四川崇材电子科技有限公司
Mogreat Technologies Co.,Ltd.
地址：中国. 四川省南充市顺庆区麦秀路3号3幢
电话: +86-137 9599 5420 , 传真: +86-817-2518282
电邮: billy.yang@mogreat.com , chemiko@126.com
联系人：杨经理（市场部）, 官网：www.mogreat.com

TDS of Quantum Dot Board

Quantum dots are the best luminescent materials discovered so far. By controlling the crystal size, we can produce full-spectrum quantum dots photoelectric materials. Quantum dot board (QD Board) adopts extrusion or coating process to coat QD material on the surface of the first generation of function Board or extrude it inside, so as to achieve stable barrier effect and achieve ideal color gamut requirements.

Product structure:

Technological process : quantum dots production → formula debugging granulation → extrusion molding → Board processing and testing

Optional substrates : PMMA / PS (Recommended)

QD Board finished product (can be customized according to customer's specific needs)

四川崇材电子科技有限公司
Mogreat Technologies Co.,Ltd.
地址：中国. 四川省南充市顺庆区麦秀路3号3幢
电话: +86-137 9599 5420 , 传真: +86-817-2518282
电邮: billy.yang@mogreat.com , chemiko@126.com
联系人：杨经理（市场部）, 官网：www.mogreat.com

Product Name	Model	Substrate	Specification	Drawing size(mm)
Quantum Dot Board	M-CPC17D	PS Low concentration	43-1.7T	949.8*539.7*1.7
	M-CPQ17D	PS Full concentration		
	M-CPC15D	PS Low concentration	50-1.5T	1106.14*626.26*1.5
	M-CPQ15D	PS Full concentration		
	M-CPC20D	PS Low concentration	55-2.0T	1216.60*688.50*2.0
	M-CPQ20D	PS Full concentration		

Product advantages：

● No barrier film is required, cost saving, and avoid coating process, quantum dot dispersion is more uniform;

● Only blue backlight, quantum dots can be excited to obtain higher purity of red and green light, quantum efficiency is up to 90%, more pure color performance, higher color gamut value (> 100% NTSC), higher saturation;

● It has the potential to achieve nano-level pixels and ultra-high refresh rate, which can be used to make ultra-high resolution and high-speed dynamic image screens;

● Quantum dots can be processed at high temperature (>250℃);

● Inside the mold co-extrusion multi-functional layer structure to achieve water resistance, oxygen resistance and anti-scratch effect;

● Simultaneously meet the functional requirements of concealer property, high brightness and quantum dot luminescence;

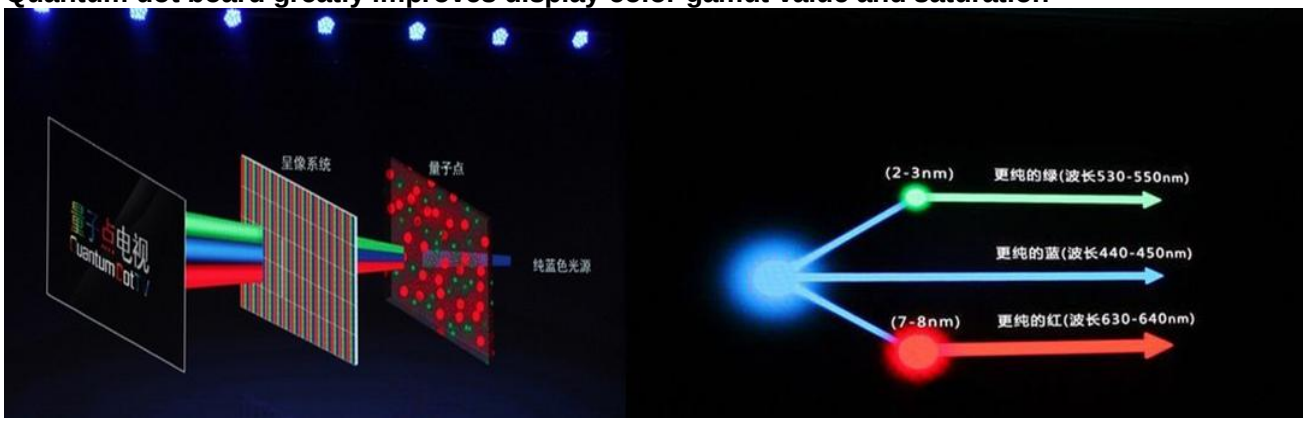
● Matching the existing function board processing technology, is conducive to large-scale automatic production, greatly saving the production time and cost;

