HONGLIZHIHUI 鸿利智汇 BYTECH

Technical Data Sheet

Specification

CMH235A2V112Z1V2

（385nm）

RoHS

BYTECH

Bytech Electronics CO., Ltd is the first company in China to launch the real inorganic package UV LED devices and core components for application based on CMH technology.

CMH technology platform is a kind of package technology which adopts ceramic, metal, hard glass as package materials. CMH technology platform originates independent intellectual property owned by Bytech Electronics CO., LTD, which is suitable for vacuum encapsulation, especially suitable for ensuring reliability of deep UV products.

DESIGN	CHECKED	APPROVED
2018.06.11	2018.06.11	2018.06.11
XIONG	HE	CHEN

研发专用章

High Power UV LED
CMH235A2V112Z1V2

Under Development	
Mass Production	●

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

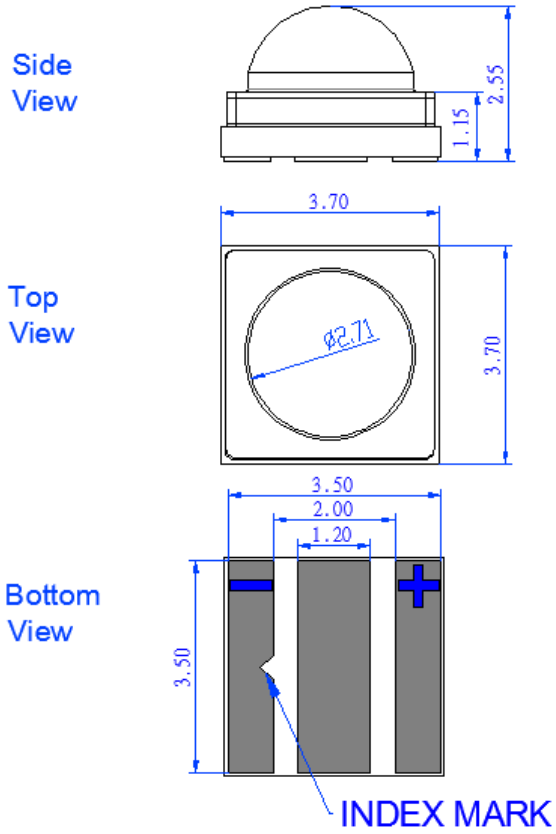
Features

- CMH real inorganic package
- Dimension 3.70mm×3.70mm×2.55mm
- Long operating life
- High reliability
- Superior ESD protection
- RoHS compliant

Applications

- Fluorescent spectroscopy
- Sensors and monitors
- Bio-analysis/detection
- Phototherapy
- UV curing
- Printing
- Coating

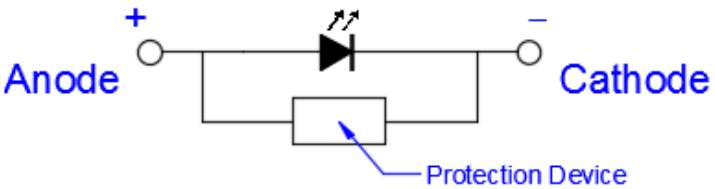
Package Dimensions（Unit: mm）



Product ID:

385nm: CMH235A2V112Z1V2

Circuit:



Tolerance： ± 0.20mm

Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

Characteristics of UV LED

1. Electrical / Optical Characteristics（Ta=25℃,RH=40%）

Parameter	Symbol	Units	CMH235A2V112Z1V2 (IF=1000mA)
Peak Wavelength [1]	λ_p	nm	380-390
Radiant Flux [2]	Φ_e [3]	mW	1800-2200
Forward Voltage [4]	VF	V	3.4-4.2
Thermal Resistance [5]	R_{th}	°C/W	5.0
Spectrum Half Width	Δλ	nm	15
View Angle	$2\theta_{1/2}$	deg	60

Notes:

[1].Peak wavelength measurement tolerance:±3nm

[2].Radiant flux measurement tolerance:±10%

[3].Φ_e is the total radiant Flux as measured with an integrated sphere

[4].Forward voltage measurement tolerance:±3%

[5].R_{th} is the thermal resistance between junction to substrate

2. Absolute Maximum Ratings (T_a=25°C,RH=40%)

Parameter	Symbol	Units	CMH235A2V112Z1V2
Maximum Rating Forward Current	I_{Fmax}	mA	1200
Maximum Rating Junction Temperature	T_{jmax}	°C	125
Operating Temperature Range	T_{opr}	°C	-10 ~ +85
Storage Temperature Range	T_{stg}	°C	-40 ~ +100

Notes:

Operating the LED beyond the listed maximum ratings may affect device's reliability and cause permanent damage.

