

**QT-Brightek Corporation**

**2.4" 8x8 Dot Matrix**

**Part No.: GMZ24XX88\_series**

---

**Table of Contents:**

Introduction .....	3
Electrical / Optical Characteristic (Ta=25 °C) .....	4
Absolute Maximum Rating .....	4
Pin Configuration .....	7
Characteristic Curves.....	8
Solder Profile .....	10
Package Dimensions .....	11
Ordering Information .....	12
Revision History .....	13
Disclaimer .....	13

## Introduction

**Feature:**

- Low power consumption
- Packed in foam
- AllInGaP technology for R/S/Y/O/AG
- InGaN technology for IG/IB
- Z=C: Anode Row, Cathode column or A: Anode Column, Cathode Row
- XX= Color

**Description:**

These 2.4" 8x8 dot matrix displays are made with white dots and a grey surface.

**Application:**

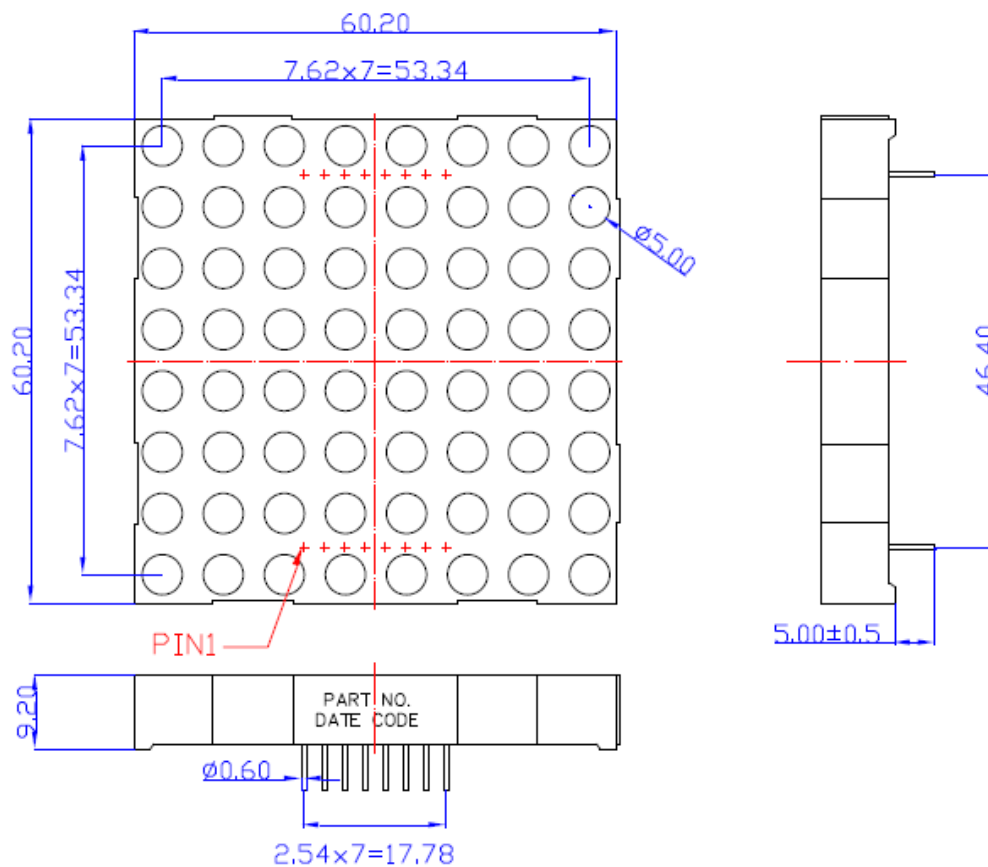
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.25mm

