Digimarc for Packaging

Extension for Adobe Illustrator

DIGIMARC

DIGIMARC

Contents

Introducing Digimarc for Packaging

Digimarc for Packaging is an extension for Adobe® Illustrator® that enables production designers and premedia professionals to create connected packaging by adding a Digimarc digital watermark to packaging artwork.

Essential Concepts

Digimarc for Packaging enables you to apply a digital watermark to layers of artwork in an Illustrator file. Linked or embedded TIF, EPS, JPG, PSD, PNG, and vector artwork files are supported for watermarking without embedding or rasterizing the original artwork elements. See Image Type Limitations for specific file types that can't be watermarked.

When you watermark a layer, the digital watermark is applied to a duplicate of the original layer, leaving the original layer unchanged, enabling you to experiment with different watermarking techniques and parameters to achieve optimal readability with minimal visibility of digital watermarks. The duplicated layer is automatically rasterized to 300ppi and embedded into the document.

System Requirements

Digimarc for Packaging requires:

- Multicore Intel processor with 64-bit support or ARM-based Apple silicon processor
- macOS 12 (Monterey), macOS 13 (Ventura), or macOS 14 (Sonoma)
- Adobe Illustrator 2022 or newer
- 16 GB RAM
- 100 MB hard disk space available for installation
- Internet connection and a ⧉ My.Digimarc account

Document Conventions

Following are the standards and conventions used in this documentation. See the Glossary for terms related to digital watermarking.

Convention	Description
Numeric format	The fractional part of a numeric value is represented by the period character, such as pi =~ 3.14
Elements in the user interface	Formatting: Text in bold
Titles of panels and dialogs	Formatting: Text in italics
User input (text that a user types)	Formatting: Text in a monospace font
File and directory paths	Formatting: Text in a monospace font
Variables or variable data	Formatting: Text in italics, often within angle brackets (< >)

Install the Extension

Follow the Adobe Illustrator instructions for installing extensions. When you install Digimarc for Packaging v1.8.1, you must agree to the software license agreement. Click **Agree** to complete the installation.

Restart Adobe Illustrator after installing the extension.

Metadata Migration

After installing Digimarc for Packaging v1.8.1, all previously watermarked art files undergo a data migration when they're first opened.

- If an art file is associated with two or more watermarking jobs, you're prompted to choose from a list of jobs. Any DM layers are deleted from the art file, and all watermarked elements are reverted and must be re-watermarked.
- If an art file is associated with only one job, the Details are displayed and all watermarked layers remain intact.

Launch the Extension

To open Digimarc for Packaging, navigate to **Window > Digimarc > Digimarc for Packaging**.

Product Help

To see the product help within Illustrator, navigate to **Help > Digimarc > Digimarc for Packaging**.

Digimarc Support

For help using the Digimarc for Packaging, contact support.

- ↗ Digimarc Support Website
- Send email to Digimarc Support

Sign In to the Packaging Module

The first time you launch Digimarc for Packaging, you're prompted to sign in to the Packaging Module.

To sign in:

1. Enter an **Email** address and **Password** associated with the account that has access to the jobs to be added to the artwork.

2. Click **Continue**.

If you have problems signing in, contact your Packaging Module administrator for help.

After you sign in, your credentials are stored. The next time you open Adobe Illustrator and choose **Window** > **Digimarc** > **Digimarc for Packaging**, the extension automatically signs into the Packaging Module plugin using your stored credentials.
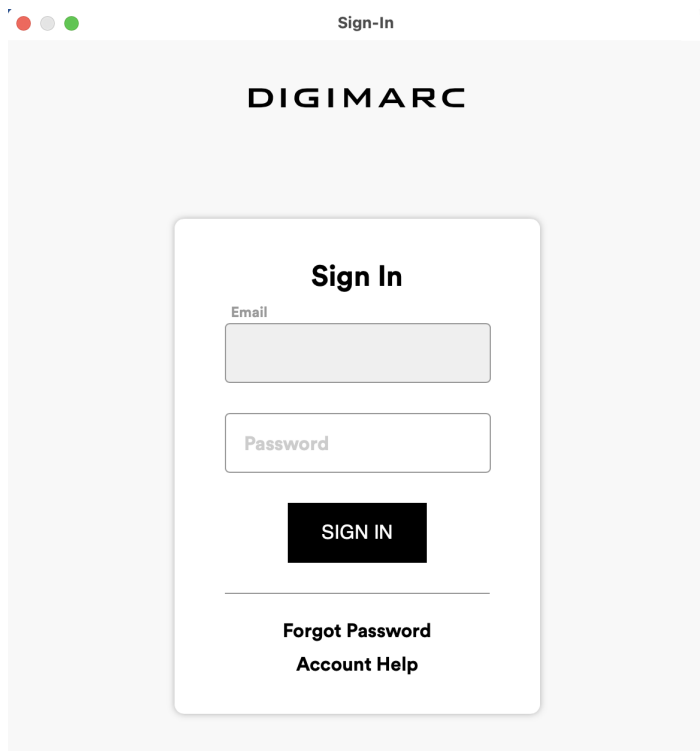
Automatic Updates

After you sign in, Digimarc for Packaging automatically looks for updates to the extension. There are two kinds of updates:

- **Optional**: If an optional update is available, you see a message across the bottom of the panel.
- **Required**: If a required update is available, you can't proceed until you've installed the update.

Click **Update Now** to install the new version.

Sign Out of the Packaging Module

After completing your work, you can sign out of the Packaging Module or stay signed in. If you sign out, your stored credentials are removed and you must sign in again to continue working with digital watermarks.

To sign out of the Packaging Module:

1. Click the Digimarc for Packaging panel menu (☰).

2. Select **Sign Out**. Your stored credentials are removed.

Search

The Search panel is displayed if you're working with an art file that doesn't already have a Digimarc digital watermark associated with it.