These or any other conditions beyond those indicated under recommended operating conditions are not implied.

The exposure to the absolute maximum rated conditions may affect device reliability.

Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

3.Ranks（ IF=1000mA, Ta=25℃,RH=40%)

波长(nm)	电压(V)	光功率(mw)						
		1400-1600	1600-1800	1800-2000	2000-2200	2200-2400	2400-2600	2600-2800
380-385	3.4-3.5	A2001	A2002	A2003	A2004	A2559	A2560	A2561
	3.5-3.6	A2005	A2006	A2007	A2008	A2562	A2563	A2564
	3.6-3.7	A2009	A2010	A2011	A2012	A2565	A2566	A2567
	3.7-3.8	A2013	A2014	A2015	A2016	A2568	A2569	A2570
	3.8-3.9	A2017	A2018	A2019	A2020	A2571	A2572	A2573
	3.9-4.0	A2021	A2022	A2023	A2024	A2574	A2575	A2576
	4.0-4.1	A2025	A2026	A2027	A2028	A2577	A2578	A2579
	4.1-4.2	A2029	A2030	A2031	A2032	A2580	A2581	A2582
385-390	3.4-3.5	A2033	A2034	A2035	A2036	A2583	A2584	A2585
	3.5-3.6	A2037	A2038	A2039	A2040	A2586	A2587	A2588
	3.6-3.7	A2041	A2042	A2043	A2044	A2589	A2590	A2591
	3.7-3.8	A2045	A2046	A2047	A2048	A2592	A2593	A2594
	3.8-3.9	A2049	A2050	A2051	A2052	A2595	A2596	A2597
	3.9-4.0	A2053	A2054	A2055	A2056	A2598	A2599	A2600
	4.0-4.1	A2057	A2058	A2059	A2060	A2601	A2602	A2603
	4.1-4.2	A2061	A2062	A2063	A2064	A2604	A2605	A2606

Notes:

*Forward voltage measurement tolerance:±3%

*Radiant flux measurement tolerance:±10%

*Φ_e is the total radiant Flux as measured with an integrated sphere

*LEDs from the above ranks will be shipped.

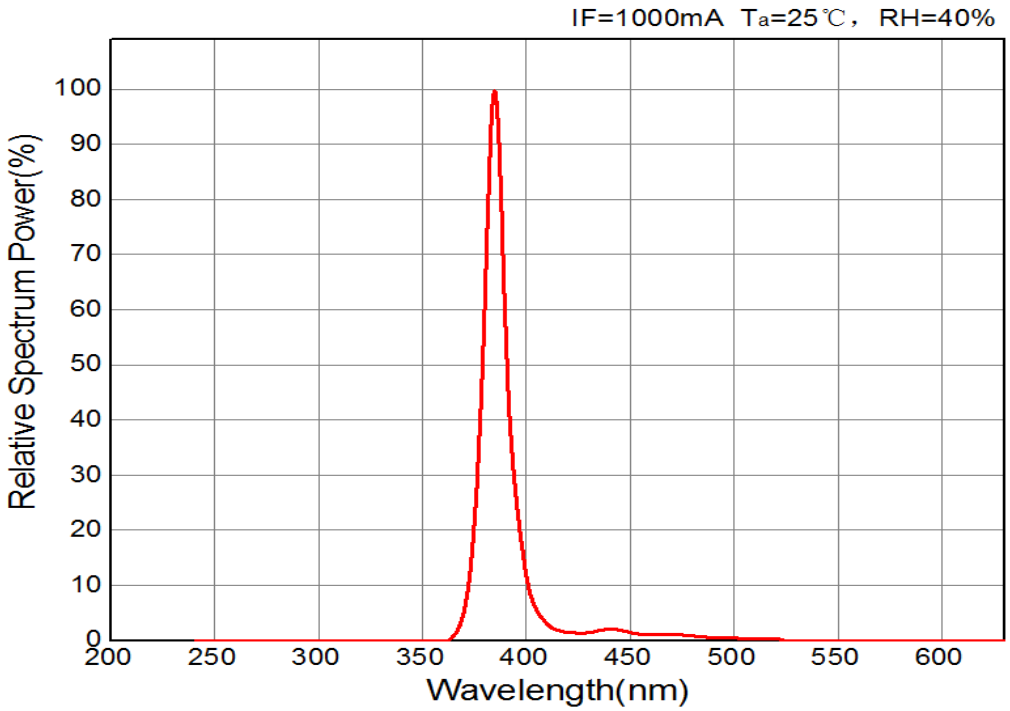
*The rank combination ratio per shipment will be decided by Bytech.