● No edge failure, layering and other problems; No risk of screen burning;

● Heavy metal content in accordance with EU standards (cadmium content < 32 PPM);

● Green quantum dots have high luminous efficiency, and the DBEF film can be omitted when suitable size plate is matched with diaphragm

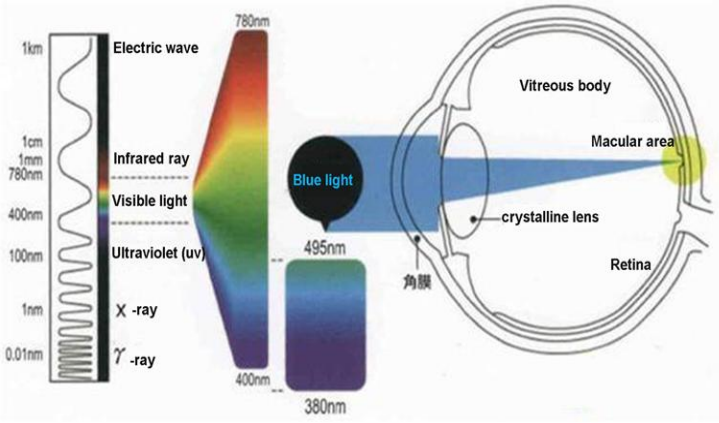
Quantum dot board greatly improves display color gamut value and saturation

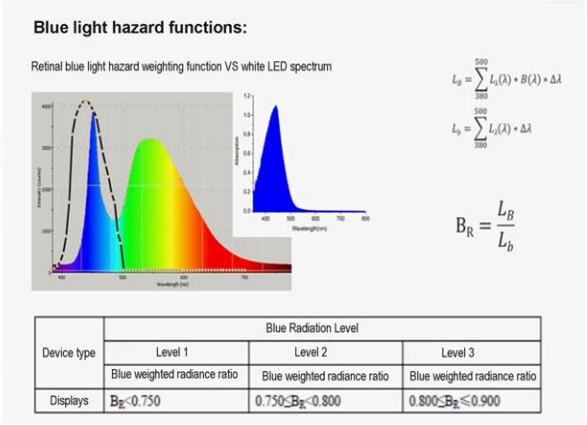


四川崇材电子科技有限公司
Mogreat Technologies Co.,Ltd.
地址：中国. 四川省南充市顺庆区麦秀路3号3幢
电话: +86-137 9599 5420 , 传真: +86-817-2518282
电邮: billy.yang@mogreat.com , chemiko@126.com
联系人：杨经理（市场部）, 官网：www.mogreat.com

Quantum dot board (QD board) alternative the diffuser in the backlight module and the function of the quantum dot film. When the point light source is converted in board will generate red light (R) and green light (G), and mixed with part of the blue light (B) through the board to get white light, so as to improve the luminous effect of the whole LCD backlight, improve the color gamut of LCD by 30%.

The harm of blue light to human eyes:



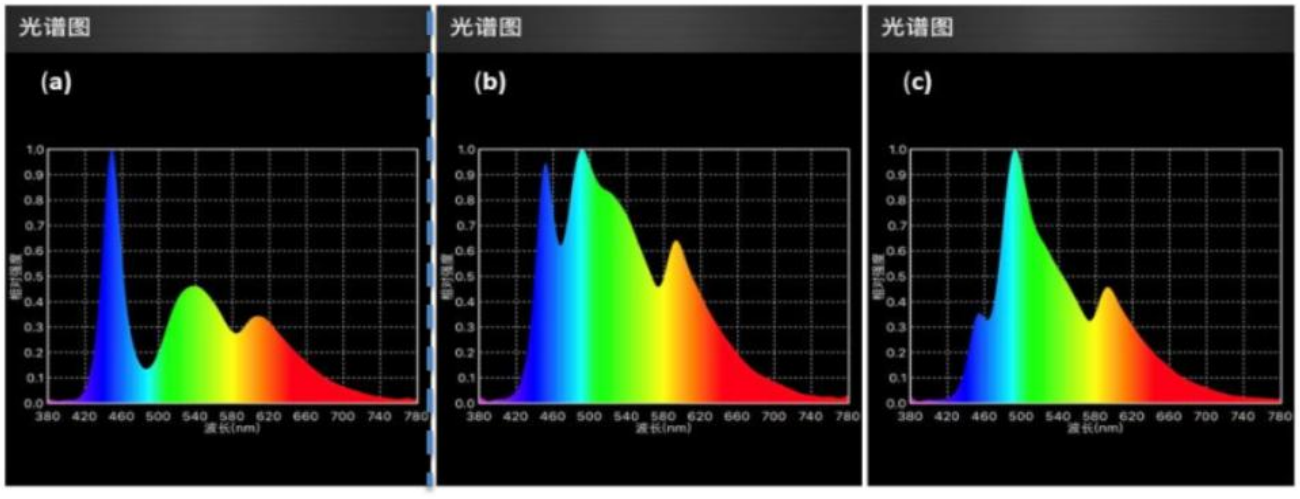


Device type	Blue Radiation Level		
	Level 1	Level 2	Level 3
	Blue weighted radiance ratio	Blue weighted radiance ratio	Blue weighted radiance ratio
Displays	B_R<0.750	0.750≤B_R<0.800	0.800≤B_R≤0.900

The shorter the wavelength, the higher the energy, and the more penetrating it is. Blue light has a relatively short wavelength, so people pay much attention to its harm to human eyes. These LED-powered screens have a peak light spectrum of this short-wave blue light, and the longer you look at them, the more damaging they become.

Blue light resistant & eye protection QD board **Plan A：Spectrum translation**

Ordinary diffuser plate + LED display **Eye protection QD board（banburying）+ LED display**

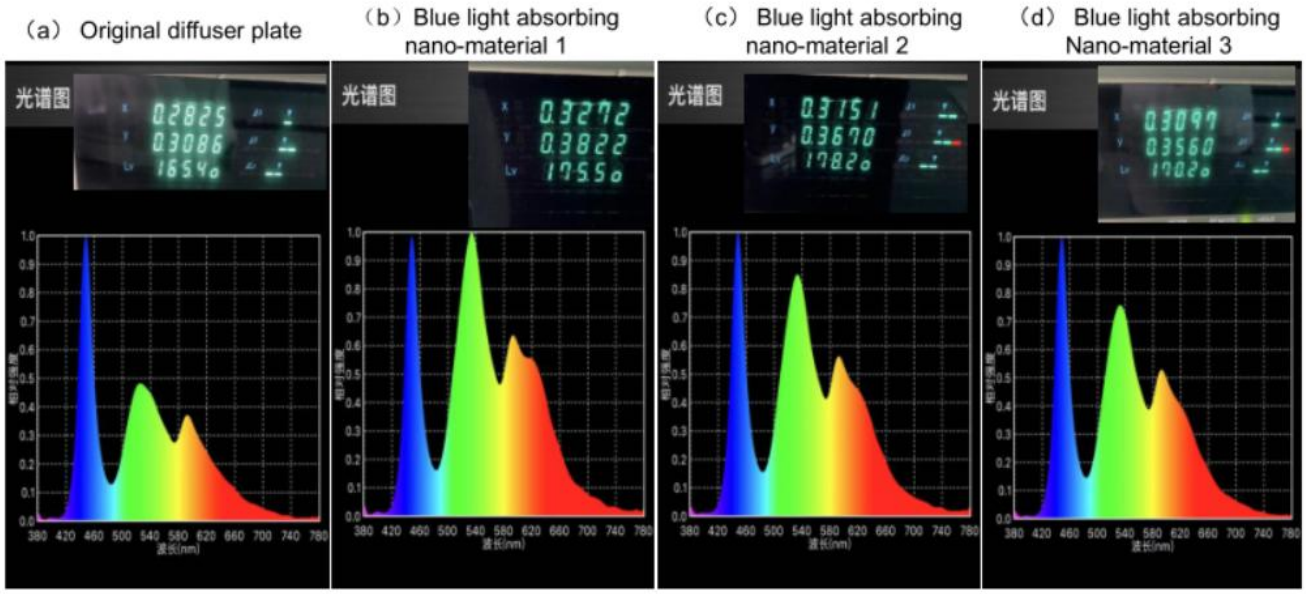


Remarks：（a）Ordinary diffuser plate + LED display spectrum chart; **（b）**Eye protection QD board（banburying）+ LED display spectrum chart, Quantum dot concentration, QD Board thickness ; **（c）** Eye protection QD board（banburying）+ LED display spectrum chart , Quantum dot concentration, QD Board thickness .

