



NATIONSTAR



A Tier-One **RGB LED** Manufacturer

2019 Brochure

—**RGB DIVISION**—

FOSHAN NATIONSTAR OPTOELECTRONICS CO.,LTD

Add: No.18 South Huabao Road, Chancheng District, Foshan,Guangdong,P.R.China

Tel: +86-(0)757-82100238 ext. 8387, 83985605

Fax: 0086-757-82109319

P.C: 528000

Web: www.nationstar.com

E-Mail: ledsales@nationstar.com

CONTENTS

NATIONSTAR and its RGB Division information

03-08

FM Family

09

Narrow Pixel Pitch

IMD-F15 **NEW** 10

FC-B1010RGBT-HG 11

Indoor

FM-B2020RGBA-HG 12

Outdoor

FM-Z1921RGBA-SH 13

FM-B1921RGBA-SH 14

FM-Z2727RGBA-SH 15

Side View

FM-3510RGBA-SH **NEW** 16

NH Family

17

NH-B1010RGBT-HF 18

NH-B2020RGBA-HF 19

NH-Z1921RGBA-SG 20

NH-Z2727RGBA-SG 21

NH-Z3535RGBW-SG 22

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



On October 30, 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.

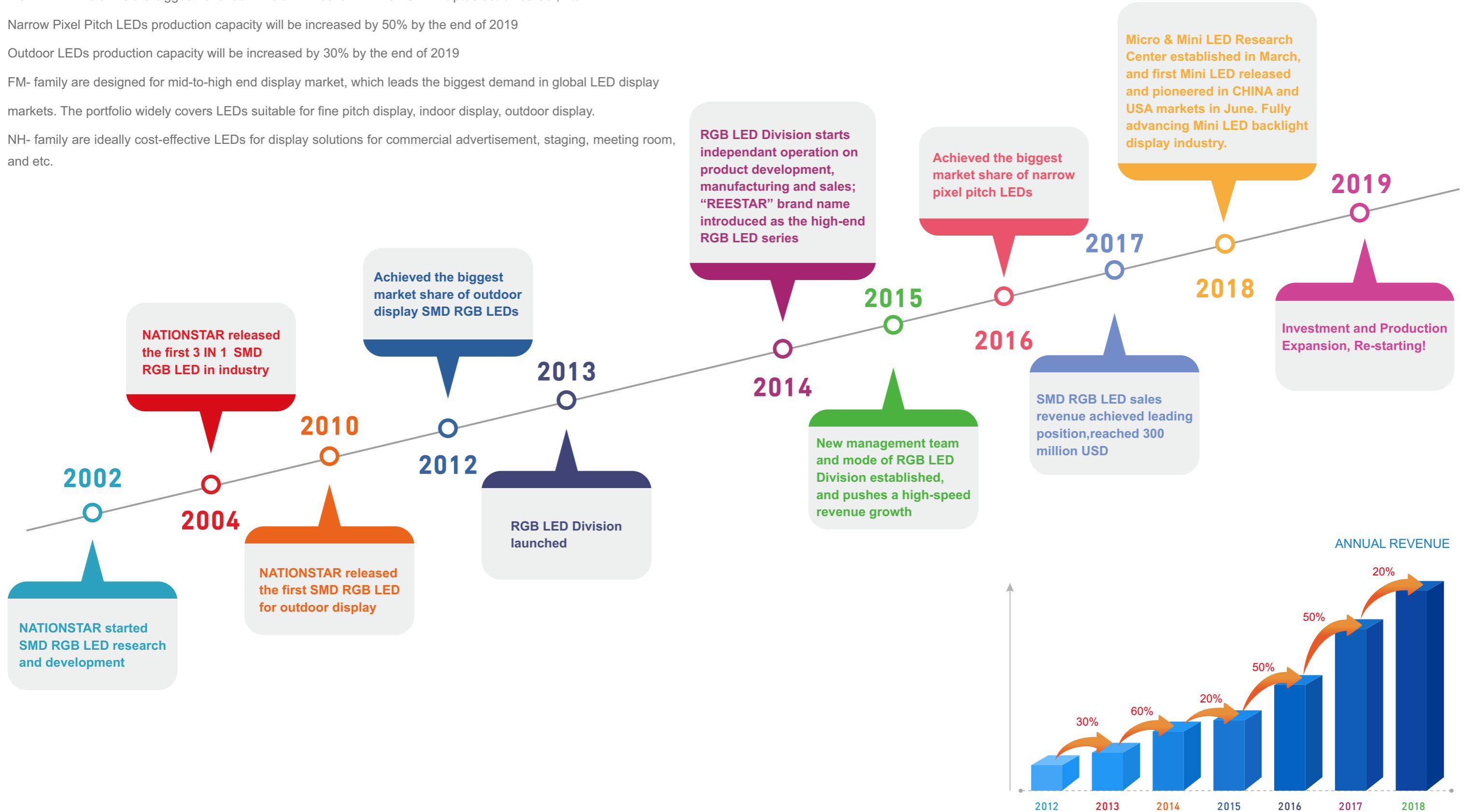
Narrow Pixel Pitch LEDs production capacity will be increased by 50% by the end of 2019