*Peak wavelength measurement tolerance:±3nm

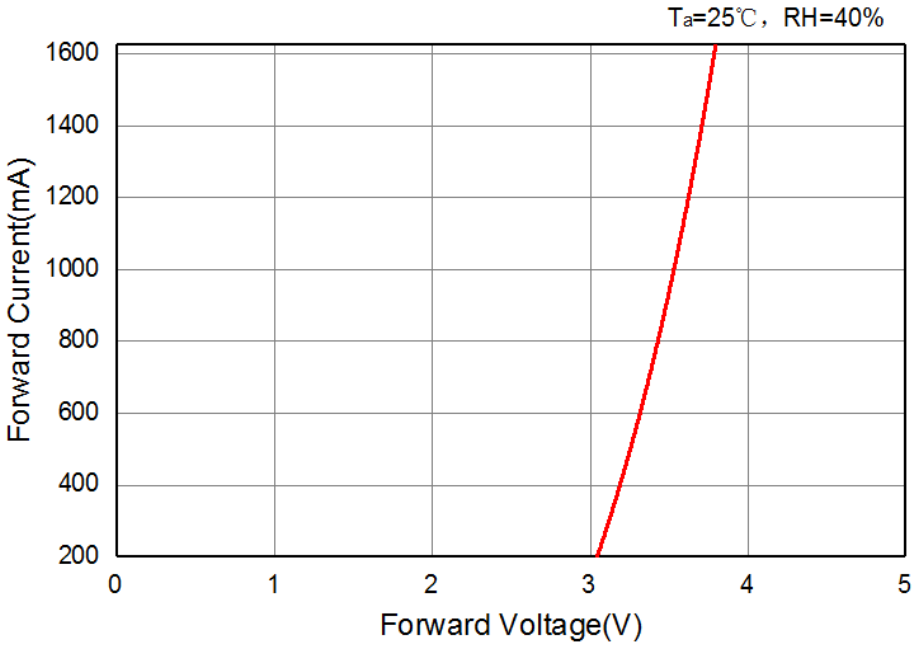
Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

