Nikon

N-Log
Specification Document

Version 1.0.0

September 1st, 2018

Version History

Version	Date	
1.0.0	September 1st, 2018	

Contents

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1. Introduction

This document describes N-Log curve and colorimetric information. N-Log is designed to permit full use of sensor dynamic range in a professional movie workflow. The curve characteristics of N-Log balance shadows and highlights and are optimized for 10-bit movie recording.

2. Curve Characteristics

The following figure shows N-Log curve characteristics.
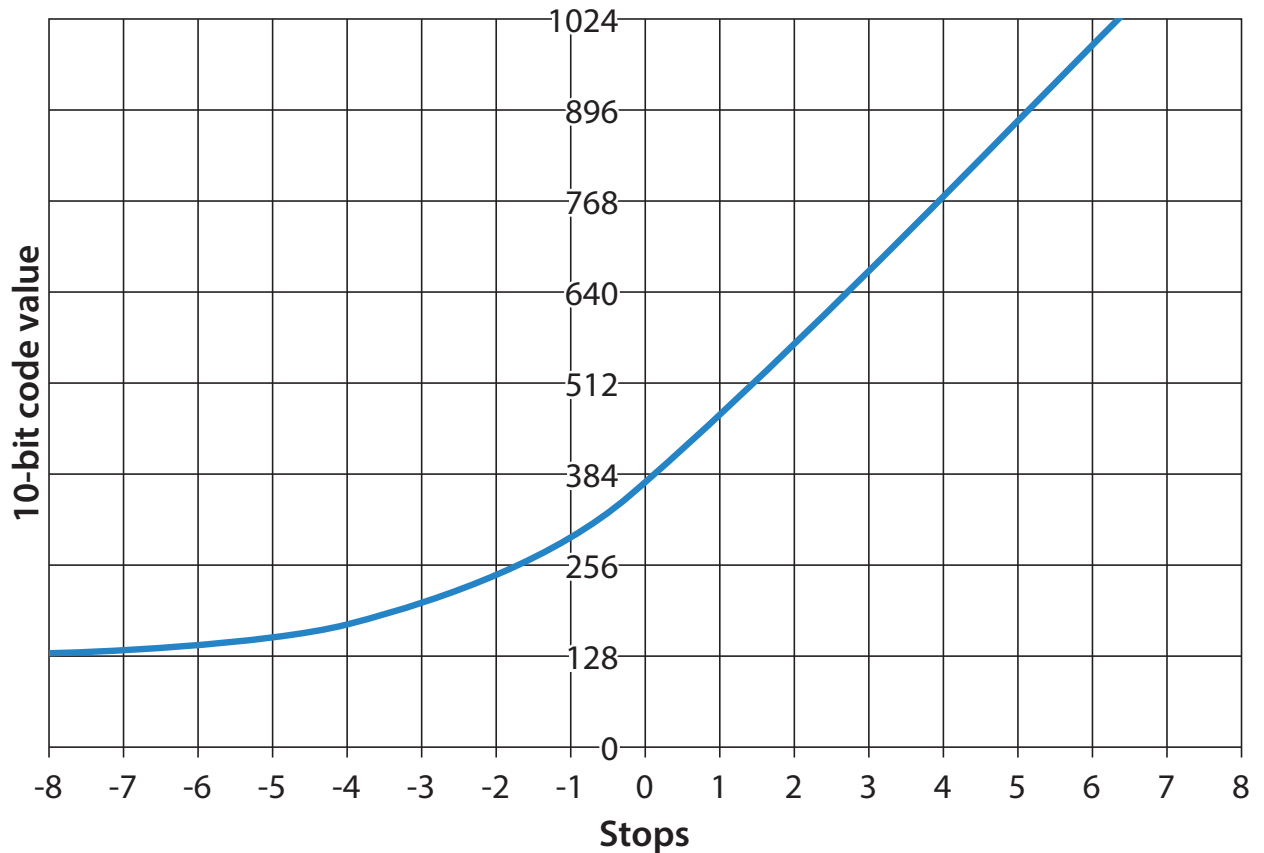
The function from N-Log to reflectance is as follows.

if (x < 452)

$$y = (x/650)^3 - 0.0075$$

else

$$y = \exp[(x-619)/150]$$

end

x is the N-Log 10-bit code value.

y is reflectance. ("y = 0.18" is equivalent to Stop 0.)

The function from reflectance to N-Log is as follows.

if (y < 0.328)

$$x = 650 * (y + 0.0075)^{(1/3)}$$

else

$$x = 150*\log(y)+619$$

end

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3. Gamut and White Point

The table below shows the gamut and white point for N-Log.

	CIE xy chromaticity	
	x	y
White point	0.3127	0.3290
Red primary	0.708	0.292
Green primary	0.170	0.797
Blue primary	0.131	0.046

The white point of N-Log is D65.

The gamut for N-Log is same as the wide color gamut known as "ITU-R BT.2020".