Use the Search function to find the watermarking job to use for the file. Keep in mind:

- You can search by Job Name, Job ID, or GTIN/UPC-E/GIAI.
- The search is case-*in*sensitive.
- Searches by GTIN, UPC-E, or GIAI must be 8–17 characters long and contain only numbers.
- For Job Name and Job ID searches, you can use alphanumeric characters in the search terms, including accented characters.
- Disallowed characters include < > ¬ ± × ÷ and emojis.
- Job Name search terms are limited to 300 characters (bytes).
- Job ID search terms are limited to 256 characters (bytes).
- Multi-byte characters, such as accented characters and those used in Chinese, Japanese, and Korean, could limit the length of the allowable search terms.
- If no jobs match the search term, a notice is displayed in the Search panel.
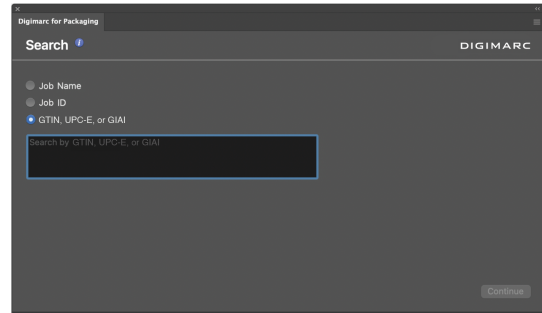
To search for a job:

1   Select whether to search by **Job Name**, **Job ID**, or the **GTIN, UPC-E, or GIAI** identifier.

- **Job Name** searches don't need to be exact, but the search text must be in the correct order. For example, if you want to use a job named ABC123DEF, a search for C123 returns the desired job, but a search for D123E doesn't. Only the Job Name field is searched; if you search for a Service Name that shares no common terms with the Job Name, no results are returned.

- To search by **Job ID**, provide the complete Job ID. This is an exact match search. For example, if the Job ID you want to use is 123ABC456, searching for 123ABC doesn't return the desired job.

> **Note**
> The Job ID isn't a required field in the Packaging Module and could be blank.

- Searches by **GTIN, UPC-E, or GIAI** don't need to match entirely, but the search text must be an exact substring. For example, if you want to use GTIN 00000123456789, a search for 00123456 returns the desired job, but a search for 00006789 doesn't.

2   Enter a valid search term as described in step 1.

3   Click **Continue**.

Search Results

If a Digimarc digital watermark is found, or if the artwork already has a digital watermark associated with it, the *Details* panel opens. If the digital watermark has multiple jobs associated with it, the *Search Results* panel opens. Jobs are listed in order by their creation date, with the most recently created job at the top.

1   Select a job from the table to see its details.

2   With the desired job selected, click **Continue**.
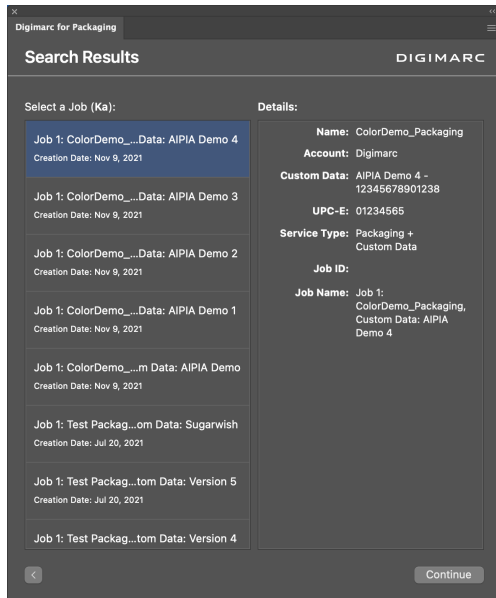
If you don't see the desired job, or if any of the details are incorrect:

1   Update the digital watermark information on ⬈ My.Digimarc**.**

2   Return to the extension and click the **Back** icon (◀) to search again.

> **Tip**
>
> If your search returns over 30 results, a message is displayed warning you that your desired job might not be in the returned list. Refine your search to narrow the results.

> **Note**
>
> In some OS or Adobe configurations, you might have to double-click a job to select it. To select it by single-clicking, first dock the Digimarc for Packaging panel to the Illustrator workspace, expand the panel, and make your selection.

Details

The **Watermark Resolution** is measured in watermarking elements ("waxel") per inch (WPI) and is set to 150 WPI (the default) or 75 WPI.

To change the resolution:

1   Click **Change Resolution.**

2   Select 75 or 150. The chosen resolution is preselected the next time you watermark a file.
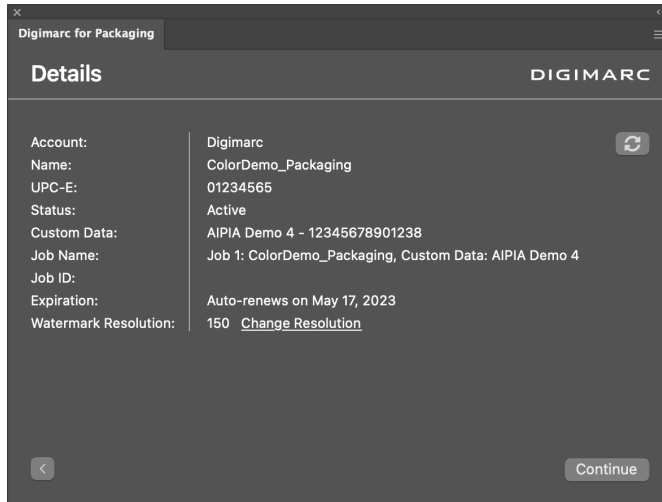
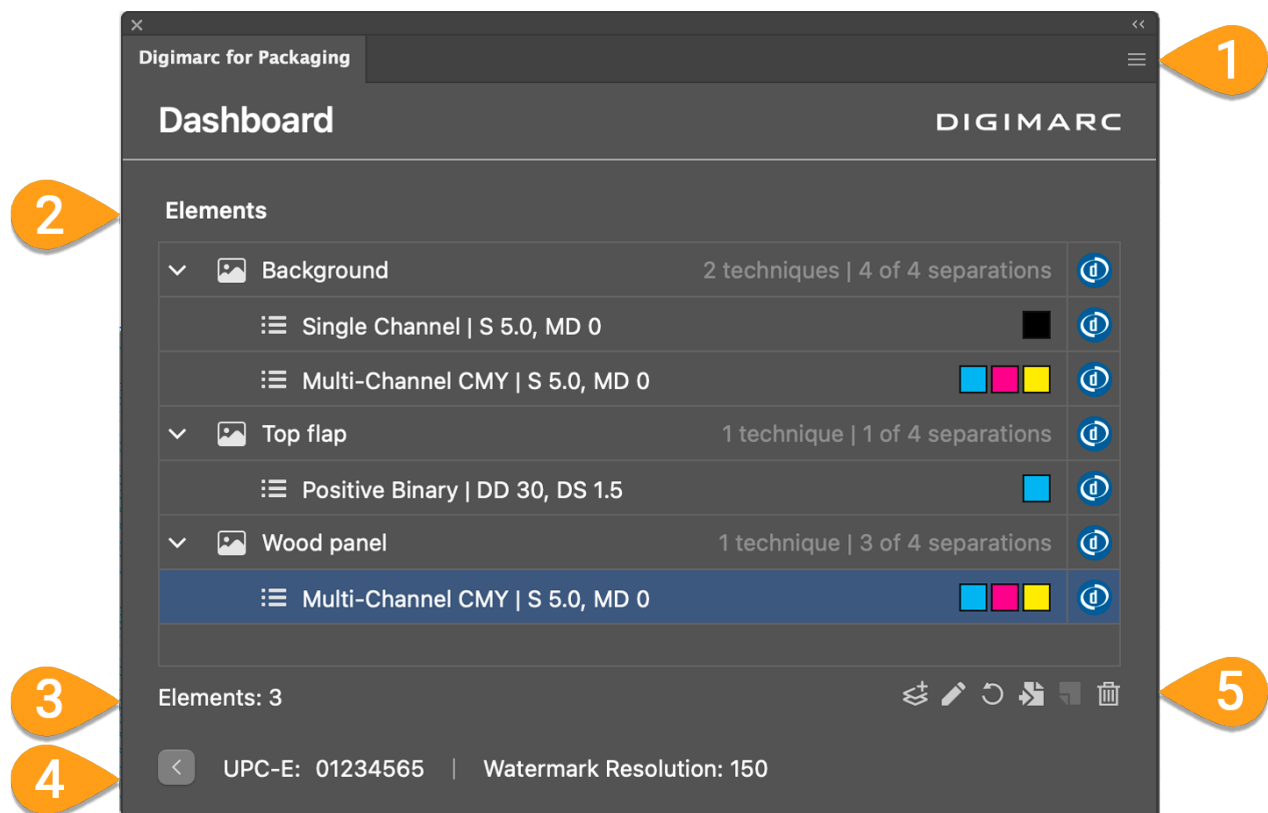3   Review the details and click **Continue**.

Note

After you continue to the Dashboard, the resolution can't be changed.

The Dashboard

The Dashboard is where you manage artwork elements and their applied watermarking techniques.

New, unmarked files have no artwork elements on the Dashboard. To add elements, see Applying a Watermark.

1 The panel menu (☰) allows you to sign out of the Packaging Module or change the watermarking job associated with the artwork.

2 The **Elements** section lists the selected elements and their watermark status. Each element can have multiple watermarking techniques to target separations. A summary of techniques and the watermarked separations is displayed under each element's name, including the multi-channel parameters for each technique (that is, CMY, CMYK, MYK).

ⓓ	Indicates the element or technique is configured and applied.
ⓓ	Indicates the element or technique contains at least one separation that is configured but unmarked. This is typically a separation that has been watermarked and then reverted to its unmarked state. If the main element icon is gray, one or more corresponding techniques were reverted. See Revert Watermarked Element or Technique.
	No icon indicates an unconfigured, unmarked element.
⤬	Indicates Channel Mapping is on.

2.1 The **Parameters** summary reflects the watermark settings specified in *Watermark Options*:

- **S** indicates the watermark strength.
- **MD** indicates the minimum dot percentage.
- **(Below)**, **(Low)**, **(Med)**, and **(High)** indicate the setting selected for Minimum Dot Blend Mode.
- **Zero Ink** indicates Protect Zero Ink is selected.
- **HL** indicates Reduce in Highlights is selected.
- **DD** indicates the dot density of a binary pattern.

- **DS** indicates the dot size of a binary pattern.
- Color chips indicate the separations involved in a technique. Move the cursor over the icons to see a tooltip with the separation names.

3 The **Elements** field displays the number of elements on the Dashboard.

4 The **GTIN/UPC-E/GIAI** field displays the Digimarc digital watermark associated with this art file. The **Watermark Resolution** field displays the Watermark Resolution previously selected in the Details panel. Click **Back** (◀) to see the *Details*.

5 Buttons are enabled only when applicable:

	Add Watermark Technique – Opens the **Watermark Options** dialog to add a watermarking technique to the selected element. You can also reach this dialog by double-clicking an element.
	Watermark Technique or **Edit Element Options** • If a watermarking technique is selected, this button opens the Watermark Options dialog where you can change the settings for the selected watermarking technique. You can also reach this dialog by double-clicking a technique. • If an element on the dashboard is selected, this button opens the Element Options dialog.
	Revert Watermarked Element or Technique – Removes the watermark from the affected separation(s). The selected technique or element's status changes from blue to gray but saves the watermark settings to the dashboard. **Tip** If you revert one or more watermarking techniques, we highly recommend you reapply them in the original order (from bottom to top). This ensures the inks and elements are assessed the same way as the original watermark.
	Go to Element – Selects the layer corresponding to the selected element in the *Layers* panel and Artboard. If the selected element has been watermarked, the watermarked layer is selected instead.
	Add Targeted Element – Adds the currently targeted, qualified layer in the *Layers* panel to the **Elements** list.
	Remove Element from Dashboard – Deletes the selected element or technique from the Dashboard. Watermarked layers and separations are also removed.

