stitched Booklets

– 68 pages for perfect bound Booklets

For **Manual Assembly** max. a 88 page perfect bound booklet is possible to set in a DVD single Box.

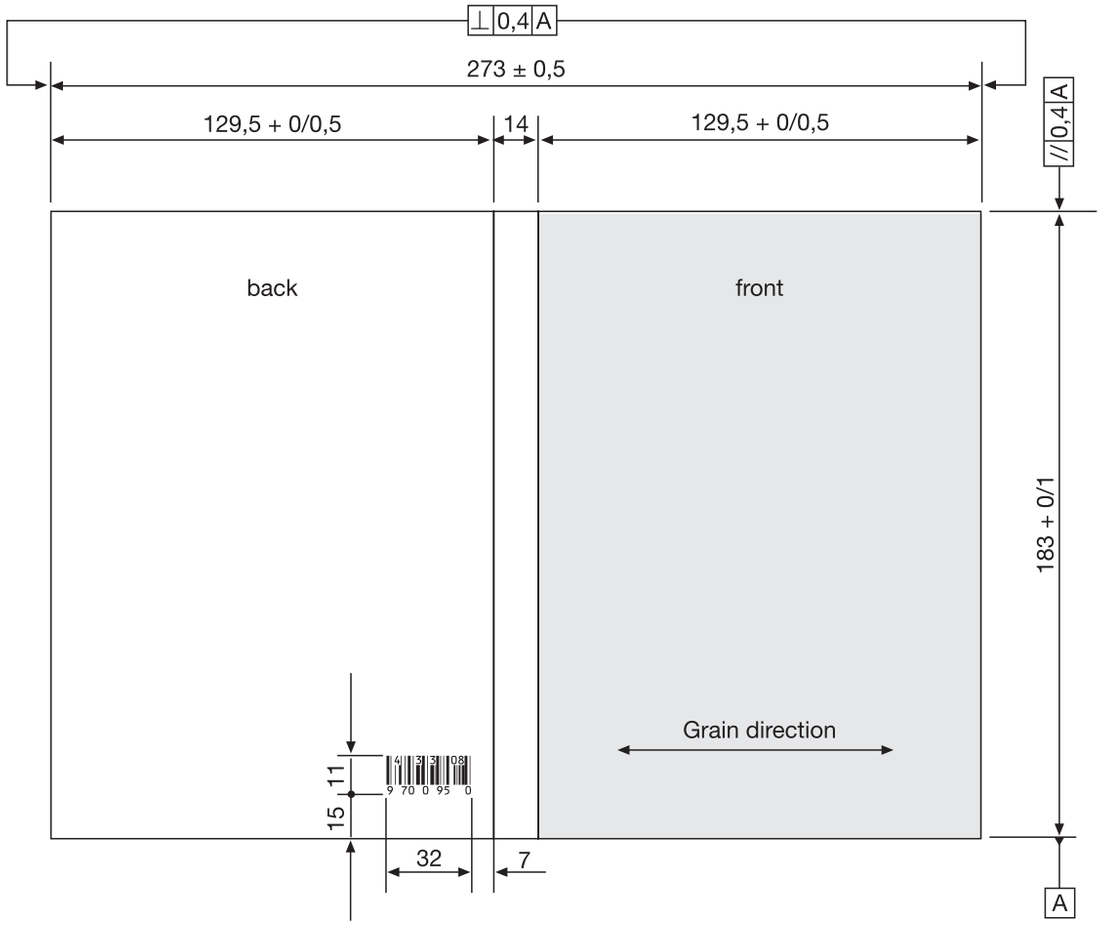
Max. Thickness of all Booklets for 2 CD-Box: 2,5 mm (36 Pages)



All dimensions in mm

Paper:	• chlorine-free
	• wood-free
	• glossy double-coated on both sides
	• white art paper
Cover page:	• min 150 g/m² – 170 g/m²
Condition at time of supply:	• upright in carton box (see fig. page 53)

Packaging Specifications: Inlay Sheet for AMARAY STYLE BOX



All dimensions in mm

Paper:
- chlorine-free
- wood-free
- glossy double-coated on both sides
- white art paper

Paper weight:
- 170 g/m²

Condition at time of supply:
- flat in carton box (see fig. page 53)

Note: With inlay cards printed on both sides, the externally visible side has to be defined (please mark on the fims outside of the area to printed).

