



# DELL Color Management Software





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### Introduction

DELL Color Management software is a Windows application that manages the color spaces of the DELL UltraSharp PremierColor (UP-series) UP3221Q, UP2720Q, UP2720QA and select UltraSharp (U-series) displays. DELL Color Management software allows quick selection of the color spaces stored in the display, creation and management of ICC profiles (v2 and v4.3), and, in supported UP-series displays, uploading of customized color spaces created with Calman<sup>®</sup>, the industry standard color calibration software for professionals.

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1 DELL Color Management U-series

Supported OS:

- Microsoft Windows 10, Windows 11

Hardware:

- DELL UltraSharp U4021QW, U2723QE, U3223QE, U3223QZ, U3423WE, U2724D, U2724DE, U3824DW, U4924DW, U3224KB/U3224KBA displays

Communication:

- USB – For setup information refer to DELL UltraSharp Quick Start Guide
- Video cable only support (HDMI, Display Port) – For setup information refer to DELL UltraSharp Quick Start Guide

2 Common UI Elements U-series

The application has two views, Dashboard and Advanced. The top and bottom borders for both views have common elements.

	<b>Monitor Model and Service Tag</b> The display model and service tag are shown. For multi-monitor configurations (up to four displays) the multi-monitor drop-down menu displays all supported displays attached to the system. Selecting a display from the menu will make it the active display to control.
	<b>Settings</b> – Opens the Settings overlay to access Run at startup, Application Window Focus, Reset Warning Dialogs, Check Update, and About.
	<b>Minimize</b> - Closes the UI and minimizes the application to the task bar. If the Hardware Lock has been enabled, the monitor can be power cycled when the application is minimized.
	<b>Close</b> – Closes the UI and minimizes the application to the task tray. If the Hardware Lock has been enabled, the monitor can be power cycled when the application is closed.

Table 1 – Top Border U-series

	<b>Launch Calibration Wizard</b> – Button specific to supported U-series displays that starts the calibration process
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Table 2 – Bottom Border U-series



### 3 Dashboard U-series

When launched, the Dashboard is the home page for DELL Color Management. The Dashboard provides a detailed view of select color spaces stored in the display. The radio button and highlighted row indicate the active color space. Click any row to make the color space in that row active. Colorspaces displayed are limited to settings that support calibration storing into local system

COLOR SPACE	RED <sub>x,y</sub>	GREEN <sub>x,y</sub>	BLUE <sub>x,y</sub>	WHITE <sub>x,y</sub>	GAMMA	AVERAGE DELTA E 2000
DCI-P3	0.680, 0.320	0.265, 0.690	0.150, 0.060	0.314, 0.351	2.6	--
sRGB	0.640, 0.330	0.300, 0.600	0.150, 0.060	0.313, 0.329	sRGB	0.673
BT.709(Rec. 709)	0.640, 0.330	0.300, 0.600	0.150, 0.060	0.313, 0.329	2.4	--
<input checked="" type="radio"/> Standard	0.680, 0.320	0.265, 0.690	0.150, 0.060	0.313, 0.329	2.2	0.848

Figure 1 – Dashboard U-series SDR

#### Table Column Fields U-series

Color Space	<ul style="list-style-type: none"> <li>• Standard – P3, D65</li> <li>• DCI-P3 – Digital Cinema P3</li> <li>• BT.709 (Rec.709) – Standard definition video</li> <li>• sRGB – RGB for computer monitors, print, and internet viewing</li> <li>• Display P3 – P3, D65 (on select displays)</li> <li>• AdobeRGB – Adobe RGB, D65 white point (on select displays)</li> </ul>
Chromaticity	Red, Green, Blue, White x,y coordinates
Gamma	Gamma curve set by the colorspace.
DeltaE average	Average DeltaE measured when last calibrated. Will only be filled after Calibration Wizard calibration completes



#### 4 Advanced U-series

The Advanced view provides the ability to quickly change modes, manage ICC profile settings, set preferences, and reset the display

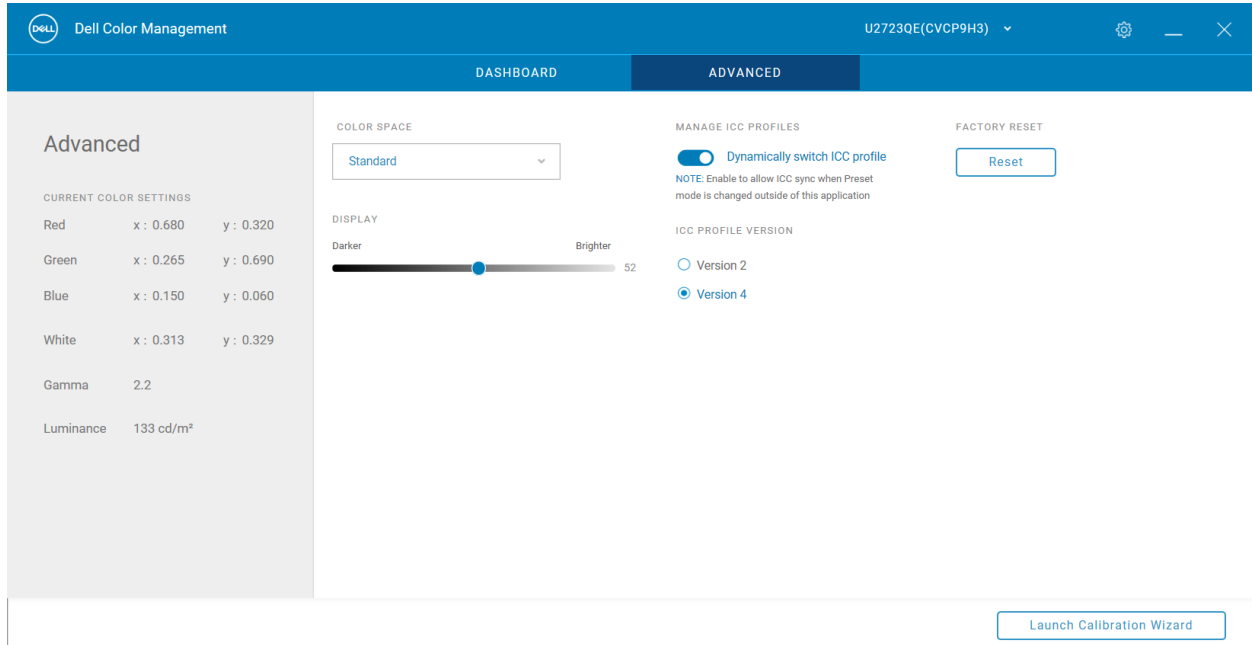


Figure 2 – Advanced U-series

**Left Gray Panel** – shows the current color space settings. This area is only for information, not for making changes.

**Color Space** – Drop-down menu to select any color space.

**Display Slider** – Adjusts the luminance for the current color space. If luminance is changed for a calibrated color space, an alert will appear under the Display Slider “A change in luminance will take the display out of the current calibrated state.”