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.

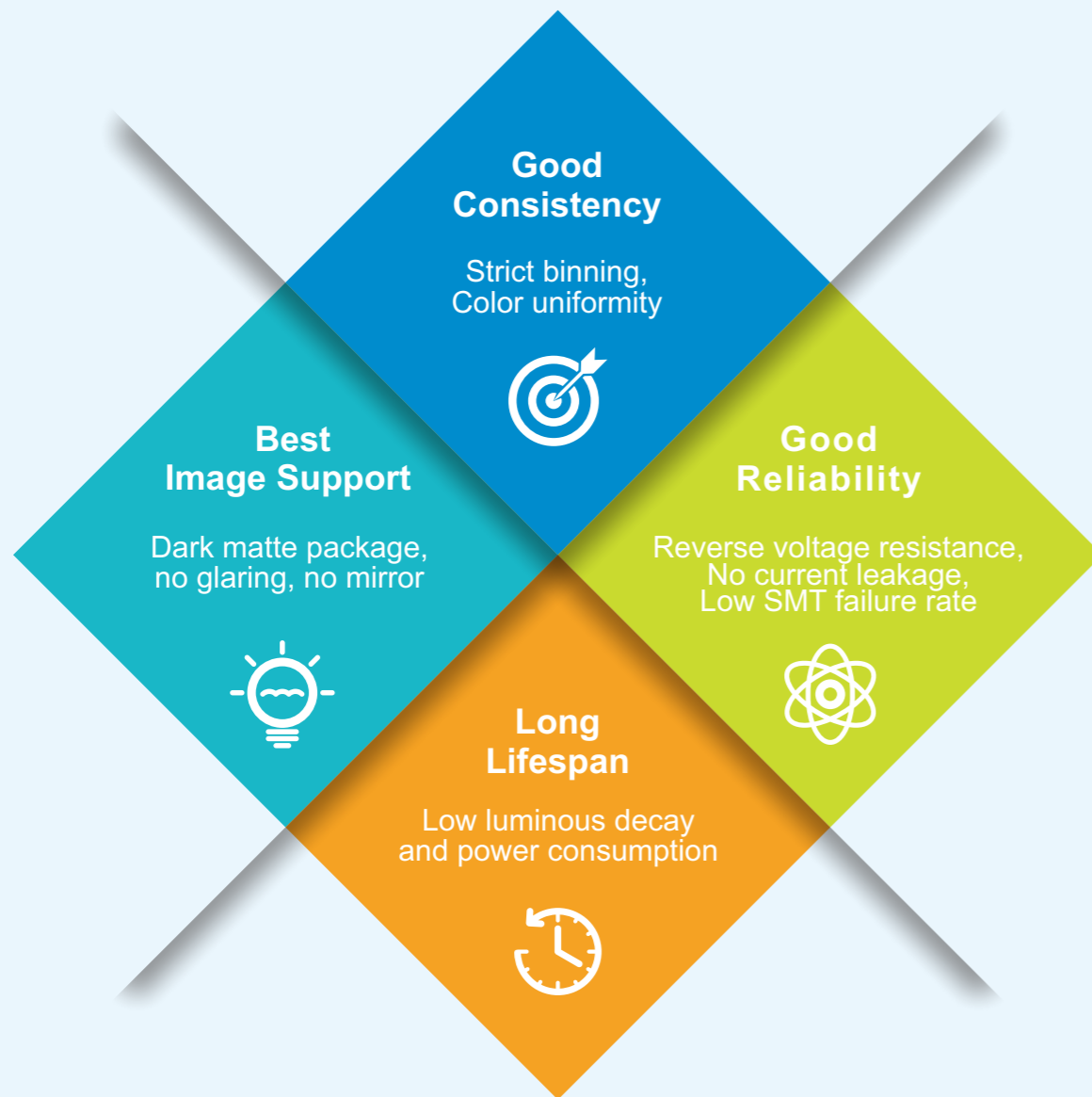
NH- family are ideally cost-effective LEDs for display solutions for commercial advertisement, staging, meeting room, and etc.

