LEGO® Education SPIKE™ Essential Technical Specifications

LEGO® Technic™ Color Sensor

Hardware name	LEGO® Technic™ Color Sensor
Description	The sensor can detect color, reflectivity, or ambient light. The sensor can also be used as a light output.
Key features	• Color sensing (RGB, HSV, and LEGO® colors) • Reflectivity sensing (for line following) • Ambient light sensing • Emission of white light • The sensor has a Technic build geometry that allows for versatile building and easy integration into models
Connector type	LEGO Power Functions 2.0 (LPF2) for connection to LEGO Smarthubs
Wire length	250 mm
Sensor sample rate	100Hz

Sensor input	Color sensing:
	• Optimal reading distance: 16 mm (depending on object size, color, and surface)
	• Output range:
	  • No object
	  • White (LEGO:01; R:244, G:244, B:244)
	  • Blue (LEGO:23; R:30, G:90, B:168)
	  • Black (LEGO:26; R:0, G:0, B:0)
	  • Green (LEGO:28; R:0, G:133, B:43)
	  • Yellow (LEGO:24; R:250, G:200, B:10)
	  • Red (LEGO:21; R:180, G:0, B:0)
	  • Medium azur (LEGO:322; R:104, G:195, B226)
	  • Bright reddish violet (LEGO:124; R:144, G:31, B:118)
	
	Reflectivity sensing:
	• Optimal reading distance: 16 mm (depending on object size, color, and surface)
	• Output range:
	  • Non-reflective/nothing = 0%
	  • Very reflective = 100%
	
	Ambient light sensing:
	• Output range:
	  • Dark = 0%
	  • Bright = 100%

Sensor output	LED output: • Color: white – temperature 4000K • Controlled individually (3 LEDs in total) • Cannot be used while sensor is in color/light sensing mode • Output power: controllable from 0–100% increments of 1%

The LEGO® Education SPIKE™ App might not support all hardware features and functionalities.

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