#### Manage ICC Profiles

**Dynamically switch ICC profile** – When enabled, the application synchronizes the system ICC profile with the active color space. Changing the colorspace to a calibrated setting outside of the application will sync the calibrated ICC profile automatically

**ICC profile Version** - Selecting Version 2 or Version 4 (4.3) associates the calibrated color spaces with that version. The ICC version is for all calibrated colorspace

**Note: Some applications do not recognize a changed ICC profile while running. The application needs to be closed and reopened to apply the changed ICC profile.**

**Factory Reset** – Resets all color spaces to the factory settings



### 5 Calibration Wizard U-series

DELL Color Management software can calibrate any supported U-series colorspace using the supported meters. Calibrations are stored on the system driving the supported monitor.

#### Supported colorimeters

- Portrait Displays: C6 HDR2000
- X-Rite: i1Display Pro, i1Display Pro Plus
- Klein Instruments: K10
- Calibrite: ColorChecker Display Pro, ColorChecker Display Plus

When launched, the wizard offers an intuitive UI walkthrough and explanation on how to successfully perform a calibration and then view the color accuracy results through a report. The steps the wizard follows are:

1. Compatibility – Displays the list of supported meters. One of the supported
2. Connection – Attempts to connect to one of the supported meters. If no supported meter is found an error will appear
3. Luminance – By Define luminance is unchecked. Unchecked will not change user set brightness. Checking the option will allow the definition of a target nit value for the calibration. Adjusting target nit value slider does not visually change screen until after calibration has completed. Using Define luminance will overwrite your current brightness setting.
4. Placement – Visual image to show meter placed in center of the monitor
5. Pattern generator – New window launched. Click the play icon to start process. Process can take up to 5 minutes to complete.
6. Results - On successful calibration shows DeltaE average of calibration and shows View Report button

#### View Report

The report will display the calibration results of colorspace. Each colorbar in the bar graph can be moused over to highlight location of color result in the CIE chart. Print icon will save the report as a PDF and prompt the user to select save location and name.