RGB LED DIVISION HISTORY



FM-Family Introduction

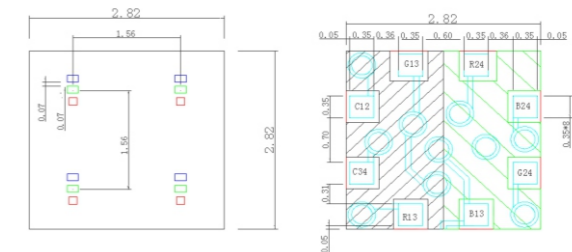
FM- family are designed for mid-to-high end display market, which have led the biggest demand in global LED display markets in the past 10 years. The portfolio widely covers LEDs suitable for narrow pitch display, indoor display, outdoor display.



Narrow Pixel Pitch LEDs in FM Family

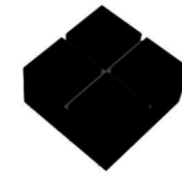
Product Type: Indoor narrow pitch display P1.5mm
 Target Market: High-end rental
 Applications: Stage, commercial (exhibition, trade show, meeting room) and etc.

NEW **IMD-F15**

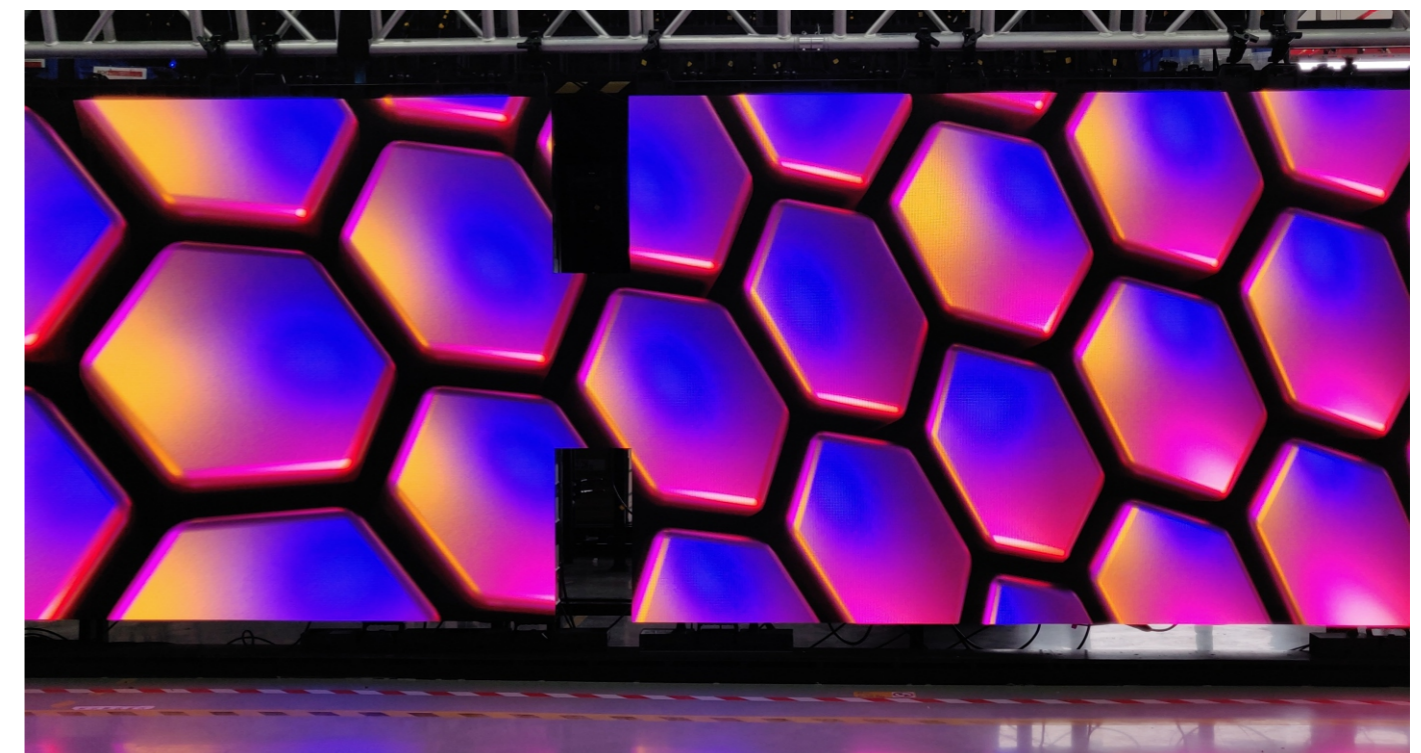