**Electrical / Optical Characteristic (Ta=25 °C)**

Product		Material	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm)			I <sub>V</sub> (mcd)
Anode Row, Cathode Column	Anode Column, Cathode Row				Typ.	Max.	Min.	Typ.	Max.	Typ.
GMC24R88	GMA24R88	AllnGaP	Red	20	2.0	2.6	619	624	629	90
GMC24S88	GMA24S88	AllnGaP	Deep Red	20	2.0	2.6	636	639	647	35
GMC24Y88	GMA24Y88	AllnGaP	Yellow	20	2.0	2.6	585	590	595	90
GMC24O88	GMA24O88	AllnGaP	Orange	20	2.0	2.6	601	606	611	90
GMC24AG88	GMA24AG88	AllnGaP	Yellow Green	20	2.1	2.6	566	571	574	30
GMC24IG88	GMA24IG88	InGaN	True Green	20	3.2	4.0	515	525	530	200
GMC24IB88	GMA24IB88	InGaN	Blue	20	3.0	4.0	460	465	470	160

**Absolute Maximum Rating**

Material	P <sub>d</sub> (mW)	Derating liner from 25 °C per dice (mA/°C)	I <sub>F</sub> (mA)	I <sub>FP</sub> (mA)*	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
AllnGaP	70	0.33	25	90	5	-25 to +85	-25 to +85
InGaN	120	0.4	30	100	5	-25 to +85	-25 to +85

