

Call Us **886-37-580-885** 

Q Type text and hit enter

**HOME (/EN/PAGE/HOME.HTML)** 

ABOUT US ▼ (/EN/PAGE/ABOUT-US.HTML)

PRODUCTS → (/EN/CATEGORY/PRODUCTS/INDEX.HTML)

APPLICATION - (/EN/APPLICATION/APPLICATION/INDEX.HTML)

NEWS -

FAQ -

SERVICE → (/EN/PAGE/SERVICE.HTML)

CONTACT US → (/EN/PAGE/CONTACT-INFO.HTML)

Home (/en/index.html) > Category (/en/category/Category/index.html) > Handheld Spectrometer (/en/category/Handheld-Spectrometer.html)

# VISUAL MERCHANDISING, LED LIGHTING SOLUTIONS-HANDHELD SPECTROMETER

Send Inquiry

### MK350S PREMIUM

Plant Factory, PPFD, PFD, LUX Meter, Screen Protector





(https://cdn.ready-market.com/106/55c013b5//Templates/pic/UPRtek-MK350S Premium with IES Progress Report award and sapphire award winner.jpg?v=2b8f2f68)

UPRtek MK350S Premium Spectrometer

#### **MENU**

Home (/en/page/home.ht

About Us (/en/page/aboutus.html)

Products ^ (/en/category/Prod

Handheld Spectrom (/en/category/Handh Spectrometer/CAT-Handheld-Spectrometer.html)

Display Measureme and Testing Solutior (/en/category/Displa Measurement-and-Testing-Solution/CA Display-Measurement-and-

Measurement-and-Testing-Solution.htm

Spectrum Applicatio Software (/en/category/Specti Application-Software/CAT-Spectrum-Applicatic Software.html)

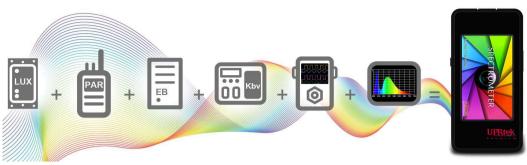
Application 

(/en/application/Ap

News

Service 
(/en/page/service.l

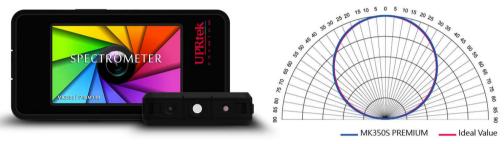
Contact Us (/en/page/contactinfo.html) MK350S Premium is a Handheld Spectrometer with Muli-Functions in itself. It's not only a Spectrometer, but also can be a Quantum PAR Meter, Blue light Detector and Oscilloscope. The strong and various functions can make users task quicker and efficiently.



(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/002\_UPRtek\_MK350S Premium multi-spectrum analyzer.jpg?v=afa0b1d5)

MK350S Premium handheld Spectrometer Keeps the excellent designs and multi-functional user friendly operation mode. Beside, it enhances the abilibty of LUX dynamic range from 100k lx to 150k lx. Auto dark calibration is embedded to reduce the noise interference from each temperature and lighting environment changes. Also, Cosine receiving surface is optimized to conform with both JIS AA and DIN B Illuminance Meter class. Overall, it's the professional instrument with the certificated accuracy and measuring speed.



(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/003\_UPRtek\_MK350S Premium\_Cosin Correction.jpg?v=d74badcb)

Light source measuring functions supersede the last generation model (MK350S) with outstanding performance. Users can choose from more than 40 light measurement units (CCT, LUX, CRI, CIE1976, CIE1931,PPFD & PFD, CQS, Duv, LambdaP, S/P ratio, TLCI, GAI and others) to create their customized list. For further analysis and research, we add the health lighting measuring solutions, such as Flicker, Blue Light Hazard (BLH) and Human Centric lighting (HCL) to help users measure light more productively.