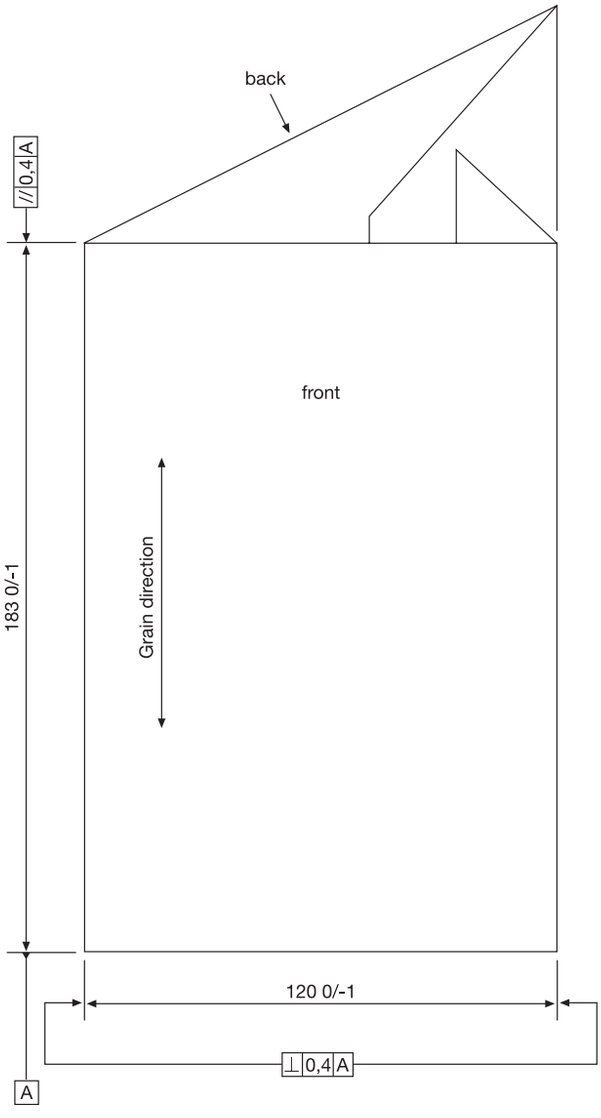
5.6 Packaging Specifications

FOLDED BOOKLET for AMARAY STYLE BOX

Automatic Assembly

Note: only Booklets which are closed on the LEFT side (see drawing), can be assembled automatically.

