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	Audio Settings	Slider	Notes
1	Audio Out		TV Speakers is default. If a soundbar (or audio device) is discovered then that replaces the TV speakers setting.
2	ClearDialog		
3	Surround Sound		
4	Volume Leveling		
5	Balance	yes	
6	Bass	yes	2021 forward and updated 2020
7	Treble	yes	2021 forward and updated 2020
8	Lip Sync	yes	Slider limited scale 0 - 8

9	Digital Audio Out		
10	Analog Audio Out		
11	Sound Bar Settings		Control of a 2021+ VIZIO sound bar.

5.0.1 Audio Settings Saved Globally

	Audio Requirements	Notes
1	Audio settings are saved globally, not by input.	
2	Volume is saved globally, not by input.	

5.1 Audio Out

	Setting	Definition	Audio Device CEC Behavior
1	AudiDeviceName if discovered- replaces TV speakers setting	<p>When a CEC audio receiver or sound bar is discovered then</p> <ul style="list-style-type: none"> Audio out setting switched to the name of the audio device Replaces the TV Speakers setting automatically with the AudioDeviceName TV speakers are automatically turned Off Audio is heard from the sound bar. While discovered CEC audio device is selected, automatic power on and off of the CEC audio device applies when TV powered on and off. For a VIZIO Sound Bar, the audio menu updates to the sound bar settings included for control by the TV. All TV Audio settings are removed except Audio Out remains at the top and Digital Audio Out following the sound bar settings. 	<ol style="list-style-type: none"> When CEC audio device is turned off or disconnected <ol style="list-style-type: none"> TV speakers are automatically powered on (unmuted). The AudioDeviceName setting is replaced by the TV Speakers setting If the TV speakers are on (discovered CEC device not connected) and the CEC audio device is reconnected <ol style="list-style-type: none"> TV speakers automatically turned off Audio Out setting switches to AudioDeviceName, TV speakers setting is removed. If CEC is disabled from the TV or ARC audio device <ol style="list-style-type: none"> Remove the AudioDeviceName setting from Audio Out Audio Out setting is changed to TV speakers Audio is heard from TV Speakers. If CEC is disabled from the TV or eARC audio device <ol style="list-style-type: none"> audio is heard from the eARC audio device automatic turn on and off is not supported with power cycle. No volume control as no support of CEC commands. Notification displays first time at power on, then no action if volume/mute is pressed. TV speakers setting not included in Audio out.
2	TV Speakers (default but if ARC/eARC audio device discovered then TV Speakers settings is removed and replaced by the AudioDeviceName)	If the TV Speakers are no longer displayed, unplug or disconnect the soundbar then the TV Speakers are automatically displayed.	<p>Audio from TV speakers</p> <p>Audio is always heard from optical or analog audio out regardless of the TV speakers settings. Audio can be heard from TV and audio device at the same time.</p>
3	Optical//Analog Audio Out	If the Optical//Analog Audio Out setting is selected, the TV speakers are turned off and a CEC power off command is sent	<p>When TV speakers are off, audio is heard from</p> <ul style="list-style-type: none"> optical

(formerly Off)	to ARC/eARC sound bar or audio receiver. TV speakers are turned off even if no CEC audio device is detected because a sound bar, audio receiver or headphones may be connected to analog or digital audio out.	<ul style="list-style-type: none"> analog audio out eARC audio source, CEC disabled <p>For Optical (digital audio out), DD+ content is pass through as DD and DTS is pass through as DTS digital surround. Other content pass through PCM.</p> <p>NOTE: audio always is sent out to optical audio out even if not selected.</p>
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5.1.1 Audio Out with CEC Audio Device

	Audio Out Setting	TV Speakers	ARC or eARC Audio Device Power On
1	TV Speakers	On	Off
2	Optical/Analog Audio Out	Off	Off
3	ARC/eARC sound bar detected with CEC enabled	Off	On
4	ARC Sound Bar without CEC detected	On	N/A (CEC required to hear audio)
5	eARC audio device without CEC disabled	Off	On

