3 Picture

	Picture Settings	Advanced Picture	Submenu	slider	Notes
1	Picture Mode				
2	Brightness (SDR) OR Tone Mapping (HDR)			yes	1. Backlight displays with SDR content 2. Tone Mapping displays with HDR
3	Black Level			yes	
4	Contrast			yes	
5	Color				
6		Color		yes	
7		Tint		yes	
8		Color Temperature			
9	Clarity				
10		Contrast Enhancer			
11		Dark Detail			
12		Super Resolution			
13		Sharpness		yes	
14		Edge Enhancement			
15		Signal Noise			
16		Block Noise			
17		Contour Smoothing			
18	Motion Control				Submenu for 3 settings
19		Judder Reduction		yes	
20		Motion Blur Reduction		yes	
21		Clear Action			
22	Advanced Picture				
23		Fim Mode			
24		Active Pixel Tuning			Renamed for Local Contrast
25		Active Full Array™ OR Global Dimming			Active Full Array for panels with local dimming. Global Dimming for panels with global dimming.
26		Ambient Light Sensor			
27		Aspect Ratio			
28		Enhanced Viewing Angle			
29		Picture Mode Edit			submenu with 2 settings
30			Save Picture Mode		
31			Reset Picture Mode		Reset Picture mode applies to preset picture modes. Grayed out if custom picture mode
32			Delete Picture Mode		Delete Picture mode applies to custom picture modes Grayed out if preset picture mode
33					
34	Color Calibrator				Supported in TV but not customer facing: adjust only for SC mobile.

35		Picture Mode			reference only: not selectable, grayed out.
36		Color Temperature			reference only: not selectable, grayed out.
37		Dynamic Range			reference only: not selectable, grayed out.
38		Color Tuner	Hue, Saturation, Brightness, each with Red, Green, Blue, Cyan, Magenta, Yellow	yes	
39		White Balance Tuner	IRE%, RGB Offset, RGB Gain each with Red, Green, Blue	yes	2-point White Balance (Offset and Gain 20-point White Balance
40		Reset Color Termperature			
41		Gamma			
42		Calibration Tests			
43		• Flat Test Pattern			
44		• Ramp Test Pattern			
45		• SMPTE Test Pattern			
46		• Uniformity Analyzer Test Pattrn			

3.0 Picture Requirements

1	**Picture Requirements**
2	Picture Mode is saved for the current input only.
3	For HDMI inputs, picture mode settings are saved separately for Dolby Vision, HDR10/HDR10+ and HLG. In short, picture modes are saved by input and content for HDMI
4	After the first adjustment(s) to a picture setting, upon exit of the picture submenu, display a pop up message warning of increased energy consumption. The notification displays only once. The notification is “Customizing the picture settings on the TV will change the energy consumption required to operate the TV. “
5	For changes that apply to a preset picture mode, an asterisk is added to the picture mode
6	Some settings display a slider on the TV for the adjustment. If selected from the SmartCast app, then adjustments on the slider displayed on the TV are controlled by the SmartCast app so user can watch the changes on the TV.
7	Not all picture settings are compatible with each other.
8	When HDMI with 4:4:4 is detected (Full Color 4:4:4 set to On), the TV dynamically updates the picture settings as required to display the content.
9	HDR 4:2:2 supported for all picture settings.

3.0.1 Picture Compatibility and Priority

	COMPATIBILITY & PRIORITY	MEMC	Game Low Latency	Clear Action Rate: LED Overdrive	Clear Action Rate: Backlight Timing	Active Full Array (Active LED zones)	Ambient Light Sensor AKA ABC
1	Backlight Boost	OK	OK	Backlight Boost	OK	OK	Backlight Boost
2	Ambient Light Sensor AKA ABC Auto Brightness (Backlight) Control	OK	OK	LED Overdrive	OK	OK	
3	Active Full Array (Active LED Zones)	OK	OK	OK	OK		
4	Clear Action Rate: Backlight Timing	OK	OK	OK			
5	Clear Action Rate: LED Overdrive	OK	OK				
6	Game Low Latency	Game Low Latency					

3.0.2 Picture Settings Not Supported by Content

	PICTURE SETTING *	Content: 4:4:4	Content: 120 Hz source (HDMI only)	NOTES
1	Motion Blur Reduction	X	X	Content over 60 hertz is not supported (not limited to 120 hertz)
2	Judder Reduction	X	X	Content over 60 hertz is not supported (not limited to 120 hertz)
3	Sharpness	X	X	Content is RGB and 120 hertz is not supported
4	Block Noise	X	X	Not supported
5	Signal Noise	X	X	Not supported
6	Film Mode	X	X	Not supported

- Picture settings that do not apply for the content type includes an X with setting grayed out, not selectable and set to Off if applicable.

3.1 Picture Mode

	Picture Mode Settings	Description	Notes
1	Bright (default if OOBE completed)	Bright based on calibrated except Color Temperature is 9300K (Normal).	OOBE completed then all inputs assigned to the Bright picture mode (TV not in demo mode). Reduce Judder & Motion set to 5 instead of 0.
2	Calibrated	For bright rooms: default color temperature (warm) follows the D65 standard, set at 6500K.	
3	Calibrated Dark	For dark rooms: default color temperature (warm) follows the D65 standard, set at 6500K.	
4	Sports	Sports is optimized for viewing sports and based Calibrated except Contrast is higher and Brightness is lower.	Reduce Judder & Motion set to 5 instead of 0. Clear Action is turned off.
5	Custom	Up to 4 custom picture modes possible, saved globally.	

