

# CSE-EQ-99-VIS-NIR

## Chromatiq Spectral Engine™

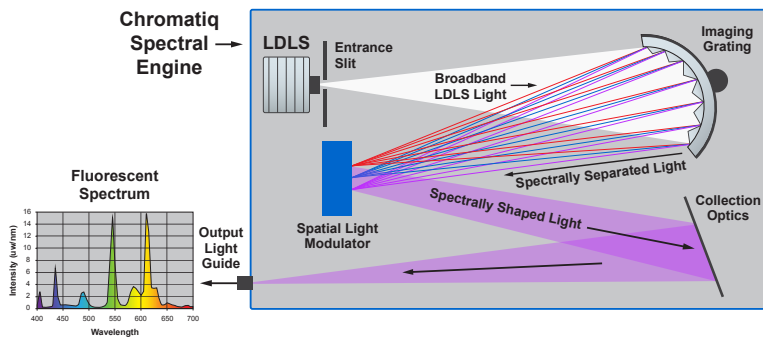


### Overview

The Chromatiq Spectral Engine™ (CSE) is a system-level light source providing precision control over the spectral content of emitted light. Users can emulate real-world lighting conditions, combine spectra from multiple sources and shape custom spectra to meet specific test and calibration needs.

The CSE offers unparalleled spectral match accuracy, repeatability, and speed to optimize optical testing and calibration procedures in the production environment. Spectra can be switched in less than 10 ms to save time and increase process throughput.

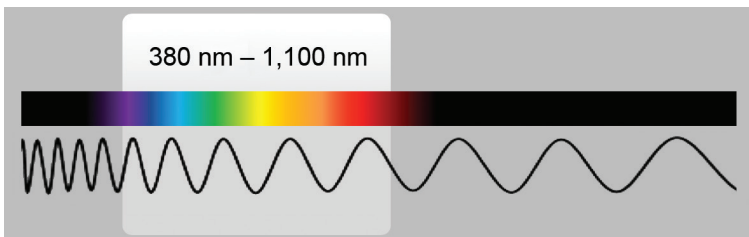
### Principle of Operation



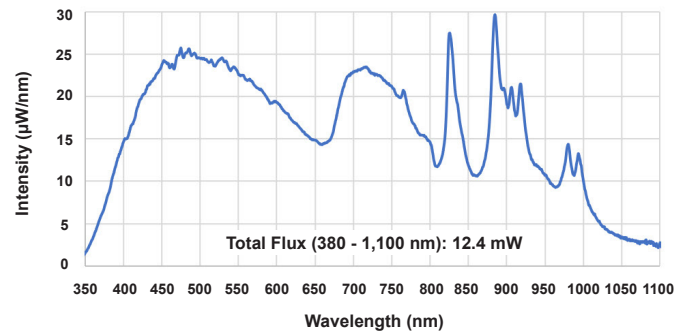
### Properties

Wavelength Range	380 nm – 1,100 nm
Spectral Resolution, VIS 380 nm – 780 nm (FWHM)	≤ 5 nm
Spectral Resolution, VIS-NIR 780 nm – 1,100 nm (FWHM)	≤ 15 nm
Switching Time (TTL trigger)	≤ 10 ms
Output Type	Liquid Light Guide (6.5 mm diameter)
Bulb Lifetime	10,000 hours
Laser Class	Class 1 (IEC 60825: 2014)

### Wavelength Range

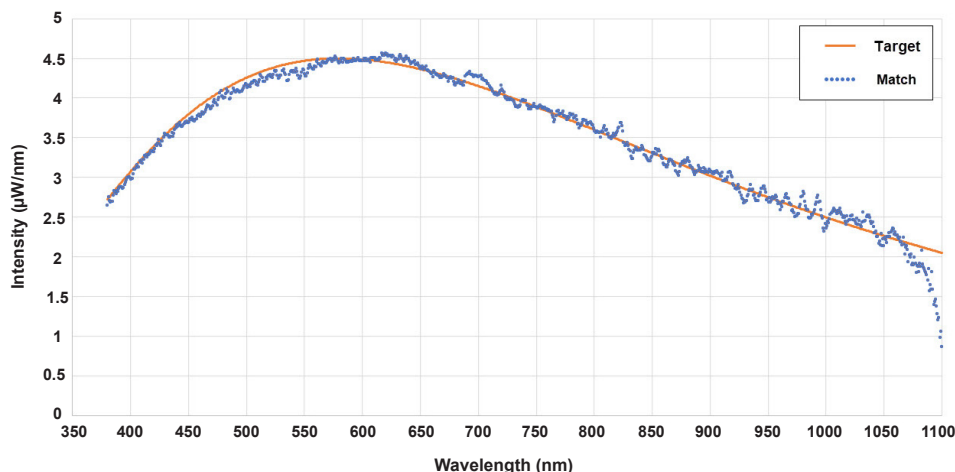


### System Throughput



Performance data is typical - not intended for system design use.