(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/004\_UPRtek\_MK350S Premium\_Flicker & Blue light hazard.jpg?v=45f4bad8)

#### ■New Indicators of Health Lighting

1- High efficient Flicker Measurement, Frequency Mode (Time domain / Frequency domain) and Flicker Risk (IEEE PAR 1789-2015) Mode

Sampling rate is up to 100k Hz/sec. This doesn't only produce the

## **BEST SALE**



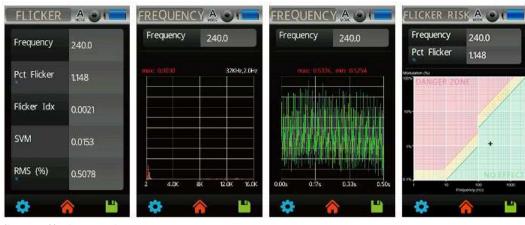
(/en/product/Stand-alon Light-meter-Handheld-

VISUAL
MERCHANDISING,
LED LIGHTING
SOLUTIONSHANDHELD
SPECTROMETER
INSPECTION
AND ANALYSIS
SOFTWARE |
HANDHELD
SPECTROMETER
UPPLIER UPRTEK

UPRtek, since 2010, is one of the prime Visual Merchandising, LED Lighting Solutions-Handheld Spectrometer manufacturers and their products are infused with a formula of practicality, mobility, green technology and intelligence. Our handheld spectrometer is lightweight and intuitively designed, users can operate the spectrometer without computers; measurement data can be displayed and viewed immediately on the spectrometer.

Handheld spectrometer's factory certification includes ISO9001 quality management system, and applying ISO14001 environmental management system and IECQ QC 080000 HSPM hazardous materials process management system. IES **Progress Report** and Red Dot award

parameters of Percent Flicker, Flicker Index and SVM, but also measures the light wave and intensity of light source accurately. Moreover, it is based on IEEE PAR 1789-2015 flicker safety regulation and built in point analysis figure which is called Flicker Risk Mode. This service will provide users more intuitive and simpler evaluation of the risk value of the "light source target".



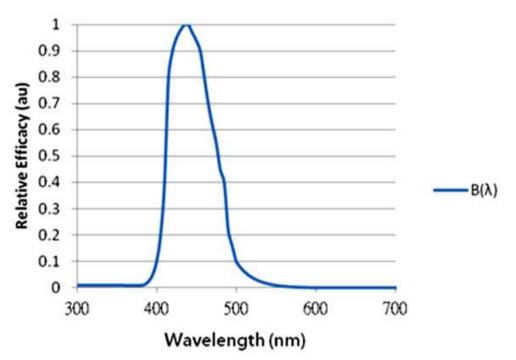
(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/005\_UPRtek\_MK350S Premium\_IEEE 1789 Flicker charge.jpg?v=1c39b86c)

#### 2-BLH (Blue light Hazard) Mode

Due to the increasing popularity of 3C products, long-term use might cause the users eye diseases such as early cataracts and Macular degeneration. There are many anti-blue light products to remind customers the concept of "Prevention is better than cure". How can we check blue light, know the BLH on human eye and its prevention, and the possible exaggeration of results?

Those are yet to be proven by further experiments and studying. MK350S Premium handheld Spectrometer is a muti-functional Lux Meter. Based on the blue light measurement requirement, we adopted IEC 62778 and utilized IEC 62471 for the assessment of BLH light sources and luminaires. It can assist users to prevent the BLH. Blue light wavelength is from 401nm-500nm.



(https://cdn.ready-market.com/106/55c013b5//Templates/pic/006\_UPRtek\_MK350S

Blue light hazard spectral weighting function:  $B(\lambda)$ 

Premium\_Blue Light Hazard.jpg?v=6f126f4c)

Spetral Radiance:  $E(\lambda)$ 

Blue light weighted irradiance (EB) =  $B(\lambda) * E(\lambda)$ 

Blue light hazard efficacy of luminous radiation (Kbv) = EB / Y (Lux)

#### BLH Risk Group (RG)

LUE HAZ	ARD AL O	RG	Definition	Tmax (s)
Eb	0.36338	RG0	Exempt	>10000 sec
Kb,v BL%	32.30	RG1	Low	>100~10000 sec
RG	32.30 Low	RG2	Moderate	0.25~100 sec
0	<b>♠</b> ■	RG3	High	<0.25 sec

(https://cdn.ready-

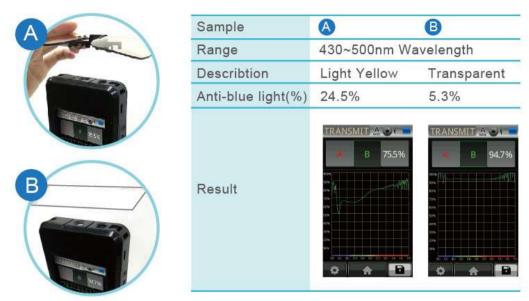
market.com/106/55c013b5//Templates/pic/007\_UPRtek\_MK350S Premium\_Blue Light Hazard Risk Group.jpg?v=e04b1f76) winning design, conforms to ISO14001, JIS, DIN and meets IECQ standards, UPRtek's handheld spectrometer total solutions are applicable to various industries such as spectrometer software, wireless card, LED meter, LED light tester and wireless card.