Tolerance: ±0.05mm unit:mm

2.82×2.82×0.85mm



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

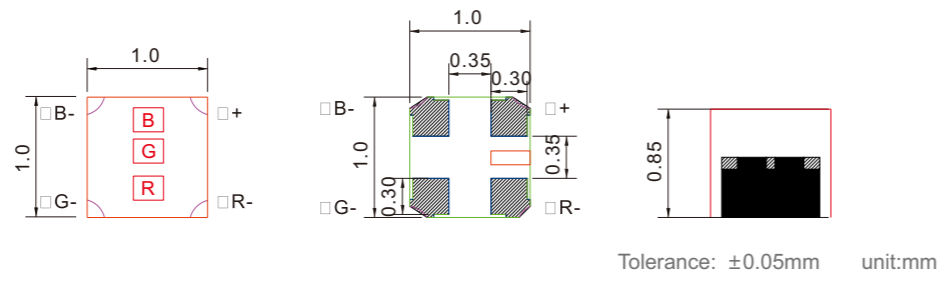


First sample made by ROE on display at 2019 ISE show

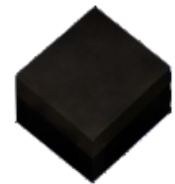
Narrow Pixel Pitch LEDs in FM Family

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

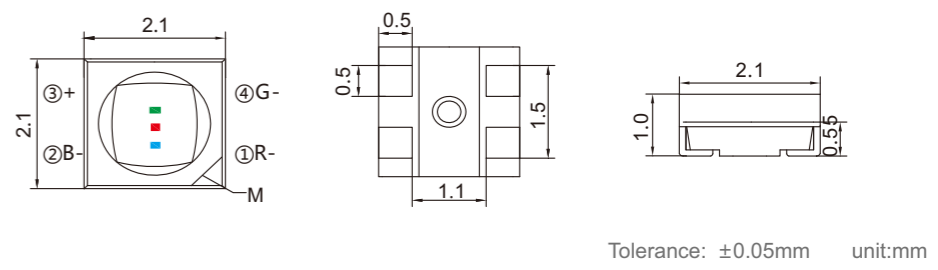


Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle de
●	5	620	20	2.0	120
●	2	530	30	2.6	120
●	2	470	5	2.7	120

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 de
●	8	622	58	2.0	110
●	5	526	150	3.0	110
●	3	470	20	3.0	110