3.1.1 Picture Mode for Demo Mode

	Picture Mode Settings for Demo	Description	Notes
1	Vivid picture mode is supported for demo mode only.	Vivid is no longer selectable by customers: not included in Picture Mode settings.	All Settings is not selectable during demo mode: not possible to view Picture Mode settings
2	If demo mode launched then automatically switch to Vivid picture mode		The saved picture mode is the mode prior to demo mode launch, usually Bright if unchanged.
3	When demo mode stopped, revert back to previous picture mode.	Previous picture mode is always Bright for OOBE. After OOBE exit the previous picture mode is the default of Bright unless user has changed it.	

3.1.2 Picture Mode banks

	Picture Mode Banks	Description	Notes
1	Picture mode	SDR content is blank after picture mode. SDR is NOT added	Remains “Picture Mode”

2	Picture Mode HLG	The picture settings for Hybrid Log Gamma (HLG) content are shared with SDR with the following caveats: • SDR and HLG interpret Backlight differently. Brightness, the name for Backlight, is peak level for SDR but tone map for HLG. A perceptually acceptable backlight that applies to both is expected. • For HLG, white is always white, no change (hence different from Brightness setting). • All the other picture settings are common and adjust the same way.	Picture Mode, text string “HLG”
3	Picture Mode HDR10	Shared with HDR10+	Picture Mode, text string “HDR10”
4	Picture Mode HDR10+	Shared with HDR10	Picture Mode, text string “HDR10+”
5	Picture Mode Dolby Vision	Dolby Vision has dedicated picture mode bank	DV logo only

3.1.2.1 Picture Mode Banks HDR Content

If HDR content, then display HR10, HDR10+ HLG or Dolby Vision with picture mode and in TV information. For Dolby Vision a logo displays for picture mode.

	YEAR	Platform	HDR10	HDR10+	FreeSync HDR	Dolby Vision	HLG
1	2024	5686	YES	YES	no	YES	YES
2	2025	5686	YES	YES	no	YES	YES

3.1.3 Picture Modes Preset and Custom

	Picture Mode Types	Requirements
1	Preset picture mode	1. Changes made to a picture setting that apply to a picture mode are applied immediately but after the first change an asterisk is appended to the picture mode name, for example, Calibrated*. No limit to number of changes. 2. To return to default settings for the preset picture selected Reset Picture mode.
2	Custom picture mode	1. From a preset or changed picture mode (with asterisk), select Save Picture Mode to create a new picture mode. To save, a custom picture mode must be named. A changed preset picture mode is unchanged when Save Picture Mode is invoked. To revert the source picture mode to defaults use Reset to Picture Mode. 2. A custom picture mode is saved globally for all inputs 3. A maximum of **4** unique custom picture modes can be saved for all inputs. Any changes to a custom picture mode enables the change globally (for all inputs). 4. An attempt to create a seventh picture mode results in an error message displayed in a dialog box with OK button.

3.1.4 Color Tuner adjustments Saved to Picture Mode

	Color Tuner Adjustment	Requirements
1	Color Tuner Hue, Saturation or Brightness	Color Tuner adjustments are available only from the VIZIO mobile app.
2		Asterisk is appended to the Picture Mode setting with the adjustment (e.g. Calibrated*)
3		The asterisk is removed when Reset Picture Mode is invoked.
4		Adjustments to a picture mode are saved by input **and dynamic range.**

3.2 Brightness and Tone Mapping

Brightness previously named Backlight

	Requirements	Notes

1	The setting is in the same location dependent on content • If SDR then Brightness is setting name • If HDR then Tone Mapping is setting name	Brightness was formerly named Backlight.
2	For HDR content, Tone Mapping is a comparable to Backlight.	

3.2.1 Brightness (SDR)

	Requirements	Notes
1	A slider adjusts the backlight value, that is the LED panel brightness, with a range from 0 to 100.	Brightness was formerly named Backlight. Technically the adjustment changes backlight but the effect appears to change brightness.
2	The default varies by picture mode and is based on the Brightness as described in the specification “Picture Modes spec v4.3.pdf” or the latest version. • Calibrated: as defined Picture Modes spec v4.3.pdf • Calibrated Dark: as defined Picture Modes spec v4.3.pdf • Bright: 100 • Sports: as defined Picture Modes spec v4.3.pdf • Vivid: Max Luminance	
3	If Ambient Light Sensor has been set, Brightness can not be adjusted and is grayed and not selectable.	

3.2.2 Tone Mapping (HDR)

	Requirements
1	Tone Mapping applies to all HDR content including: • HDR10 • HDR10+ • Dolby Vision • HLG
2	A slider adjusts the Tone Mapping value with a range from 0 to 100.
3	Tone mapping brightens the screen by adjusting the mid-range of the tone mapping curve. Applies to LED and OLED panels.

3.2.2.1 Tone Mapping Default by Picture Mode

	Picture Mode	Tone Mapping default
1	Bright	100, DV:70
2	Calibrated	50
3	Calibrated Dark	50
4	Sports	60
5	Vivid	100

3.3 Black Level

Black Level previously named Brightness

	Requirements	Notes

1	Brightness configures the black level of the picture.	Black Level was formerly named Brightness. Technically the adjustment changes brightness but the effect appears to change black level.
2	A slider adjusts the Black Level with a range from 0 to 100.	
3	The default Black Level setting value for SDR is • 50: Bright (sku dependent), Calibrated, Calibrated Dark • 48: Bright (sku dependent). • As per comment Picture Modes spec v4.3.pdf: Sports, Vivid The default Black Level setting value for HDR is • 48: Bright, Vivid (per sku) • 50: Bright, Calibrated, Calibrated Dark, Sports	

3.4 Contrast

	Contrast configures the white level of the picture.
1	A slider adjusts the Contrast value with a range from 0 to 100.
2	The default Contrast setting value is 50. • Except for SDR Sports and SDR Vivid: default is as per comment Picture Modes spec v4.3.pdf

3.5 Color

	Requirements	**Settings**
1	Settings in Color submenu optimize the color of the TV.	• Color • Tint • Color Temperature

3.5.1 Color

	Requirements
1	Color configures the intensity of the picture colors.
2	A slider adjusts the Color value with a range from 0 to 100.
3	The default Color value is defined below.