### Example Spectral Match – 5000 CCT



	Target	Match	Abs. Err.
CCT	4999.86	4884.5	115.36
u	0.211426	0.213568	0.002142
v	0.484663	0.484978	0.000315
x	0.345094	0.348099	0.003005
y	0.35159	0.351322	0.000268
Duv	6.23E-06	0.001343	0.001337
RMS			0.036478

Flux	2503 µW
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Performance data is typical - not intended for system design use.

## Models

The recommended service interval is 10,000 hours.

Part Number	Description	Wavelength Range
CSE-EQ-99-VIS	ChromatIQ Spectral Engine, Visible	380 nm – 780 nm
CSE-EQ-99-VIS-NIR	ChromatIQ Spectral Engine, Visible – Near Infrared	380 nm – 1,100 nm

## Accessories

Part Number	Description
CSE-LLG-VIS-NIR-65-1M	Liquid Light Guide, 6.5 mm diameter, 1 m length
CSE-LLG-VIS-NIR-65-3M	Liquid Light Guide, 6.5 mm diameter, 3 m length
CSE-HM-GR-13	Glass Rod Homogenizer

## Facility Requirements

Electrical	100-240 VAC, single phase, 50/60 Hz 390 W max.
Nitrogen Purge	Recommended. Grade 4.8 or higher, filtered to 5 µm; 0.14 MPa pressure
Ambient Temperature	15-35 °C

## Physical Specifications

Lamphead Dimensions (H x W x D)	221 x 484 x 538 mm
System Weight	7.6 kg

## User Interface

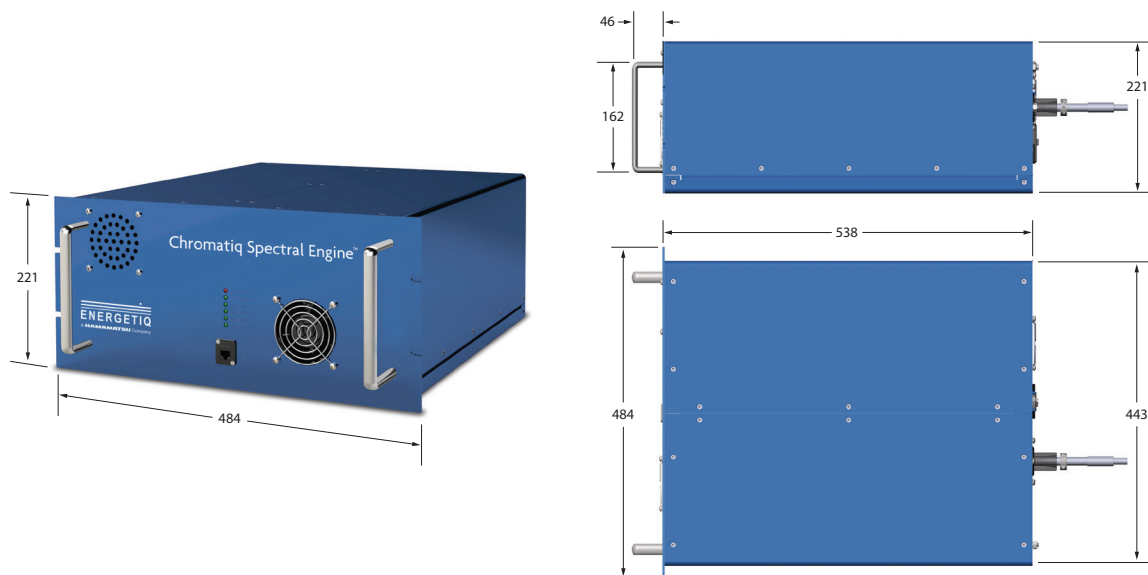
The CSE Host Application includes automated spectrum matching algorithms and a flexible user interface that enables system configuration, spectrum matching, creation of custom spectra, and definition of trigger sequences. The CSE Host Application runs on a standard PC with the Microsoft Windows operating system.

The CSE Host Application includes an automated System Characterization process that adjusts the output of the CSE based on feedback from a calibrated spectrometer. Characterization is typically performed during system installation and periodically thereafter (typically every month or every several months). An individual spectrometer can support a fleet of any number of CSE systems. One of the following spectrometer models is required for characterization.

Spectrometer Name	Model Number
Ocean Insight QE Pro	XQEPRO-EQT (VIS, VIS-NIR, Energetiq-specific configuration) QEPRO-ABS (VIS only, internal shutter option required)
Instrument Systems CAS140	CAS140CT-156 (UV, VIS, NIR, discontinued model) CAS140D-156 (UV, VIS, NIR, current model)

## ChromatIQ Spectral Engine Dimensions (Unit: mm)

Drawings are for reference only and are not to scale.  
STEP-File available.



[www.energetiq.com/patents](http://www.energetiq.com/patents)



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Specifications are typical and subject to change without notice.  
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