Military Medical Academy Project

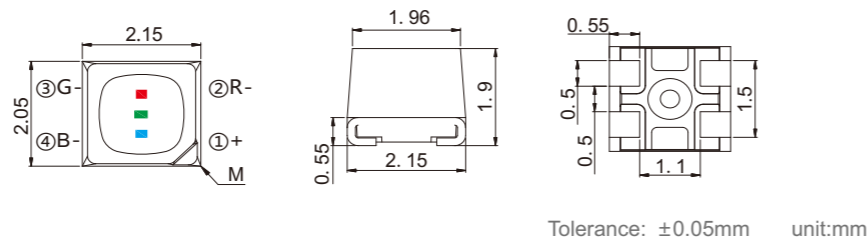


Guangzhou Baiyun Airport Terminal T2 LED display

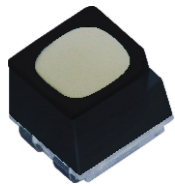
Outdoor LEDs of FM Family

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

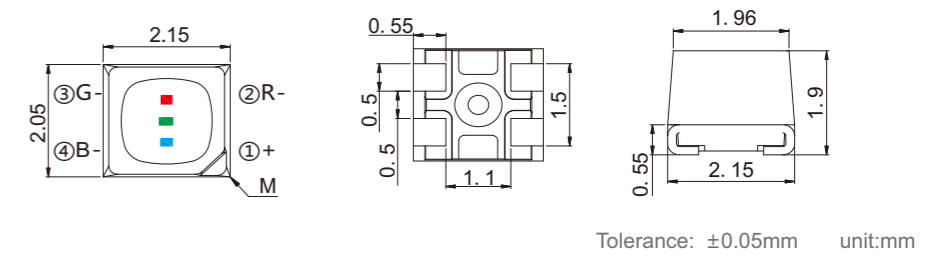


Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle de
Red	15	622	450	2.0	110
Green	8	522	730	3.0	110
Blue	5	472	105	3.0	110

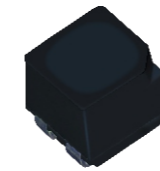
Outdoor LEDs of FM Family

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 de
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

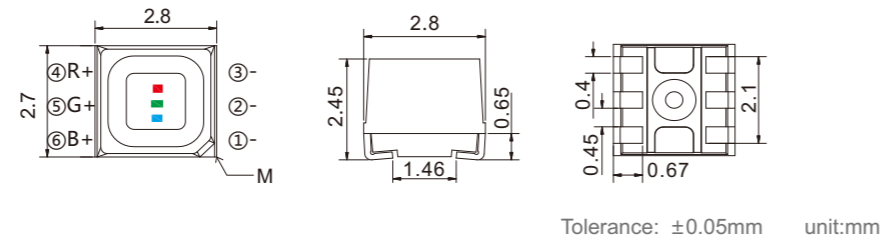


2018 SCO summit stage LED Screen

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

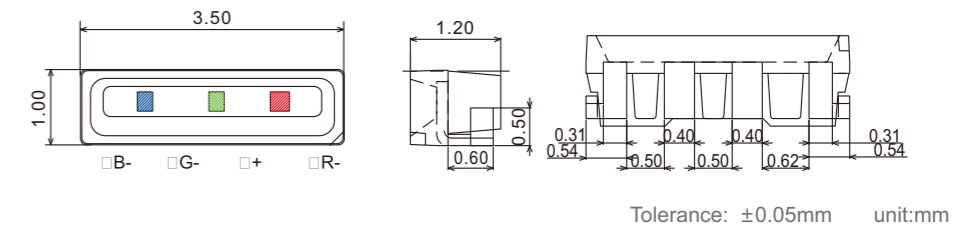


Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle de
Red	15	622	470	2.0	110
Green	8	525	750	3.0	110
Blue	5	470	120	3.0	110

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.

NEW FM-3510RGBA-SH



3.5×1.0×1.2mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle de
Red	15	622	500	2.0	110
Green	8	527	850	3.0	110
Blue	5	470	125	3.0	110



McDonald's outdoor display in Brisbane, Australia



Hangzhou Liangzhu Future Light

NH- Family Introduction

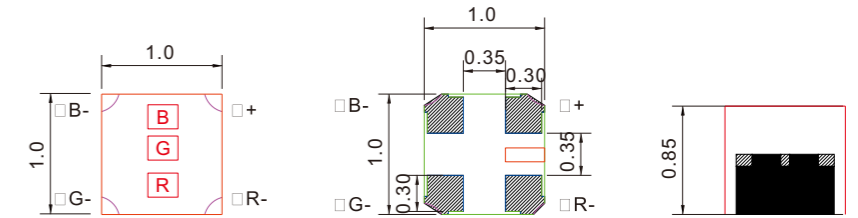
NH- family were launched in 2015, they are ideally cost-effective LEDs for display solutions in commercial advertisement, staging, meeting room, and etc.



LEDs of NH Family

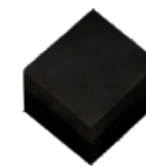
Product Type: Indoor narrow pitch display
Target Market: Mid-market rental and fixed
Applications: Commercial (classroom, meeting room, theater, retail), public, and etc.