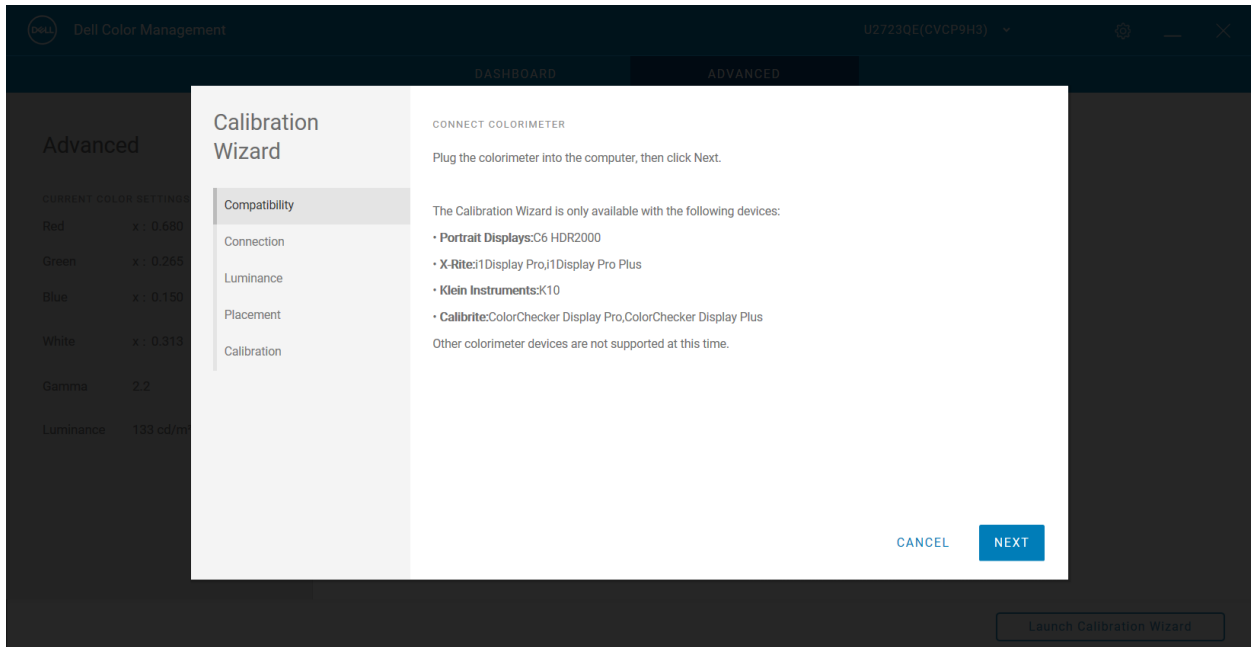


Figure 3 – 1. Compatibility U-series

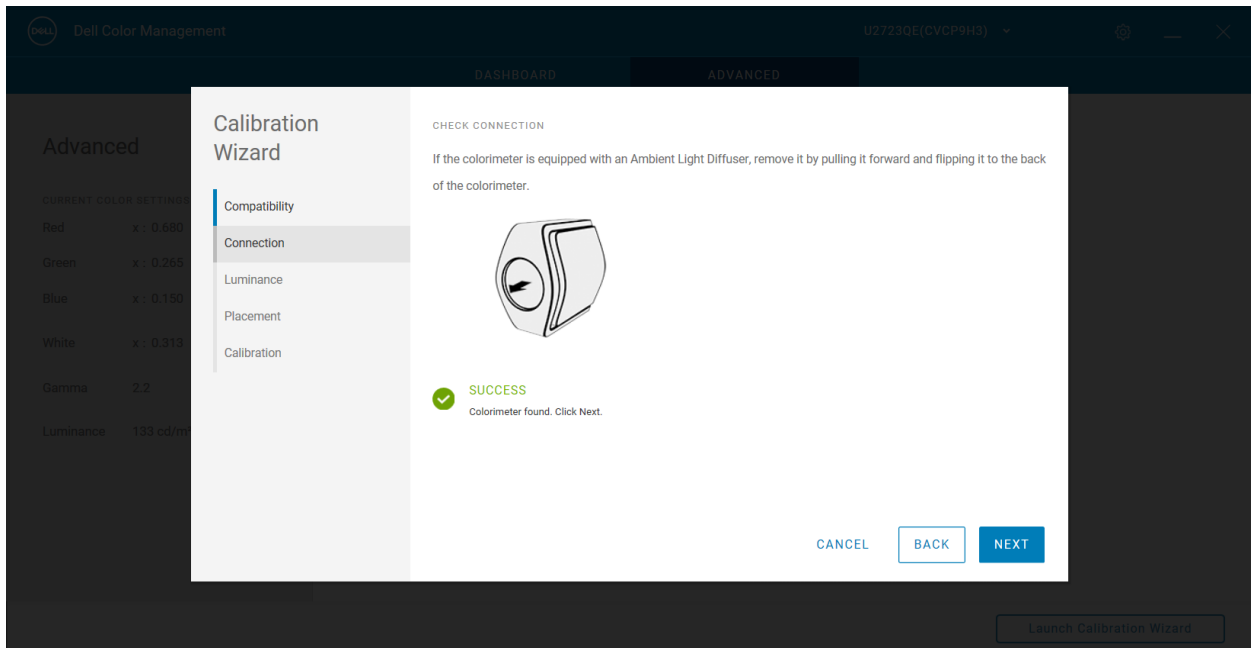


Figure 4 – 2. Connection U-series



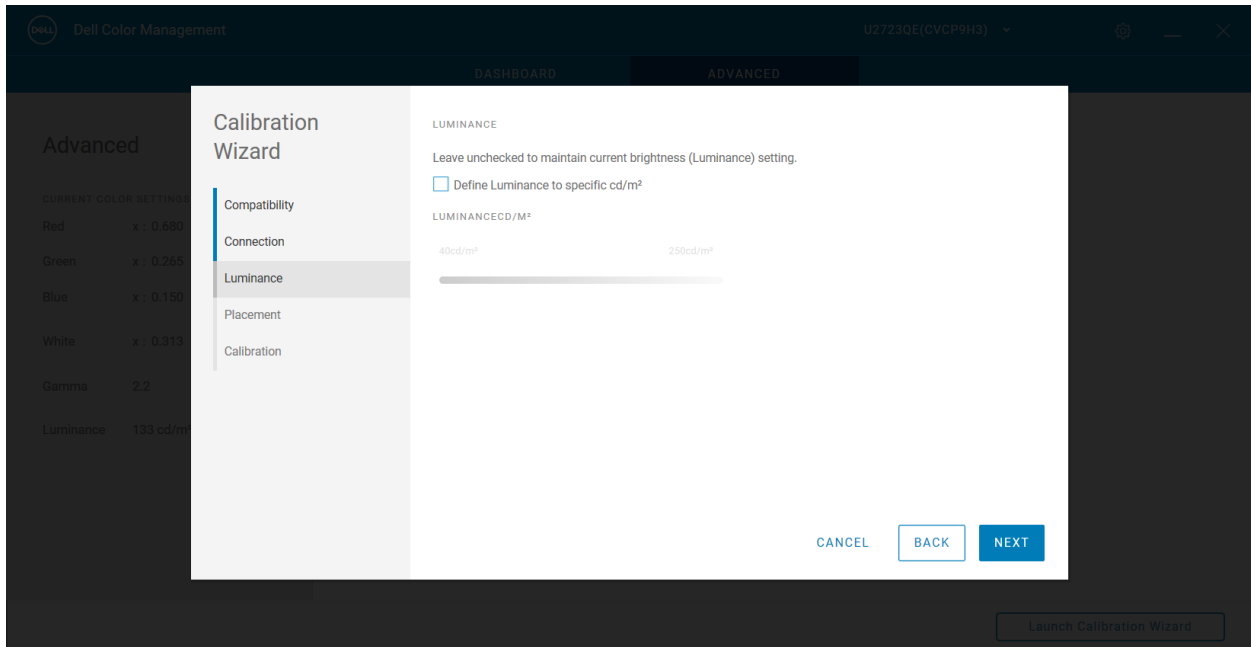


Figure 5 – 3.1 Luminance unchecked U-series

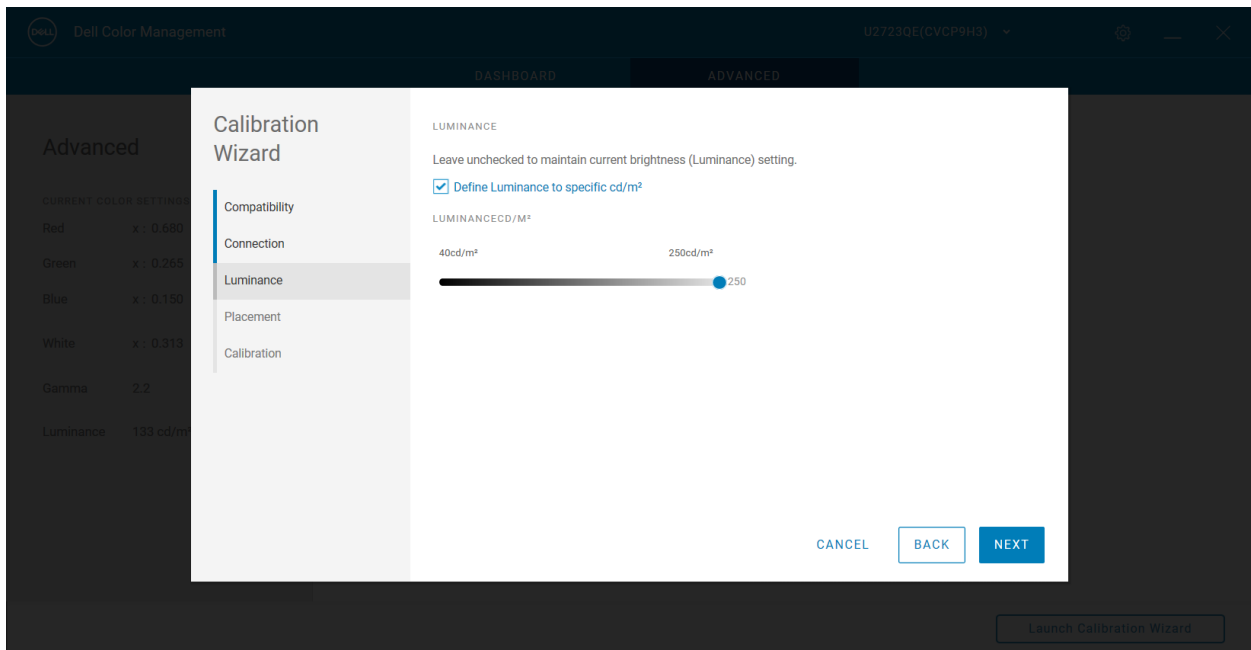


Figure 6 – 3.2 Luminance checked U-series

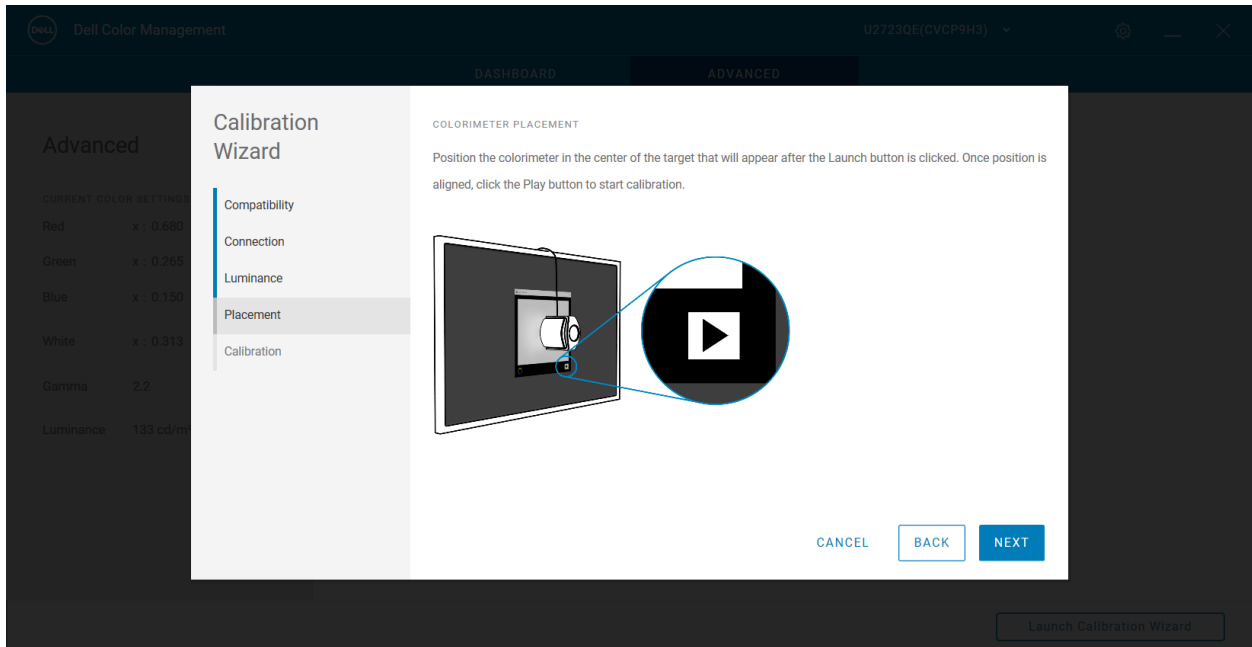


Figure 7 – 4. Placement U-series

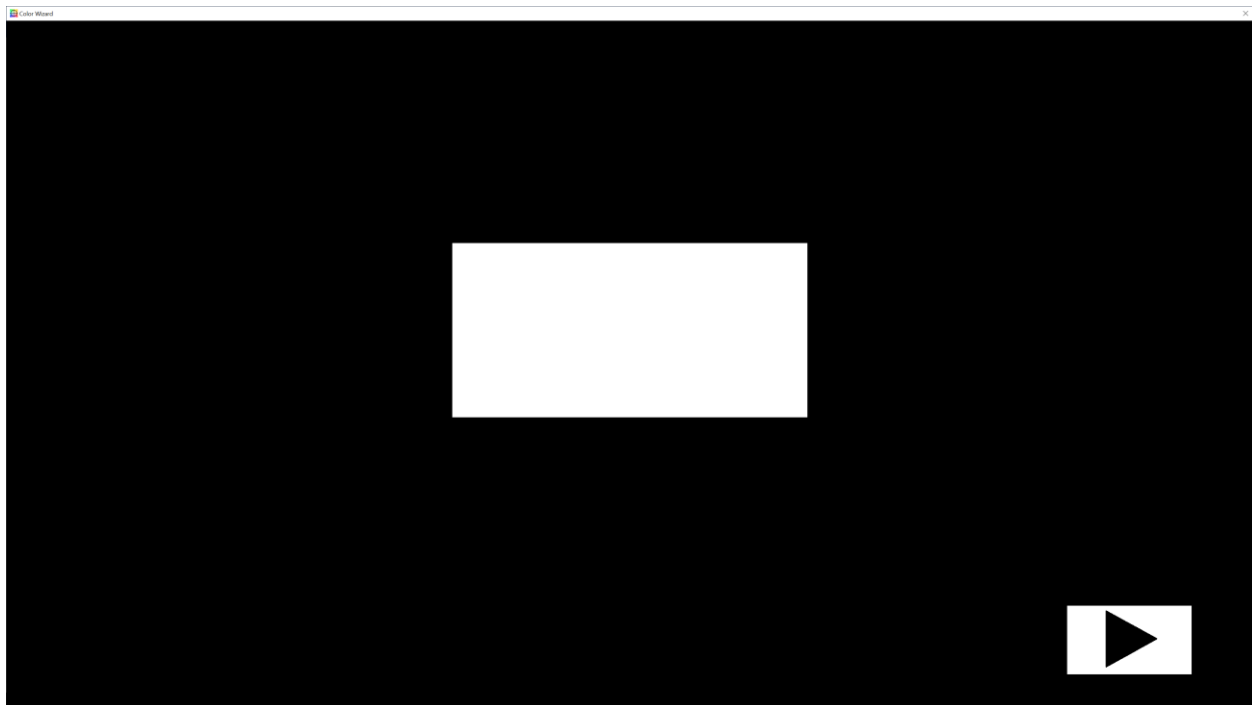


Figure 8 – 5. Pattern Generator U-series

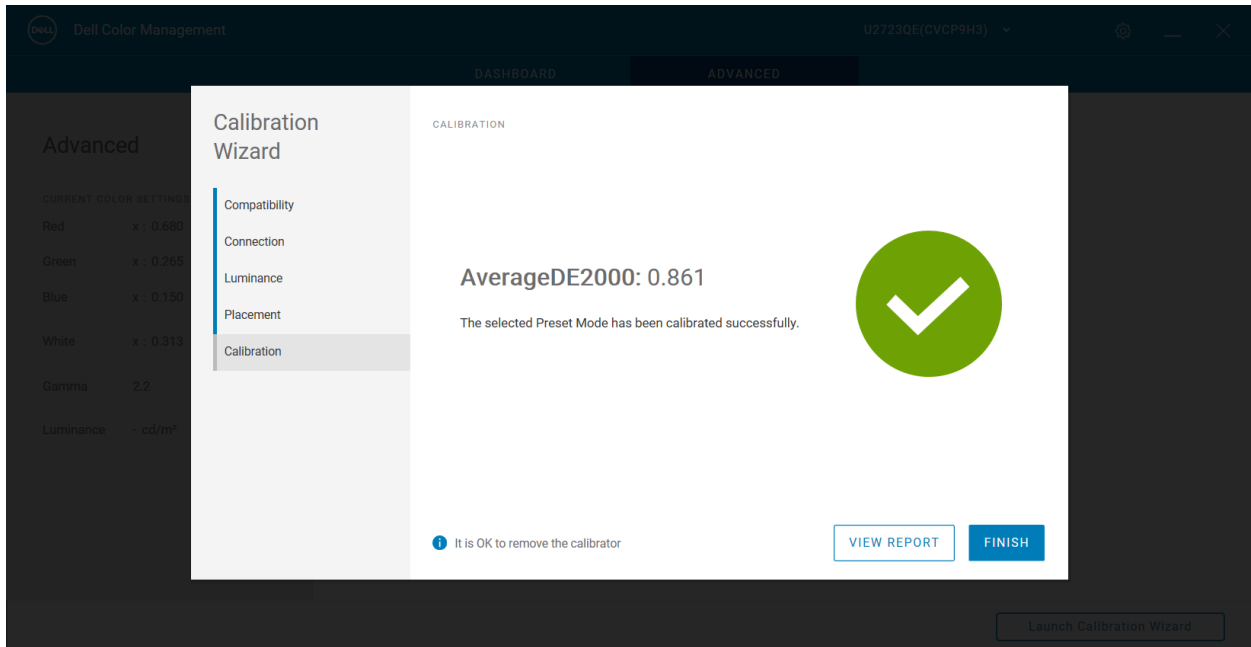


Figure 9 – 6.1 Results U-series

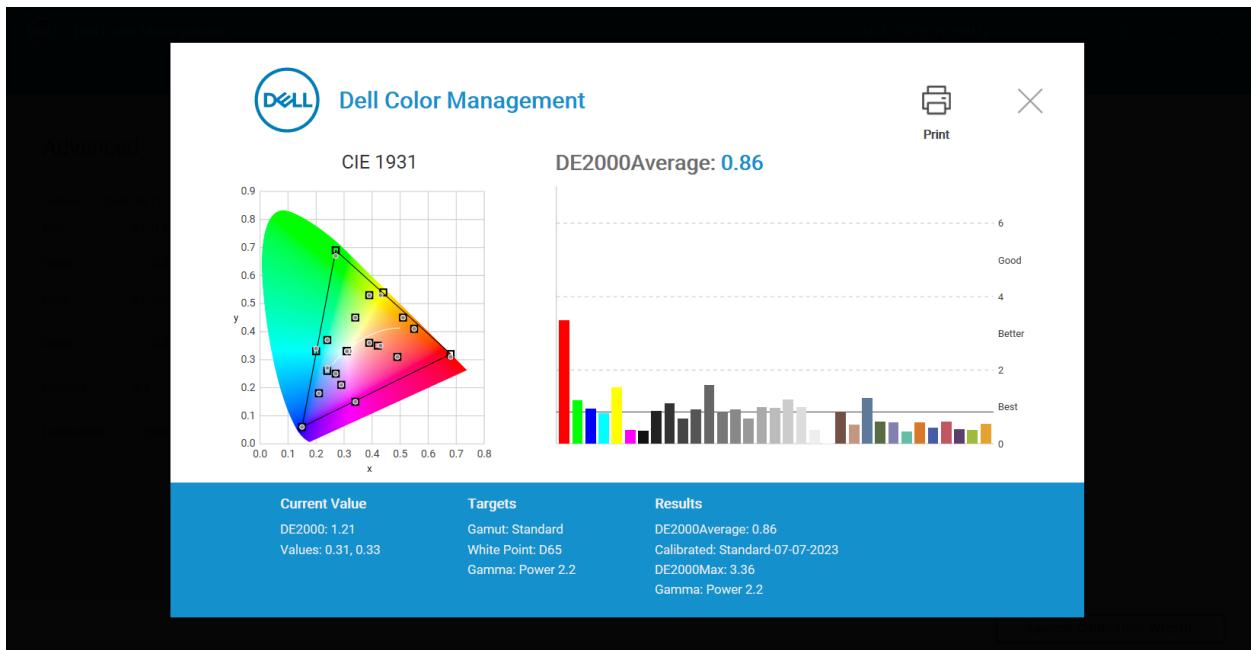


Figure 10 – 6.2 Report U-series



### 6 Settings U-series

Settings are available from the cog in the title bar.

**Run at startup** – When enabled, the application launches at system startup and is available in the Task Tray. If disabled, the application must be manually launched from the start menu or desktop shortcut.

**Application Window Focus** – When enabled, the application window appears at the forefront of the desktop.

