



Brochure

# Hera LED measurements



**admesy**  
ADVANCED MEASUREMENT SYSTEMS  
*hera*

ETHERNET  
USB  
RS232  
IN  
OUT  
TRIGGER

ADVANCED MEASUREMENT SYSTEMS  
**admesy**



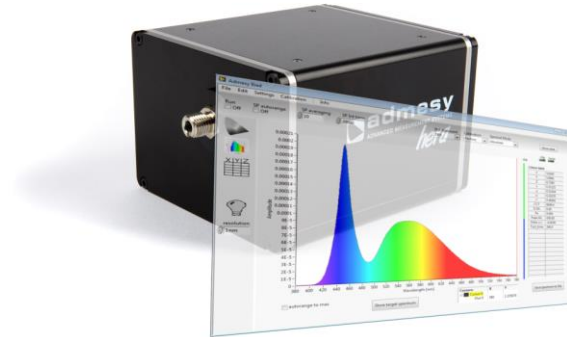
## 1. Introduction

### Hera for LED measurements: Cost effective spectrometer for LED measurements

The Hera spectrometer is ideal for LED measurements where ease of use, stability, performance and price are of the essence. All in all the perfect solution for hassle free integration in your product or process

#### Highlights

- VIS, UV and UV-NIR models
- Spectral output or color values output are both possible
- Auto-range function
- Excellent linearity over entire dynamic range
- Dark current compensated, virtually zero over entire integration range
- Holographic grating for low stray light
- USBTMC compliant, SCPI command set, high speed device
- Numerous interfaces, ideal for system integration
- All spectral calculations are done inside
- Several sphere size options
- Robust Housing



#### Speed & ease of use

We from Admesty strongly believe in creating devices whereby ease of use and speed are key factors. To achieve this for you we take care of the following in our spectrometers

- Wavelength
- Dark current
- Linearity
- Absolute

These calculations and compensations are done in a staggering 14ms. All this is possible due to the high speed processor inside the Hera combined with our algorithms. When setting your integration time to 10 milliseconds you get the fully calibrated spectrum back in 24 milliseconds, including communication time over high speed USB.

This makes the Hera the ideal LED sorting device whereby speeds of up to 50 LED's per second can be achieved



## 2. General specification

Specification <sup>1</sup>				
Model	Hera 01 - VIS	Hera 02 - VIS	Hera 03 - UV	Hera 04 - UV-NIR
Status <sup>2</sup>	In production	In production	Pre-production	Coming soon
Spectral range	380-780nm	360-830nm	190-435nm	200-1100 nm
Optical resolution (FWHM) <sup>3</sup>	2.3nm	2.3nm	0.7nm	2nm
Order sorting filter	2 <sup>nd</sup> order sorting on chip	2 <sup>nd</sup> order sorting filter	No order sorting filter	Linear variable filter
Wavelength accuracy	+/- 0.5nm	+/- 0.5nm	+/-0.5nm	+/- 0.5nm
Stray light	<0.03%	<0.03%	<0.03%	<0.03%
Lumen accuracy <sup>4</sup>	+/-4%	+/-4%	+/-5%	+/-4%
Chromaticity accuracy <sup>4</sup>	+/- 0.002	+/- 0.002	+/- 0.003	+/- 0.002
Luminous flux <sup>5</sup> (AIS-75)	1m lm – 60 lm	1m lm – 60 lm	Coming soon	Coming soon
Luminous flux <sup>5</sup> (AIS-150)	5m lm – 300 lm	5m lm – 300 lm	Coming soon	Coming soon
Luminous flux <sup>5</sup> (AIS-250)	10m lm – 600 lm	10m lm – 600 lm	Coming soon.	Coming soon
Non - Linearity	< 1%			
Integration time	2.5ms – 20s			
Spectral resolution	Selectable 0.5nm-1nm-2.5nm-5nm-10nm			
Interfaces	High speed USB, RS232, Ethernet, Trigger connections			
Output	Spectral output, radiometric data or color data (Lumen, x,y, dwl, pwl CRI etc..)			
Data processing time	14ms			
Size (height, width, depth)	100 x 80 x 55 mm			
Weight	0.35 kg			
Operating temperature	10-35°C			
Power consumption	1250mW (USB powered)			

\*1- Specification is subject to change without notification, no legal rights can be derived from this specification

\*2- Specification of models which are not in production can change

\*3- Contact us for different FWHM values

\*4- After calibration to the calibration standard, UV model is checked with 400nm LED's

\*5- OD filters can be incorporated for higher ranges into the spheres



**3. Admesy spheres, fibers and OD filters**

### Spheres

Admesy can supply several sphere sizes

- 75mm diameter
- 150mm diameter
- 250mm diameter

Admesy can also help you with customizing the sphere for your production process or help you with implementing and calibrating your own existing sphere.



### Fiber

Admesy uses a special M8 fiber and fiber connector, this connector has been developed to connect the optical fiber in a consistent way to ensure the best possible repeatability.

