

Jan.2020



A Tier-One **RGB LED** Manufacturer

2020 Brochure

—**RGB DIVISION**—

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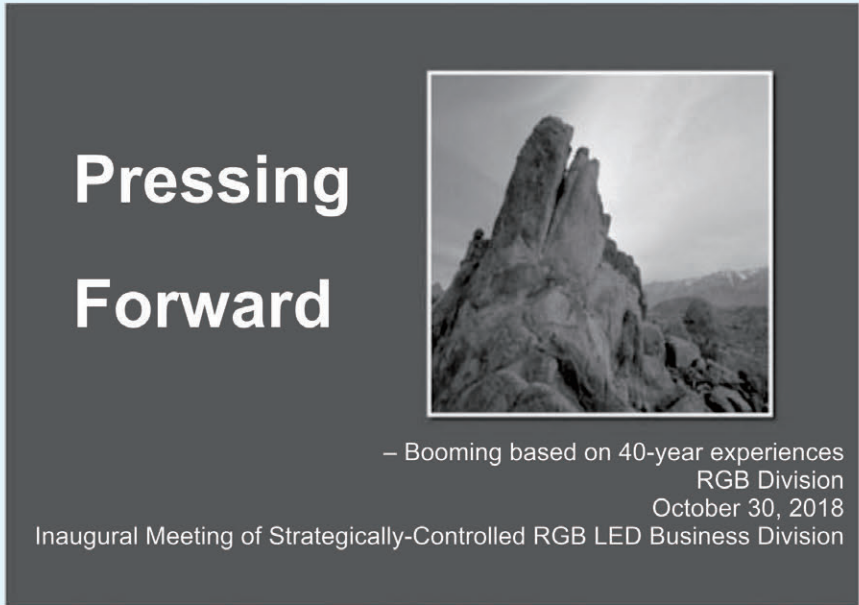
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NATIONSTAR Sets up the Strategically-Controlled RGB Division which is commonly called as RGB Super Division.



On October 30, 2018 NATIONSTAR held the Inaugural Meeting of Strategically-Controlled RGB Division, with the attendance of all the directors, supervisors, top leaders and senior managers of the company which totaled up to over 80. At the meeting, it was announced that the Strategically-Controlled RGB Division was officially established.

About NATIONSTAR and its RGB Division

According to the IHS Markit's market tracking reports on LEDs supply and demand in Q2, 2018, the operating revenue of NATIONSTAR for LED packages ranking the 8th globally in the list of operating revenue and market shares, two places surpassing that in the same period in 2017.

Looking back at the history, NATIONSTAR has been at the forefront of reform and opening up. Established in 1969, it has gone through such reforms as the “state-owned factories in the era of planned economy”, “OEM enterprises in the era of reform and opening up”, and “private enterprises based on independent innovation in the new century”. With the investment and holding of Guangdong Rising Assets Management Co., Ltd. since 2014, NATIONSTAR has ushered in a new era of high-speed growth at a rate of over 20% per year.

RGB Division, the largest division in NATIONSTAR, is mainly engaged in RGB display components. Its management team is dynamic, passionate, and rich in industry experience, with its members aged 32.4 on average, of whom, however, the average length of service is over 10 years. With the implementation of Division system in NATIONSTAR since October 2013, the RGB Division has realized rapid growth per year for five consecutive years, and has ranked the first globally in terms of sales revenue in SMD RGB LEDs and market share of Narrow Pixel Pitch LEDs. In addition, the RGB Division has undertaken several major international projects, such as supplying RGB LEDs to build “the displays for Tian'anmen military parade ceremony”, “72 pcs large displays for Rio Olympics Arena”, “displays for Boao Forum for Asia for three consecutive years” and “displays for Russian World Cup stadiums”.

This upgrading will certainly vitalize the development of the Division to continue to hold on to a favorable position in the LED packages industry. What's more, it will mobilize the initiative of the Division's management team, releasing vitality and liberating productive forces, and it will bring a splendid future for LED display packages industry.

RGB LED DIVISION INTRODUCTION

RGB LED Division is the biggest revenue Division in Foshan NATIONSTAR Optoelectronics Co., Ltd.