Error Messages

After an object is watermarked, if you make any of the following changes to the original object, the associated element on the Dashboard shows an error icon (⚠):

- Change an object's position on the artboard
- Change a fill or stroke color
- Delete an object
- Resize an object
- Update an opacity mask
- Update a linked file
- Add or remove an object from a group
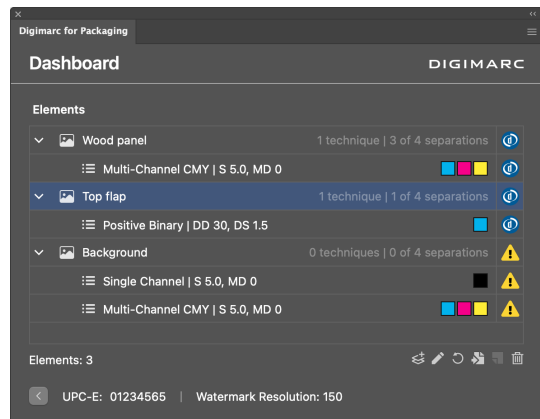
To resolve an error, update or replace all problematic watermarks from the Dashboard.

Applying a Watermark

You apply a Digimarc digital watermark to one or more artwork elements within a single file. New, unmarked artwork has no elements on the Dashboard until you add them.

Add Artwork Elements

To add artwork elements to the Dashboard:

1 Select an artwork element to receive the digital watermark.

2 Click **Add Targeted Element to Dashboard** ( ) from the toolbar. The element is added with a default name.

3 Repeat these steps for each artwork element to be watermarked.

See Element Options for more information about artwork element options.

Apply the Watermark to an Element

To apply a watermark to an artwork element:

1 Select the artwork element on the Dashboard.

2 Click **Add Watermark Technique** ( ). The *Watermark Options* dialog opens. See Watermark Options for more information about selecting the watermarking technique.

3 **Apply** the desired watermarking options.

4 Repeat these steps for each artwork element to be watermarked.

After you click **Apply** in the *Watermark Options* dialog:

- The layer in the *Layers* panel that corresponds to the selected element is duplicated, and the new layer has **_DM** appended to its name.

- Digimarc digital watermark is applied in the duplicate layer, rasterized to 300ppi, and embedded into the art file. The following settings are applied to the DM layer:

  - **Color Model**: CMYK or Grayscale, as appropriate

  - **Resolution**: High (300ppi)

  - **Background**: Transparent

  - **Anti-aliasing**: Art Optimized (Supersampling)

  - **Preserve spot colors**: ON

  - Embedded

- The original layer is unchanged.

If watermarking succeeds:

- The watermarked duplicate layer is kept.
- Any previously watermarked layer associated with the same original artwork is deleted.
- The Dashboard is updated with any changes made to the watermarking technique and parameters in **Watermark Options**.

If watermarking fails:

- An alert informs you of the reason.
- The duplicate layer is deleted.
- Any previously watermarked layer associated with the same original layer is untouched.
- The Dashboard isn't updated with changes made in **Watermark Options**.

> **Note**
> Watermarking fails only if the network connection is lost or if the original element already contains a Digimarc digital watermark.

If you want to change a digital watermark, see Replace a Digital Watermark.

Group Watermarking

You can watermark multiple objects with one dashboard element. To do this, target each layer or group, press **Command + G** to group them together, and then add the group to the Dashboard. When you add a group to the dashboard and watermark it, the _DM layer includes a watermarked, rasterized copy of all the layers in the group. The original group is unaffected. After a group is added to the dashboard, no other layers within that group can be individually added for additional watermarks.

> **Note**
> You can't add a group from the top-most layer level to the Dashboard. A group must be nested at least one level to be added.

Additional Notes

- The elements and settings on the Dashboard are saved when the art file is saved.
- The list of elements on the Dashboard is kept up-to-date regarding changes to the *Layers* panel. For example, if a layer corresponding to an element on the Dashboard is deleted from the *Layers* panel, the element is deleted from the Dashboard.
- If you revert one or more watermarking techniques, we highly recommend you reapply them in the original order (from bottom to top). This ensures the inks and elements are assessed the same way as the original watermark.

Replace a Digital Watermark

You can replace a Digimarc digital watermark in the artwork without removing existing watermarking options.

To change the digital watermark to be embedded in the artwork:

1   Select **Change Watermark** from the panel menu (☰). A dialog opens, warning you that the existing digital watermark will be removed from all watermarked artwork elements.

2   To continue, click **OK**. After the digital watermark is removed, the Search panel opens.

3   Select another job to apply to the artwork elements.

Any existing watermarking techniques are saved on the Dashboard, but they haven't been applied. They're shown with a gray Digimarc icon (ⓓ). Those watermarks must be reapplied or removed (🗑).

Reapply a Watermark

To reapply a watermark marked with a gray Digimarc icon (ⓓ):

1   Select an unapplied watermarking technique for an artwork element.

> **Tip**
> We highly recommend you reapply the watermarking techniques in the original order (from bottom to top). This ensures the inks and elements are assessed the same way as the original watermark.

2   Click **Edit Watermark Technique** (✎).

3   Select the desired watermarking technique. See Applying a Watermark for more information.

> **Note**
> The watermark resolution can't be changed. The watermarking technique uses the previously selected resolution value.

4   Click **Apply**.

The Digimarc icon turns blue (ⓓ) when the watermark has been applied.

> **Tip**
> After replacing a watermark, use the Verify application to confirm the watermark's consistency. You can get the Verify application from the Downloads module at ↗ My.Digimarc.

Element Options

Here, you can change the element's name and apply a clipping mask to vector elements.

Rename an Element

To change an element's name:

1   Select the element on the Dashboard.

2   Click **Edit Element Options** (✎). The *Element Options* dialog opens.

3   Type the new **Name**.

4   Click **Apply**. The name is applied to the element (the original layer) and the DM layer if it exists.

Automatic Clipping Mask

This setting is off by default and is available only for vector objects. To create a vector outline path for cleaner, less pixelated artwork:

1   Select the element on the Dashboard.

2   Click **Edit Element Options** (✎). The *Element Options* dialog opens.

3   Enable **Apply Clipping Mask**.

4   Click **Apply**.

This creates a clip group containing the clipping path layer and the watermarked (DM) layer. The clipping path automatically clips the DM layer to remove the pixelated raster edge from the rasterization process. If this option is turned off later, the clipping path layer is deleted and the DM layer is removed from the clip group.