5.1.2 Volume Control

	Requirements	Notes	TestRail Test Case#
1	Volume can be changed from a variety of sources: <ul style="list-style-type: none"> SmartCast mobile Volume buttons on the TV Volume IR codes from a VIZIO or other IR remote CEC command to change volume for sound bar <ul style="list-style-type: none"> Limited to volume up/down CEC command Voice Command from BT remote or Alexa/GVA. 	If volume is changed from SmartCast mobile, the adjustment is displayed on the TV with the volume control at top right so eyes are on screen.	
2	Volume has a range from 0 – 100.	The Volume default setting value is 20 for D, P and OLED. Default is 30 for V and M.	
3	The volume setting is global.	When an input is changed the volume setting is unchanged.	C21340062
4	Volume change for TV or connected VIZIO sound bar using Alexa/GVA/Vizio Voice command (BT remote).	For ARC/eARC, use CEC Volume Up/Down repeatedly to achieve specified volume level requested via Alexa/GVA/Vizio Voice	
5	Direct value volume change for VIZIO sound bar connected to TV using Voice command (BT remote)	Set volume to requested value <ul style="list-style-type: none"> Display value for new 2021 VIZIO SB and later No display of value for old VIZIO SB 	C21370391

6	Direct value volume change for non-VIZIO sound bar connected to TV using Voice command (BT remote)	Set volume to requested value <ul style="list-style-type: none"> No display of value for non-VIZIO SB 	C21370390
7	No volume control display: <ul style="list-style-type: none"> TV power on Connect sound bar during TV boot up Switch TV speaker setting auto/on/off Plug or unplug of sound bar 	This is true for both no sound bar and sound bar use cases.	C21366602

5.1.3 TV Speakers Off, Devices with Volume Control

	Audio Out setting	Audio device connected	Volume Control	Device name	Notes
1	Optical/Analog Audio Out	Analog Audio out = Variable	Volume ring with + and - TV volume level on ring	"Audio System"	Audio device connected via left/right audio OR Headphones line out TV does not know the volume scale.
2	ARC/eARC sound bar	CEC audio system connected via: <ul style="list-style-type: none"> ARC eARC 	Audio system volume level (digits) Ring depicts scale	Volume Slider with device name above slider as follows: <ul style="list-style-type: none"> VIZIO Elevate VIZIO AIO VIZIO MicMe SB All other VIZIO sound bars: <ul style="list-style-type: none"> VIZIO Soundbar non-VIZIO: Audio system 	TV issues CEC commands to the audio system to change the volume Audio team has requested to suppress the CEC name for all VIZIO sound bars except Elevate and AIO: model number no longer displayed.
3	Any	Bluetooth headphones	Slider displays BT headphones volume value on round control without digits.	headphones icon (no text)	BT headphones are not included in audio out

5.1.3.1 ARC/eARC Sound Bar Volume Control

	Volume Control Used	Behavior	Notes
1	Volume Up/Down from IR or BT remote	Increment/decrement volume on sound bar by two	VIZIO only?
2	Alexa/GVA/VIZIO Voice specifies new volume value for connected VIZIO sound bar.	<ol style="list-style-type: none"> Use CEC to find current sound bar volume value. Find difference between current sound bar volume and new volume value. Use CEC volume up/down to change volume with number of commands required to achieve requested change. 	CEC volume changes by two steps.

5.1.3.2 Volume Control with VIZIO Sound Bar

	Volume Control with VIZIO Sound Bar Requirements	Details
1	Volume Up/Down on TV remote issues volume CEC command to sound bar.	Vendor specific commands created to reduce CEC traffic, specifically to disable sound bar audio status (confirmation) back to TV after volume IR code received and volume changed.
2	For a faster response to the volume control between a VIZIO TV and VIZIO sound bar.	<ul style="list-style-type: none"> TV does not wait for CEC feedback command from the sound bar to confirm received (this caused a delay) The volume OSD for sound bar, and the volume OSD for the TV reacts more quickly and more in sync.
3	CEC mapping of TV volume to VIZIO sound bars are 2:1.	<ul style="list-style-type: none"> A volume step of 2 is 1 sound bar step Odd TV volume is rounded up (e.g. TV volume 89 is interpreted as 45 on sound bar) TV volume 96 - 100 is converted to 49 (maximum volume) on the sound bar
4	BT Voice control change volume via CEC mapping to sound bars including: <ul style="list-style-type: none"> Volume up/down increase/decrease volume increase/decrease audio make it louder turn it up/down set volume to XX or % (VIZIO sound bars only) 	<ul style="list-style-type: none"> Volume up/down then starting at level 10 increase or decrease SB volume by 4 steps VIZIO sound bars: show volume slider with value non-VIZIO sound bars: show up or down, no slider, no value. If requested volume value is odd then round up to next even volume value (e.g. 11 spoken would change volume to 12)