3.5.1.1 Color Defaults by Picture Mode

	Pic Mode	**Color SDR**	**Color HDR**
1	Bright	Per Picture Modes spec*	60/65
2	Calibrated	50	55, DV: 50
3	Calibrated Dark	50	55, DV: 50
4	Sports	Per Picture Modes spec*	55
5	Vivid	Per Picture Modes spec*	80

* Picture Mode spec version 5.3 or latest.

3.5.2 Tint

	Requirements

1	Tint configures the hue of the picture.
2	A slider adjusts the Tint value with a range from - 50 to 50.
3	If, the tint slider must display a one for one value, this may require a reduced scale such as -32 to 32.
4	The default SDR Tint setting value is 0.
5	The default HDR Tint setting value is • 0: Bright, Calibrated Dark, Vivid • 0: Calibrated, Sports

3.5.3 Color Temperature

Color Temperature configures the white level warmth or coolness.

	Settings	Color Temperature
1	Warm	6500K
2	Cool	15000K with taper to panel native
3	Normal	9300K

3.5.3.1 White Balance Tuner Saved to Color Temperature

	Requirements
1	Adjustments to White Balance Tuner are saved to Color Temperature.
2	If the White Balance Tuner is used to adjust Gain/Offset and/or 20 Point White Balance then an asterisk is appended to the Color Temperature setting with the adjustment (e.g. Normal*).
3	Adjustments to Gain/Offset and 20 Point White Balance per color temperature setting is global.
4	The asterisk is removed when Reset Color Temperature is invoked.
5	For example, changes in Gain for Normal Color Temperature will apply to all picture modes, for all inputs, where Normal Color Temperature is the current setting.

3.6 Clarity

	Requirements	Settings
1	Settings in Clarity submenu adjusts clarity of the picture.	• Contrast Enhancer • Dark Detail • Super Resolution • Sharpness • Edge Enhancement • Signal Noise • Block Noise • Contour Smoothing
2	Clarity submenu header is grayed out and not selectable with Game /PC Mode enabled.	All 8 settings under Clarity are not selectable with Game/PC Mode enabled.
3	Help text includes exclusion for Dark Detail.	Adjusts picture settings that improve shadow detail. If content is Dolby Vision then Dark Detail can't be adjusted for Calibrated or Calibrated Dark.

3.6.1 Contrast Enhancer

	Settings SDR and HDR Content	Settings DV Content	Notes

1	Off (default Calibrated Dark and Sports)	Off (default Calibrated, Calibrated Dark and Vivid)	Contrast Enhancer was formerly named Black Detail.
2	Low	Low	
3	Medium (default for Bright and Calibrated)	Medium (default Bright and Sports)	
4	High (default for Vivid)	High	

3.6.1.1 Contrast Enhancer Requirements

	Requirements	Notes
1	Contrast Enhancer includes Dark Detail with Contrast Enhancement.	The intent is to adjust the blacks to prevent black crush.
2	If DVI is the source then Contrast Enhancer is grayed out and not selectable.	
3	Grayed out and not selectable with Game/PC Mode enabled.	

3.6.2 Dark Detail

	Settings	Notes
1	Enabled (default Bright, Vivid)	Enhances shadow detail in dark scenes and highlights the shadows so not crushing using Dolby Vision algorithms.
2	Disabled (default Sports)	

3.6.2.1 Dark Detail Requirements

	Requirements	Notes
1	Dark Detail is intended only for Dolby Vision content. If not DV content then Dark Detail is grayed out.	
2	Dark Detail enhances the Contrast Enhancer adjustment.	
3	If the picture mode is Calibrated or Calibrated Dark then Dark Detail is set to off, grayed out and not selectable.	Per Dolby Vision requirement.
4	Grayed out and not selectable with Game/PC Mode enabled.	
5	Help text indicates limited to DV content.	“Improves details in dark areas of the picture and is only for Dolby Vision Content”

3.6.3 Super Resolution (4K skus only, not VHD, VFD skus)

	Settings SDR	Settings HDR
1	Off (Calibrated, Calibrated Dark)	Off (Calibrated)
2	Low	Low (Calibrated Dark, Sports)
3	Medium (Bright, Sports, Vivid)	Medium (Bright, Vivid)
4	High	High

3.6.3.1 Super Resolution Requirements

	Requirements	Notes
1	Super Resolution configures the resolution to enhance dim and blurred pictures resulting in a sharper picture for 1080P signal source and below.	

2	Super Resolution combines sharpness with de-jagging of the image.	Care is recommended as higher settings may introduce artifacts into the picture.
3	If the source is 4K the Super Resolution is grayed out and not available.	
4	Grayed out and not selectable with Game/PC Mode enabled.	