**Check Update** – Manually check for the latest released version of DELL Color Management software. Opens a new browser page. If a new version is available, it can be downloaded from the site. If no new version is available, a message is shown indicating “Your software is current”. Requires internet connection.

**About** – Displays About information.



### 7 Task Tray Menu U-series

The Task Tray menu offers a quick way to manage the display settings without having to open the application. The most commonly used Color Management features are available when right-clicking of the application icon in the task tray.

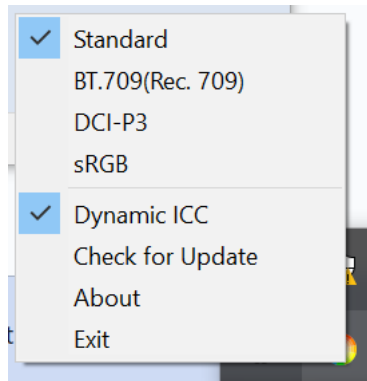


Figure 11 – Task Tray Icon and Menu U-series

- Right click
  - **Select Monitor** – This entry is only shown when more than one supported display is attached to the system. A check mark indicates the active display. Selecting any other display entry from the fly-off makes the new selection the active display. The display is identified by model name and service tag.
  - **Color Spaces** – Selecting any of the color space entries makes the selection the active color space. A check mark next to the color space name indicates the color space in use.
  - **Dynamic ICC** – Enable or disable Dynamic ICC by selecting the entry. When enabled a check mark is shown indicating Dynamic ICC is On.
  - **Check for Update** – Manually check for the latest released version of DELL Color Management software. Opens a new browser page. If a new version is available, it can be downloaded from the site. If no new version is available, a message is shown indicating “Your software is current”. Requires internet connection.
  - **About** – Shows the About box with version information
  - **Exit** – Closes the application and removes it from the task tray
  
- Left click
  - Launches the application



### 8 DELL Color Management UP-series

Supported OS:

- Microsoft Windows 10, Windows 11

Hardware:

- DELL UltraSharp UP3221Q, UP2720Q, UP2720QA displays

Communication:

- USB – For setup information refer to DELL UltraSharp Quick Start Guide

### 9 Common UI Elements UP-series

The application has two views, Dashboard and Advanced. The top and bottom borders for both views have common elements.