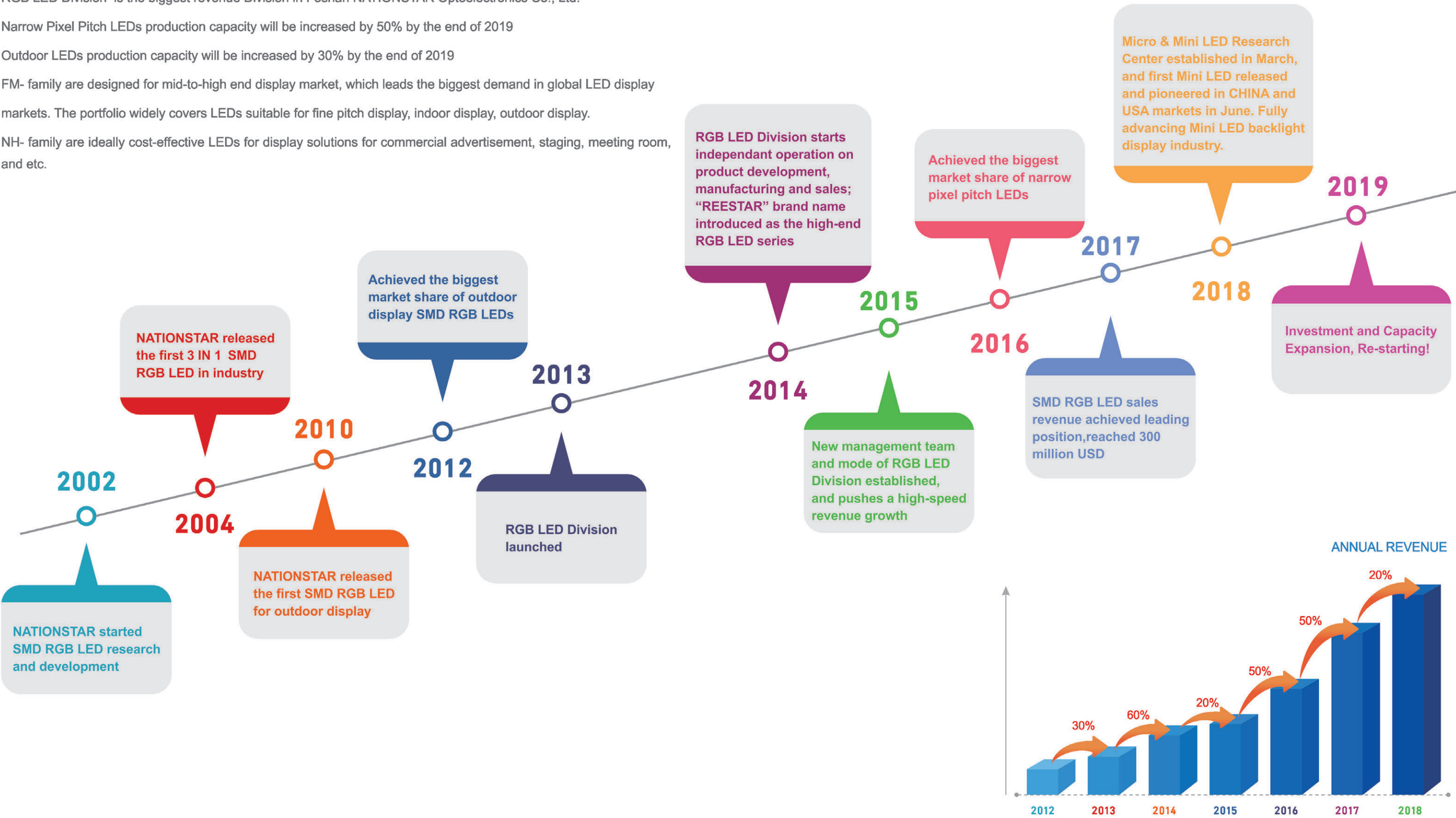
Narrow Pixel Pitch LEDs production capacity will be increased by 50% by the end of 2019

Outdoor LEDs production capacity will be increased by 30% by the end of 2019

FM- family are designed for mid-to-high end display market, which leads the biggest demand in global LED display markets. The portfolio widely covers LEDs suitable for fine pitch display, indoor display, outdoor display.

NH- family are ideally cost-effective LEDs for display solutions for commercial advertisement, staging, meeting room, and etc.

RGB LED DIVISION HISTORY



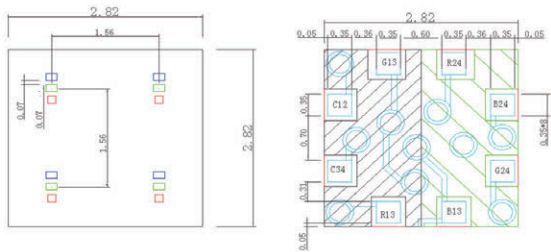
FM-Family Introduction

FM- family are designed for mid-to-high end display market, which have led the biggest demand in global LED display markets in the past 10 years. The portfolio widely covers LEDs suitable for narrow pitch display, indoor display, outdoor display.

Narrow Pixel Pitch LEDs in FM Family

Product Type: Indoor narrow pitch display P1.5mm
Target Market: High-end rental
Applications: Stage, commercial (exhibition, trade show, meeting room) and etc.

IMD-F15



Tolerance: ±0.05mm unit:mm

2.82×2.82×0.85mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	5	620	15	1.9	120
Green	2	530	25	2.5	120
Blue	2	470	4	2.6	120

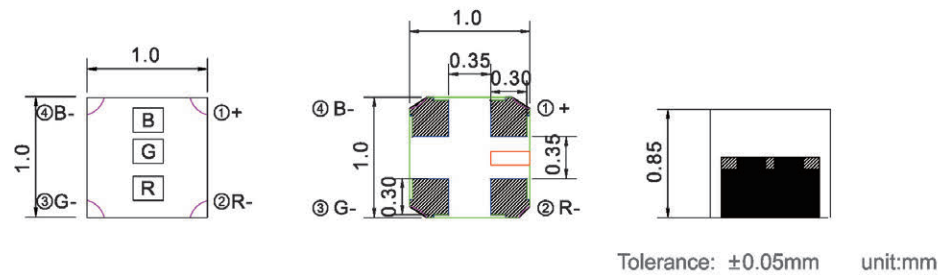


Robbie Williams'Concert

Narrow Pixel Pitch LEDs in FM Family

Product Type: Indoor narrow pitch display P1.5x~2.x
Target Market: Mid-and-high rental and fixed
Applications: Military command room, security and control room, broadcast, video conference room, cinema, and etc.

