



TrueChrome Series TUCAM-API Properties & Capabilities



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1. Before Use

This document explains the supported properties and capabilities of the TrueChrome series cameras and how to control them through TUCAM-API. Before use them, please understand the basic concepts of the TUCAM-API and SDK.

The TrueChrome & HD series of cameras include:

Camera Model	Version	Name
HD Lite	V1.0	HD Lite
TrueChrome II	V1.0	TrueChrome II
TrueChrome IIS	V1.0	TrueChrome IIS
TrueChrome Metrics	V1.0	TrueChrome Metrics
TrueChrome AF	V1.0	TrueChrome AF
TrueChrome 4K Pro	V1.0	TrueChrome 4K Pro

2. Reference List

Note:

- 1) Macro definitions that are not listed indicates that they are not supported.
- 2) ●: supported, ○: not supported

2.1. Capabilities reference table (prefix "TUIDC _")

Camera Model	RESOLUTION (0x00)	BITOFDEPTH (0x02)	ATEXPOSURE (0x03)	HORIZONTAL (0x04)
HD Lite	●	●	●	●
TrueChrome II	●	●	●	●
TrueChrome IIS	●	●	●	●
TrueChrome Metrics	●	●	●	●

TrueChrome AF	•	•	•	•
TrueChrome 4K Pro	•	•	•	•

Camera Model	VERTICAL (0x05)	ATWBALANCE (0x06)	ATLEVELS (0x08)	HISTC (0x0A)	CHANNELS (0x0B)
HD Lite	•	•	•	•	•
TrueChrome II	•	•	•	•	•
TrueChrome IIS	•	•	•	•	•
TrueChrome Metrics	•	•	•	•	•
TrueChrome AF	•	•	•	•	•
TrueChrome 4K Pro	•	•	•	•	•

Camera Model	FLTCORRECTION (0x0F)	VERCORRECTION (0x13)	MONOCHROME (0x14)
HD Lite	•	•	•
TrueChrome II	•	•	•
TrueChrome IIS	•	•	•
TrueChrome Metrics	•	•	•
TrueChrome AF	•	•	•
TrueChrome 4K Pro	•	•	•

Camera Model	ENABLEPOWEEFREQU ENCY(0x18)	ROTATE_R9 0(0x19)	ROTATE_L90 (0x1A)	NEGATIVE (0x 1B)
HD Lite	•	•	•	•
TrueChrome II	•	•	•	•
TrueChrome IIS	•	•	•	•
TrueChrome Metrics	•	•	•	•
TrueChrome AF	•	•	•	•
TrueChrome 4K Pro	•	•	•	•

Camera Model	ATFOCUS (0x 21)	ATFOCUS_STATUS (0x 22)	FOCUS_C_MOUNT (0x1A)
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HD Lite	○	○	○
TrueChrome II	○	○	○
TrueChrome IIS	○	○	○
TrueChrome Metrics	○	○	○
TrueChrome AF	●	●	●
TrueChrome 4K Pro	○	○	○

2.2. Property reference table (prefix "TUIDP _")

Camera Model	GLOBALGAIN (0x00)	EXPOSURETM (0x01)	BRIGHTNESS (0x02)	SHARPNESS (0x05)
HD Lite	●	●	●	●
TrueChrome II	●	●	●	●
TrueChrome IIS	●	●	●	●
TrueChrome Metrics	●	●	●	●
TrueChrome AF	●	●	●	●
TrueChrome 4K Pro	●	●	●	●

Camera Model	NOISELEVEL (0x06)	GAMMA (0x08)	CONTRAST (0x09)	LFTLEVELS (0x0A)	RGLEVELS (0x0B)
HD Lite	●	●	●	●	●
TrueChrome II	●	●	●	●	●
TrueChrome IIS	●	●	●	●	●
TrueChrome Metrics	●	●	●	●	●
TrueChrome AF	●	●	●	●	●
TrueChrome 4K Pro	●	●	●	●	●