### Higher measurement range

A higher measurement range can be achieved by implementing OD filters (neutral density filters) in the measurement setup. Admesy offers several OD filters to optimize the Hera for your measurement.



#### 4. Typical speed and performance Hera 01 – VIS with AIS-75-01

Measurement conditions				
Used light source	White LED			
Sphere size	75mm diameter - AIS-75-01			
Spectral resolution	1nm			
Averaging	1			
Auto-range function	Off			
Temperature	24°C			
repeatability @ 60 lumen				
Saturation level	Integration time	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	2.5ms	< 0.2%	+/- 0.0003	16.5
Repeatability @ 15 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	10	< 0.2%	+/- 0.0003	24
~40%	5	< 0.3%	+/- 0.0004	19
~20%	2.5	< 0.4%	+/- 0.0008	16.5
Repeatability @ 5 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	32	< 0.2%	+/- 0.0003	46
~40%	16	< 0.3%	+/- 0.0004	30
~20%	8	< 0.4%	+/- 0.0008	22
~10%	4	< 0.7%	+/- 0.0012	18
Repeatability @ 1 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	160	< 0.2%	+/- 0.0003	174
~40%	80	< 0.3%	+/- 0.0004	94
~20%	40	< 0.4%	+/- 0.0008	54
~10%	20	< 0.7%	+/- 0.0012	34
Repeatability @ 0.1 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	1600	< 0.2%	+/- 0.0003	1614
~40%	800	< 0.3%	+/- 0.0004	814
~20%	400	< 0.4%	+/- 0.0008	414
~10%	200	< 0.7%	+/- 0.0012	214

\*Measurements are real life taken measurement and can vary slightly from device to device



### 5. Typical speed and performance Hera 01 – VIS with AIS-150-01

Measurement conditions				
Used light source	White LED			
Sphere size	150mm diameter - AIS-150-01			
Spectral resolution	1nm			
Averaging	1			
Auto-range function	Off			
Temperature	24°C			
repeatability @ 300 lumen				
Saturation level	Integration time	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	2.5ms	< 0.2%	+/- 0.0003	16.5
Repeatability @ 75 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	10	< 0.2%	+/- 0.0003	24
~40%	5	< 0.3%	+/- 0.0004	19
~20%	2.5	< 0.4%	+/- 0.0008	16.5
Repeatability @ 25 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	32	< 0.2%	+/- 0.0003	46
~40%	16	< 0.3%	+/- 0.0004	30
~20%	8	< 0.4%	+/- 0.0008	22
~10%	4	< 0.7%	+/- 0.0012	18
Repeatability @ 5 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	160	< 0.2%	+/- 0.0003	174
~40%	80	< 0.3%	+/- 0.0004	94
~20%	40	< 0.4%	+/- 0.0008	54
~10%	20	< 0.7%	+/- 0.0012	34
Repeatability @ 0.5 lumen				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	1600	< 0.2%	+/- 0.0003	1614
~40%	800	< 0.3%	+/- 0.0004	814
~20%	400	< 0.4%	+/- 0.0008	414
~10%	200	< 0.7%	+/- 0.0012	214

\*Measurements are real life taken measurement and can vary slightly from device to device



## 6. Typical speed and performance Hera 01 – VIS with AIS-250-01

<b>Measurement conditions</b>				
Used light source	White LED			
Sphere size	250mm diameter - AIS-250-01			
Spectral resolution	1nm			
Averaging	1			
Auto-range function	Off			
Temperature	24°C			
<b>repeatability @ 600 lumen</b>				
Saturation level	Integration time	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	2.5ms	< 0.2%	+/- 0.0003	16.5
<b>Repeatability @ 150 lumen</b>				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	10	< 0.2%	+/- 0.0003	24
~40%	5	< 0.3%	+/- 0.0004	19
~20%	2.5	< 0.4%	+/- 0.0008	16.5
<b>Repeatability @ 50 lumen</b>				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	32	< 0.2%	+/- 0.0003	46
~40%	16	< 0.3%	+/- 0.0004	30
~20%	8	< 0.4%	+/- 0.0008	22
~10%	4	< 0.7%	+/- 0.0012	18
<b>Repeatability @ 10 lumen</b>				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	160	< 0.2%	+/- 0.0003	174
~40%	80	< 0.3%	+/- 0.0004	94
~20%	40	< 0.4%	+/- 0.0008	54
~10%	20	< 0.7%	+/- 0.0012	34
<b>Repeatability @ 1 lumen</b>				
Saturation level	Integration time [ms]	Lumen (2 sigma)	Chromaticity x,y (2 sigma)	Tact time [ms]
~80%	1600	< 0.2%	+/- 0.0003	1614
~40%	800	< 0.3%	+/- 0.0004	814
~20%	400	< 0.4%	+/- 0.0008	414
~10%	200	< 0.7%	+/- 0.0012	214

\*Measurements are real life taken measurement and can vary slightly from device to device