FC-B1010RGBT-HG



1.0×1.0×0.85mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	5	620	20	2.0	120
Green	2	530	30	2.6	120
Blue	2	470	5	2.7	120

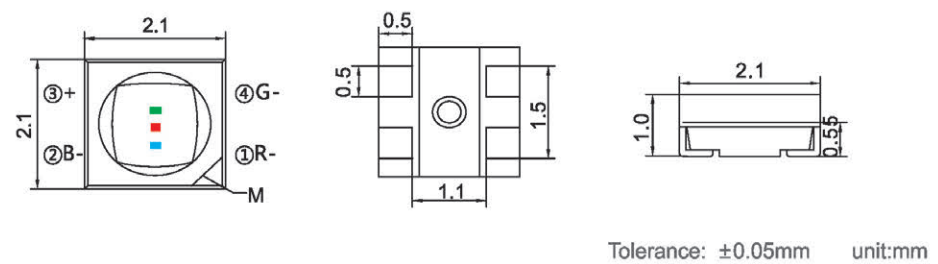


Beijing Daxing Airport Project

Indoor LEDs in FM Family

Product Type: Indoor display P2.x~3.x
Target Market: Mid-and-high rental and fixed
Applications: Broadcast, stage, public and retail (airport, metro, shopping mall), and etc.

FM-B2020RGBA-HG



2.1×2.1×1.0mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	8	622	58	2.0	110
Green	5	526	150	3.0	110
Blue	3	470	20	3.0	110

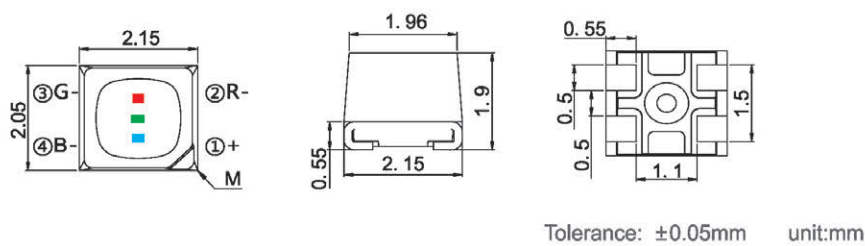


Guangzhou Baiyun Airport Terminal T2 LED display

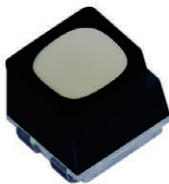
Outdoor LEDs of FM Family

Product Type: Outdoor display P3.x~5.x
Target Market: Mid-and-high rental and fixed
Applications: Stage (transparent display, video floor display), outdoor fine pitch signage, and etc.

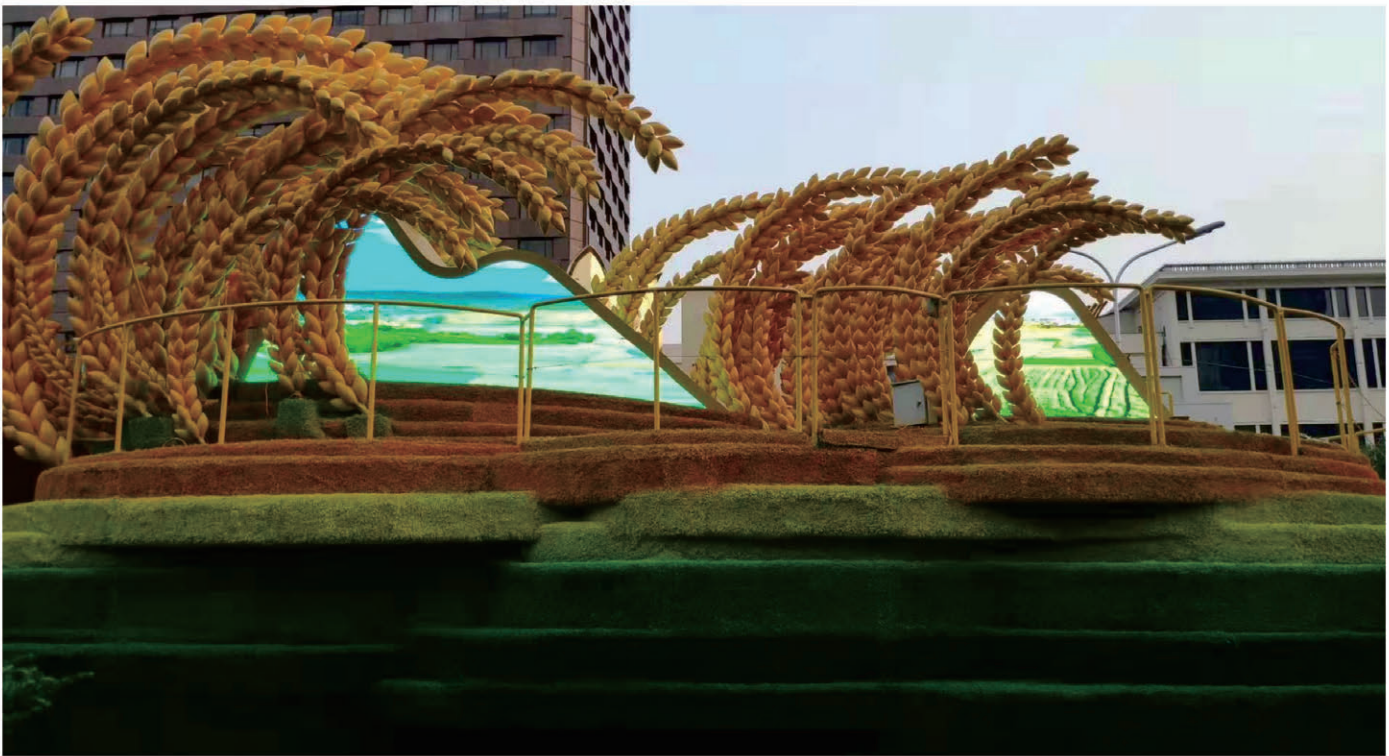
FM-Z1921RGBA-SH



2.15×2.05×1.9mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	622	450	2.0	110
Green	8	522	730	3.0	110
Blue	5	472	105	3.0	110

