

Landsat 8 Band Characteristics & Uses

*Of its 11 bands, only those in the very shortest wavelengths (bands 1–4 and 8) sense visible light – all the others are in parts of the spectrum that we can't see. STELLA instrument bands compared to Landsat 8 work from the spectral bands (1, 2, 3, and 4) up to the Near- Infrared (NIR) band (5).

Band	Wavelength (µm)	Description	Common Uses of this Band	Spatial Resolution
Coastal Aerosol (1)*	0.43 - 0.45	Deep Blues & Violets	Coastal studies, aerosol detection	30 m
Blue (2)*	0.450 - 0.51	Blue Light	Water quality, vegetation analysis, bathymetric mapping, identifying soil from vegetation	30 m
Green (3)*	0.53 - 0.59	Green Light	Vegetation health, land cover classification, plant vigor	30 m
Red (4)*	0.64 - 0.67	Red Light	Vegetation, vegetative slopes, natural color composites	30 m
Near-Infrared NIR (5)	0.85 - 0.88	Reflected Near-Infrared	Plant health assessment, biomass estimation, shorelines	30 m
Shortwave infrared SWIR 1 (6)	1.57 - 1.65	Short-Wave Infrared 1	Vegetation moisture, soil moisture, penetrates (thin) clouds	30 m
Shortwave infrared SWIR 2 (7)	2.11 - 2.29	Short-Wave Infrared 2	Mineral identification, geology, penetrates (thin) clouds	30 m
Panchromatic PAN (8)*	0.50 - 0.68	All Visible Colors (High Resolution)	Improved spatial resolution of other bands, creating detailed maps, sharper image definition	15 m
Cirrus (9)	1.36 - 1.38	Reflected Near-Infrared	Cirrus cloud detection	30 m
Thermal Infrared TIR (10)	10.8 - 12.3	Thermal Emittance (100m)	Land surface temperature, soil temperature	100 m
Thermal Infrared TIR (11)	11.5 - 12.5	Thermal Emittance (100m)	Land surface temperature, soil moisture	100 m