UPRtek has been offering customers high quality spectrometer | LED light tester that are infused with a formula of practicality, mobility, green technology and intelligence. Both with advanced technology and 8 years of experience, **UPRtek ensures** each customer's demands are met.

View our quality products Handheld Spectrometer (/en/search/index.html? q=Handheld%20Spectro Flicker Meter (/en/search/index.html? q=Flicker%20Meter&typ Color Meter (/en/search/index.html? q=Color%20Meter&type Compact Spectrometer (/en/search/index.html? q=Compact%20Spectro Advanced Spectrometer (/en/search/index.html? q=Advanced%20Spectro Spectral PAR Meter (/en/search/index.html? q=Spectral%20PAR%20 Wireless Control Card (/en/search/index.html? q=Wireless%20Control% Mobile Spectrum **APP** (/en/search/index.html? q=Mobile%20Spectrum9 PC Software (/en/search/index.html? q=PC%20Software&type and feel free to Contact Us (/en/page/contactinfo.html).

Blue Light Hazard-Blue-ray %: The irradiance ratio of blue wavelength (401nm-500nm) for LED. BL% can be applied for museum lighting to avoid the antiquities damages from the blue light.

In addition, users can use Transmit mode to get the anti-blue light value, understand the potential blue light risk level around them, show the HEV (high-energy visible light) efficiently and protect them from possible hazards. This is highly recommended for lighting manufacturers, LCD & OLED display panels, optometrists, eye specialists and others.



(https://cdn.ready-market.com/106/55c013b5//Templates/pic/008\_UPRtek\_MK350S Premium\_Transmit Measurement.jpg?v=65570f32)

#### 3-Human Centric Lighting (HCL)

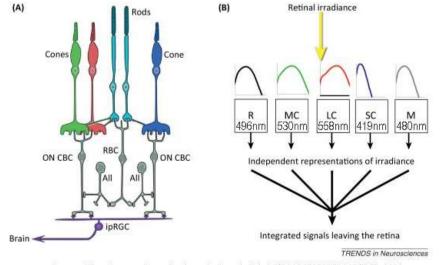
The MK350S Premium LED Test Meter adds HCL Mode (Human Centric lighting) to help you create a more comfortable and healthier lighting environment based on WELL Building Standard (V1) and CIE TN 003-2015 Report on the First International Workshop on Circadian & Neurophysiological Photometry.

We can perceive light and color because the retina absorbs the light and converts it into a neural signal which is transmitted signals to our brain for visual imaging and physiological function adjustment. As you can see from the picture below:

- (A) The non-image-forming responses of the retina is affected by the ipRGCs (intrinsically photosensitive retinal ganglion cells) which are also influenced by intrinsic melanopsin and the extrinsic signals in Rods and Cones (shown in red, green and blue) that convert the signals to the brain.
- (B) The 5 photoreceptors (refer to A), depending on their photopigments, weighted its different wavelengths with spectral sensitivity and get the illuminance in order to quantify the effect of biological rhythm.

#### Reference:

www.sciencedirect.com/science/article/pii/S0166223613001975#fig0010



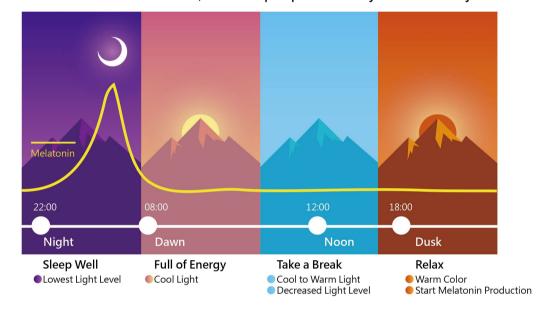
Source: https://www.sciencedirect.com/science/article/pii/S0166223613001975#fig0010

Photoreceptor	Photopigment	Unit of Measure
S cones	SC photopsin	Cyanopic-lux
M cones	MC photopsin	Chloropic-lux
L cones	LC photopsin	Erythropic-lux
intrinsically photosensitive retinal ganglion cells	Melanopsin	Melanopic-lux
Rods	Rod opsin	Rhodopic-lux