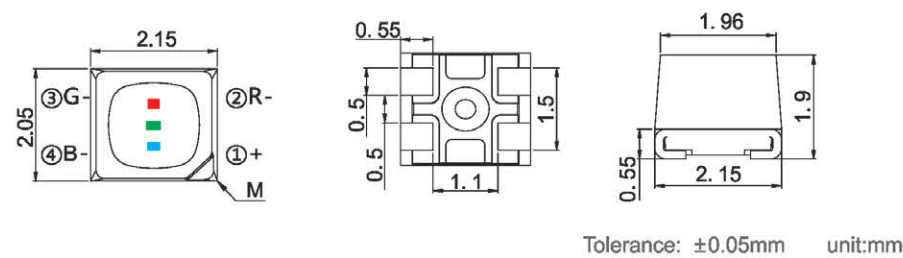


2019 The Anhui Float "Hope of Fields" on 70th Anniversary Military Parade

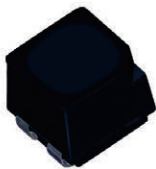
Outdoor LEDs of FM Family

Product Type: Outdoor display P3.x~5.x
Target Market: Mid-and-high rental and fixed
Applications: Stage (transparent display, video floor display), outdoor fine pitch signage, and etc.

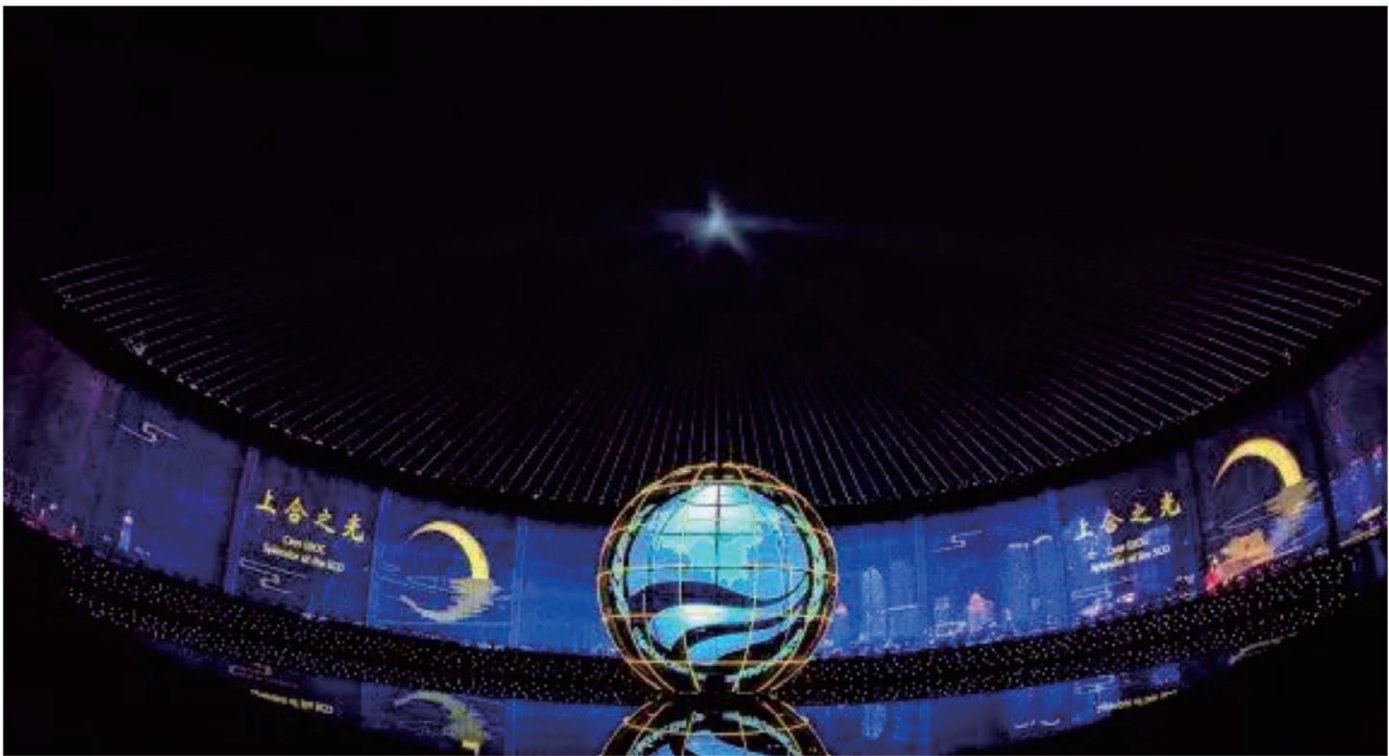
FM-B1921RGBA-SH



2.15×2.05×1.9mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	624	260	2.1	110
Green	8	525	405	2.9	110
Blue	5	474	60	2.9	110

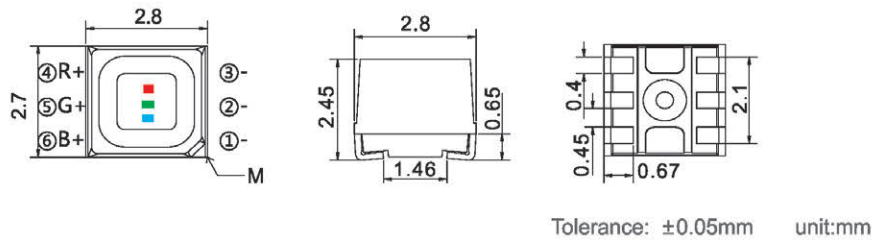


2018 SCO summit stage LED Screen

Outdoor LEDs of FM Family

Product Type: Outdoor display
Target Market: Module wholesales
Applications: Stage, large size advertising signage, and etc.