5.1.3.3 Bluetooth headphones Volume Control

	Audio device connected	Volume keys pressed	Notes
1	Bluetooth Headphones	Press Volume Up or Down key.	Slider displays BT headphones volume value on round control without digits. Each key press advances or decrements 6 steps. Audio for Sound Bar, TV speakers and/or Optical/Analog Audio Out is muted and not heard.

5.1.4 TV Speakers Off, Notification, No Volume Control

	Audio out setting	Audio device connected	Volume control	Volume keys pressed	Notes
1	Optical/Analog Audio Out	Audio device connected via optical	No display of volume control	First volume key press or IP command displays "Speakers are Off".	TV cannot detect if optical is connected or not Old AV Receiver or sound bar connected via optical
2	Optical/Analog Audio Out	Analog Audio out = Fixed	No display of volume control	First volume key press or IP command displays "Speakers are Off".	TV cannot detect if analog audio out is connected.

					Audio device connected via left/right audio OR Headphones line out
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5.1.5 Audio out for ARC or eARC sound bars (or AVR), CEC enabled/disabled

DELETED - no longer applicable with removal of Auto setting

5.2 ClearDialog

	Dialogue Enhancer Settings	Notes	TestRail TC #
1	Off (default)	The help text is "If enabled, then clarity of dialogue is enhanced when Surround Sound is enabled."	C21662291
2	Low	If Low, Medium or High is selected and then the audio is enhanced.	
3	Medium	Same as above	
4	High	Same as above	

5.2.1 ClearDialog Requirements

	ClearDialog Requirements	Notes
1	ClearDialog is always available but depending on the content the solution changes as per below.	This is a set and forget setting so even if the setting does not apply to the content it can still be set for future content.
2	Dolby MS12 Config Y includes a function known as "Dialog Enhancer" for AC-4 content only.	
3	If audio content is Dolby AC-4: <ul style="list-style-type: none"> Only the Dolby function "Dialog Enhancer" adjusts the setting value heard by the user. DTS dialog clarity is disabled. 	
4	If audio content is not Dolby AC-4: <ul style="list-style-type: none"> Only the DTS Dialog Clarity function adjusts the setting value heard by the user. Dolby function "Dialog Enhancer" is disabled. 	
5	If Surround Sound is set to Off then even though the Dialog Enhancer setting is available (not grayed out) the setting has no effect.	Dialog Clarity is part of Virtual:X so is disabled when Surround Sound is off

5.3 Surround Sound

	Surround Sound Settings	Description	Notes
1	Virtual:X (default)	If Surround Sound is set to Virtual:X, DTS audio processing	SmartCast app must include the same help text as sidebar referring to partner: "When set to On, enables

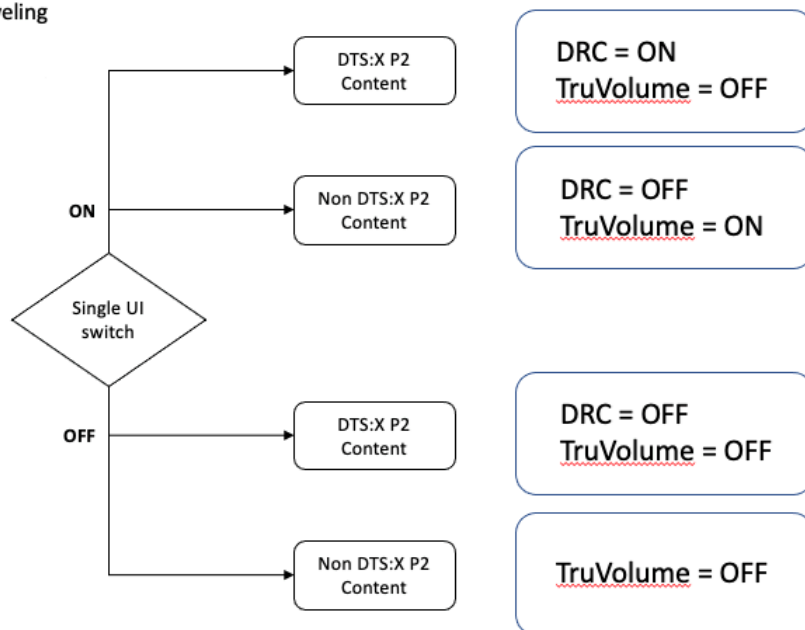
		provides surround sound and virtual height.	Surround Sound suitable for sports and TV shows. Virtual:X™ adds virtualized height best for movies."
2	On	If Surround Sound is set to On, DTS audio proceeding provides Surround Sound.	
3	Off		Dialog Clarity is part of Virtual:X so is disabled when Surround Sound is off