(https://cdn.ready-market.com/106/55c013b5//Templates/pic/017\_UPRtek MK350S\_Premium\_Trends in Neurosciences\_EN.jpg?v=3bf05296)

Melanopsin is in charge of non-visual function adjustment, such as body clock, the release of melatonin and others. Melatonin is also known as sleep hormone manages human body's biological rhythm. During daytime, it is produced at a lesser quantity to keep humans awake, otherwise, you will feel tired and sleepy. As a result, light intensity and different CCT easily affect circadian rhythm, hormone secretion and external behavior. This is the main reason why light therapy can mediate depression and sleep disorders.

- Melanopic Lux: A measure of light used to quantify how much a light source will stimulate melanopsin's light response High Melanopic Lux leads to less melatonin secretion and people will not feel tired easily.
- Mel Daylight Lux: Simulated CIE D65 Daylight and calculates the most suitable indoor lighting environment to similar the sunlight. If the spatial designers want to create a full spectrum of daylight atmosphere, this value is recommended.
- S/M/L Cones & R rod (Cyanopic, Chloropic, Erythropic, Rhodopic Lux): Quantify the environmental light source by photoreceptor to analyze its effects on organisms. It is generally used in professional applications such as ophthalmology research.
- Melanopic ratio: It's about Melanopic lux and Photopic Illumnance. When the melanopic ratio is high, the light intensity inhibits the melanopsin, the melatonin secretion is less, and the people can stay awake easily.



(https://cdn.ready-market.com/106/55c013b5//Templates/pic/018\_UPRtek\_MK350S\_Premium\_v=c71150e8)



Note: HCL Mode provides 8 parameters for users to customize the list depending on their needs.

(https://cdn.ready-market.com/106/55c013b5//Templates/pic/018\_UPRtek\_MK350S\_Premium\_v=7b367268)

■ The optimal health lighting environment set-up can be calculated based on the EML(Equivalent Melanopic Lux) of the Well Building Standard (V1)

#### [Formula] EML= L X R

EML=Melanopic Lux

L: Visual Lux

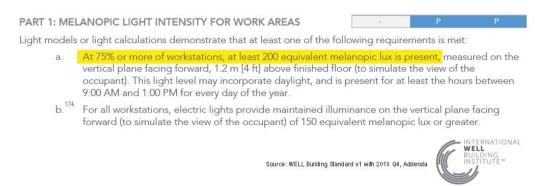
R: Melanopic Ratio

For example, I would like to install LEDs in my office. What is the best illumination(Ix)?

According to the Melanopic light intensity for work areas requirement of Well Building Standard, EML should be greater than 200. After using MK350S Premium, it shows that the Melanopic Ratio is 84.29%.

When you simulate or design the spatial lighting, the recommended Lux should be 237lx (200/0.8429)

Reference: WELL Building Standard v1 with 2018 Q4, Addenda



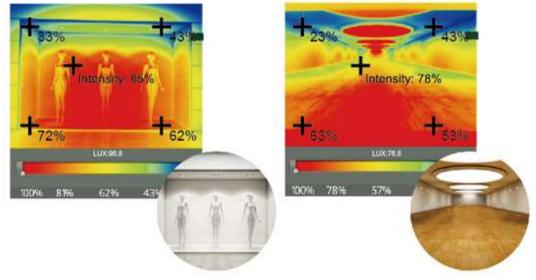
(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/016\_UPRtek\_MK350S Premium\_WELL\_Building\_Standard\_V1.jpg?v=512e5fce)

MK350S Premium is designed to meet the needs of all users from RD lighting designers, lighting manufactory, quality control, interior light designers, horticulture measurement, cinematographer to health prevention and so on.Recommended functions shown as below:

#### **Mode 1: LUX Image Distribution**

The spatial designers and professionals can use the visual language to explain the light shape, form and lines of objects which are abstract and illustrate the feeling of lighting level and uniformity.



(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/009\_UPRtek\_MK350S Premium\_Lux Image.jpg?v=893644e1)

#### Mode 2: TM30-15 Evaluating Color Rendition

Adopted two indices which are called Rf ( Color Fidelity) and Rg (Color Saturation) to assess the light source. Color Vector Graphic shows the deviation of hue and chroma from test object compare to the standard condition which helps users understand the light color quality comprehensively and compensate the weakness of CRI traditional evaluation source color.