3.6.4 Sharpness

	Requirements
1	Sharpness configures the edge and content sharpness of the picture.
2	A slider adjusts the Sharpness value with a range from 0 to 100.
3	Default for SDR content for Bright, Calibrated, Calibrated Dark, Sports and Vivid picture modes is defined as High Sharpness (from a normal viewing distance up the sharpness adjustment until the Spears & Munsil sharpness pattern looks harsh, then reduce the sharpness adjustment until it smooth out a bit). Refer to the specification “Picture Modes spec 4.3” or latest version for details. • as per spec: Vivid, Calibrated, Calibrated Dark, Sports • 30: Bright
4	Default for HDR content is • 30 for Bright and Vivid • 20 for Calibrated Dark • 25 for Sports • 0 for Calibrated
5	Super resolution edge enhancement is not included into the sharpness.
6	If Full Color 4:4:4 is On, then Sharpness is disabled, is grayed out and not selectable.
7	Grayed out and not selectable with Game/PC Mode enabled.

3.6.5 Edge Enhancement

	Settings	Notes
1	Off	Grayed out and not selectable with Game/PC Mode.
2	Low (default)	
3	Medium	
4	High	

3.6.5.1 Edge Enhancement Requirements

	Requirements	Notes
1	Edge Enhancement supports de-jagging of the image. Edge Enhancement increases the smoothness of edges.	
2	If Full Color 4:4:4 is On and content is 4:4:4, then Edge Enhancement is disabled, grayed out and not available.	

3.6.6 Signal Noise

	Requirements	Notes
1	Off	
2	Low (default Calibrated, Calibrated Dark, Sports)	
3	Medium (default Bright, Vivid)	

4	High	

3.6.6.1 Signal Noise Requirements

	Requirements	Notes
1	Signal Noise configures video noise reduction.	
2	Signal Noise is not available i for HDMI content with SDR 4:4:4 or HDR 4:4:4 (available with HDR 4:2:2 and Dolby Vision).	Most common 120 Hz source is PC connected to HDMI or HDMI 1.4a device with EDID confirming 120 Hz.
3	If Full Color 4:4:4 is On, then Signal Noise is disabled, not available and grayed out	
4	Grayed out and not selectable with Game/PC Mode enabled.	

3.6.7 Block Noise

	Requirements	Notes
1	Off	
2	Low (default Calibrated, Calibrated Dark, Sports)	
3	Medium (default Bright, Vivid)	
4	High	

3.6.7.1 Block Noise Requirements

	Requirements	Notes
1	Block Noise configures the MPEG compression level. Block Noise includes UltraClear Noise Reduction (UCNR).	
2	Block Noise is not available if the current HMDI content is SDR 4:4:4 or HDR4:4:4 (available with HDR 4:2:2 and Dolby Vision).	
3	If Full Color 4:4:4 is On, then Block Noise is disabled, grayed out and not available	
4	Grayed out and not selectable with Game/PC Mode enabled.	

3.6.8 Contour Smoothing (not for VHD, VFD, 4K, VQD sku)

	Requirements	Notes
1	Off (default Calibrated, Calibrated Dark)	Grayed out and not selectable with Game/PC Mode enabled.
2	Low (default Sports)	
3	Medium (default Bright, Vivid)	
4	High	Contour Smoothing removes visible contour noise while retaining the complex detail in the digital image.

3.7 Motion Control (not for VHD, VFD, 4K, VQD skus)

	Requirements	Settings
1	Settings in Motion Control submenu optimize motion perception of the picture.	• Judder Reduction • Motion Blur Reduction • Clear Action

2	Motion Control submenu header is grayed out and not selectable with Game/PC Mode enabled.	All 3 settings under Motion Control are not selectable with Game/PC Mode enable.

3.7.1 Judder Reduction (Not for VHD, VFD, 4K, VQD skus)

	Requirements	Notes
1	Judder Reduction only applies to film dejudder (24 frame film content).	
2	Judder Reduction configures frame interpolation to reduce film judder when upconverting 24 or 30 Hz content to the 60 Hz panel or 24, 30, 60 Hz content to the 120 Hz panel.	Most common 120 Hz source is PC connected to HDMI or HDMI 1.4a device with EDID confirming 120 Hz.)
3	The Judder Reduction setting value can range from 0 to 10.	
4	The default Judder Reduction is • 7 Vivid • 6 Bright • 0 Calibrated Dark • 2 Calibrated, Sports	
5	Judder Reduction is a set and forget setting: If On is selected then Judder Reduction applies if applicable as per the table below. No gray out of Judder Reduction. If Judder Reduction is NA in the tables below, then Judder Reduction has no effect.	
6	Grayed out and not selectable with Game/PC Mode enabled.	

3.7.1.1 MEMC and Film mode Support 120 Hz TV for 60 Hz and 50 Hz Rate Reduction

	Original Signal	Pull down	Input Signal	Motion Blur Reduction	Judder Reduct	Film Mode	Notes
1	24	-	24	N/A	On	Note 1	5:5 pulldown to 120
2	24	-	24	N/A	On	Note 1	MEMC to 120
3	24	2:1:1:1	30	N/A	Off	Note 1	Reverse then 5:5 pulldown to 120
4	24	2:1:1:1	30	N/A	On	Note 1	Reverse then MEMC to 120
5	24	3:2	60	N/A	Off	Note 1	Reverse then 5:5 pulldown to 120
6	24	3:2	60	N/A	On	Note 1	Reverse then MEMC to 120
7	30	-	30	N/A	Off	Note 1	4:4 pulldown to 120
8	30	-	30	N/A	On	Note 1	MEMC to 120
9	30	2:2	60	N/A	Off	Note 1	Reverse then 4:4 pulldown to 120
10	30	2:2	60	N/A	On	Note 1	Reverse then MEMC to 120
11	60	-	60	Off	N/A	Note 1	2:2 pulldown to 120
12	60	-	60	On	N/A	Note 1	MEMC to 120
13	120	-	120	N/A	N/A	Note 1	Display Input Directly
14	25	-	25	N/A	Off	Note 1	4:4 pulldown to 100
15	25	-	25	N/A	On	Note 1	MEMC to 100
16	25	2:2	50	N/A	Off	Note 1	Reverse then 4:4 pulldown to 100
17	25	2:2	50	N/A	On	Note 1	Reverse then MEMC to 100
18	50	-	50	Off	N/A	Note 1	2:2 pulldown to 100
19	50	-	50	On	N/A	Note 1	MEMC to 120
20	100	-	100	N/A	N/A	Note 1	Display Input Directly

Note 1: Film Mode may be overloaded to disable cadence detection if switched "Off".