5.4 Volume Leveling

	Volume Leveling Settings	Description	Notes
1	Off (default)	TruVolume does not apply DRC for DTS:X content does not apply.	SmartCast app must include the same help text as sidebar referring to partner: "DTS TruVolume™ levels the sound heard if Volume Leveling is set to On."
2	On	Content is not DTS:X then TruVolume levels the sound when commercials are detected. If source is DTS:X then TruVolume does not apply, Dynamic Range Compression (DRC) is used.	DRC and TruVolume have different algorithms but the apparent effect from customer perception is basically the same.

5.4.1 Volume Leveling Flow Chart

Volume Leveling



5.5 Balance

	Balance Setting	Slider range	Default	Notes
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1	Configures left right balance of the audio.	- 50 to 50	0	As the setting is changed in the SmartCast app, a slider displays on the TV with the adjustment.
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5.6 Bass

	Balance Setting	Slider range	Default	Notes
1	Configures bass.	-12 to 12	0	As the setting is changed in the SmartCast app, a slider displays on the TV with the adjustment.

5.7 Treble

	Balance Setting	Slider range	Default	Notes
1	Configures treble.	-12 to 12	0	As the setting is changed in the SmartCast app, a slider displays on the TV with the adjustment.

5.8 Lip Sync

	Lip Sync Setting	Slider range	Default	Notes
1	Configures the synchronization of the audio with the video.	0 - 20 The audio delay is 10 ms for each step	0	Delay Adjustment range: 0 to 200 msec

5.9 Digital Audio Out Settings

	Digital Audio Out Setting	Description	Notes
1	Auto (default)	Auto automatically provides the best audio format supported by the EDID as follows: <ul style="list-style-type: none"> Dolby Digital, Dolby Digital+ and Dolby TrueHD DTS-HD or DTS-X For optical, if support is detected by EDID, then Dolby Digital is sent For optical If end user's device does not support Dolby Digital as detected by EDID, then PCM is sent. 	
2	PCM		
3	Digital (all Dolby and DTS)	Digital included to provide DTS support to optical via pass through instead of using TV EDID.	When low latency enabled, then digital audio out setting changes to Digital. No notification. The user can switch back to Auto or PCM if preferred and is persistent (no future change to digital automatically unless reset to

		<p>factory settings). Prevents transcoding inherent in the Auto setting, allows pass through only.</p> <p>When Game Low Latency no longer enabled, then fall back to previous setting (Auto or PCM).</p>
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5.9.1 Digital Audio Out Requirements

	Digital Audio Out Requirements	Notes
1	Digital audio output is always available except if TV speakers is set to On then setting changed to PCM and Digital Audio out is grayed out and not available.	<p>Change to PCM because different audio type to TV speakers and digital audio out (non-ARC sound bar) can require different audio processing and may result in abnormal audio to TV speakers.</p> <p>ARC not an issue as automatically turned off via CEC when TV speakers set to ON.</p>
2	This is a set and forget setting.	Setting does not gray out if not digital content.
3	If source is AAC audio for both optical out and HDMI ARC/eARC the output is PCM Stereo for Auto, PCM and digital settings.	Multi channel AAC must output 2 channel PCM through S/PDIF and HDMI ARC/eARC.