Also, based on the Rf-Rg Plot analysis figure, users will know the sensible relationship between Rf and Rg.

Note: When TM-30 Rf is above 60, TM-30 Rg is between approximately 60-140.

Source:

https://www.energystar.gov/sites/default/files/asset/document/3\_Michael%20



Indice	Range	Best Value
Rf (Color Fidelity)	0-100	80↑
Rg (Color Saturation)	0-140	80-120

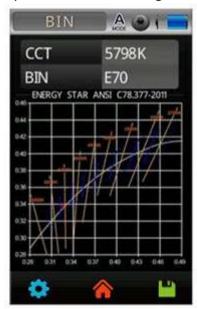
(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/010\_UPRtek\_MK350S Premium\_IES TM-30-15.jpg?v=a2b689ee)

## Mode 3- LED BIN rating application mode

Built-in ANSI78.377 and MacAdam Ellipse Additional BIN customized function is also designed to fulfill specialized LED design field.



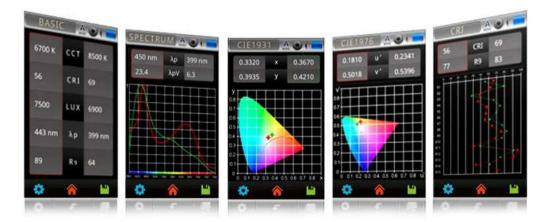


(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/011\_UPRtek\_MK350S Premium\_BIN.jpg?v=35f29a99)

#### **Mode 4- Measurement Comparison Mode**

Users may measure timely and compare the light figures side by side with the previous data.Intuitive UI allows easy data analysis.



(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/012\_UPRtek\_MK350S Premium.jpg?v=f1970c29)

### **Mode 5- Log Mode**

Users set up the I-Time, exposure time, interval, counts, monitor the light color change and adjustment it in real time.

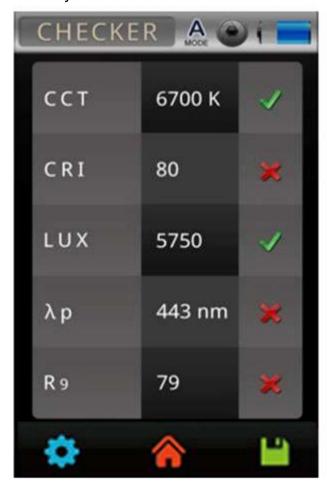


(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/013\_UPRtek\_MK350S Premium\_Log measurement.jpg?v=b50b2310)

#### **Mode 6- Quality Checker Mode**

Customize the measuring units and setup the range, you will get the result efficiently  $\rightarrow$  Pass/NG.



(https://cdn.ready-

market.com/106/55c013b5//Templates/pic/014\_UPRtek\_MK350S Premium\_Checker.jpg?v=3ddaefd9)

The MK350S Premium handheld spectrometer:

- 1. No need to connect with PC or mobile phone.
- 2. Standalone operation to measure at any time.
- 3. Free download Apps for iOS and Android.
- 4. WiFi wireless remote control capability with no boundary.
- 5. uSpectrum / uFlicker PC softwares would help you analyze data efficiently.











uFlicker PC Software















(https://cdn.ready-market.com/106/55c013b5//Templates/pic/015\_UPRtek\_MK350S
Premium uSpectrum & uFlicker & uSpectrumX.jpg?v=6fdf577f)
Files DownloadVideosAwardSupported ProductsApplicable Industry

MK350S Premium Spectrometer 
(/Templates/att/on/Engilish Specification/Engilish Specification/Engilish Specification/Engilish Specification/Engilish Specification/EN\_201907.pdf?

[Ing=en]

(/Templates/att/MK350S\_Premium\_Specification\_EN\_20 lng=en)

Measuring modes, capabilities and system introduction

MK350S Premium Handheld Spectrometer (/Templates/att/MK350S\_Premium\_Handheld\_Spectro
Ing=en)
(/Templates/att/MK350S\_Premium\_Handheld\_Spectro
Ing=en)

Brand story, spectrometer application, lighting solution provider and correspondence software

MK350S Premium Spectrometer - Grow Light PAR
(/Templates/att/MK350S Premium Spectrometer - Grow Light PAR Meter\_I
Ing=en)
(/Templates/att/MK350S Premium Spectrometer Gro
Ing=en)

