

Truecolor Streams

With update 1.10, it is possible to create Truecolor models and apply them to the Perception Core.

Truecolor Streams can be sent as 8Bit RGB (3* 8Bit) or 16Bit RGB (3 * 16Bit). Available color formats are XYZ, Lab and sRGB. The pixel values of the streams

are scaled to use the full range of the selected bitdepth range. Thus, the values need to be converted at the receiver site. The following table shows the conversion

for all formats and bitdepth combinations.

v = Transmitted Pixel Value

Bitdepth	Color Format	Value Name	Value Range	Transmitted Range (v)	Transformation
8Bit RGB (3* 8Bit)	XYZ	X	[0, 100] float	[0, 255] uint8	$= v * (100 / 255)$
		Y	[0, 100] float	[0, 255] uint8	$= v * (100 / 255)$
		Z	[0, 100] float	[0, 255] uint8	$= v * (100 / 255)$
8Bit RGB (3* 8Bit)	Lab	L	[0, 100] float	[0, 255] uint8	$= v * (100 / 255)$
		a	[-128, 128] float	[0, 255] uint8	$= v * (255 / 255) - 128$
		b	[-128, 128] float	[0, 255] uint8	$= v * (255 / 255) - 128$
8Bit RGB (3* 8Bit)	sRGB	R	[0, 1] float	[0, 255] uint8	$= v * (1 / 255)$
		G	[0, 1] float	[0, 255] uint8	$= v * (1 / 255)$
		B	[0, 1] float	[0, 255] uint8	$= v * (1 / 255)$
16Bit RGB (3 * 16Bit)	XYZ	X	[0 - 100] float	[0, 65535] uint16	$= v * (100 / 65535)$
		Y	[0 - 100] float	[0, 65535] uint16	$= v * (100 / 65535)$
		Z	[0 - 100] float	[0, 65535] uint16	$= v * (100 / 65535)$
16Bit RGB (3 * 16Bit)	Lab	L	[0 - 100] float	[0, 65535] uint16	$= v * (100 / 65535)$
		a	[-128, 128] float	[0, 65535] uint16	$= v * (255 / 65535) - 128$
		b	[-128, 128] float	[0, 65535] uint16	$= v * (255 / 65535) - 128$
16Bit RGB (3 * 16Bit)	sRGB	R	[0, 1] float	[0, 65535] uint16	$= v * (1 / 65535)$
		G	[0, 1] float	[0, 65535] uint16	$= v * (1 / 65535)$
		B	[0, 1] float	[0, 65535] uint16	$= v * (1 / 65535)$