Camera Model	CHNLGAIN (0x0C)	SATURATION (0x0D)	POWEEFREQUENCY (0x 13)
HD Lite	●	●	●
TrueChrome II	●	●	●
TrueChrome IIS	●	●	●

TrueChrome Metrics	●	●	●
TrueChrome AF	●	●	●
TrueChrome 4K Pro	●	●	●

Camera Model	ENHANCE_STRENGTH (0x 16)	FOCUS_POSITION (0x 18)
HD Lite	○	○
TrueChrome II	●	○
TrueChrome IIS	●	○
TrueChrome Metrics	○	○
TrueChrome AF	●	●
TrueChrome 4K Pro	○	○

3. Detailed Reference Table

Note: The camera models not listed indicate that the camera is not supported.

3.1. Capabilities Reference Table

3.1.1. TUIDC_RESOLUTION

Camera Model	Range	Default	Step	Description
HD Lite	[0, 1]	0	1	0: "2592x1944 compress" 1: "2592x1944 uncompress"
TrueChrome II	[0, 1]	0	1	0: "1920x1080 compress" 1: "1920x1080 uncompress"
TrueChrome IIS				
TrueChrome Metrics				
TrueChrome AF				
TrueChrome 4K Pro	[0, 1]	0	1	0: "3840x2160" 1: "1920x1080"

3.1.2. TUIDC_BITOFDEPTH

Camera Model	Range	Default	Step	Description
TrueChrome series	[8, 8]	8	0	8:8 Bit data bit

3.1.3. TUIDC_ATEXPOSURE

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	1	1	0: Manual exposure mode 1: Automatic exposure mode

3.1.4. TUIDC_HORIZONTAL

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Non-horizontal mirror state 1: Horizontal mirror state

3.1.5. TUIDC_VERTICAL

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Non-horizontal mirror state 1: Horizontal mirror state

3.1.6. TUIDC_ATWBALANCE

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 2]	1	1	0: Manual white balance state 1: Automatic white balance state 2: Single white balance state (reserved)

3.1.7. TUIDC_ATLEVELS

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 3]	0	1	0: Manual color scale status 1: Automatic left color order state (histogram statistics must be turned on) 2: Automatic right color order state (histogram statistics must be turned on) 3: Auto left and right color order status (histogram statistics must be turned on)

3.1.8. TUIDC_HISTC

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Close the histogram data statistics (the automatic color scale is invalid) 1: Open the histogram data statistics (the automatic color scale is valid)

3.1.9. TUIDC_CHANNELS

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 3]	0	1	0: Shared channel (RGB or Gray) 1: Red channel 2: Green channel 3: Blue channel

3.1.10. TUIDC_FLTCORRECTION

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 3]	0	1	0: Close the flat-field correction 1: Grab the frame data

				2: Calculate the flat-field correction 3: Open level field correction (successful calculation is effective)
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3.1.11. TUIDC_VERCORRECTION

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	1	1	0: Close the vertical mirror correction 1: Open the vertical mirror correction (Windows system Default)

3.1.12. TUIDC_MONOCHROME

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Close the monochrome state 1: Open the monochrome state

3.1.13. TUIDC_ENABLEPOWEEFREQUENCY

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Close the power frequency and is enabled 1: open the power frequency is enabled

3.1.14. TUIDC_ROTATE_R90

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Image original state 1: rotate the image by 90 degrees to the right

3.1.15. TUIDC_ROTATE_L90

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Image original state 1: rotate the image by 90 degrees to the left

3.1.16. TUIDC_NEGATIVE

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Close the negative chip mode 1: Open the negative chip mode

3.1.17. TUIDC_ATFOCUS

Camera Model	Range	Default	Step	Description
TrueChrome AF	[0, 2]	0	1	0: Manual focus mode 1: Autofocus mode 2: Primary focus mode