\*Duty 1/10 @ 1KHz

**Luminous Intensity I<sub>V</sub> for Red @ I<sub>F</sub>=20mA**

Bin	Min.	Max.	Unit
R	60	90	mcd
S	90	120	
T	120	150	
U	150	180	

**Luminous Intensity I<sub>V</sub> for Deep Red @ I<sub>F</sub>=20mA**

Bin	Min.	Max.	Unit
P	17	35	mcd
Q	35	53	
R	55	72	

**Luminous Intensity  $I_V$  for Yellow @  $I_F=20\text{mA}$** 

Bin	Min.	Max.	Unit
R	60	90	mcd
S	90	120	
T	120	150	
U	150	180	

**Luminous Intensity  $I_V$  for Orange @  $I_F=20\text{mA}$** 

Bin	Min.	Max.	Unit
R	60	90	mcd
S	90	120	
T	120	150	
U	150	180	

**Luminous Intensity  $I_V$  for Yellow Green @  $I_F =20\text{mA}$** 

Bin	Min.	Max.	Unit
M	10	20	mcd
N	20	30	
O	30	40	

**Luminous Intensity  $I_V$  for True Green @  $I_F =20\text{mA}$** 

Bin	Min.	Max.	Unit
R	120	190	mcd
S	190	260	
T	260	330	
U	330	400	

**Luminous Intensity  $I_V$  for Blue @  $I_F=20\text{mA}$** 

Bin	Min.	Max.	Unit
T	120	150	mcd
U	150	180	
V	180	210	

**Dominant Wavelength  $\lambda_D$  for Red @  $I_F =20\text{mA}$** 

Bin	Min.	Max.	Unit
1	619	623	nm
2	623	626	
3	626	629	

**Dominant Wavelength  $\lambda_D$  for Deep Red @  $I_F = 20\text{mA}$** 

Bin	Min.	Max.	Unit
1	636	640	nm
2	640	643	
3	643	647	

**Dominant Wavelength  $\lambda_D$  for Yellow @  $I_F = 20\text{mA}$** 

Bin	Min.	Max.	Unit
1	585	588	nm
2	588	592	
3	592	595	

**Dominant Wavelength  $\lambda_D$  for Orange @  $I_F = 20\text{mA}$** 

Bin	Min.	Max.	Unit
1	601	605	nm
2	605	611	

**Dominant Wavelength  $\lambda_D$  for Yellow Green @  $I_F = 20\text{mA}$** 

Bin	Min.	Max.	Unit
1	566	569	nm
2	569	571	
3	571	574	

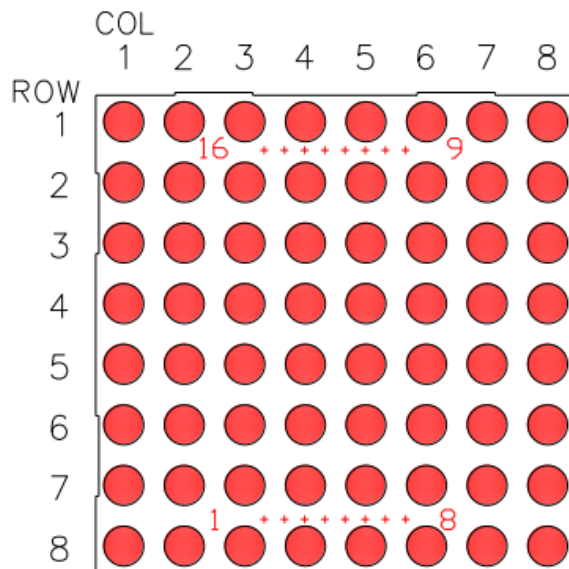
**Dominant Wavelength  $\lambda_D$  for True Green @  $I_F = 20\text{mA}$** 

Bin	Min.	Max.	Unit
1	515	520	nm
2	520	525	
3	525	530	

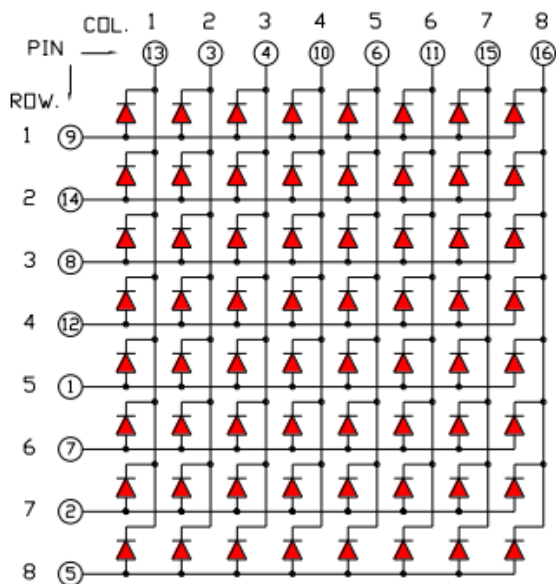
**Dominant Wavelength  $\lambda_D$  for Blue @  $I_F = 20\text{mA}$** 