Understanding how the proportion of light source affects plant growth and case study

MK350S Premium Spectrometer - Flicker

(/Templates/att/MK350S/Engrish Version)

Handbook/Fernipilates/att/MK350S\_Premium\_Spectrometer\_Flic

Ing=en)

Handbook\_EN.pdf?Ing=en)

Introduction on LED lighting flicker, potential health concerns and anti-flicker solution

MK350S Premium Spectrometer - MK350 LED

(/Templates/att/MK250Sisfreveirsion) ectrometer\_MK350\_LED\_Meter\_EN.p

Ing=en)

(/Templates/att/MK350S\_Premium\_Spectrometer\_MK

Ing=en)

MK350 Series Spectrometer basic features introduction

MK350S Premium Spectrometer - MK350 Series

(/Templates/art/////// #1505 And Book (English Version) 

(/Templates/att/MK350S\_Premium\_Spectrometer\_MK Ing=en)

MK350 Series Spectrometer basic optical know-how and case study

MK350S Premium Spectrometer - User Manual (/Templates/att/MK350S-Spectrometer-User\_Manual-EN.pdf? User\_Manual-EN.pdf?Ing=en)

Product introduction on operation, Q&A and warranty services

MK350S Premium Spectrometer - User Manual (/Templates/att/MK350S-premium\_Spectrometer-User\_Manual-JP.pdf? User\_Manual-JP.pdf?Ing=en)

Product introduction on operation, Q&A and warranty services

MK350S Premium Spectrometer (/Templates/att/MK35ASpplication-Brueright hazard DM
Industry\_(polication-Brueright\_Hazard\_DMEN.pdf?
(/Templates/att/MK350S\_Premium\_SpectrometerIndustry\_Application\_Blue\_Light\_Hazard\_DMEN.pdf?Ing=en)

Explanation on how to detect LED and reduce the blue-hazard damage for human eyes

MK350S Premium Spectrometer 
(/Templater/att/MK35Application-Praite Growth DM (English
Industry\_Application\_Plant\_Growth\_DM
EN.pdf?
(/Templates/att/MK350S\_Premium\_SpectrometerIndustry\_Application\_Plant\_Growth\_DM-EN.pdf?
Ing=en)

Explanation of commonly used measurement in plant growth LED

MK350S Premium Spectrometer 
(/Templater/att/stry\_5Application-Spatial design DM (English Industry\_Application\_Spatial\_design\_DM
EN.pdf?
(/Templates/att/MK350S\_Premium\_Spectrometer-Industry\_Application\_Spatial\_design\_DM-EN.pdf? Ing=en)

Explanation on how to measure indicators commonly used by lighting designers

MK350S Premium Spectrometer 
(/Templates/att/MK350S-Premium\_SpectrometerIndustry\_(/Templates/att/MK350S\_Premium\_SpectrometerEN.pdf?
Industry\_Application\_Flicker\_DM-EN.pdf?Ing=en)

Introduction on LED lighting flicker, potential health concerns and anti-flicker solution

MK350S Premium Spectrometer - DM (English (/Templates/att/MK350S\_Premium\_EN\_DM\_201907.pdf? Ing=en) (/Templates/att/MK350S\_Premium\_EN\_DM\_201907.pd Ing=en)

Spectrometer features and application introduction



FIX Flicker mode & Frequency mode data problems

After downloading the file, please enter your password. If you encounter any problems, please contact UPRtek sales representative: Hedy\_lee@uprtek.com

Tag

Anti-Blue Light Meter (/en/search/index.html?q=Anti-Blue+Light+Meter&type=all)

Flicker Meter (/en/search/index.html?q=Flicker+Meter&type=all)