FM-Z2727RGBA-SH



2.8×2.7×2.45mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	622	470	2.0	110
Green	8	525	750	3.0	110
Blue	5	470	120	3.0	110

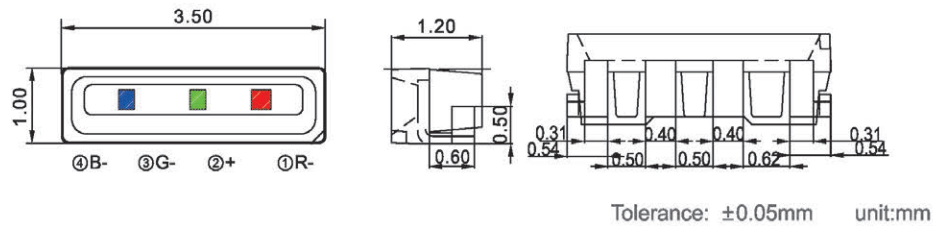


The 7th World Military Games

Side View LEDs of FM Family

Product Type: Indoor side-view
Target Market: Mid-and-high transparent display
Applications: Stage, glass wall (retail, brand chain-shop), large indoor space, and etc.

FM-3510RGBA-SG



3.5×1.0×1.2mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	622	455	2.0	110
Green	8	527	762	3.0	110
Blue	5	470	104	3.0	110



Hangzhou Liangzhu Future Light

NH- Family Introduction

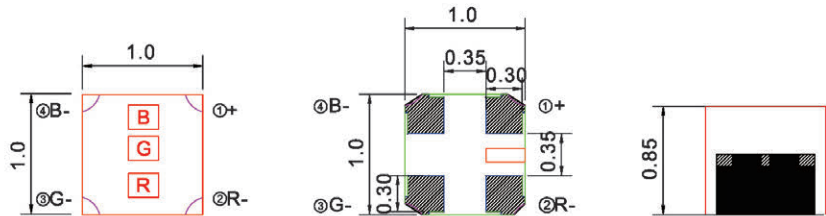
NH- family were launched in 2015, they are ideally cost-effective LEDs for display solutions in commercial advertisement, staging, meeting room, and etc.



LEDs of NH Family

Product Type: Indoor narrow pitch display
Target Market: Mid-market rental and fixed
Applications: Commercial (classroom, meeting room, theater, retail), public, and etc.

NH-B1010RGBT-HF



Tolerance: ±0.05mm unit:mm

1.0×1.0×0.85mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	5	620	18	2.0	120
Green	2	530	25	2.6	120
Blue	2	470	4.5	2.7	120

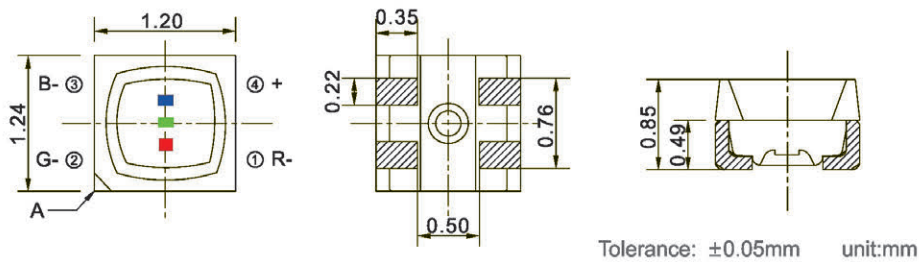


Qixia "Smart City" Digital City Management System LED Display

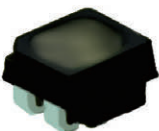
LEDs of NH Family

Product Type: Indoor narrow pitch display (P1.5 ~ P2.5)
Target Market: Mid-and-high rental and fixed
Applications: Stage, meetingroom, classroom, market, exhibition