NH-B1010RGBT-HF

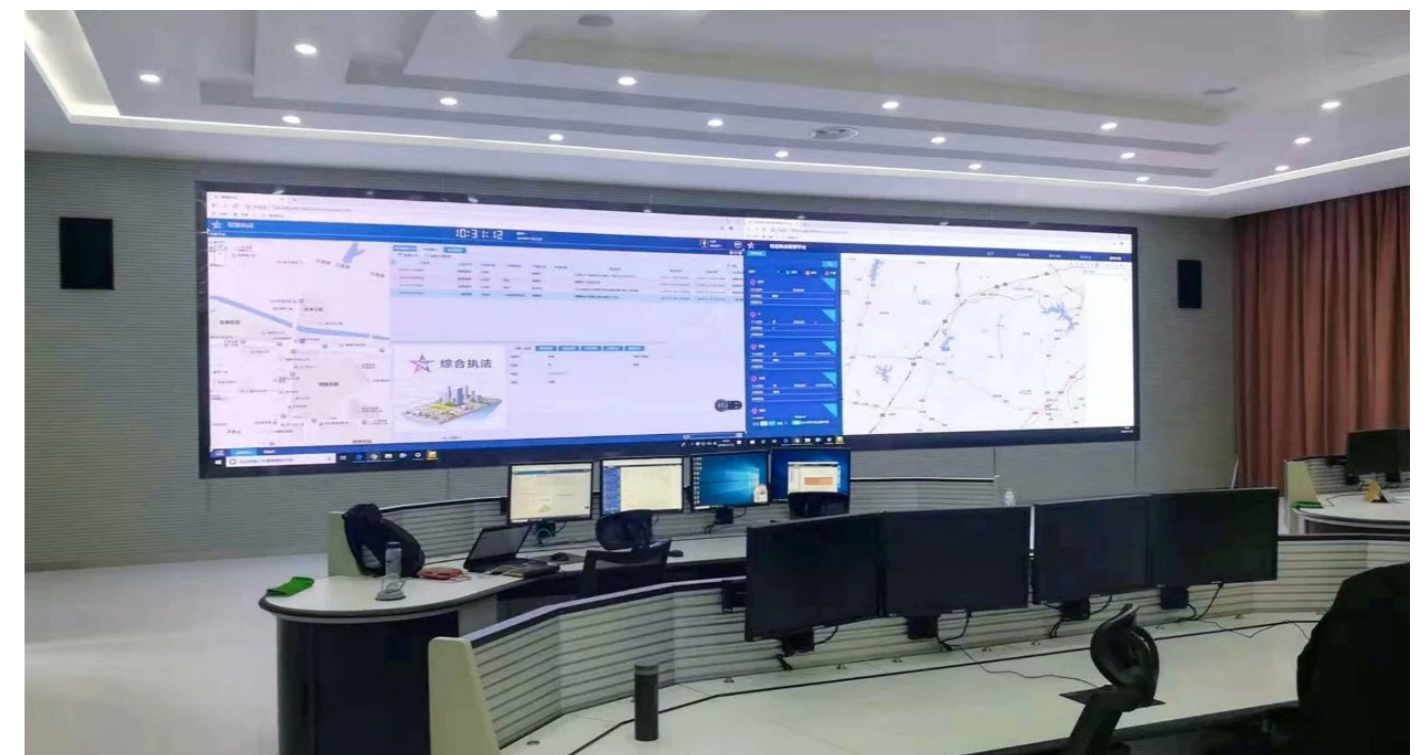


Tolerance: ±0.05mm unit:mm

1.0×1.0×0.85mm



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

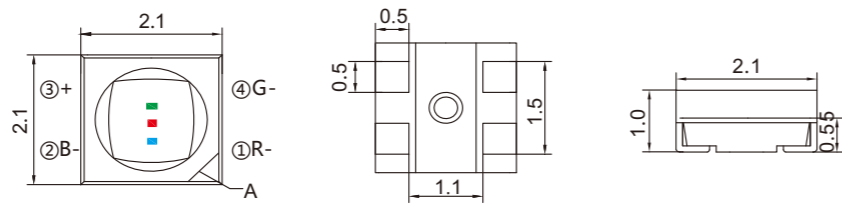


Qixia "Smart City" Digital City Management System LED Display

LEDs of NH Family

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

NH-B2020RGBA-HF



Tolerance: ±0.05mm unit:mm

2.1x2.1x1.0mm

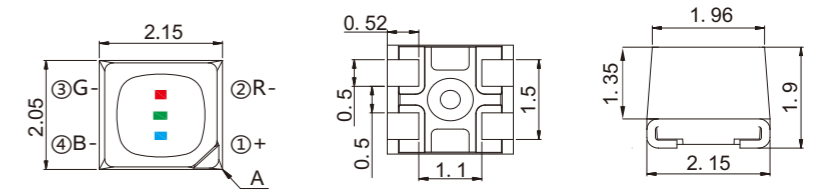


Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle de
Red	8	622	45	1.9	110
Green	5	526	160	2.8	110
Blue	3	470	25	2.8	110