Clipping Mask Example
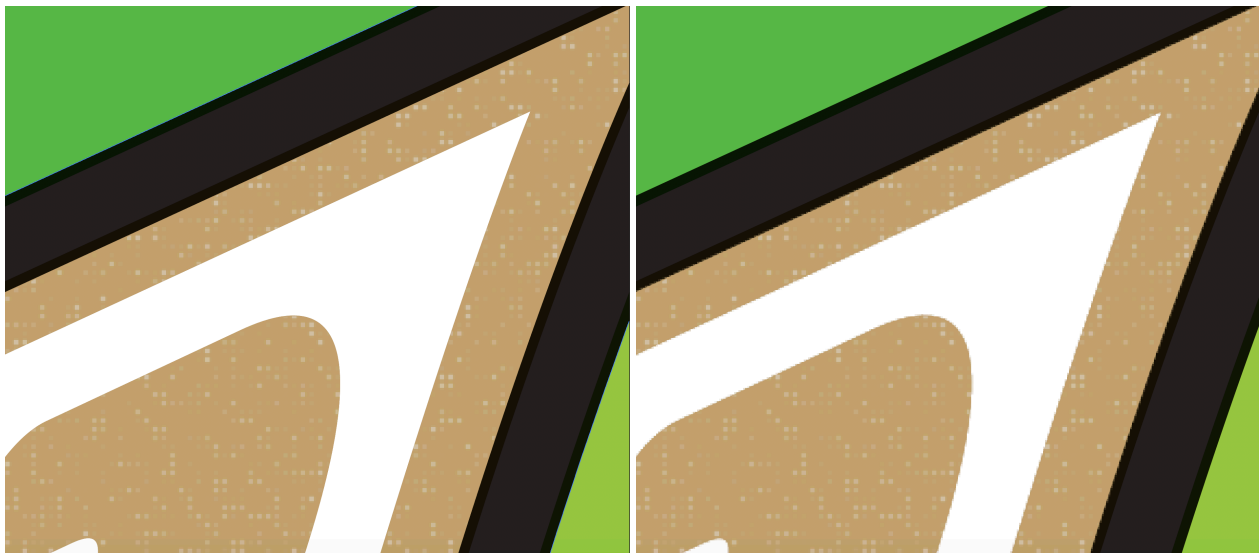
With Clipping Mask　　　　　　　　　　　　**Without Clipping Mask**

Watermark Options

The *Watermark Options* dialog presents a choice of watermarking techniques: Multi-Channel, Single Channel, or binary pattern. Depending on the chosen technique, the Watermark Parameters can change. The multi-channel technique is selected by default if process channels are available in the image. If there are no process channels, the single-channel technique is selected by default.

Multi-Channel Technique
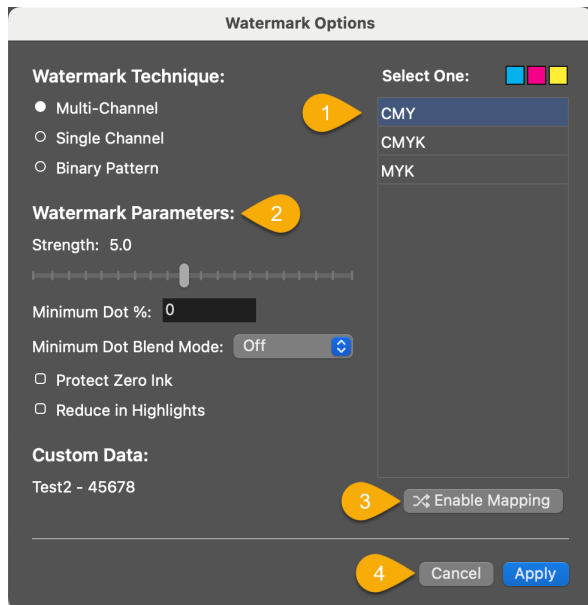
1 Select the **Multi-Channel** technique, and then select the color channels to watermark: **CMY**, **CMYK**, or **MYK**. The icon in the upper-right corner shows the selected channels. Options are shown as unavailable if any necessary colors have already been watermarked or aren't present.

2 Select the desired **Watermark Parameters**:

- **Strength** – Controls the strength of the Digimarc digital watermark.

    - When the watermark resolution is set to 150 WPI, the strength slider displays values in half-strength increments from .5 to 10.

    - When the resolution is 75 WPI, the strength slider displays whole values from 1 to 10.

- **Minimum Dot %** – Specifies the minimum dot as supplied by your printer.

> **Note**
> Minimum Dot % and Minimum Dot Blend Mode settings default to those last used in the art file.

- **Minimum Dot Blend Mode** – Compresses a range of pixels based on a preset curve. Based on the setting, compression is applied as pixels approach min dot, creating a blending effect in a specific range using the following formula:

- **Below**: Applies positive adjustments to pixels below the **Minimum Dot %** value.

> **Note**
> Pixel compression isn't supported for the **Below** setting.

- **Off**: No compression

- **Low**: (Min dot * 2) + 5

- **Medium**: (Min dot * 2) + 10

- **High**: (Min dot * 2) + 15

- **Protect Zero Ink** – In channels with no ink, the digital watermark isn't added. This option is available only for multi-channel watermarks and is selected by default when min dot is above 0.

- **Reduce in Highlights** – Available for CMY watermarking only if **Minimum Dot Blend Mode** isn't set to **Below**. This option minimizes watermarks in highlight areas. This reduces the need for art elements to go through an additional step of highlight reduction in Photoshop after watermarking in Illustrator.

- **Custom Data** – The custom data associated with the job you selected in Search Results is shown here, if applicable.