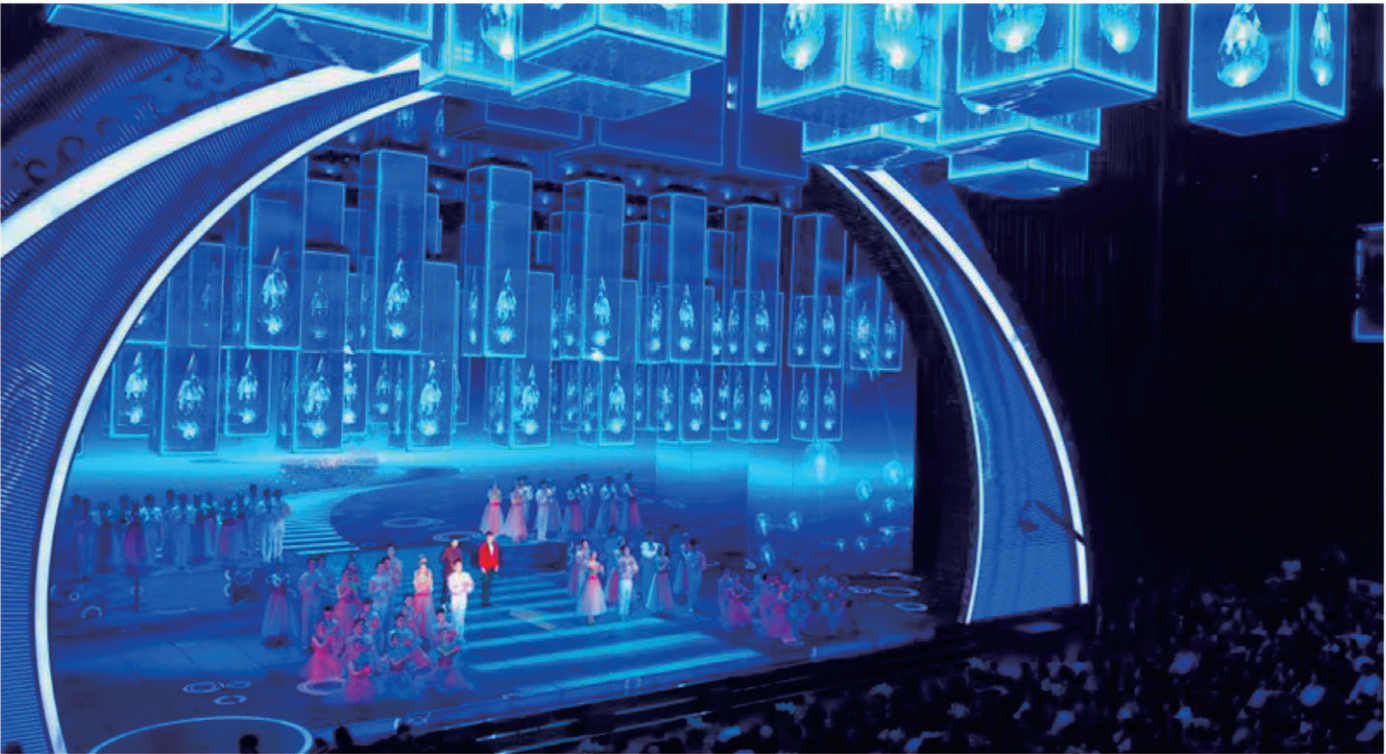
NH-B1212RGBA-HF NEW



1.2x1.24x0.85mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	8	622	42	2.0	110
Green	5	526	125	2.8	110
Blue	3	470	18	2.8	110

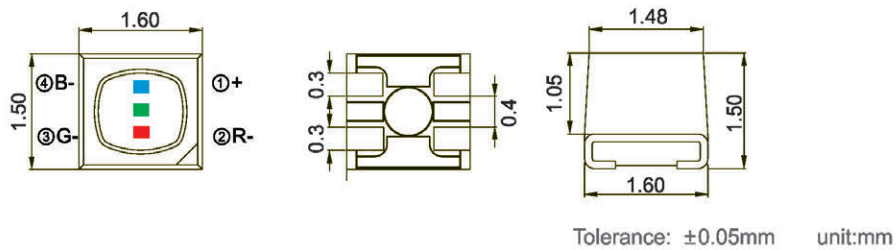


Application cases

LEDs of NH Family

Product Type: Outdoor narrow pitch display
Target Market: Mid-and-high rental and fixed
Applications: Stage, Advertising machine, Outdoor spacing floor screen

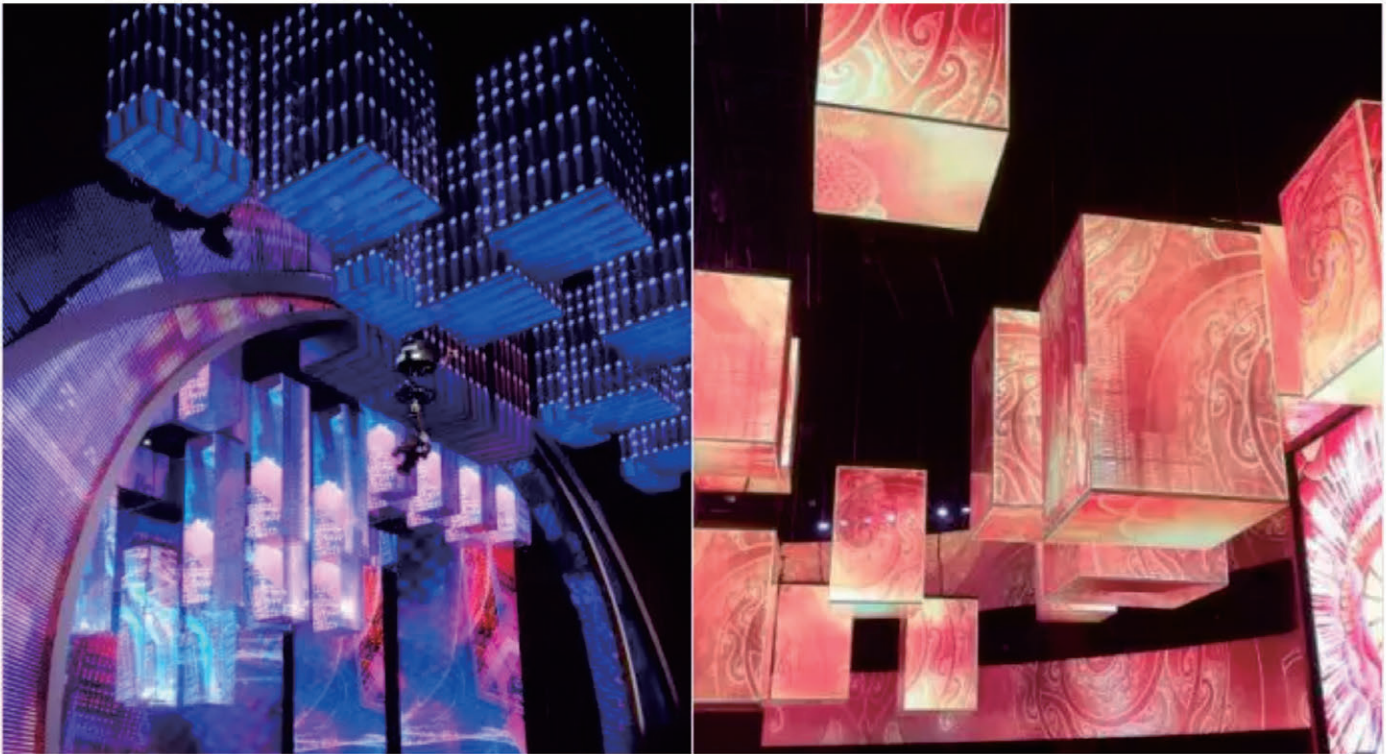
NH-Z1415RGBA-SG NEW



1.5x1.6x1.5mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	622	320	2.1	110
Green	8	528	510	2.9	110
Blue	5	469	70	2.9	110