prefered: ALTAR Fold

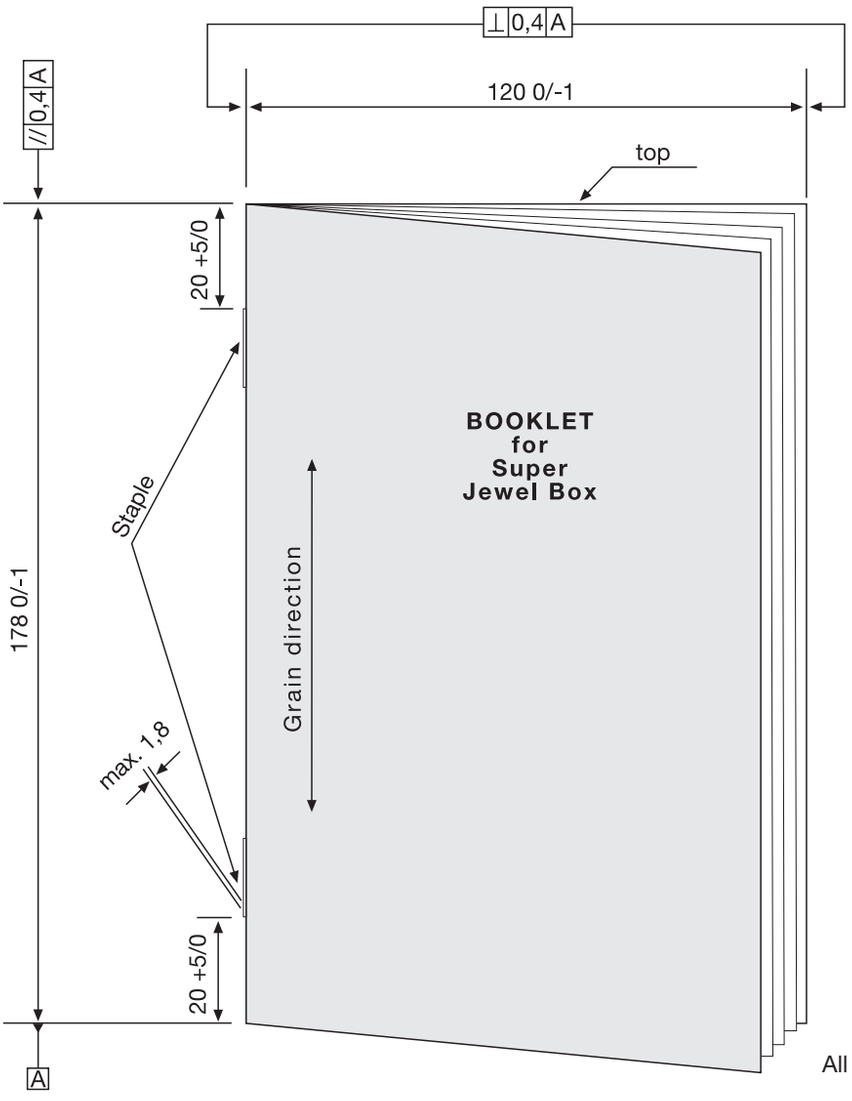


All dimensions in mm

Paper:	• chlorine-free
	• wood-free
	• glossy double-coated on both sides
	• white art paper
Cover page:	• min 150 g/m² – 170 g/m²
Condition at time of supply:	• upright in carton box (see fig. page 53)