5.10 Analog Audio Out Settings

	Analog Audio Out Settings	Description	Notes
1	Fixed (default for Stereo audio)	A press of the volume keys does not change value sent to analog audio out	<p>Volume adjustment is expected from the audio device.</p> <p>Default for:</p> <ul style="list-style-type: none"> all 2020 2021 V5 (carryover) 2021 M7/M8 2021 P9/Px
2	Variable (default for single audio out jack)	When set to variable, volume slider controls volume to analog audio out as well as volume.	<p>Default for:</p> <ul style="list-style-type: none"> 2021 D skus except D24f4-J1 2021 V6 2021 M6

5.10.1 Analog Audio Out Requirements

	Analog Audio Out Requirement	Notes
1	Analog audio out is Stereo Left Right out or line out for headphones	Model dependent
2	Analog audio output is always available regardless of the TV speakers setting and presence or absence of a connected audio device.	
3	This is a set and forget setting.	Setting does not gray out if not digital content.

5.11 Sound Bar Settings Requirements V3

V3 2023 FUR6.0, V2 2022 FUR5.2, V1 2021 at launch and for 2020 update.

	Requirement	Menu Items	Notes
1	A VIZIO sound bar connected via CEC (limited to ARC/eARC) can be controlled from the TV using vendor specific commands.	<p>Press of volume displays the Volume Slider with device name above slider as follows:</p> <ul style="list-style-type: none"> VIZIO 2022 Atmos: VIZIO + soundbar simplified name: VIZIO M-Elevate, VIZIO P-Elevate VIZIO AiO: VIZIO M213ad changed to M-AiO. VIZIO non-Atmos: VIZIO + soundbar simplified name e.g. VIZIO P514a, VIZIO SB46514 non-VIZIO: audio system 	<p>Sound bars supported:</p> <ul style="list-style-type: none"> 2020 M51 2021 V21 and M51 all 2022 going forward
2	<p>Sound Bar settings do not display in the menu until supported sound bar is discovered.</p> <p>The header is the VIZIO soundbar simplified name followed by "Settings" followed by the current audio out in parentheses</p> <p>V3 includes removal of Speaker test as well as addition of Height Level.</p>	<ul style="list-style-type: none"> DEVICE NAME Settings (AUDIOOUT) Bass Treble ClearDialog Subwoofer Height Level Night Mode Virtual:X Info 	<ol style="list-style-type: none"> The first item is informational text, not selectable and grayed out The remaining are VIZIO sound bar setting (2021 forward) controlled via CEC. DEVICE NAME = soundbar simplified name such as <ol style="list-style-type: none"> M-Elevate or P-elevate P514a or SB46514 AUDIOOUT = the current audio format e.g. DTS: X
3	The supported audio settings from the TV follow the Sound Bar Control setting (e.g. EQ mode, Bass, Treble, etc).	<ul style="list-style-type: none"> TV settings Audio Out Digital Audio Out 	<ol style="list-style-type: none"> TV Settings is informational not selectable & grayed out If TV speakers are changed to On then the sound bar settings are grayed out and all audio settings for TV are available.
4	TV audio settings that don't apply and do not display while the sound bar is connected, and TV Speakers are set to Auto or Off	<ul style="list-style-type: none"> Surround Sound ClearDialog Volume Leveling Balance Bass Treble Lip Sync Analog Audio Out 	<p>Bass and Treble are always included in audio settings.</p> <p>Equalizer and Delete Audio mode are only in models that are not updated.</p>

5	For SmartCast mobile with connected sound bars, the Audio submenu replaces the sound bar settings with a link to Audio SmartCast mobile.		
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5.11.1 Sound Bar Settings Supported by TV

	Sound Bar Setting	Options for HTML5 app	New CEC	2.0	2.1	5.1	Atmos	Notes
1	Volume	<ul style="list-style-type: none"> Up Down 	NO	X	X	X	X	Slider - supported from key press, no submenu
2	Mute	<ul style="list-style-type: none"> On Off 	NO	X	X	X	X	Radial - supported from key press, no submenu
3	Bass	<ul style="list-style-type: none"> Low Medium High 	yes	X	X	X	X	Radial Sound bar has 21 point slider
4	Treble	<ul style="list-style-type: none"> Low Medium High 	yes	X	X	X	X	radial Sound bar has 21 point slider
5	ClearDialog	<ul style="list-style-type: none"> Low Medium High 	yes	X	X	X	X	Radial Sound bar has 10 point slider Grayed out if EQ = Direct
6	Subwoofer	<ul style="list-style-type: none"> Low Medium High 	yes		X	X	X	Radial Sound bar has 21 point slider
7	Height Level	<ul style="list-style-type: none"> Low Medium High 	yes	X 2024 skus forward	X 2024 skus forward	X 2024 skus forward	X	Applies to sound bars with Atmos support. If bar does not includes height speakers, then Height level adjustment is virtual (M215aw-K6, M213ad-K8)
8	Night Mode	<ul style="list-style-type: none"> On Off 	yes	X	X	X	X	Radial; Not persistent through power cycle
9	Virtual:X	<ul style="list-style-type: none"> On Off 	yes	X	X	X	O	Radial - 2021 Atmos bars only, not for 2020 Atmos bars
10	Info	Launch new menu	yes	X	X	X	X	Displays for 2024 sound bars going forward that support