四川崇材电子科技有限公司
Mogreat Technologies Co.,Ltd.
地址：中国. 四川省南充市顺庆区麦秀路3号3幢
电话: +86-137 9599 5420 , 传真: +86-817-2518282
电邮: billy.yang@mogreat.com , chemiko@126.com
联系人：杨经理（市场部）, 官网：www.mogreat.com

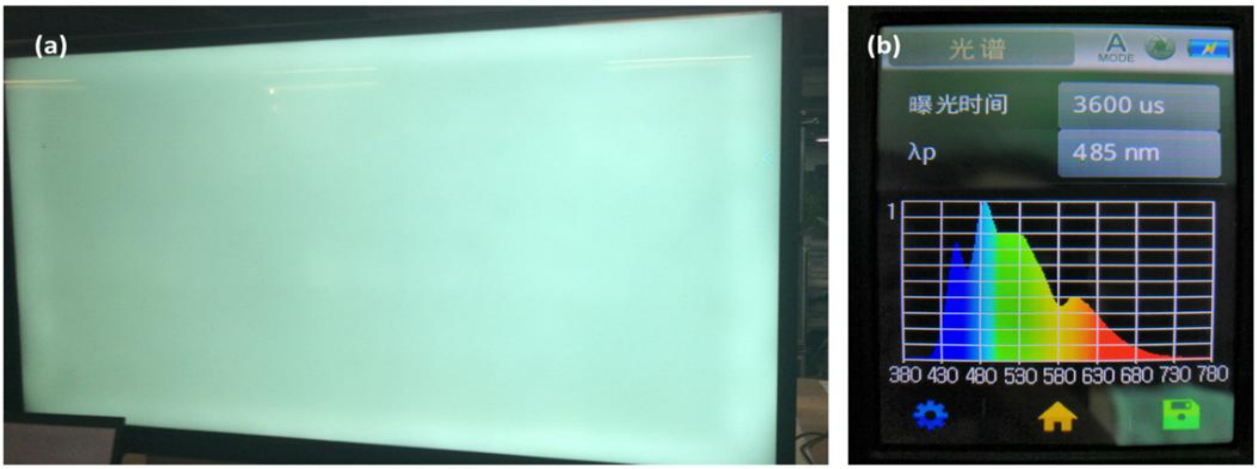
Blue light resistant & eye protection QD board

Plan B: the spectrum is adjustable, adding blue light absorption nano-materials



For quantum dot screen, the spectra is more balance, such as above plan A, spectrum translation, more balanced than the conventional spectrum, soft screen without stimulation, so as to effectively reduce visual fatigue; In addition, the spectrum of the quantum dot screen can be adjusted. Such as above plan 2, the blue light absorbing nano-materials are added to optimize the distribution of spectral energy and light intensity in a healthier and scientific way, so as to protect visual health. Quantum dot screen with high spectral purity, under the same conditions, only lower brightness is required, the picture is clearer and the screen is more comfortable.

Installation visual effect map and Spectrogram



（a）Visual effect drawing of 65 inch educational device ；　　（b）Spectrogram of 65 inch educational device ；

四川崇材电子科技有限公司
Mogreat Technologies Co.,Ltd.
地址：中国. 四川省南充市顺庆区麦秀路3号3幢
电话: +86-137 9599 5420 , 传真: +86-817-2518282
电邮: billy.yang@mogreat.com , chemiko@126.com
联系人：杨经理（市场部）, 官网：www.mogreat.com

Disclaimer: The above data is based on the results of our company laboratory test conditions, for reference only; Whether it meets user's requirements shall be subject to user's adjustment according to the actual site conditions. Since we cannot foresee or control the user's process conditions, we cannot guarantee the quality of your products, and we do not assume joint and several liability for the results arising from the post-processing and post-application of the products.

Mogreat ®
Mogreat Technologies Co.,Ltd.
http://www.mogreat.com