Bin	Min.	Max.	Unit
1	460	462.5	nm
2	462.5	465	
3	465	467.5	
4	467.5	470	

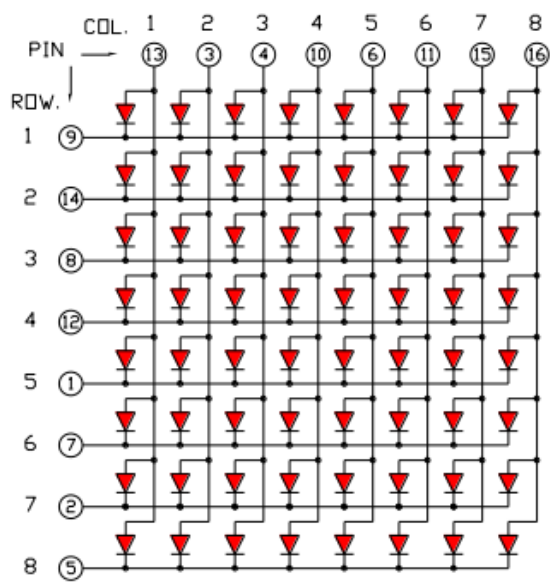
**Pin Configuration**



**Anode Row, Cathode Column**

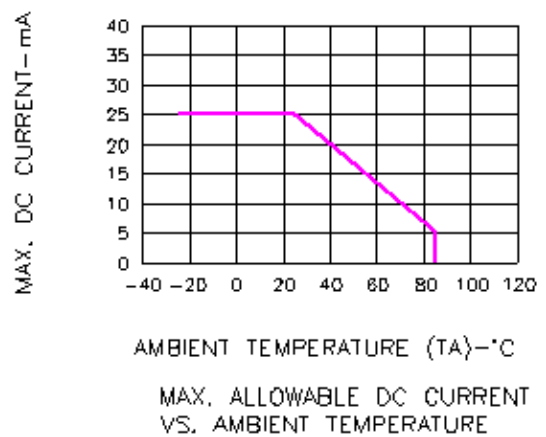
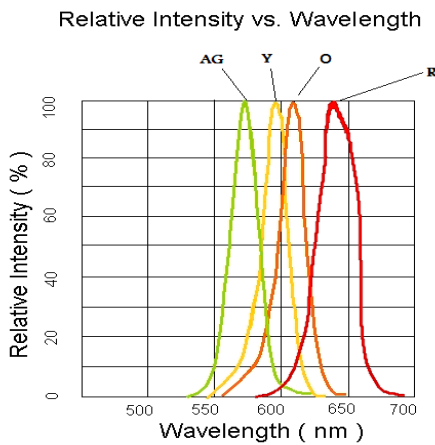
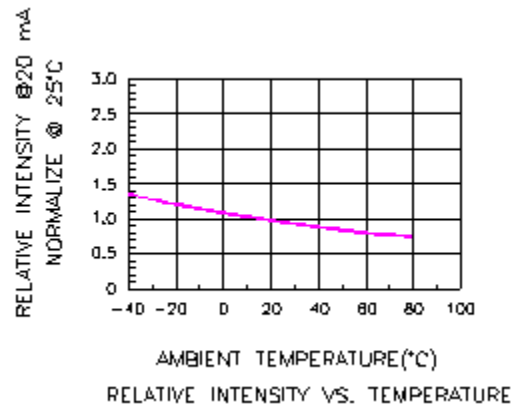
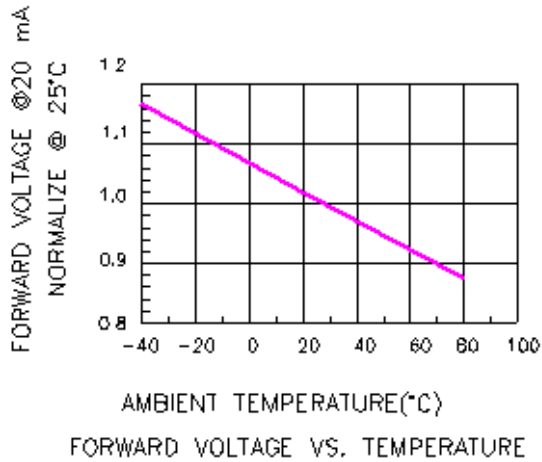
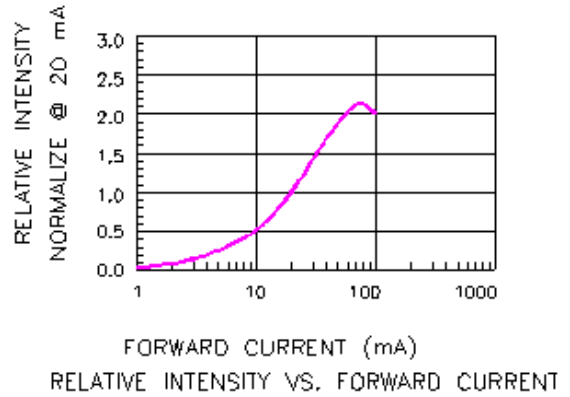
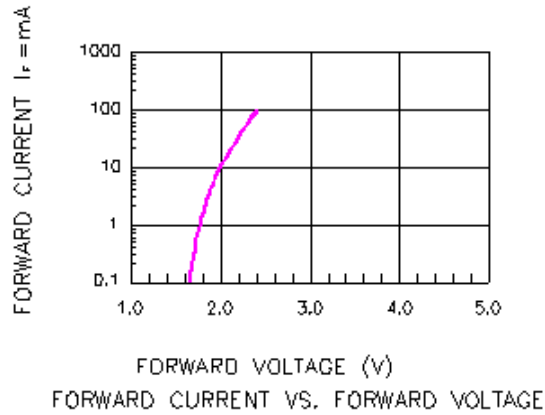