3.7.1.2 MEMC and Film mode Support 60 Hz TV for 60 Hz and 50 Hz Rate Reduction

	Original Signal	Pull down	Input Signal	Judder Reduct	Film Mode	Notes
1	24	-	24	Off	On	Update LCD at 48, BL at 192 Film Mode only for native 24 Hz
2	24	-	24	Off	Off	3:2 pulldown to 60
3	24	-	24	On	Note 1	MEMC to 60 MEMC has priority over Film Mode
4	24	2:1:1:1	30	Off	Note 1	Reverse to 24 then 2:3 pulldown to 60
5	24	2:1:1:1	30	On	Note 1	Reverse to 24 then MEMC to 60
6	24	3:2	60	Off	Note 1	Display Input Directly
7	24	3:2	60	On	Note 1	Reverse to 24 then MEMC to 60
8	30	-	30	Off	Note 1	2:2 pulldown to 60
9	30	-	30	On	Note 1	MEMC 30 to 60
10	30	2:2	60	Off	Note 1	Display Input Directly
11	30	2:2	60	On	Note 1	Reverse to 30 then MEMC to 60
12	60	-	60	N/A	Note 1	Display Input Directly
13	25	-	25	Off	Note 1	2:2 pulldown to 100
14	25	-	25	On	Note 1	MEMC to 50
15	25	2:2	50	Off	Note 1	Reverse to 25 then 2:2 pulldown to 20
16	25	2:2	50	On	Note 1	Reverse t0 25 then MEMC to 60
17	50	-	50	Off	Note 1	Display Input Directly

Note 1: Film Mode may be overloaded to disable cadence detection if switched "Off".

3.7.2 Motion Blur Reduction (not for VHD, VFD, 4K, VQD skus)

	Requirements	Notes
1	Motion Blur Reduction configures frame interpolation to reduce blur when upconverting 60 Hz content to the 120 Hz panel.	
2	Judder Reduction and Motion Blur Reduction use MEMC video processing to compensate for motion blur.	
3	The Motion Blur Reduction setting value can range from 0 to 10.	
4	The default Motion Blur Reduction setting is: • 7 Vivid • 6 Bright • 0 Calibrated Dark, Game • 2 Calibrated, Sports	
5	Applies only to 120 Hz panels.	Motion Blur Reduction is not included for 60 Hz panels and is not available and does not display.
6	Motion Blur Reduction is a set and forget setting: If On is selected then Motion Blur Reduction applies if applicable as per the table above. No gray out of Motion Blur Reduction. If Motion Blur Reduction is NA in the tables below, then Motion Blur Reduction has no effect.	
7	Grayed out and not selectable with Game/PC Mode enabled.	

3.7.3 Clear Action (VQD/MQ6 skus only)

	Settings	Default
1	Off	Default
2	On	Clear Action reduces blur in scenes with fast action.

3.7.3.1 Clear Action Requirements (VQD skus only)

	Requirements	Notes
1	For 60 HZ panel, Clear Action only applies to a signal of 60 Hz scanning backlight strobe rate, and 60 fps input data. Backlight timing is changed to de-blur with the effect that motion blur is reduced but flicker may be present.	
2	If signal is a 24 Hz source (e.g. film), then Clear Action does not apply, is not supported and is grayed out.	
3	If the panel is 60 Hz or 120 Hz then Clear Action activates overdrive for all signal sources by boosting the backlight LED current while reducing the duty cycle. The image sharpens by essentially providing a shorter strobe pulse while maintaining the same luminance level.	If 960 hz (DMR) hen duty cycle of 1ms backlight strobing If 360 hz then 2.8ms 180 hz or DMR 120 then no Clear Action support
4	The effect is to turn down the duty cycle, which results in less blur but reduces backlight brightness.	
5	To compensate for the reduction, the LED drive is increased to raise the backlight.	A by-product is the Backlight range is reduced.
6	Grayed out and not selectable with Game/PC Mode enabled.	

3.8 Picture Mode Edit

	Requirements	Notes
1	Save Picture Mode	
2	Reset Picture Mode	Only displays with a preset picture mode. If a custom picture mode then no display.
3	Delete Picture Mode	Only displays with a custom picture mode. If a preset picture mode then no display.

3.8.1 Save Picture Mode

	Requirements	Notes
1	Save Picture Mode is available for a preset picture mode or modified preset picture mode (picture mode with an asterisk).	The preset or modified picture mode becomes the basis of the custom picture mode.
2	When Save Picture mode is selected the following steps are taken: • Naming of the saved picture mode with a maximum of 15 characters • Resets the source picture mode to defaults (and removes the asterisk), if applicable. • Saves the picture mode as a custom picture mode.	
3	A custom picture mode cannot be saved again.	Save picture mode is grayed out if a custom picture mode selected.
4	A custom picture mode is saved globally for all inputs.	
5	A maximum of 4 unique custom picture modes can be saved for all inputs.	
6	An attempt to create a fifth picture mode results in an error message.	The dialog box message is “The maximum of four picture modes has been created.” An OK key is included to close the dialog box.