								the required vendor specific commands for info settings.
								Do not display for 2020 and 2021 sound bars.

5.12.2.1 Information screen

	Information	Audio Format	Notes
1	Model Name: XXXXX-XX		
2	Serial Number: XXXXXXXXXXXXXXXX		
3	Firmware: x.x.x.x		
4	Audio out	<ul style="list-style-type: none"> • Dolby Audio - Dolby Digital • Dolby Audio - Dolby Digital Plus • Dolby Digital - Dolby True HD • Dolby Atmos - Dolby Digital Plus • Dolby Atmos - Dolby True HD • Dolby Atmos - Dolby MAT • DTS Digital Surround • DTS-HD Master Audio • DTS:X • LPCM • PCM • Stereo • WAV • MP3 	Current audio format played from the Soundbar

5.12.2 Sound Bar Slider Setting Defaults

	Sound Bar Setting	Low	Medium	High
1	Bass Treble Subwoofer	<ul style="list-style-type: none"> • -10 • -9 • -8 • -7 (default for TV) • -6 • -5 • -4 	<ul style="list-style-type: none"> • -3 • -2 • -1 • 0 (default for TV) • 1 • 2 • 3 	<ul style="list-style-type: none"> • 4 • 5 • 6 • 7 (default for TV) • 8 • 9 • 10
2	ClearDialog	<ul style="list-style-type: none"> • 0 (default) • 1 • 2 • 3 	<ul style="list-style-type: none"> • 4 • 5 (default) • 6 • 7 	<ul style="list-style-type: none"> • 8 • 9 • 10 (default)

3	Height Level	<ul style="list-style-type: none"> • -5 (default) • -4 • -3 • -2 	<ul style="list-style-type: none"> • -1 • 0 (default) • 1 	<ul style="list-style-type: none"> • 2 • 3 (default) • 4 • 5
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5.12.3 AIO Slider Setting Defaults

	AIO Setting	Low	Medium	High
1	Bass Treble Subwoofer	<ul style="list-style-type: none"> • -14 • -13 • -12 • -11 • -10 (default for TV) • -9 • -8 • -7 • -6 	<ul style="list-style-type: none"> • -5 • -4 • -3 • -2 • -1 • 0 (default for TV) • 1 • 2 • 3 • 4 • 5 	<ul style="list-style-type: none"> • 6 • 7 • 8 • 9 • 10 (default for TV) • 11 • 12 • 13 • 14
2	Height Level	<ul style="list-style-type: none"> • -5 (default) • -4 • -3 • -2 	<ul style="list-style-type: none"> • -1 • 0 (default) • 1 	<ul style="list-style-type: none"> • 2 • 3 (default) • 4 • 5

5.12.4 Supported Sound Bars for Sound Bar Settings displayed by TV

SOC	Model	Year
Zylux	M51a-H6	2020 (not included at launch)
Zylux	M512a-H6	2020 (not included at launch)
Zylux	P514a-H6	2020 (not included at launch)
Zylux	V51-H6	2020 (not included at launch)
Zylux	M51ax-J6	2021 (not included at launch)
Zylux	V51x-J6	2021 (not included at launch)
Zylux	M512a-J6	2021 (not included at launch)
Tonly	V21x-J8	2021 (not included at launch)
Tonly	V21d-J8	2021 (not included at launch)
Tonly	V20-J8	2021 (not included at launch)
Tonly	V20x-J8	2021 (not included at launch)
Tonly	V21t-J8	2021 (not included at launch)
Zylux	M512E-K6 (M-elevate)	2022

Zylux & Tonly

All skus

2022 and going forward