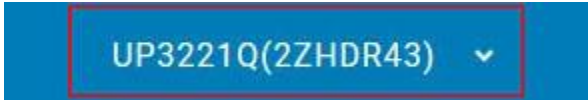




	<p><b>Monitor Model and Service Tag</b> The display model and service tag are shown. For multi-monitor configurations (up to four displays) the multi-monitor drop-down menu displays all supported displays attached to the system. Selecting a display from the menu will make it the active display to control.</p>
	<p><b>Identify</b> – Shows the OSD Monitor overlay for each attached monitor with numeric value.</p>
	<p><b>Settings</b> – Opens the Settings overlay to access Run at startup, Application Window Focus, Reset Warning Dialogs, Check Update, and About.</p>
	<p><b>Minimize</b> - Closes the UI and minimizes the application to the task bar. If the Hardware Lock has been enabled, the monitor can be power cycled when the application is minimized.</p>
	<p><b>Close</b> – Closes the UI and minimizes the application to the task tray. If the Hardware Lock has been enabled, the monitor can be power cycled when the application is closed.</p>

Table 3 – Top Border




	<p><b>Lock monitor while under Software Color Management Control</b> – Displays the current state of the Hardware Lock. When Enabled, the OSD will be locked and cannot be accessed when the application is running.</p>
	<p><b>Calman</b> – When Calman Studio or Ultimate is installed selecting the Calman logo will launch Calman.</p>
	<p><b>DELL Store</b> – Link to the DELL store.</p>

Table 4 – Bottom Border UP-series



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### 10 Dashboard UP-series

When launched, the Dashboard is the home page for DELL Color Management. The Dashboard provides a detailed view of all color spaces stored in the display. The radio button and highlighted row indicate the active color space. Click any row to make the color space in that row active.

COLOR SPACE	RED <sub>x,y</sub>	GREEN <sub>x,y</sub>	BLUE <sub>x,y</sub>	WHITE <sub>x,y</sub>	GAMMA	LUMINANCE cd/m <sup>2</sup>	HOURS SINCE LAST CALIBRATION	1D/3D LUT	ICC VERSION
S1: DCH-P3	0.680, 0.320	0.265, 0.690	0.150, 0.060	0.313, 0.329	2.4	100	0	1D	v2
S2: BT.709	0.640, 0.330	0.300, 0.600	0.150, 0.060	0.313, 0.329	-	100	28	1D	v2
<input checked="" type="radio"/> S3: BT.2020	0.708, 0.292	0.170, 0.797	0.131, 0.046	0.313, 0.329	-	100	28	1D	v2
S4: sRGB	0.640, 0.330	0.300, 0.600	0.150, 0.060	0.313, 0.329	sRGB	120	0	1D	v2
S5: Adobe RGB D65	0.640, 0.330	0.210, 0.710	0.150, 0.060	0.313, 0.329	2.2	160	0	1D	v2
S6: Adobe RGB D50	0.640, 0.330	0.210, 0.710	0.150, 0.060	0.346, 0.359	2.2	160	9	1D	v2
Native	--	--	--	--	-	-	-	1D	v2
H1: HDR 10 D65	0.708, 0.292	0.170, 0.797	0.131, 0.046	0.313, 0.329	ST.2084	1000	50	3D	v4
H2: HDR D65 HLG	0.708, 0.292	0.170, 0.797	0.131, 0.046	0.313, 0.329	HLG	1000	50	3D	v4
User 1	--	--	--	--	-	150	-	1D	-
User 2	--	--	--	--	-	150	-	1D	-
User 3	--	--	--	--	-	150	-	1D	-

LOCK MONITOR WHILE UNDER SOFTWARE COLOR MANAGEMENT CONTROL: Enforced

calman Dell Store

Figure 12 – Dashboard SDR UP-series

COLOR SPACE	RED <sub>x,y</sub>	GREEN <sub>x,y</sub>	BLUE <sub>x,y</sub>	WHITE <sub>x,y</sub>	GAMMA	LUMINANCE cd/m <sup>2</sup>	HOURS SINCE LAST CALIBRATION	1D/3D LUT	ICC VERSION
S3: BT.2020	0.708, 0.292	0.170, 0.797	0.131, 0.046	0.313, 0.329	-	100	28	1D	v2
S4: sRGB	0.640, 0.330	0.300, 0.600	0.150, 0.060	0.313, 0.329	sRGB	120	0	1D	v2
S5: Adobe RGB D65	0.640, 0.330	0.210, 0.710	0.150, 0.060	0.313, 0.329	2.2	160	0	1D	v2
S6: Adobe RGB D50	0.640, 0.330	0.210, 0.710	0.150, 0.060	0.346, 0.359	2.2	160	9	1D	v2
Native	--	--	--	--	-	-	-	1D	v2
<input checked="" type="radio"/> H1: HDR 10 D65	0.708, 0.292	0.170, 0.797	0.131, 0.046	0.313, 0.329	ST.2084	1000	50	3D	v4
H2: HDR D65 HLG	0.708, 0.292	0.170, 0.797	0.131, 0.046	0.313, 0.329	HLG	1000	50	3D	v4
User 1	--	--	--	--	-	150	-	1D	-
User 2	--	--	--	--	-	150	-	1D	-
User 3	--	--	--	--	-	150	-	1D	-
CAL1: DCH-P3 08212...	0.680, 0.320	0.265, 0.690	0.150, 0.060	0.346, 0.359	1.6	100	0	3D	v2
CAL2: DCH-P3 08212...	0.680, 0.320	0.265, 0.690	0.150, 0.060	0.346, 0.359	1.6	100	0	3D	v2