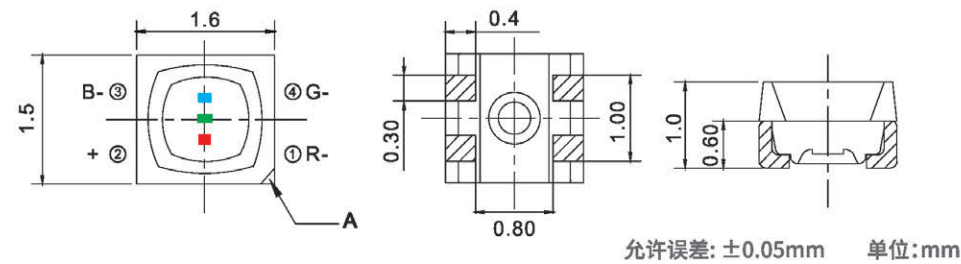


Application cases

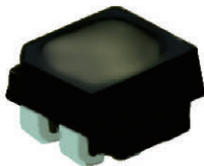
LEDs of NH Family

Product Type: Indoor display
Target Market: Mid-and-high rental and fixed
Applications: Stage, exhibition, Market

NH-B1515RGBA-HF



1.5x1.6x1.0mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	8	622	48	2.0	110
Green	5	526	155	2.7	110
Blue	3	470	25	2.8	110

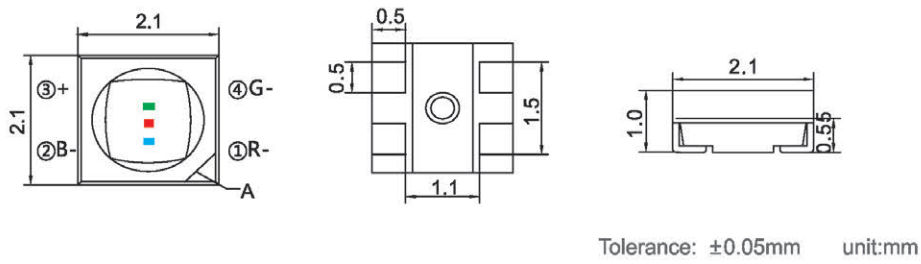


Application cases

LEDs of NH Family

Product Type: Indoor display
Target Market: Mid-market rental and fixed
Applications: Stage, commercial (hotel meeting room, retail) and etc.

NH-B2020RGBA-HF



2.1x2.1x1.0mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	8	622	45	1.9	110
Green	5	526	160	2.8	110
Blue	3	470	25	2.8	110

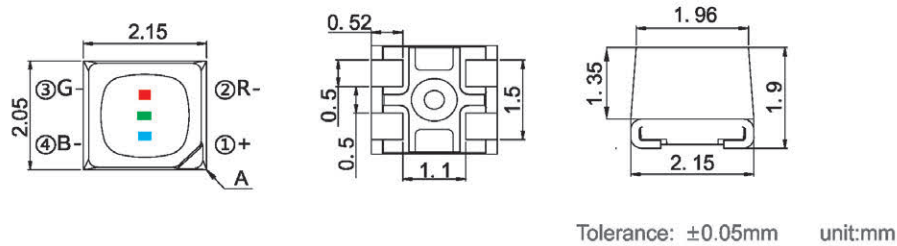


Shenzhen North High Speed Railway Station Project

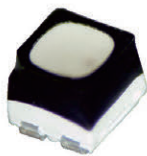
LEDs of NH Family

Product Type: Outdoor display
Target Market: Mid-market rental and fixed, Module wholesales.
Applications: Stage, advertising machine, medium and small size signage, and etc.

NH-Z1921RGBA-SG



2.15×2.05×1.9mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	622	350	2.1	110
Green	8	530	620	2.9	110
Blue	5	472	95	2.9	110

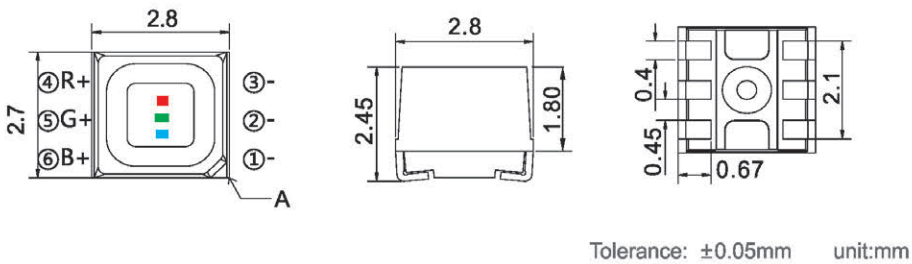
Hong Kong Ocean Park P4 Flexible screen



LEDs of NH Family

Product Type: Outdoor display
Target Market: Module wholesales
Applications: Stage, large size advertising signage, and etc.