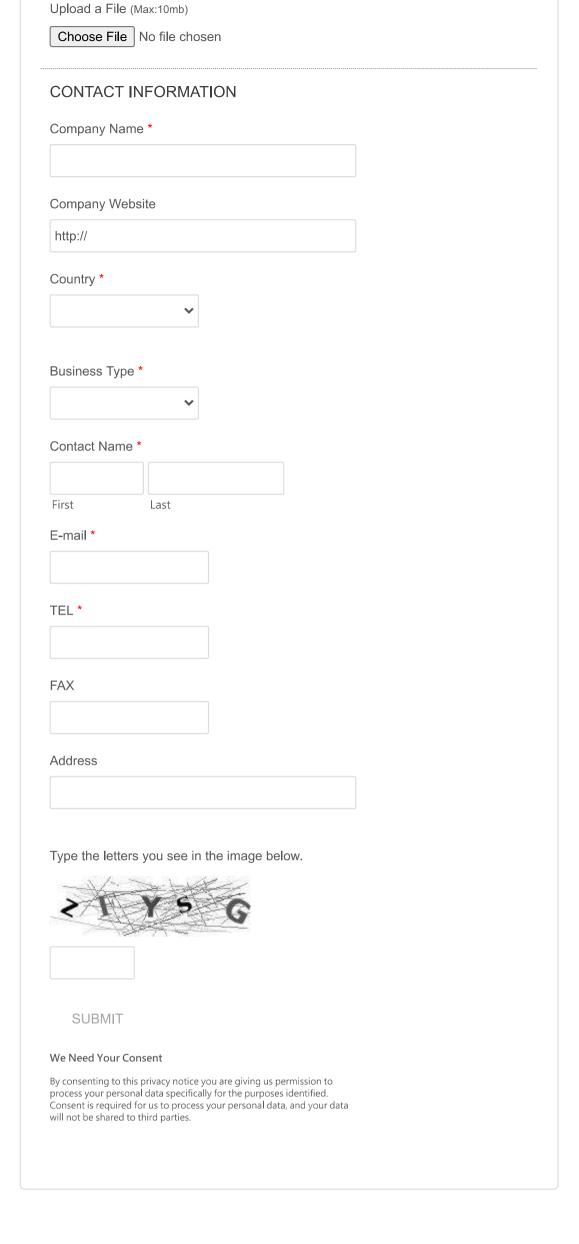
IEEE 1789 (/en/search/index.html?q=IEEE+1789&type=all)

< (/en//punckphoch/listesbillestorifeAspeletira-Mittgliet-Rhielse2002hhcspeeld+capteAndarivetter/Mtks450N-

>

Premium-Handheld-Spectrometer.html)

## SEND PRODUCTS INQUIRY TO US To provide with better services, pleaser fill out the form below. Subject \* **Products Inquiry** Leave Your Message \* Inquiry Items https://www.uprtek.com/en/product/Visual-Merchandising-LED-Lighting-Solutions-Handheld-Spectrometer/MK350S-Premium-Spectrometer.html Other Requested Information \* ☐ Price Quote ☐ Delivery Time ☐ Data Sheet / Brochure ☐ Minimum Order ☐ Sample Price Payment Terms Others (described in requirements)



## **HOT PRODUCTS**







MK350S Premium Spectrometer



PG200N Spectral PAR Meter

With three measuring options. The world's first flicker meter of 50K Hz strobe frequency...

Read More (/en/product/Standalone-Spectral-Lightmeter-Handheld-Spectrometer/MK350N-Premium-Handheld-Spectrometer.html) Provide light quality data and spectral primitive map, optical radiation energy data for lighting...

> Read More (/en/product/MK350S-Premium-Spectrometer.html)

The first 2 in 1 agricultural spectrometer with waterproof light quantum and motion sensors...

Read More (/en/product/PG200N-Spectral-PAR-Meter.html)

#### **Contacts**

- **\** 886-37-580-885
- sales@uprtek.com
- NO.38, KEYI STREET, ZHUNAN TOWNSHIP, MIAOLI COUNTY 35059, TAIWAN

#### Information

- Home (/en/page/Home/home.html)
- About Us (/en/page/About-Us/about-us.html)
- Products (/en/category/Products/index.html)
- Application
   (/en/application/Application/index.html)
- News (/en/page/News/newsind.html)
- FAQ (/en/faq/FAQ/index.html)
- Service (/en/page/Service/service.html)
- Contact Us (/en/page/Contact-Us/contact-info.html)

Latest News

< **!!!** >

USpectrum PC Software and
USpectrum APPis ready! – Make
USpectrum APPis ready! – Make
PG200N PAR Meter Completed!
USPECTURE SOFT TO SPECTIF THE SOFT THE SOFT TO SPECTIF THE SOFT THE SOFT

Software-and-uSpectrum-APPisready-Make-PG200N-PAR-Meter-Completed/UPRtek-news-2019-007.html)

Since the PG200N handheld Spectral PAR Meter was launched in June this year, UPRtek expects PG200N is able to service and meet customer's needs on

Copyright © 2019 United Power Research Technology Corp.. All Rights Reserved.