Characteristics Diagrams

1.Relative Spectrum Power Distribution

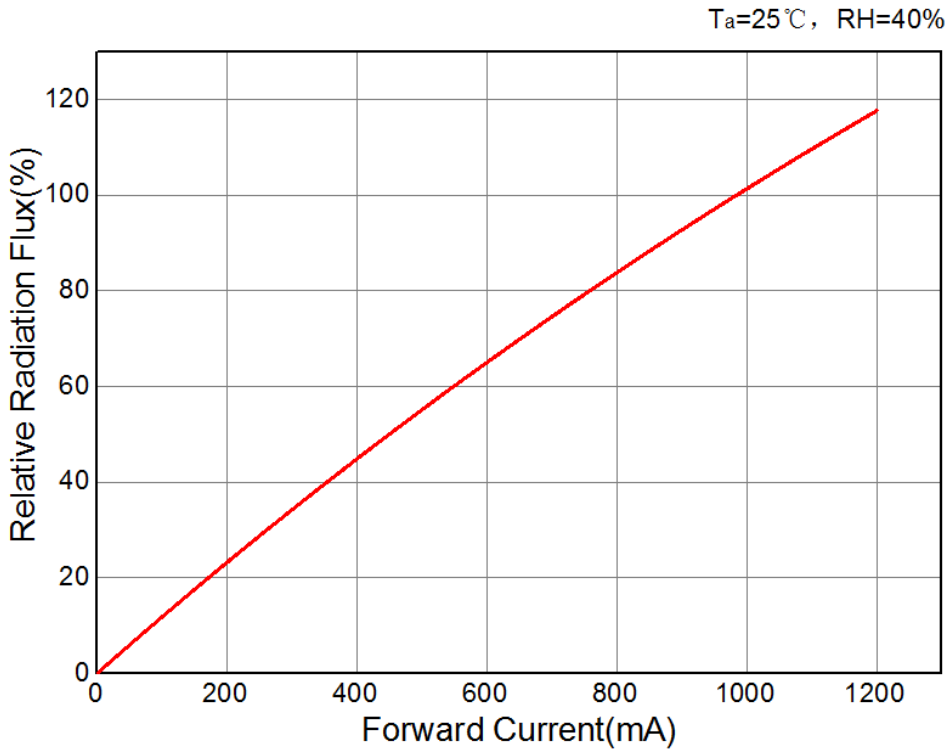


2.Forward Voltage vs Forward Current

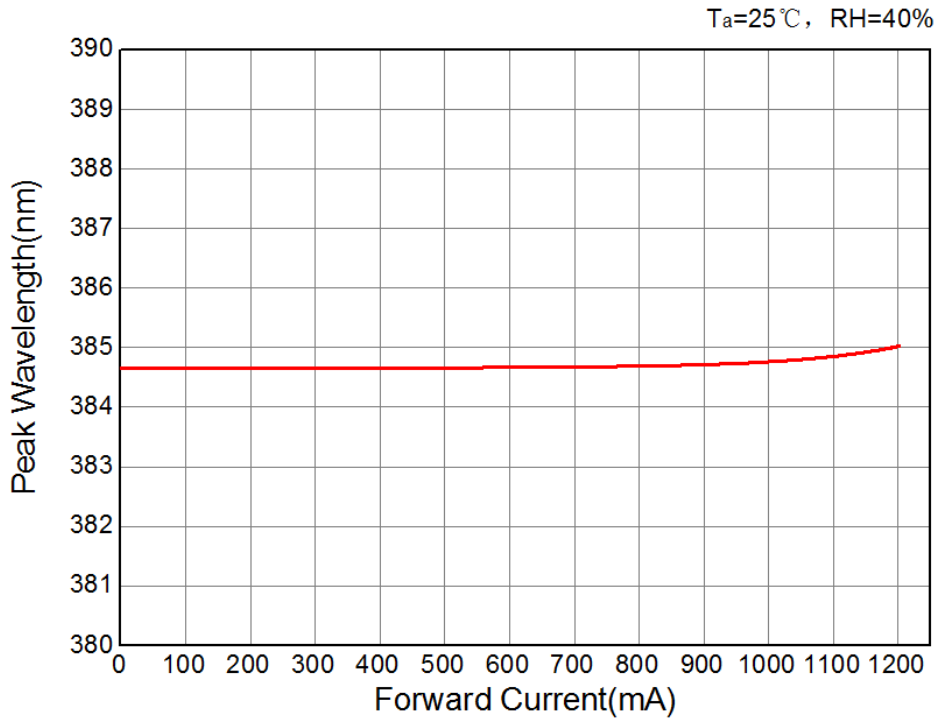


Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

3.Relative Radiation Flux vs Forward Current

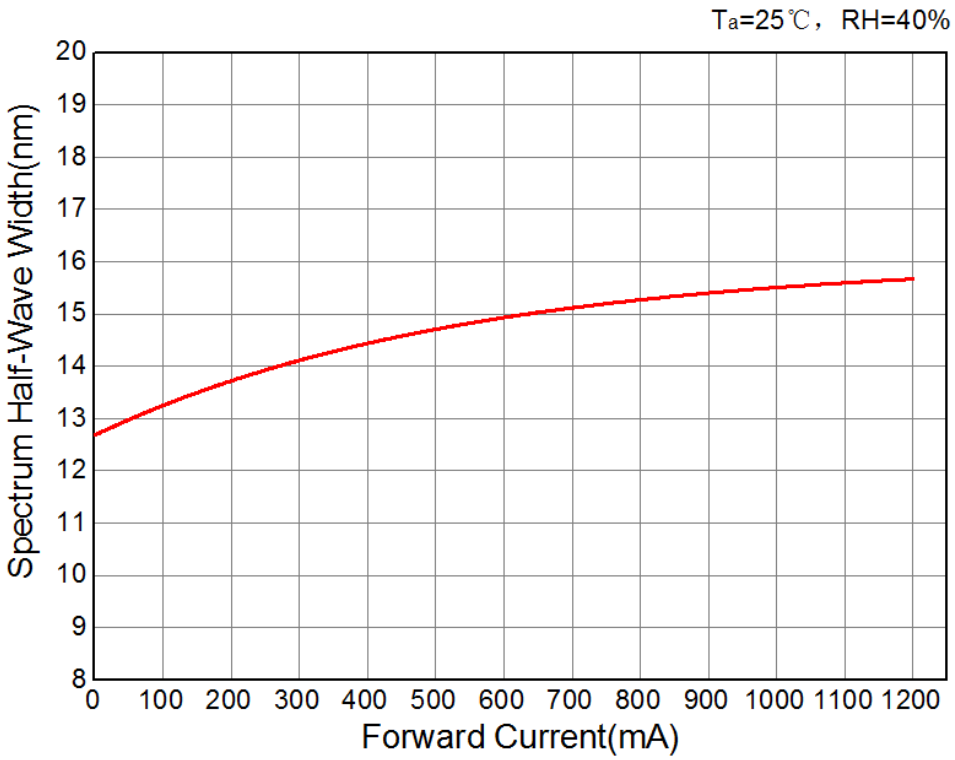


4.Peak Wavelength vs Forward Current

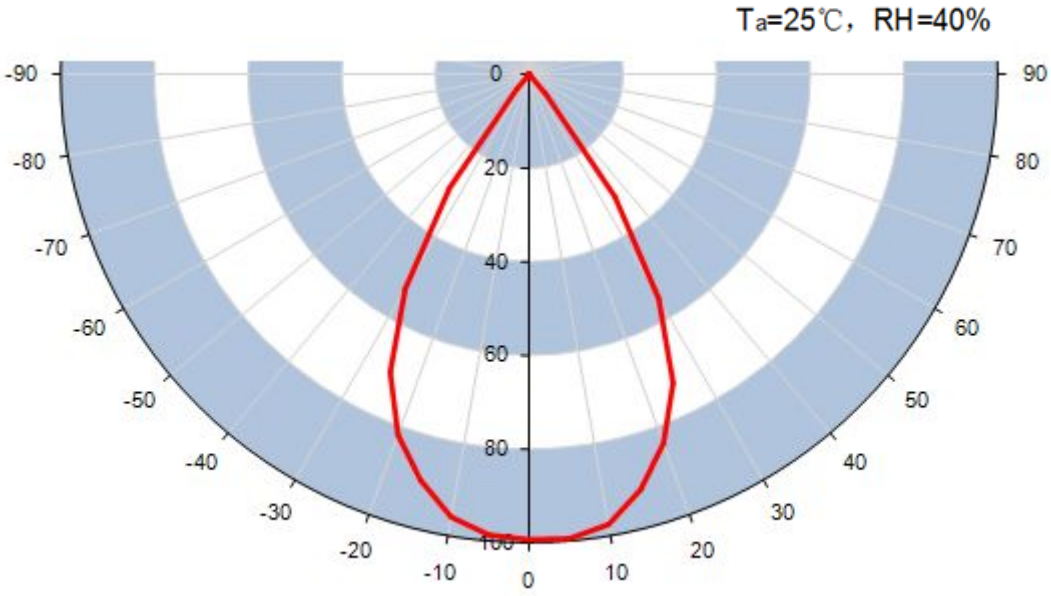


Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

5.Spectrum Half-Wave Width vs Forward Current

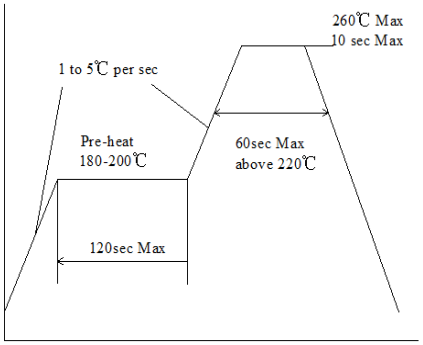


6.Spatial Distribution Graph

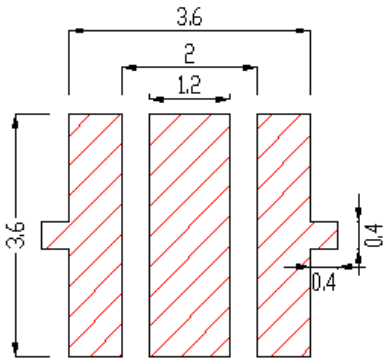


Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

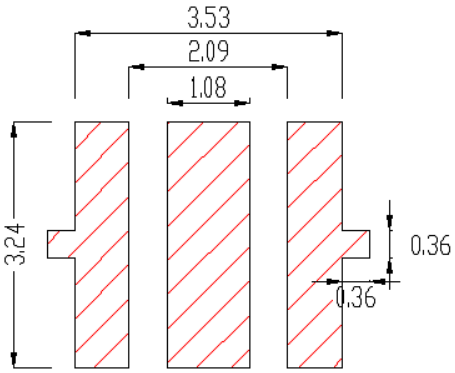
Product Application Information



Recommended Reflow Soldering Condition
（Lead-free solder）



Recommended Soldering pad Layout
（Unit: mm）



Recommended Soldering Mask Layout
（Unit: mm）

Notes:

*This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered,
Bytech cannot guarantee its reliability.

*Reflow soldering must not be performed more than twice.

*Avoid rapid cooling. Ramp down the temperature gradually from the peak temperature.

*Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation,
caused by heat and/or atmosphere.

*Since the glass used in the encapsulating glass is fragile, do not press on the encapsulant glass.