**Anode Column, Cathode Row**



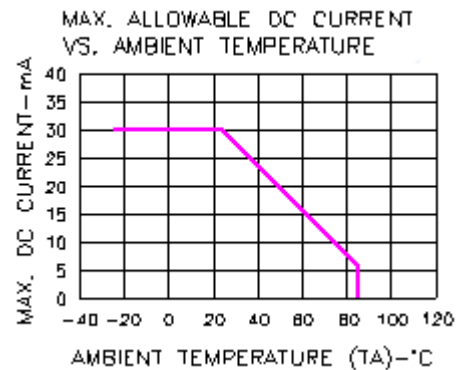
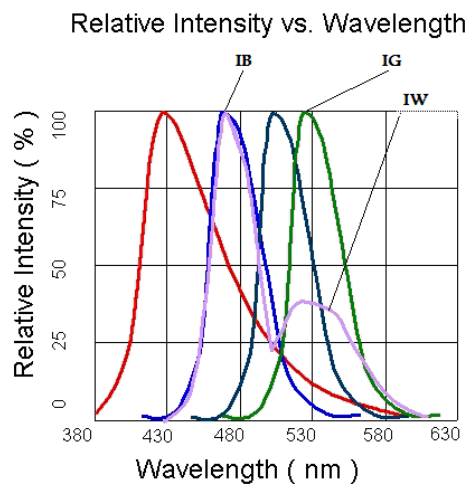
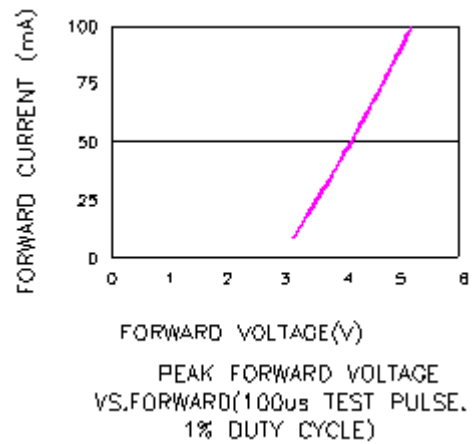
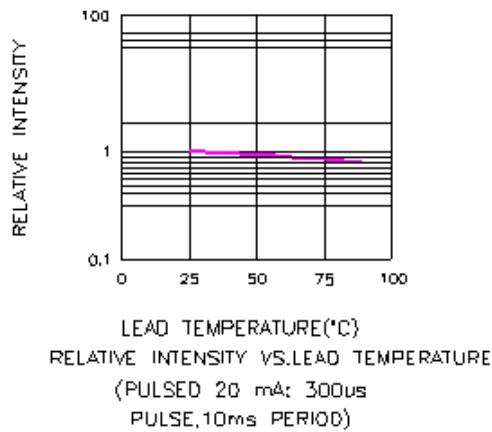
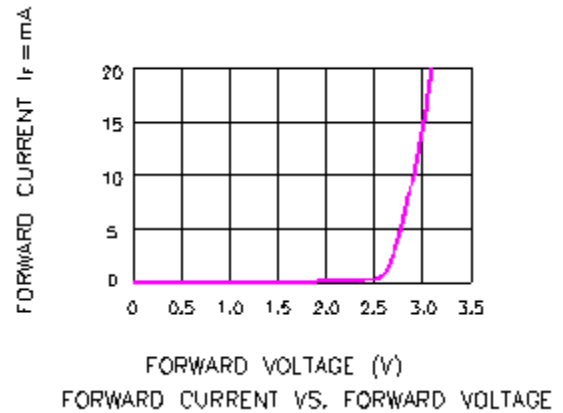
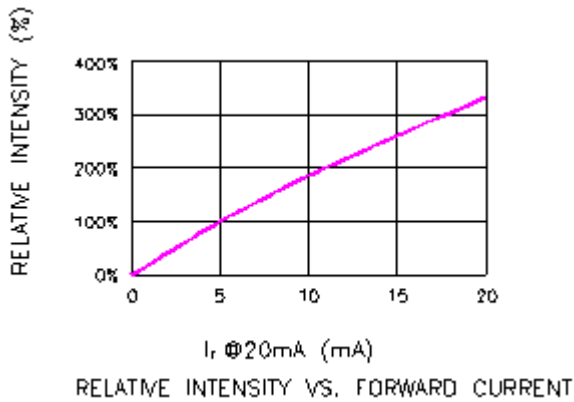
**Characteristic Curves**