3 To reveal the channel mapping panel, click **Enable Mapping**.
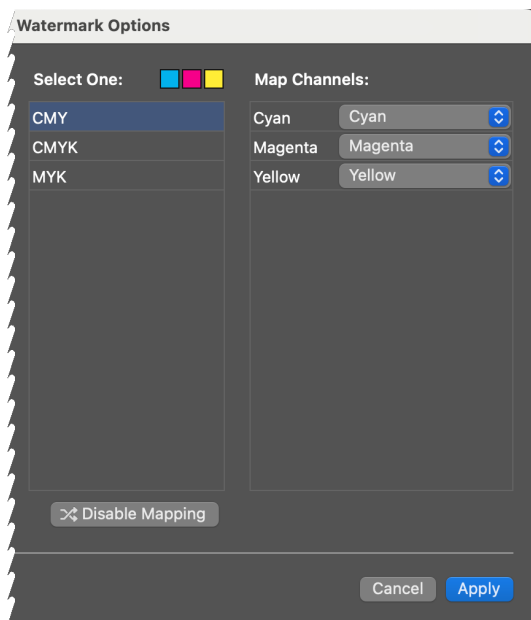
The channel mapping panel allows you to watermark any available non-process colors in the place of Cyan, Magenta, Yellow, or Black in a Multi-Channel technique rather than using a Single Channel technique. This can be beneficial because single-channel watermarks are often stronger and more visible than multi-channel watermarking, which blend multiple separations to output a smoother, less visible watermarking. The color chip icons dynamically update to display the separations involved in the output.

> **Caution**
> Channel mapping is an advanced setting and is recommended for use by experienced users with specific training from Digimarc. An expert-level understanding is critical to ensure the readability of the watermarked image. Contact Digimarc to schedule training if you're unfamiliar with this technique.

4   To watermark the selected element, click **Apply**, or click **Cancel** to exit without watermarking the element.

Single Channel Technique
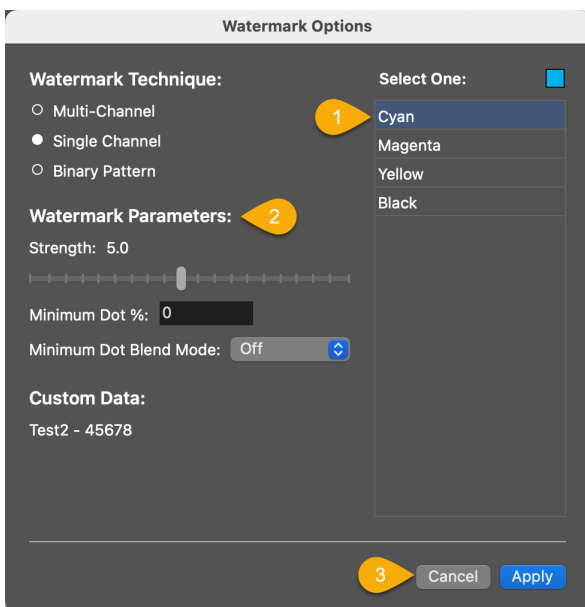
1   Select the **Single Channel** technique, and then select the channel to watermark. Options are shown as unavailable if the color has already been watermarked.

2   The **Watermark Parameters** are:

- **Strength** – Controls the strength of the digital watermark.

    - When the watermark resolution is set to 150 WPI, the strength slider displays values in half-strength increments from .5 to 10.

    - When the resolution is 75 WPI, the strength slider displays whole values from 1 to 10.

- **Minimum Dot %** – Specifies the minimum dot as supplied by your printer.

- **Minimum Dot Blend Mode** – Compresses a range of pixels based on a preset curve. Based on the setting compression is applied as pixels approach minimum dot, creating a blending effect in a specific range using the following formula:

- **Below**: Applies positive adjustments to pixels below the **Minimum Dot %** value.

> **Note**
>
> Pixel compression isn't supported for the **Below** setting.

- **Off**: No compression

- **Low**: (Min dot * 2) + 5

- **Medium**: (Min dot * 2) + 10

- **High**: (Min dot * 2) + 15

- **Custom Data** – The custom data associated with the job you selected in Search Results is shown here, if applicable.

3   To watermark the selected element, click **Apply**, or click **Cancel** to exit without watermarking the element.

Binary Pattern Technique
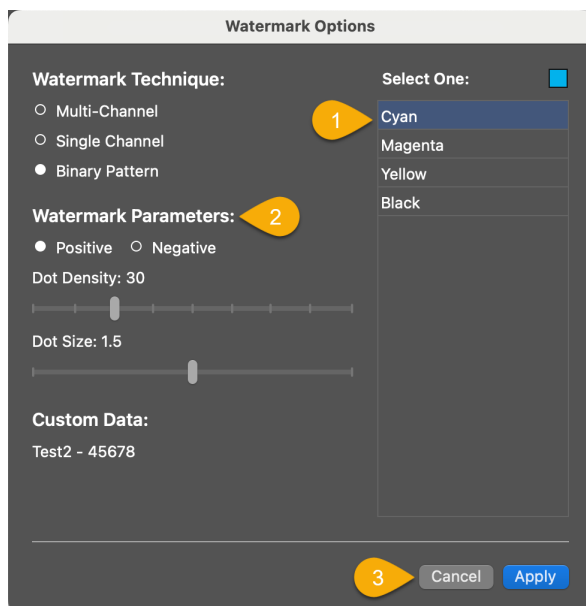
1   Select the **Binary Pattern** technique, and then select the channel to watermark. Options are shown as unavailable if the color has already been watermarked.

2   The **Watermark Parameters** are:

- **Positive/Negative** – Select a negative binary pattern (White dots on black) or a positive binary pattern (Black dots on white).

- **Dot Density** – Set the dot density of the dot pattern.

> **Note**
>
> Dot Density 30 is the default for watermarking at 150 WPI. For watermarking at 75 WPI. The default is 40.

- **Dot Size** – Set the dot size of the dot pattern.

> **Note**
> Dot Size 1.5 is the default for watermarking at 150 WPI. For watermarking at 75 WPI, the default is 2.

- **Custom Data** – The custom data associated with the job you selected in Search Results is shown here, if applicable.