7	Saved picture modes are saved by dynamic range: there are 4 global picture modes for each dynamic range.	Dynamic ranges: SDR, HDR10/HDR10+, HLG, Dolby Vision.

3.8.2 Reset Picture Mode

	Requirements	Notes
1	Only a modified picture mode (preset picture mode with an asterisk) can be reset.	Reset Picture mode does not displays if custom picture mode is currently selected.
2	To reset, the picture mode must first display on the TV.	
3	When the picture mode is reset, any changes in the picture settings can be seen and a notification displays.	
4	Alternatively, if all picture modes are reset simultaneously from the SmartCast app, the picture mode on the TV remains the current picture mode.	

3.8.3 Delete Picture Mode

	Requirements	Notes
1	Only a custom picture mode can be deleted.	Delete Picture mode does not displays if a preset picture mode is currently selected.
2	To delete, the picture mode must first display on the TV.	
3	When the current picture mode is deleted then the picture mode is changed to Bright on screen and the change annunciated.	

3.9 Advanced Picture

	Requirements
1	Settings in Advanced Picture are included for advanced settings typically changed only once.

3.9.1 Film Mode

	Settings	Notes
1	On (default)	• Film Mode detects the content and if no MEMC, optimizes movie content. • TV has 60 Hz panel • MEMC turned off or not supported • 24 Hz content • If Film Mode set to On, then update LCD at 48 Hz and flashing backlight at 192 Hz
2	Off	Normal tone mapping based on HDR metadata. • If Film Mode set to Off, then 3:2 pulldown and then updating the LCD at 60 Hz and flashing backlight at 480 Hz.

3.9.1.1 Film Mode Requirements

	Requirements	Notes
1	Film Mode is available for 120 Hz panel for detection of film content only. Not disabled nor gray out with MEMC or Game/PC Mode.	

2	Film Mode is not available (disabled and grayed out) and does not display if TV has a 60 Hz panel and the following occurs: • MEMC enabled • Game/PC Mode enabled.	When Game/PC mode is turned off, Film Mode is restored to On.
3	If DVI is the source and chip cannot support Film Mode then the setting is grayed out and not available.	

3.9.2 Active Pixel Tuning

	Settings	Notes	Notes
1	Off (default Calibrated, Calibrated Dark)	Defaults apply to both SDR and HDR content.	Applies to all skus but with less zones than previously.
2	Low (default Sports)		
3	Medium (default Bright, Vivid)		
4	High		Tuning Active Pixel Tuning supports fine scale local contrast.

3.9.3 Active Full Array (not for VHD, VFD, 4K, VQD skus)

	Year	VHD	VFD	4K	VQD
1	2024				
2					

3.9.3.1 Active Full Array Requirements

	Requirements	Notes
1	Active Full Array™ is local dimming.	
2	Active Full Array is only for LED panels with local dimming. If none, then Global Dimming applies.	

3.9.3.2 Active Full Array Peak Brightness

	Settings	Peak Brightness	Local Dimming	Effect
1	Off	Off	Off	
2	Low	Off	On	
3	Medium	On	On	Minimizes blooming
4	High	On	On	Maximizes panel peak brightness.

3.9.3.3 Active Full Array Defaults by Picture Mode

	Picture Mode	Default for SDR content	Default for HDR content
1	Bright	Medium	Medium
2	Calibrated	Medium	Medium
3	Calibrated Dark	Low	Medium
4	Sports	Medium	Medium
5	Vivid	High	High

3.9.4 Global Dimming

	Settings	Picture Mode Default SDR Content	Picture Mode Default HDR Content

1	On	Calibrated, Calibrated Dark, Sports	Calibrated Dark, Sports
2	Off	Bright and Vivid	Calibrated, Bright and Vivid

3.9.4.1 Global Dimming Skus

	Year	VHD	VFD	4K	VQD
1	2024	X	X	X	X
2					

3.9.4.2 Global Dimming Requirements

	Requirements	Notes
1	Global dimming configures global backlight control (DCR only)	Global Dimming was formerly named Backlight Control.
2	If Global Dimming is supported, then Active LED Zones is not supported.	
3	If DVI is the source and chip cannot support Black Detail then the setting is grayed out and not selectable	

3.9.5 Ambient Light Sensor (not for VHD, VFD, 4K, VQD skus)

	Requirements
1	Ambient Light Sensor, known as Auto Brightness Control (ABC) in the industry, configures the automatic brightness based on the room lighting.
2	Ambient Light sensor to behave similar to a phone. This will require tuning.
3	If Clear Action is enabled, Ambient Light Sensor is disabled, grayed out and not selectable.
4	If content is HDR, HLG, or Dolby Vision, Ambient Light Sensor is disabled, grayed out and not selectable.
5	Ambient light sensor does not apply to D, V or M6 skus.

3.9.5.1 Ambient Light Sensor settings

	Settings	Description
1	Off	Default
2	Low	Results in a darker picture.
3	Medium	
4	High	Results in a brighter picture.