5.6 Packaging Specifications

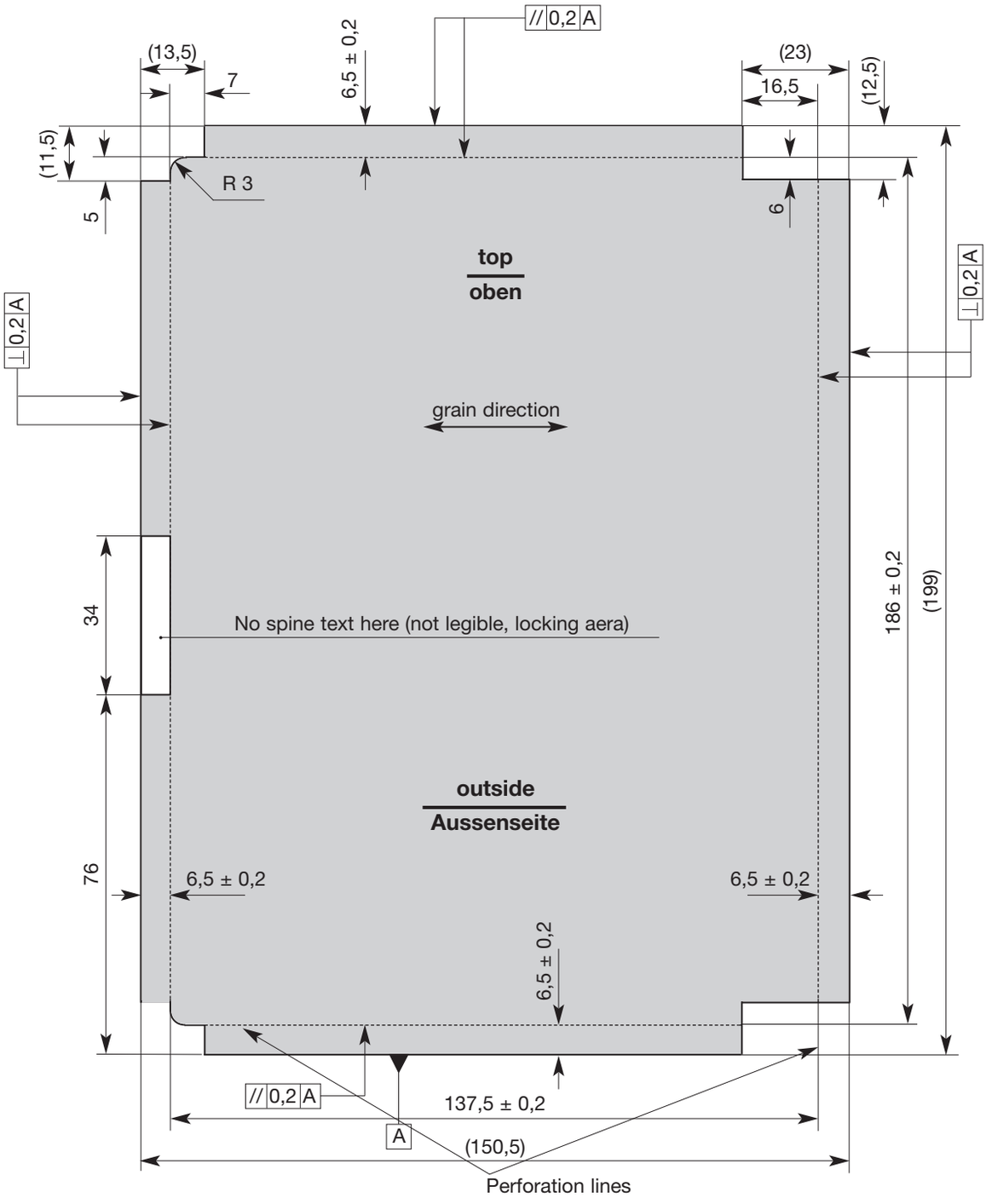
Booklet for SUPER JEWEL BOX



All dimensions in mm

Paper:	• chlorine-free
	• wood-free
	• glossy double-coated on both sides
	• white art paper
Cover page:	• min 150 g/m² – 170 g/m²
Condition at time of supply:	• upright in carton box (see fig. page 53)

Packaging Specifications: Inlay Card for SUPER JEWEL BOX

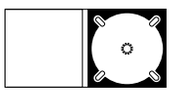


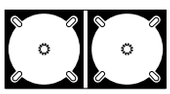
All dimensions in mm

Paper:	• chlorine-free
	• wood-free
	• glossy double-coated on both sides
	• white art paper
Paper weight:	• 170 g/m²
Condition at time of supply:	• flat in carton box (see fig. page 53)

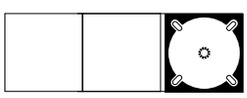
Note: With inlay cards printed on both sides, the externally visible side has to be defined (please mark on the fims outside of the area to printed).

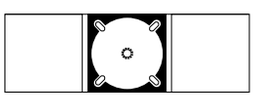
Digipak Index

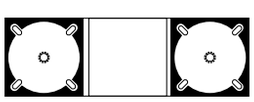

DAXXX2XX

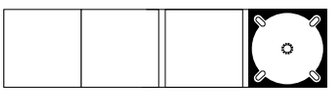

DAXXX12XX

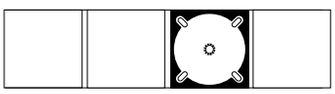

DBXXX3XX

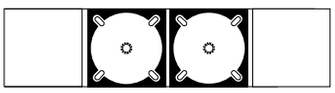

DBXXX3XA

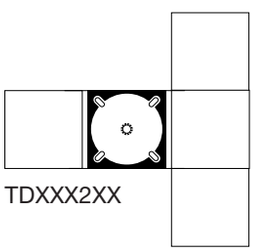

DBXXX2XX

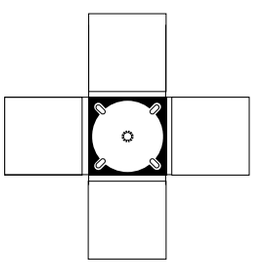

DBXXX13X


DCXXX4XX


DCXXX3XX


DCXXX23X

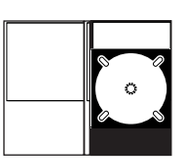

TDXXX2XX

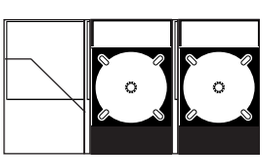

CDXXX2XX

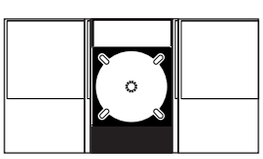
The Digipak, which consists of a compound of plastics and carton, requires hand packing.