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



Tolerance: ±0.05mm unit:mm

2.15x2.05x1.9mm



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



Shenzhen North High Speed Railway Station Project

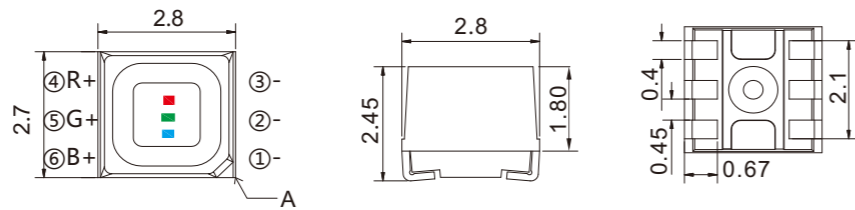
Hong Kong Ocean Park P4 Flexible screen



LEDs of NH Family

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

NH-Z2727RGBA-SG



Tolerance: ±0.05mm unit:mm

2.8×2.7×2.45mm



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

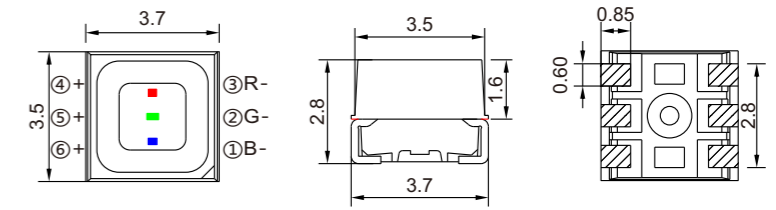


Liupanshui People's Park display

LEDs of NH Family

Product Type: Outdoor display
 Target Market: Module wholesales
 Applications: Commercial, such as large size advertising signage, architectural exterior lighting decoration, and etc.

NH-Z3535RGBW-SG



Tolerance: ±0.05mm unit:mm

3.7×3.5×2.8mm



Color	IF(mA) TEST	λD(nm) Typ.	IV(mcd) Typ.	VF(V) Typ.	View angle de
Red	20	622	600	2.0	110
Green	20	520	1350	3.2	110
Blue	20	470	280	3.3	110

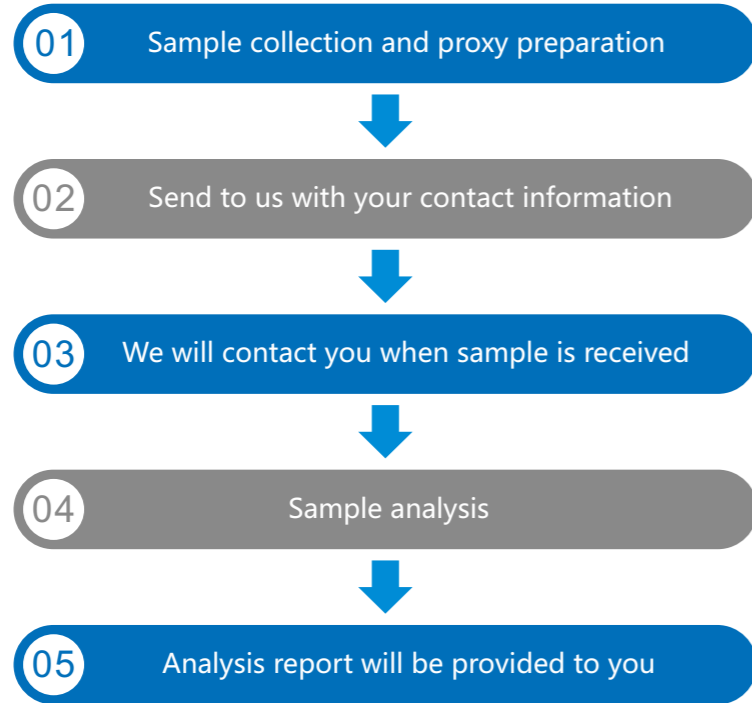


HongKong SOGO Outdoor P6 Advertising screen

Product Identification

We adhere to fight against counterfeit NATIONSTAR products in the market and ensure our customers have a pleasure experience by using our products.