3 To watermark the selected element, click **Apply**, or click **Cancel** to exit without watermarking the element.

Known Limitations

Image Type Limitations

The following image types can't be watermarked:

- Any non-grouped object with an Adobe Illustrator or Photoshop Effect

- Any non-grouped single-channel object with a Gradient or Gradient Mesh

Workflows to Avoid After Watermarking

To avoid placing the artwork file in a state that exposes known issues, it is critical that designers complete the artwork design, layout, and layer structure before using the extension. Avoid the following post-watermarking workflows:

- Undo (Cmd + Z)*

- Deleting the original layer*

- Color correction

- Unembedding watermarked links

- Embedding outside-watermarked links from other applications, such as Photoshop

> **Note**
> Items marked with an asterisk (*) are most relevant to prepress operators.

Digimarc Color Advisor

Digimarc Color Advisor is an additional tool provided by Digimarc for Packaging. It helps production designers and prepress specialists:

- Select the best spot colors with which to watermark packaging with Digimarc digital watermarks.
- Decide how best to work with a given spot color for readability by barcode scanners.

These recommendations don't cover readability on mobile devices.

Open Digimarc Color Advisor by navigating to **Window** > **Digimarc** > **Digimarc Color Advisor**.

When you select a spot color, Digimarc Color Advisor displays the suggested technique for watermarking that color with digital watermarks. The Digimarc Color Advisor contains data for spot colors from the **PANTONE+ Solid Coated** or **PANTONE+ Pastels & Neons Coated** swatch libraries (PANTONE GP1501 Plus Series Formula Guide Coated or PANTONE GG1504 Plus Series Pastels and Neons Coated).

> **Note**
> Watermark recommendations are supported for both 75 WPI and 150 WPI art files. If the art file doesn't contain a digital watermark, the default resolution is the last resolution applied.
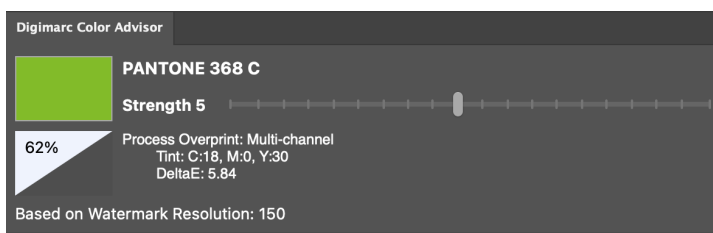
150 WPI
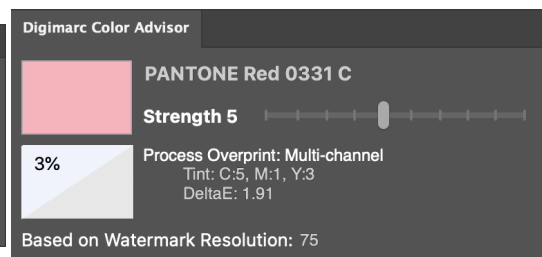
75 WPI

Field Definitions

- **PANTONE® Color Name**: The PANTONE MATCHING SYSTEM® is a tool allowing for the faithful selection, articulation, and reproduction of consistent, accurate color anywhere in the world. The tool organizes color standards through a numbering system and chip format.

- **Strength**: The suggested technique assumes a default strength of 5. Use the slider to view suggestions for other watermarking strengths. Some colors can be watermarked better at certain strengths.

- **Red Light Contrast**: Given as a percentage, this is the difference in reflectivity between paper white and solid ink of the light (670 nm wavelength) transmitted by barcode scanners. Contrasts between 20% and 80% indicate more easily watermarked colors.

- **Suggested Technique**: This is a suggested starting point for working with a particular tint, based on offset printing on white, coated paper, and assumes a GRACoL2006 profile. Experiment with the techniques to find the one that works best for your particular color, substrate, and printing environment.

  - **Spot Direct: Screened**: This process varies the percentage of ink applied within areas covered by the spot color.

  - **Process Overprint**: Multi-channel: This process adds low percentages of cyan, magenta, and yellow (CMY) inks over the spot color. The suggested CMY tints are listed as well as the DeltaE.

- **DeltaE**: How noticeable the difference is between the overlay and the original spot color, where a DeltaE of 2.3 is barely noticeable and higher DeltaE values are more noticeable.

> **Note**
>
> DeltaE is shorthand for the standard CIE ΔE^{*}_{ab}, which is the Euclidean distance between two colors in the perceptually uniform device-independent color space, CIELAB.

Version History

v1.8.1

- "Digimarc digital watermark" or "digital watermark" replaced the term "Digimarc Barcode" throughout.

- "Watermark" or "watermarking" replaced the term "enhance" or "enhancement."

- Added support for macOS 14 (Sonoma).

- Added support for Adobe Illustrator 2024.

v1.8

- The Adobe Illustrator extension now supports systems with ARM processors, including Mac Silicon (M1 or M2), so users will no longer need Rosetta to run the extension.

- The Adobe Illustrator extension now supports enhancement with secure digital watermarks. Contact Digimarc to learn more about this advanced feature.

- The word "Barcode" was removed or replaced by "Watermark" in the user interface when referring to the terms below:

    - Search

    - Resolution

    - Details

- The Adobe Illustrator extension now has an in-app sign-in screen.

- The Search functionality has changed. You can now search for enhancement jobs by Job ID, Job Name, or the GTIN, UPC-E, or GIAI number.

- You can now change the digital watermark during the enhancement process.

- You can now rename elements in the dashboard.

v1.6.1

- Fixed an issue where the Digimarc for Packaging extension would not load after installing Adobe Illustrator 26.3.1.

- Added the ability for the extension to alert the user that an update is available.

v1.6

- Added support for macOS 12 (Monterey).

- Added support for Adobe Illustrator CC 2022.

- Added telemetry reporting.

- Updated Barcode Search criteria to no longer require adding zeroes before a code to make it 14-characters long.

- Updated the Barcode Search Results panel to allow users to select the job to enhance, if multiple jobs are available.