LOCK MONITOR WHILE UNDER SOFTWARE COLOR MANAGEMENT CONTROL: Not Enforced

calman Dell Store

Figure 13 – Dashboard HDR UP-series



## DELL Color Management Software User Manual

Table Column Fields UP-series

Color Space	<ul style="list-style-type: none"><li>• DCI-P3 – Digital Cinema D65</li><li>• BT.709 – Standard definition video</li><li>• BT.2020 – Ultra high definition video</li><li>• sRGB – RGB for computer monitors, print, and internet viewing</li><li>• Adobe RGB D65 – Adobe RGB, D65 white point</li><li>• Adobe RGB D50 – Adobe RGB, D50 white point</li><li>• Native – No color correction. Hours since last calibration will be null.</li><li>• HDR 10 D65 – HDR 1000 nits D65</li><li>• HDR D65 HLG – Hybrid Log-Gamma D65</li><li>• User 1/2/3 – Temporary preset locations. Targets are set in the OSD. Hours since last calibration will be null. No ICC profile.</li><li>• CAL 1/CAL 2 – User calibrations created either in Calman or from the OSD of the display. Null fields indicate no calibration has been uploaded.</li></ul>
Chromaticity	Red, Green, Blue, White x,y coordinates
Gamma	Target gamma formula for the color space
Luminance	SDR 45 – 350 range HDR – 1000 nits
Hours since last calibration	<ul style="list-style-type: none"><li>• Hourly counter since last calibrated. Hours are color coded.</li><li>• Grey - Normal 0-99 hours</li><li>• Yellow - Exceed 100 hours, 100-149 hours</li><li>• Orange - Approaching 200 hours, 150-199 hours</li><li>• Red - 200 or more hours of use since last calibration</li></ul>
1D/3D LUT	Calibration with 1D, 3x3 matrix, or 3D calibration
ICC Version	Version 2 or Version 4.3 MHC compliant associated with the color space. Profiles are generated each time the color space has been calibrated.





## 11 Advanced UP-series

The Advanced view provides the ability to quickly change modes, manage ICC profile settings, set preferences, and upload imported calibrations from Calman®.

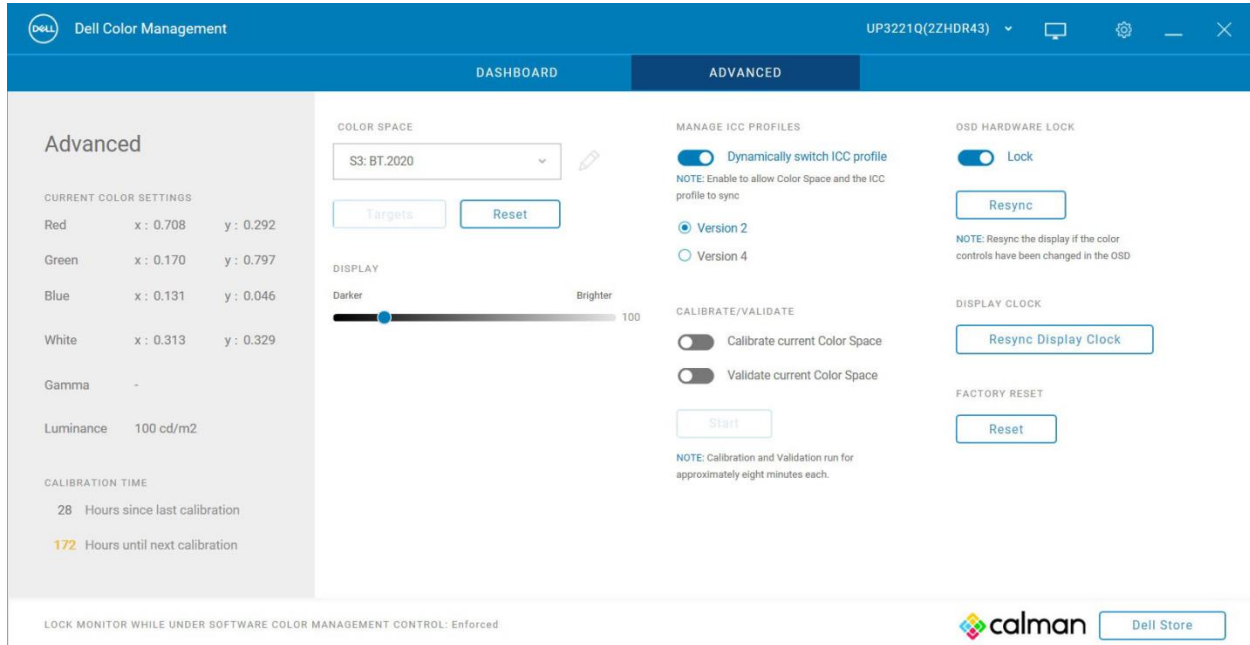


Figure 14 – Advanced UP-series

**Left Gray Panel** – shows the current color space settings. This area is only for information, not for making changes.

**Color Space** – Drop-down menu to select any color space.

**Color Space Reset** – Resets the current color space to its default settings. Reset is not available when CAL 1 or CAL 2 is selected.

**Targets** – Only available when CAL 1 or CAL 2 is selected. When selected the Target button is enabled. Selecting Target opens the Calman Studio Calibrated Targets pane for managing and uploading calibrations.

**Display Slider** – Adjusts the luminance for the current color space. If luminance is changed for a calibrated color space, an alert will appear under the Display Slider “A change in luminance will take the display out of the current calibrated state.” Luminance slider is not available when in HDR mode.

**Rename** – Allows CAL 1, CAL 2, User 1/2/3 to be renamed to a descriptive name.

**Calibrate/Validate** – Calibrates and/or validates the current selected color space.

**OSD Hardware Lock** – When enabled, this setting locks both the Power and the monitor OSD buttons when DELL Color Management software is open. Minimizing to the task bar or task tray allows the power button to function. Exiting the application allows the monitor OSD buttons to function. The Hardware Lock status is shown in the bottom border.

**Resync** – Selecting Resync synchronizes the application to the OSD. This is required if changes to the display have been made while the application is running (e.g., making adjustments using the OSD buttons or using another application, such as Calman, to adjust the display).

**Manage ICC Profiles** – When enabled, the application synchronizes the system ICC profile with the active color space. Selecting Version 2 or Version 4.3 associates the color space with that version. When the application is launched, it will check the calibration status for each color space. If the color space has been recalibrated, the application generates a new ICC profile. User 1/2/3 color spaces do not have ICC profiles.