NH-Z2727RGBA-SG



2.8×2.7×2.45mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
Red	15	622	450	2.2	110
Green	8	530	680	3.0	110
Blue	5	472	100	3.0	110



Liupanshui People's Park display




Product Identification

NATIONSTAR RGB R&D center guarantees that sample verification is free of charge and the analysis report will be sent to you within 7 working days after receiving your sample.

Applications: Commercial, such as large size advertising signage, architectural exterior lighting decoration, and etc.

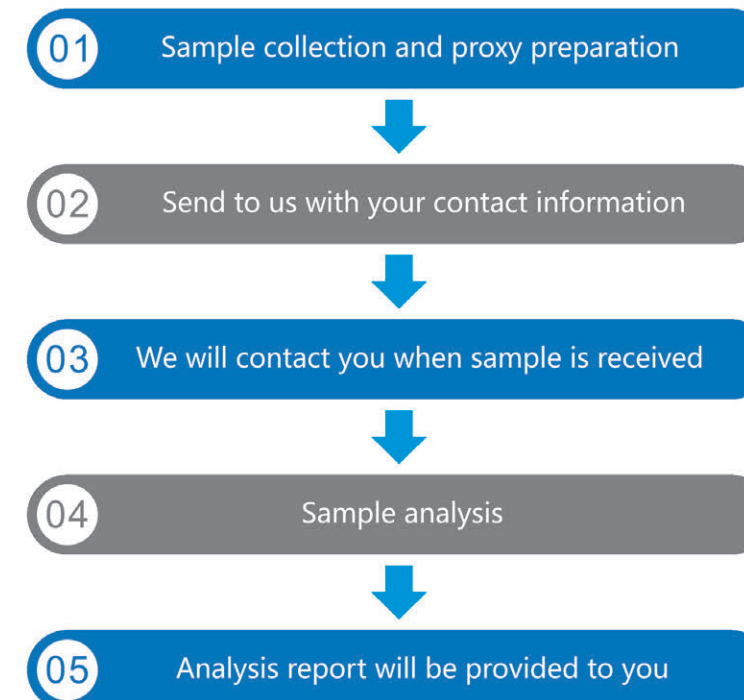
[illegible]

Tolerance: $\pm 0.05\text{mm}$ unit:mm


Color	IF(mA) TEST	ΔD (nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle (deg)
	20	622	600	2.0	110
	20	520	1350	3.2	110
	20	470	280	3.3	110




HongKong SOGO Outdoor P6 Advertising screen



Sample testing proxy

 NATIONSTAR <small>REAL ESTATE</small>			
<h2>Sample Test Proxy</h2>			
Client		Date	
Contact Person		Method	
Address			
Item		Quantity	
Sample Supplier			
Test Content			
Test Intention			
Test Report	Method: <input type="checkbox"/> Data Report <input type="checkbox"/> Written Report		
	Delivery Method: <input type="checkbox"/> Self pick-up <input type="checkbox"/> Mail <input type="checkbox"/> E-mail		
Client Sign and Stamp	<div style="text-align: right;">YY/MM/DD</div>		

Testing report

LED Sample Test Analysis									
Sample Situation	Client	[Redacted]		Receiving Date	2018-6-5				
Requirement	To analyze if the LEDs in a module belongs to NationStar, to see if the bonding wire is golden wire.								
Item	1921	Reviewer	Lin wen hao		Date	2018-6-7			
Inspection Item	<input checked="" type="checkbox"/> Appearance <input checked="" type="checkbox"/> Parameter <input checked="" type="checkbox"/> Interior Structure		Temperature (°C)		Humidity (%)				
			22°C		55%RH				
Appearance									
Inspection Item	<div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>LEDs samples were identified with FM-Z1921RGA-SH of NationStar, bonding wire was golden wire.</p> <p style="text-align: center;"> <input checked="" type="checkbox"/> NationStar FM-Z1921RGA-SH Bm: 15-8-5mA If: 200-600 mcd G:400-1100 mcd B: 70-160 mcd </p> </div>								
Conclusion	<div style="display: flex; justify-content: space-between;"> <div> <p>Drawn <u>林文豪</u> Check <u>陈海欣</u> Approve <u>郑宝</u></p> </div> <div> <p><i>(Red circular stamp)</i></p> </div> </div>								
<p>Declaration:</p> <p>2. If the product is confirmed to be NationStar's product after inspection, it does not represent that NationStar will provide any express or implied warranty or guarantee for the inspected product.</p> <p>3. NationStar is not responsible for the correctness of the above inspection results. If the client or the third party is responsible for any illegal behavior or claim on the basis of inspection, NationStar shall not be responsible for this.</p> <p>4. We provide the identification of services, only for those parts including appearance, parameter and interior structure. Client has an obligation to provide accurate name, model number and any other relevant information. If there is any discrepancy, please confirm it by phone to avoid the liability.</p> <p>5. NationStar has the right to decide whether to inspect the products provided by client or determine the inspection results. After the inspection of tested products, NationStar is not responsible for the re-inspection.</p> <p>6. Client should provide the products subject to inspection to be inspected by our company and shall be responsible to agree to this clause.</p>									

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R&D Institutions



NATIONSTAR laboratory has gained approval by CNAS

Patents Achievements

By Oct 2019, NATIONSTAR had applied for 600 patents, including 168 patents for inventions, 52 overseas patents. There are 464 patents issued patents, including 68 patents for inventions.

Company Honors

- Global TOP 8 LED Encapsulation Manufacture in Q2 2018(IHS Markit)
- National Science and Technology Progress Award
- National high-tech enterprise
- TOP 10 international competitiveness of Chinese LED enterprises
- Key high-tech enterprise of National Torch Plan
- One of 500 manufacture enterprises in Guangdong province
- LED famous brand in China
- International standard certification utilization