- Added more information to the Barcode Details panel:

    - More specific GTIN types

    - Custom data, if applicable

    - Job information, if applicable

- Custom Data is now applied at the document level, instead of the element level.

v1.5

Digimarc Color Advisor

- Added support for 150 WPI and 75 WPI spot color enhancement recommendations. The WPI used in Color Advisor reflects the WPI of the active document. If no WPI is applied, Color Advisor defaults to the last WPI applied to a file.

- Enhancement recommendations are now generated from the 2019 PANTONE + Solid Coated/Uncoated and Pastels & Neons Coated books.

Adobe Illustrator Extension

- Added support for enhancement of all image types, resolutions, linked, and embedded original artwork. See Essential Concepts and Applying an Enhancement for more information.

- Added support for Group Enhancement.

- Added a new Element Options dialog to support Auto-Clipping Masks for vector objects.

- Added support for Dashboard Errors.

Glossary

artwork

The elements of design and text that makeup packaging, labels, or other visual media, in which a Digimarc digital watermark is or will be included.

barcode

The generic term for an optically machine-readable pattern that encodes data in a way that is generally not recognizable to human observation. Barcodes include one-dimensional symbols that encode data into a machine-readable pattern of adjacent, varying width, parallel, dark rectangular bars and pale spaces, and 2-Dimensional Symbols that encode data in the X and Y-axes (sometimes referred to as a 2D barcode), for example, in the case of a QR Code, Data Matrix, and Digimarc digital watermarks.

binary pattern

A form of Digimarc digital watermarks consisting of a sparse pattern of dots.

DeltaE

How noticeable the difference is between the overlay and the original spot color, where a DeltaE of 2.3 is barely noticeable and higher DeltaE values are more noticeable. DeltaE is shorthand for the standard CIE ΔE^*ab, which is the Euclidean distance between two colors in the perceptually uniform device-independent color space, CIELAB.

Digimarc digital watermark

A novel data carrier that encodes data in media in ways that are generally imperceptible to people, permitting the carrier to be repeated many times over the surface of the watermarked media. It delivers unprecedented ease of use, reliability, and efficiency in identifying the media due to massive mathematical and graphical redundancy.

digital watermark

In this guide, digital watermark refers specifically to the Digimarc digital watermark.

dot density

The density of dots per tile in a binary pattern expressed as a percentage of a maximum number of waxels that contain a dot. The maximum number of waxels that can contain a dot marking in a Tile of a binary pattern is 50%. A dot density of 20 means that 10% (20%*50%) of the waxels in a tile contain a dot marking.

dot size

The width of a dot in pixels at the watermark resolution using the binary technique. The watermark resolution is expressed in pixels at a resolution in DPI. If the WPI is 75, and the watermark resolution is 300 DPI, then there are 4 by 4 pixels per waxel. Dot size 2, for example, is a dot comprised of two by two pixels.

job

Jobs are used to track events and associated data about the production of packaging artwork. A Packaging Watermark (or Custom Data) can have one or more Jobs associated with it.

minimum dot

The minimum dot percent that can be held at press. Often abbreviated as "min dot." Min dot is affected by factors such as the printing process, different plating technologies, and the substrates being printed on. For example, a flexographic printer might have a min dot of 2, meaning a 2% dot is the smallest dot they can successfully print at press.

Multi-Channel

A technique that applies a Digimarc digital watermark in multiple color channels.

negative binary pattern

A sparse pattern of Digimarc digital watermarks comprised of light dots or holes in a darker background. A Negative Binary Pattern is not an inversion of the dark dots in a Positive Binary Pattern of the same Digimarc digital watermark. Instead, this technique places light dots at the lightest Waxels within a Tile.

positive binary pattern

A sparse pattern of Digimarc digital watermarks consisting of dark dots on a lighter background. This technique places dark dots at the darkest Waxels within a Tile.

process color

A color comprised of percentages of cyan, magenta, yellow, and black (CMYK) typically printed with halftone printing plates. A type of color model, similar to additive color, which involves "process"colorsthat are a combination of cyan, magenta, yellow, and black, or CMYK inks. Eachprocess coloris comprised of percentages of cyan, magenta, yellow, and black inks. Extended gamut includes additional colors, such as orange, green, and violet. From Pantone: achieving color in printing is referred to as CMYK, four–color process, 4/c process or even just process. To reproduce a color image, a file is separated into four different colors: Cyan (C), Magenta (M), Yellow (Y), and Black (K).

Single Channel

A technique that applies a Digimarc digital watermark in a single color channel.

spot color

A color generated by an ink (pure or mixed) that is printed using a single run. This is different from a process color, which is produced by overlaying a series of dots on multiple impressions using different colors.

strength

The suggested technique assumes a default strength of 5. Use the slider to view suggestions for other watermark strengths. Some colors can be watermarked better at certain strengths.

substrate

The base material to be printed on.

tile

The fundamental unit of Digimarc digital watermarks, formed by combining an encoded message and Synchronization Signal in a two-dimensional area, which is repeated in whole or in part across artwork or a label.

unmarked

An artwork element that doesn't contain a digital watermark.

validation

The process of checking that the data carried in a Digimarc digital watermark is both accurate and consistent. Also called verification.

validation point

The location in watermarked artwork that is designated for quality evaluation. The data validation process checks the GTIN carried in Digimarc digital watermarks, within an inspection area centered at this point, to determine whether the GTIN is correct and consistent with the GTIN in other areas and any 1D barcode in the artwork.

verification

The process of checking that the data carried in a Digimarc digital watermark is both accurate and consistent. Also called validation.

watermark

The process to integrate Digimarc digital watermark into a label or package artwork, enabling it for scanning.

watermarking

The process of creating and integrating a Digimarc digital watermark into product packaging and other substrates.

watermarking element

A spatial cell in a tile to which a component of a message and synchronization signal can be mapped. Abbreviated as "waxel."

waxel

A spatial cell in a tile to which a component of a message and synchronization signal may be mapped. Waxel is short for "watermarking element." See "tile."

WPI

The resolution of a Digimarc digital watermark represented as waxels per inch.