**Note: Some applications do not recognize a changed ICC profile while running. The application needs to be closed and reopened to apply the changed ICC profile.**

**Calibration Time** – Shows the calibration hours in color.



- Grey - Normal 0-99 hours
- Yellow - Exceed 100 hours, 100-149 hours
- Orange - Approaching 200 hours, 150-199 hours
- Red - 200 or more hours of use since last calibration

**Resync Display Clock** – Reads the display's clock to sync it to the application and updates the calibration hours.

**Factory Reset** – Resets all color spaces to the factory settings

### 12 CAL1 CAL2 Management UP-series

DELL Color Management software can import any calibration that has been created in Calman by uploading the calibration directly into CAL 1 or CAL 2 in the display. The ability to store and upload Calman calibrations allows unlimited calibrations to be saved to the system so any calibration can be uploaded that is best suited for the workflow. An ICC profile for the calibration is created whenever a calibration is uploaded.

Note: Calibrations for CAL 1 and CAL 2 can also be created from selecting targets within the OSD. These calibrations can NOT be downloaded to Color Management software for future use.

7. In the Advanced view, select either CAL1 or CAL 2 from the Color Space drop-down menu.
8. Select Targets button – The Calman Studio Calibrated Targets will be displayed

**Import** – Imports a calibration and adds it to the list of available Calman calibrations. Selecting Import will open Explorer to navigate to the calibration file. Calman calibrations have the file extension CCEX.

**Load** – Loads the selected calibration into the display. A warning message will appear stating that the calibration will overwrite the existing color space data in the display. Note that the calibration file name will not replace CAL 1 or CAL 2. The descriptive name is only shown in the application.

**Remove** – Removes the selected entry from the list of calibrated targets

**OK** – Returns to the Advanced view



### 13 Settings UP-series

Settings are available from the cog in the title bar.

**Run at startup** – When enabled, the application launches at system startup and is available in the Task Tray. If disabled, the application must be manually launched from the start menu or desktop shortcut.

**Application Window Focus** – When enabled, the application window appears at the forefront of the desktop.

**Reset Warning Dialogs** – When enabled, the application resets all hidden warning dialogs. All dialogs that have been set to “Do not show me this notification” will be displayed.

**Check Update** – Manually check for the latest released version of DELL Color Management software. Opens a new browser page. If a new version is available, it can be downloaded from the site. If no new version is available, a message is shown indicating “Your software is current”. Requires internet connection.

**About** – Displays About information.



### 14 Task Tray Menu UP-series

The Task Tray menu offers a quick way to manage the display settings without having to open the application. The most commonly used Color Management features are available when right-clicking of the application icon in the task tray.

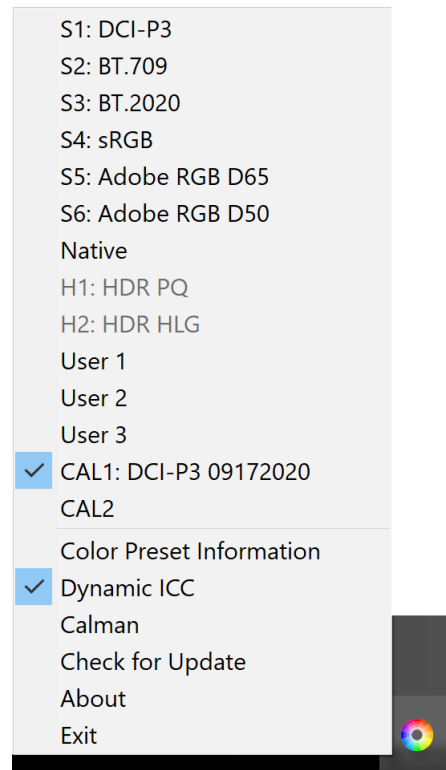


Figure 15 – Task Tray Icon and Menu UP-series

- Right click
  - **Select Monitor** – This entry is only shown when more than one supported display is attached to the system. A check mark indicates the active display. Selecting any other display entry from the fly-off makes the new selection the active display. The display is identified by model name and service tag. Entry is only available when more than one UP3231Q or UP2720Q are attached to the host.
  - **Color Spaces** – Selecting any of the color space entries makes the selection the active color space. A check mark next to the color space name indicates the color space in use.
  - **Load Target CAL 1/CAL 2** – The fly-off menu shows all custom calibrations stored on the system. Selecting any of the calibrations loads the data into the display.
  - **Color Preset Information** – Displays a dialog of the active color space information: Luminance, gamma, gamut (with x:y RGB), preset name, and white point.
  - **Dynamic ICC** – Enable or disable Dynamic ICC by selecting the entry. When enabled a check mark is shown indicating Dynamic ICC is On. Changing the color space changes the ICC profile associated with the color space. When Off, the default ICC profile is not changed when the color space is changed.
  - **Calman** – Launches Calman Studio. This entry is only active when Calman is installed. When selected, Calman will launch.
  - **Check for Update** – Manually check for the latest released version of DELL Color Management software. Opens a new browser page. If a new version is available, it can be downloaded from



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the site. If no new version is available, a message is shown indicating “Your software is current”. Requires internet connection.

- **About** – Shows the About box with version information
- **Exit** – Closes the application and removes it from the task tray
  
- Left click
  - Launches the application

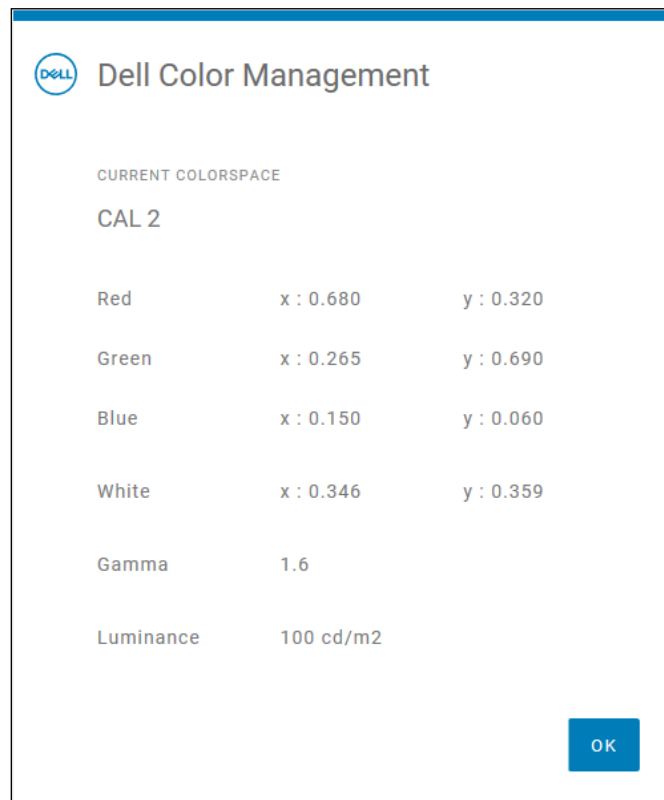


Figure 16 – Color Space Info Dialog UP-series