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.



Sample testing proxy

Sample Test Proxy			
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			
YY/MM/DD			

Testing report

LED Sample Test Analysis																																																						
Sample Situation	Client	[Redacted]		Receiving Date	2018-8-5																																																	
Requirement	To analyze if the LEDs in a module belongs to NationStar, to see if the bonding wire is golden wire.																																																					
Item	1923	Manufacturer	Lin-wen-hsin	Date	2018-8-7																																																	
Inspection Item	Appearance	Parameter	Historic Structure	Temperature (°C)	Humidity (%)																																																	
				22°C	55%RH																																																	
<p>LEDs samples were identified with FM-Z1921RGBW-SH of NationStar, bonding wire was golden wire.</p>																																																						
<p>Conclusion: NationStar FM-Z1921RGBW-SH Bin: 15-B-5mA R: 300-480 mcd C: 480-1100 mcd B: 70-100 mcd</p>																																																						
<p>Inspector: [Signature] Check: [Signature] Approve: [Signature]</p>																																																						
<p>Parameter (Forward Current 15-6-5mA)</p> <table border="1"> <thead> <tr> <th>Wavelength (nm)</th> <th>I_f (mA)</th> <th>V_f (V)</th> <th>I_{lm} (mA)</th> <th>V_{lm} (V)</th> <th>I_{lm} (mA)</th> <th>V_{lm} (V)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.1</td> <td>2.7</td> <td>2.8</td> <td>514.9</td> <td>799.9</td> <td>104.5</td> </tr> <tr> <td>2</td> <td>2.1</td> <td>2.7</td> <td>2.9</td> <td>504.2</td> <td>796.9</td> <td>105.5</td> </tr> <tr> <td>3</td> <td>2.1</td> <td>2.7</td> <td>2.1</td> <td>496.3</td> <td>763.1</td> <td>104.7</td> </tr> <tr> <td>4</td> <td>2.1</td> <td>2.7</td> <td>2.1</td> <td>496.3</td> <td>763.1</td> <td>104.7</td> </tr> <tr> <td>5</td> <td>2.1</td> <td>2.7</td> <td>2.1</td> <td>496.4</td> <td>762.8</td> <td>105.2</td> </tr> <tr> <td>6</td> <td>2.1</td> <td>2.7</td> <td>2.1</td> <td>496.4</td> <td>762.8</td> <td>105.2</td> </tr> </tbody> </table>						Wavelength (nm)	I _f (mA)	V _f (V)	I _{lm} (mA)	V _{lm} (V)	I _{lm} (mA)	V _{lm} (V)	1	2.1	2.7	2.8	514.9	799.9	104.5	2	2.1	2.7	2.9	504.2	796.9	105.5	3	2.1	2.7	2.1	496.3	763.1	104.7	4	2.1	2.7	2.1	496.3	763.1	104.7	5	2.1	2.7	2.1	496.4	762.8	105.2	6	2.1	2.7	2.1	496.4	762.8	105.2
Wavelength (nm)	I _f (mA)	V _f (V)	I _{lm} (mA)	V _{lm} (V)	I _{lm} (mA)	V _{lm} (V)																																																
1	2.1	2.7	2.8	514.9	799.9	104.5																																																
2	2.1	2.7	2.9	504.2	796.9	105.5																																																
3	2.1	2.7	2.1	496.3	763.1	104.7																																																
4	2.1	2.7	2.1	496.3	763.1	104.7																																																
5	2.1	2.7	2.1	496.4	762.8	105.2																																																
6	2.1	2.7	2.1	496.4	762.8	105.2																																																

Tel : 0086-757-82100238-8188 E-mail : RGByanfa@nationstar.com

R&D Institutions



NATIONSTAR laboratory has gained approval by CNAS

Patents Achievements

By December 2018, NATIONSTAR had applied for 560 patents, including 132 patents for inventions, 45 overseas patents. There are 380 patents issued patents, including 52 patents for inventions.

Company Honors

- Global TOP 10 LED Encapsulation Manufacture in Q2 2017(HIS 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