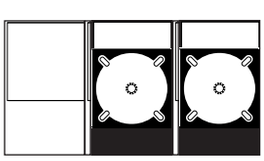
Note:
The DIGIPAK packaging format is patented.
If you have any questions, please ask your Customer Service contact, who will be pleased to provide information on the various special formats and their processing possibilities.

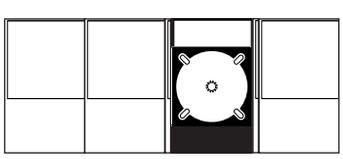
DVD Digipak Index

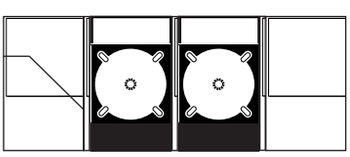

DVDAXXX2XX


DVDB1X123X


DVDBXXX2XX


DVDBXXX23X


DVDCXXX3XX

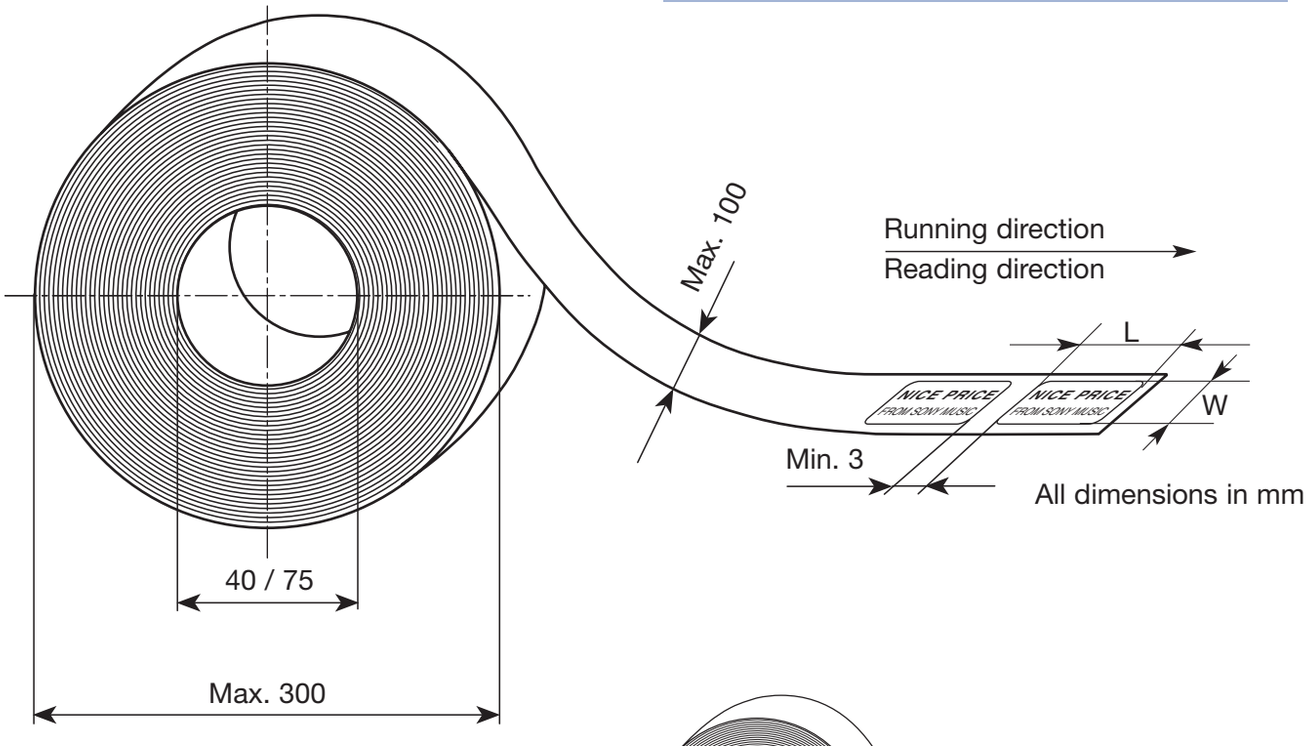

DVDC1X123X

Stickers

Stickers are processed as self-adhesive labels supplied on rolls.