3.9.6 Aspect Ratio

	Settings	Description
1	Normal (default)	No change to aspect ratio
2	Stretch (HD only)	if 16:9 signal is 4:3 image with black bars left & right, stretches to fill screen
3	Panoramic (SD only)	Stretches a 4:3 image to fill 16:9 screen with an algorithm so the center doesn't look stretched.
4	Wide	Stretches a 4:3 aspect ratio to fill 16:9 screen, If 16:9 image adds black bars top and bottom

5	Zoom	Expands image both horizontally and vertically by 14%

3.9.6.1 Aspect Ratio Requirements

	Requirements	Notes
1	Depending on the current source, either Stretch or Panoramic is supported. If SD (480i/p) settings are: • Normal • Panoramic • Wide • Zoom If the source is 720p (1080i) settings are: • Normal • Stretch • Wide • Zoom	
2	Aspect Ratio is saved by input and dynamic range.	
3	The aspect ratio can change for a physical input if the content changes from HD to SD and vice versa.	
4	Aspect ratio is supported for WatchFree+ OTA channels only (no support for streaming content).	
5	The Aspect Ratio setting is changed to Normal, grayed out and not adjustable for the following conditions: • 1080p and 4K • Current content is 120Hz (typically a PC) • Full screen graphics - as for some apps during selection or play • HDR, HLG or Dolby Vision content. • Streaming content • VIZIO Home • WatchFree streaming content (but supported for OTA content)	No notification displays.

3.9.7 Enhanced Viewing Angle

	Settings	Default SDR Content	Default HDR Content
1	On	Bright, Calibrated, Calibrated Dark, Sports, Vivid	Calibrated Dark, Sports
2	Off		Bright, Calibrated, Vivid

3.9.7.1 Enhanced Viewing Angle Requirements

	Requirements	Notes
1	The Enhanced Viewing Angle is a global setting that improves the viewing angle but with the cost of reduces horizontal resolution.	
2	VRR takes precedence so if setting is On and VRR metadata detected and VRR active then Enhanced Viewing Angle is Off, grayed out and unavailable.	When VRR is no longer active, the Enhanced Viewing Angle is reinstated to the current setting.
3	Supported as follows: • Enhanced Viewing Angle is supported if available for the panel • VHD series – no Enhanced Viewing Angle support	Supported skus: • V4K50M-0809 • V4K50C-0809 • VQD50M-0809
4	For VQD50M with DLG, Enhanced Viewing Angle changes to Off and is grayed out with 4K1K120 content: Dual Line Gate (DLG) is enabled and drives 2 horizontal lines (vertical resolution) at the same time.	

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3.10 Color Calibration (Displays with key combo per VIZIO Test)

	Settings	Supports	Notes
1	Picture Mode Reference		Grayed out and not selectable
2	Color Temperature		Grayed out and not selectable
3	Dynamic Range	• SDR • HDR10/HDR10+ • HLG • Dolby Vision	Grayed out and not selectable
4	Color Tuner	• RGB Enabled • RGBCMY Hue • RGBCMY Saturation • RGBCMY Brightness	
5	White Balance Tuner	• 2-point White Balance (that is, RGB Offset & RGB Gain) • 20 Point white Balance	
6	Reset Color Temperature		
7	Gamma		
8	Calibration Test	• SMPTE test pattern • Flat Test Pattern • Ramp Test Pattern • Uniformity Analyzer test pattern	

3.10.0 Color Calibration requirements

	Requirements	Notes
1	Color Calibration and Gamma are no longer in All Settings for the user. Entry of a combination of keys as defined in VIZIO Test menu adds Color Calibration and Gamma at the end of Picture menu.	Settings must be supported but are hidden from the user in All Settings. For key combo go to https://vizio.atlassian.net/wiki/spaces/PM/pages/235874421375/13+VIZIO+Test+Menu#13.10-Launch-PQ-Color-Calibration-menu
2	Color Calibration is intended for professional calibration for • fine tuning of colors (Hue, Saturation and Brightness) saved by the current picture mode by input • Gain/Offset, 20 Point White Balance and 1D LUT, saved by Color Temperature.	
3	The current picture mode, color temperature and dynamic range are displayed as a reference because the baseline colors for the color tuner are dictated by these.	In practice, Calibrated would be the selected picture mode before color calibration is started. Color temperature is defined by picture mode. Dynamic range is defined by content.
4	Color Calibration is saved by input for: • HDMI ports • Antenna • WatchFree+ • Applications (adjustments applies globally to all apps) • not allowed for graphics including VIZIO Home.	CONFIRM THIS IS TRUE

3.10.1 Color Tuner

	Requirements	Notes

1	The Color Tuner allows the user to configure or view the display settings for color.	
2	The adjustments are saved to the currently selected picture mode for the current input.	
3	Color Tuner also supports enable and disable of the primary colors red, green, blue	Used by professionals during color calibration.
4	The adjustments included in the Color Tuner table are: • Hue, Saturation and Brightness.	

3.10.1.1 Red, Green, Blue Enabled

	Requirements	Notes
1	The Red, Green or Blue setting enables and disables the red, green or blue color displayed on the TV for testing purposes.	If all three colors are disabled, the screen is blank, so if two colors are disabled, the third color can not be disabled.
2	By default, the color is enabled.	
3	Primary color is persistent across inputs.	
4	Changing inputs does not change the setting if turned off.	
5	To turn on the Red, Green or Blue color: • Change setting enabled • DC or AC cycle.	

3.10.1.2 Red, Green, Blue, Cyan, Magenta, Yellow Hue

	Requirements	Notes
1	The Red, Green, Blue, Cyan, Magenta or Yellow Hue setting configures the hue.	
2	The Hue range for all 6 colors spans from -50 to 50, and the default value is 0.	

3.10.1.3 Red, Green, Blue, Cyan, Magenta, Yellow Saturation

	Requirements	Notes
1	The Red, Green, Blue, Cyan, Magenta or Yellow Saturation setting configures the saturation.	
2	The Saturation range for all 6 colors spans from -50 to 50, and the default value is 0.	

3.10.1.4 Red, Green, Blue, Cyan, Magenta, Yellow Brightness

	Requirements	Notes
1	The Red, Green, Blue, Cyan, Magenta or Yellow Brightness setting configures the brightness for the color.	
2	The Brightness range for all 6 colors spans from -50 to 50, and the default value is 0.	