pressure can cause nicks, chip-outs, encapsulant delamination and deformation, and wire breaks, decreasing reliability

*Repairing should not be done after the LEDs have been soldered.
It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

*The Die Heat Sink should be soldered to customer PCB. If it is difficult or impossible, use high heat-dissipating adhesive.

*When soldering, do not apply stress to the LED while the LED is hot.

*When using a pick and place machine, choose an appropriate nozzle for this product.

*When flux is used, it should be a halogen free flux. Ensure that the manufacturing process is not designed in a manner
Where the flux will come in contact with the LEDs.

*Make sure that there are no issues with the type and amount of solder that is being used.

Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

CAUTIONS

1. Handling Precautions

● Do not handle the LEDs with bare hands as it will contaminate the LEDs surface and may affect the optical characteristics.

● When handling the product with tweezers, be careful not to apply excessive force to the glass. Otherwise, the glass can be cut, chipped, delaminate or deformed, causing wire-bond breaks and catastrophic failures.

■ Dropping the product may cause damage.

2. Electrostatic Discharge (ESD)

● The product are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measure against electrostatic discharge are strongly recommended:

Eliminating wrist strap, ESD footwear, clothes, and floors

Grounded workstation equipment and tools

ESD table/shelf mat made of conductive materials

● Ensure that tools, jigs and machines that are being used are properly grounded and that proper grounding techniques are used in work areas. For devices/equipment that mount the LEDs, protection against surge voltages should also be used.

● The customer is advised to check if the LEDs are damage by ESD

When performing the characteristics inspection of the LEDs in the application.

Damage can be detected with a forward voltage measurement at low current(≤1mA).

3. Eye Safety

● Please proceed with caution when handling any UVLEDs driven at low or high current. Since UV light can be harmful to eyes, do Not look directly into the UV light, even through an optical instrument.

● UV protective glasses are required to use in order to avoid damage by UV light in case of viewing UV light directly.

Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.

History of Revision

Revision	Date	Contents of Revision Change	Remark
REV NO: 1.0	2018.06.11	New Establishment	

Copyright@2018 Bytech Electronics Co., Ltd. All rights reserved.