- Possible core diameter: 40 or 75 mm
- Max. possible roll diameter: 300 mm
- Eliminate punching grid
  (do not leave on the roll).

- Distance between the stickers: At least 3 mm.
- Position stickers with letters or various print in unwinding direction, if application is to the upper side of the box.
- Punched paper base cannot be processed further.
- Repaired paperbase areas in the stickerroll are not allowed.
- Use the max. diameter of 300 mm in case of big amounts, and avoid splitting the sticker rolls.
- Stickers not complying with the standard cannot be processed by the machine and will increase costs considerably.
- Protect your stickers in a carton box during delivery.



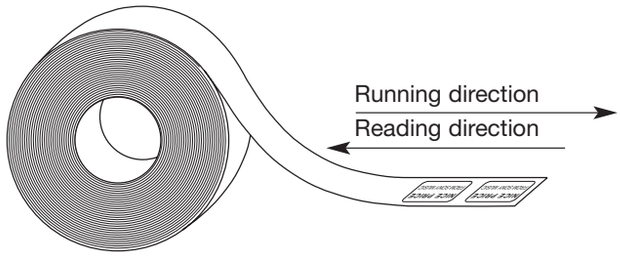
Positioning of the sticker

V = position of the sticker on the front side (V/. /.)

H = position of the sticker on the rear side (H/. /.)

Example: V/A/1
sticker on position A1/front side
H/B/2
sticker on position B2/rear side

Stickers can be processed automatically on the upper and lower side of the box. To indicate the desired position of the sticker on the box, please use the opposite diagram.



Arrangement of stickers on the roll for the lower side of the box.

Sticker sizes to be processed by machine:

min. L&W 15x10 or Ø 20 mm
max. L&W 110x90 or Ø 90 mm

5. Packaging Services

Sticker - Packaging - Description

Product	Sticker position on product				Winding Orientation
Jewel Case Brilliant Box 2 Piece Box, PS1		Front Side	wrap/no wrap		4
		Back Side	manual stickering		3
				closure	2*
Carton Sleeve	open - at the right	Front Side			1
			shrink		2
		Back Side			2
			shrink		1
	open - at the top				3
			shrink		4
				closure	1/4*
Amaray Style Box		Front Side	wrap/no wrap		3
		Back Side	manual stickering		4
Papersleeve with flap					3
				closure	2
Manual packing					1
Digipak-DVD		Front Side	shrink/ no shrink		3
		Back Side	shrink/ no shrink		4
Disc Box Slider					3
Super Jewel Box					1