AllnGaP



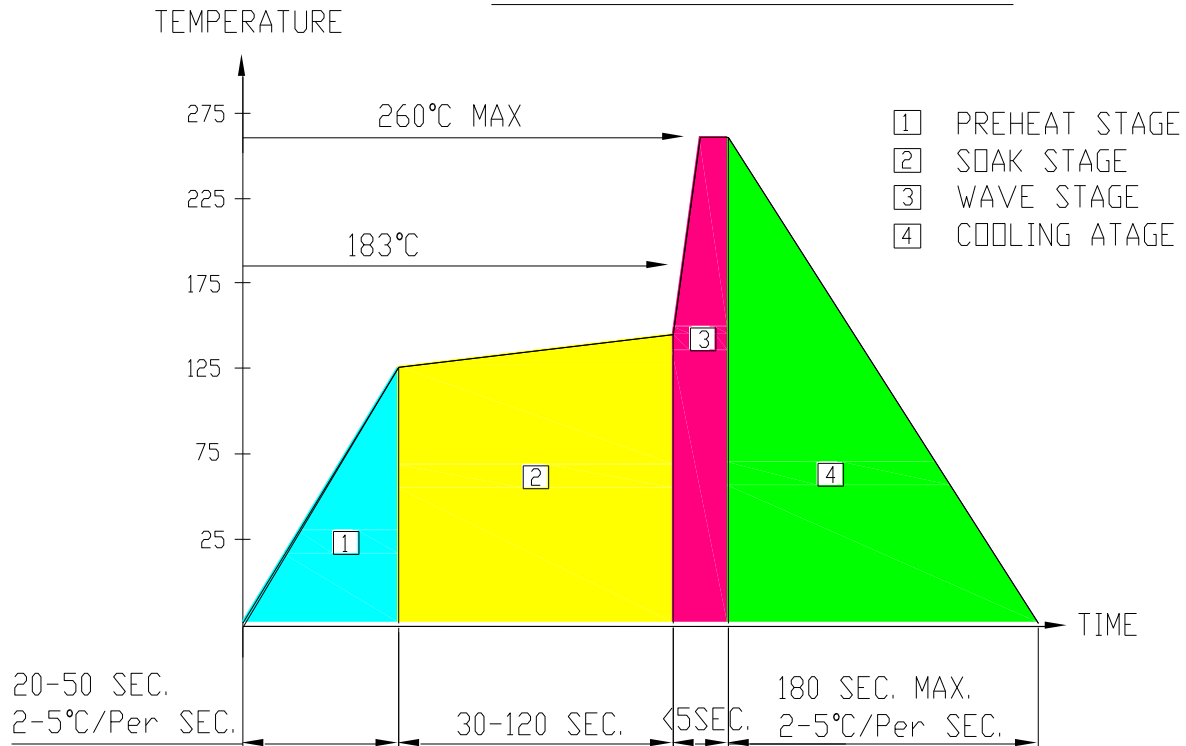


InGaN



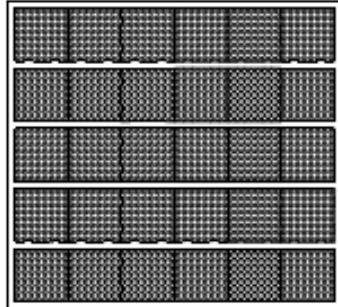
**Solder Profile**

WAVE SOLDER PROFILE



**Package Dimensions**

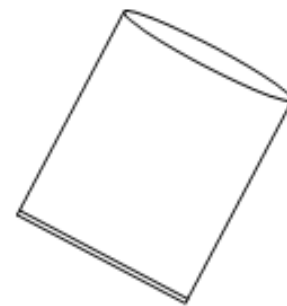
30 PCS / 1 Polyform ( 6 X 5 PCS )



5 Polyform / 1 BAG  
150PCS /Inner Carton

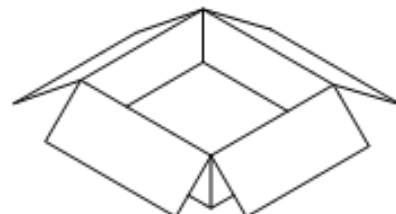


A reference for packing within bag.

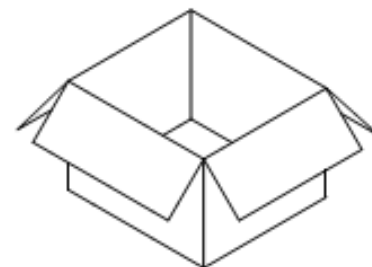


BAG SIZE :450X410X560

300 PCS / 2 INNER CARTON / 1 OUTER CARTON



INNER BOX SIZE : 394 x 370 x 138 mm



OUTER BOX SIZE : 430 x 390 x 300 mm

## Ordering Information

Product		Orderable Part#		Spec Range	Quantity per foam
Anode Row, Cathode Column	Anode Column, Cathode Row	Anode Row, Cathode Column	Anode Column, Cathode Row		
GMC24R88	GMA24R88	GMC24R88	GMA24R88	I <sub>v</sub> =90mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =619nm to 629nm	30pcs
GMC24S88	GMA24S88	GMC24S88	GMA24S88	I <sub>v</sub> =35mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =636nm to 647nm	30pcs
GMC24Y88	GMA24Y88	GMC24Y88	GMA24Y88	I <sub>v</sub> =90mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =585nm to 595nm	30pcs
GMC24O88	GMA24O88	GMC24O88	GMA24O88	I <sub>v</sub> =90mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =601nm to 611nm	30pcs
GMC24AG88	GMA24A88	GMC24AG88	GMA24AG88	I <sub>v</sub> =30mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =566nm to 574nm	30pcs
GMC24IG88	GMA24IG88	GMC24IG88	GMA24IG88	I <sub>v</sub> =200mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =515nm to 530nm	30pcs
GMC24IB88	GMA24IB88	GMC24IB88	GMA24IB88	I <sub>v</sub> =160mcd typ. @ I <sub>F</sub> =20mA, λ <sub>d</sub> =460nm to 470nm	30pcs

## Revision History

Description:	Revision #	Revision Date
New Release of GMA24XX88_series	V1.0	11/22/2013
Amend brightness and update labeling information/ Amend Part number to GMZ24XX88	V1.1	06/23/2011
Add Blue and Green Color Spec.	V1.2	07/18/2011
Add colors/ bins/ typo fixed	V1.3	10/01/2015

## Disclaimer

QT-BRIGHTTEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. QT-BRIGHTTEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

## Life Support Policy

QT-BRIGHTTEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of QT-BRIGHTTEK. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.