3.1.18. TUIDC_ATFOCUS_STATUS

Camera Model	Range	Default	Step	Description
TrueChrome AF	[0, 3]	0	1	0: Focus stop state 1: Focusing state 2: Focus completion state 3: Disfocused state

3.1.19. TUIDC_FOCUS_C_MOUNT

Camera Model	Range	Default	Step	Description
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TrueChrome AF	[0, 1]	0	1	0: Manual focus position 1: C-Mount
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3.2. Property Reference Table

3.2.1. TUIDP_GLOBALGAIN

Camera Model	Range	Default	Step	Description
HD Lite	[1, 63]	17	1	The larger the value, the higher the brightness, but the noise increases accordingly
TrueChrome Metrics				
TrueChrome AF				
TrueChrome II	[1, 63]	1	1	
TrueChrome IIS				
TrueChrome 4K Pro	[1, 255]	17	1	

3.2.2. TUIDP_EXPOSURETM

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, -]	-	-	The range of exposure time and step are related to the resolution and the minimum exposure time, and the range is obtained through the interface.

3.2.3. TUIDP_BRIGHTNESS

Camera Model	Range	Default	Step	Description
HD Lite	[0, 15]	9	1	Valid in auto exposure state
TrueChrome II				
TrueChrome IIS				
TrueChrome Metrics				
TrueChrome AF				

TrueChrome 4K Pro				
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3.2.4. TUIDP_SHARPNESS

Camera Model	Range	Default	Step	Description
HD Lite	[0, 15]	5	1	Sharpening level, the larger the value, the greater the sharpening intensity
TrueChrome Metrics				
TrueChrome AF				
TrueChrome 4K Pro	[0, 15]	2	1	
TrueChrome II	[0, 7]	3	1	
TrueChrome IIS				

3.2.5. TUIDP_NOISELEVEL

Camera Model	Range	Default	Step	Description
HD Lite	[0, 15]	8	1	0: Close noise reduction 1: Open noise reduction
TrueChrome Metrics				
TrueChrome AF				
TrueChrome 4K Pro	[0, 15]	1	1	
TrueChrome II	[0, 7]	5	1	
TrueChrome IIS				

3.2.6. TUIDP_GAMMA

Camera Model	Range	Default	Step	Description
HD Lite	[1, 63]	32	1	Gamma value
TrueChrome Metrics				
TrueChrome AF				
TrueChrome II	[1, 63]	28	1	
TrueChrome IIS				
TrueChrome 4K Pro	[1, 63]	24	1	

3.2.7. TUIDP_CONTRAST

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 15]	8	1	Contrast value

3.2.8. TUIDP_LFTLEVELS

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 254]	0	1	8 Bit data

3.2.9. TUIDP_RGTLEVELS

Camera Model	Range	Default	Step	Description
TrueChrome series	[1, 255]	255	1	8 Bit data

3.2.10. TUIDP_CHNLGAIN

Camera Model	Range	Default	Step	Description
HD Lite	[0, 511]	256	1	Gain value of the corresponding channel (green channel not supported)
TrueChrome Metrics				
TrueChrome AF				
TrueChrome II	[0, 99]	52	1	
TrueChrome IIS				
TrueChrome 4K Pro	[0, 1024]	256	1	

3.2.11. TUIDP_SATURATION

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 15]	8	1	Saturation value

3.2.12. TUIDP_POWEEFREQUENCY

Camera Model	Range	Default	Step	Description
TrueChrome series	[0, 1]	0	1	0: Power frequency: 50 MHZ 1: Power frequency: 60 MHZ

3.2.13. TUIDP_ENHANCE_STRENGTH

Camera Model	Range	Default	Step	Description
HD Lite	[0, 63]	20	1	Enhanced (permeability)
TrueChrome Metrics				
TrueChrome AF				
TrueChrome 4K Pro				

3.2.14. TUIDP_FOCUS_POSITION

Camera Model	Range	Default	Step	Description
TrueChrome AF	[0, 2470]	2260	1	The focus corresponds to the physical position of the motor