*** The orientation of the sticker depends on the desired text orientation.**

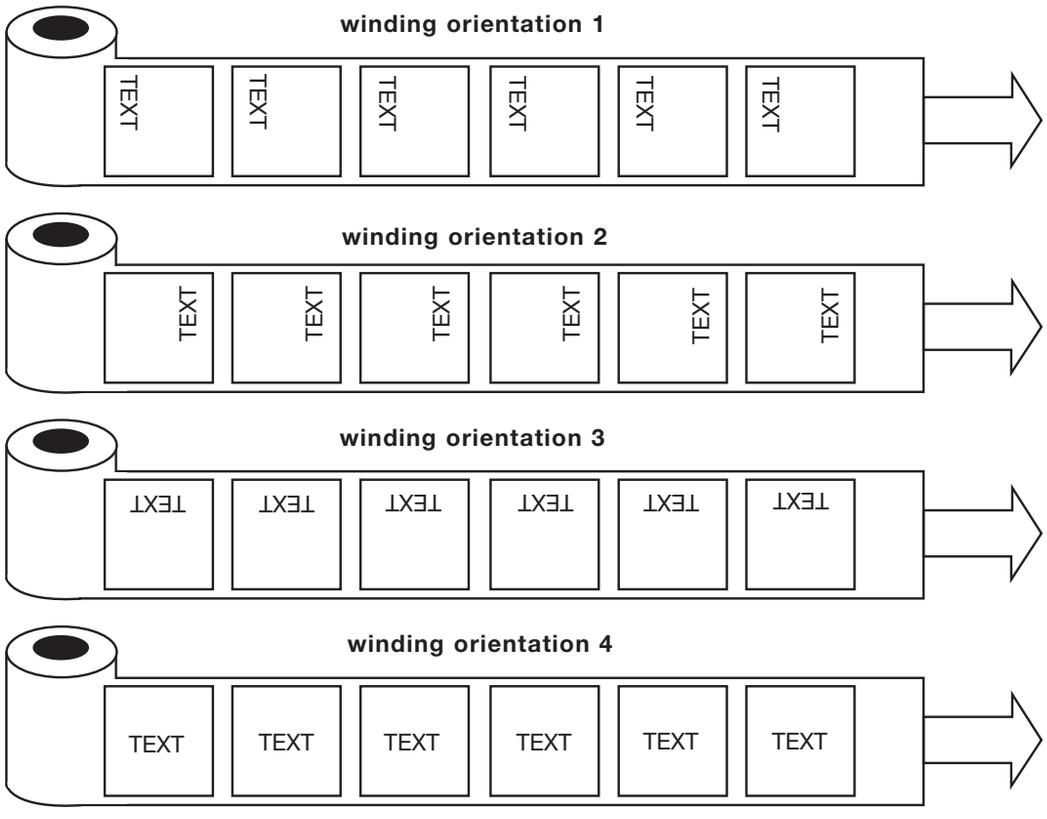
Sticker Position Jewel Case

	A	B	C	D
1	A1	B1	C1	D1
2	A2	B2	C2	D2
3	A3	B3	C3	D3
4	A4	B4	C4	D4

Sticker Position Amaray Style Boxes

	A	B	C	D
1	A1	B1	C1	D1
2	A2	B2	C2	D2
3	A3	B3	C3	D3
4	A4	B4	C4	D4
5	A5	B5	C5	D5
6	A6	B6	C6	D6

Winding Orientation



Generell Information:

Standard Sticker:

width: min. 10 mm, max. 90 mm
length: min. 15 mm max. 110 mm
round sticker: dmin. 20 mm dmax. 90 mm

Seal on Box:

width: min. 20 mm, max. 80 mm
length: min. 20 mm max. 40 mm

Seal on Sleeve:

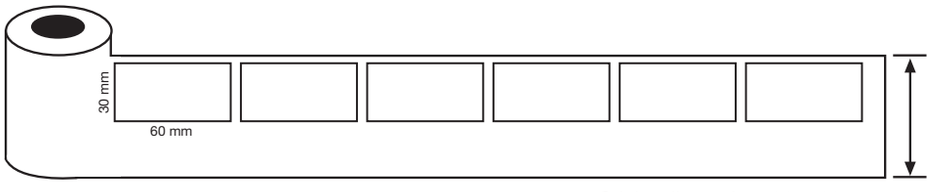
width: min. 15 mm, max. 80 mm
length: min. 15 mm max. 100 mm

Sticker on Shrink:

width: min. 20 mm, max. 80 mm
length: min. 20 mm max. 80 mm

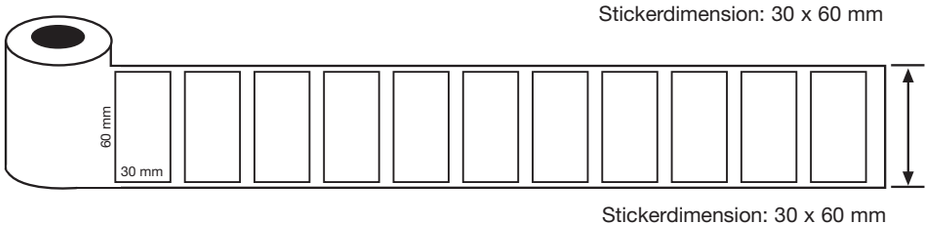
If you dimension your stickers, please provide the transversal length (=width) first and then the longitudinal length:

Example 1



Stickerdimension: 30 x 60 mm

Example 2



Stickerdimension: 30 x 60 mm