3.10.2 White Balance Tuner

	Requirements	Notes

1	The Red, Green, Blue, Cyan, Magenta or Yellow Saturation setting configures the saturation.	
2	The Saturation range for all 6 colors spans from -50 to 50, and the default value is 0.	

3.10.2.1 Red, Green, Blue Offset

	Requirements	Notes
1	Red, Green, Blue Offset configures the color offset.	
2	The Offset range is actually 256 but supported values spans from -100 to 100 truncating the end limits.	
3	The default setting is 0.	

3.10.2.2 Red, Green, Blue Gain

	Requirements	Notes
1	Red, Green, Blue Gain configures the color gain.	
2	The gain range is actually 256 but supported values spans from -100 to 100 truncating the end limits.	
3	The default setting is 0.	

3.10.2.3 21 Point White Balance

	Requirements	Notes
1	21 Point White Balance adjusts for the currently selected color temperature.	
2	The 21 Point White Balance Setting is the Gain percentage for the respective color (red, green, or blue).	
3	The Gain percentage values for red, green, and blue: • 5% (default) • 10% • 15% • 20% • 25% • 30% • 35% • 40% • 45% • 50% • 55% • 60% • 65% • 70% • 75% • 80% • 85% • 90% • 95% • 100%	
4	For each Gain setting, (e.g. 5%), the Red, Green, and Blue values can be adjusted with a hue setting value range from -50 to 50 and default of 0.	

3.10.3 Reset Color Temperature

	Requirements	Notes

1	A White Balance Tuner adjustment is saved to the current Color Temperature and Reset Color Temperature is available.	The Reset Color Temperature setting is not available if there are no White Balance tuner adjustments for the current color temperature and is grayed out.
2	The selected color temperature setting is reset to the defaults globally. Since color temperature is saved globally, the reset of the color temperature setting is reflected in all picture modes for all inputs with the setting.	
3	When reset is completed, the color temperature reset is annunciated on the TV.	

3.10.4 Gamma

	Settings	Notes
1	1.8	
2	2.0	
3	2.1 (Normal)	default
4	2.2	default for Calibrated Dark
5	2.4	

3.10.5 Calibration Tests

	Requirements	Settings
1	SMPTE Test Pattern	Off (default) On
2	Flat Test Pattern	Off, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
3	Ramp Test Pattern	Off (default), White, Red, Green, Blue
4	Uniformity Analyzer Test Pattern	Off (default), On

3.10.5.0 Calibration Tests Requirements

	Requirements	Notes
1	The four test patterns are collectively known as the calibration tests, and are used to tune picture settings.	
2	If the current dynamic range does not support the calibration test then it is grayed out (e.g Dolby Vision) on the mobile app.	
3	When a test pattern is selected from the mobile app, then the test patterns displays on the TV.	
4	All test patterns are created on demand: An image is not stored on the TV. If a test pattern is selected from the SmartCast app, the test pattern is immediately generated and displays on the TV screen.	Though not selectable from the Color Tuner, Dolby Vision test patterns are also generated and display on the TV screen when selected from the SpectralCal app loaded on a PC.
5	Only one test can be displayed at a time. If a calibration test is on and a second test is selected from the mobile app, the first calibration test is turned off.	
6	The calibration tests are persistence until turned off. To remove a test pattern: • Turn the setting to Off • Select another test pattern • Change the input • Change the channel (if underlying source is tuner) • Press the MENU key	

7	To change calibration while using a test pattern, tap the back arrow button to redisplay the Color Calibration menu in the mobile app then tap Color Tuner or White Balance Tuner. The Test Pattern remains onscreen for the currently selected dynamic range.	
8	If the current input has no source or the UHD input is the current source, the requested calibration test displays.	
9	A calibration test cannot display over a graphical input including SmartCast TV, app content selection/streaming, or USB media. The calibration tests are grayed out in the mobile app.	“To display the test pattern connect a source to the input and try again.”

3.10.5.1 SMPTE Test Pattern

	Requirements	Notes
1	The SMPTE Test Pattern is an industry standard color bar including vertical bars of white, yellow, cyan, green, magenta, red, blue and black.	
2	Once enabled, the SMPTE Test Pattern becomes full-screen.	
3	If requested by SmartCast app, test not annunciated.	
4	The settings Is:	Off (default)

3.10.5.2 Flat Test Pattern

	Requirements	Notes
1	The Flat Test Pattern is full screen gray selected from 0% (off) to 100%.	
2	By default, the Flat Test Pattern setting value is set to off.	
3	The values for the test pattern include • Off (0%, default) • 10% • 20% • 30% • 40% • 50% • 60% • 70% • 80% • 90% • 100%.	
4	The percentage of the selected flat test pattern is annunciated on the screen throughout the test.	
5	Definitions of the color fills: • White opaque 1920 X 1080 fill with settings of 10% to 100% RGB • 100% RGB is 255, 255, 255 • 10% RGB is 25, 25, 25.	

3.10.5.3 Ramp Test Pattern

	Requirements	Notes
1	For the Ramp Test Pattern, the 1920 X 1080 display is divided into 21 vertical bars of fill progressing from the color selected to black.	
2	If requested by SmartCast app, test not annunciated.	

3	The colors that can be selected are:	• Off • White • Red • Green • Blue

3.10.5.4 Uniformity Analyzer Test Pattern

	Requirements	Notes
1	The Uniformity Analyzer test pattern is a 1920x1080 fill at 80% white with a 200x100 box at 40% white screen center.	
2	If requested by SmartCast app, test not annunciated.	
3	The settings is:	Off (default)