

Product Specification

Product: Indoor Full Color P1.8/43 Scan Module

Item No.: Q1.8-43S-1515-H-R

Version: 1.0


Drafting:	Audit:	Approval: (Seal)



1. Scope of Application

This technical manual is only applicable to the indoor Q1.8-43S-H-R-1515 soft module , the following are conventional product parameters, and can be customized if you have special requirements.

2. Precautions

Item		Descript ion
Environmental Precautions	Temperature requirement	Storage temperature range: -10°C - 30°C , over 30°C needs to do cooling treatment. Operating temperature range: -20°C - 40°C , other temperature range, need to install temperature control equipment. Lamp surface temperature (working time): $\leq 60^{\circ}\text{C}$, temperature control equipment is required to be installed when temperature exceeding the standard.
	Humidity requirement	Storage humidity range: 10% RH-60% RH, humidity over 60% RH requires dehumidification treatment. Operating humidity range: 10% RH-65% RH, If the humidity exceeds the standard, it must be dehumidified before it can be used normally.
	Storage overdue processing	If the product has been stored for more than one month, it must be aged for 6 hours before use before normal use. The aging method is: full brightness setting 10% 1H, full brightness setting 30% 1H, full brightness setting 60% 2H, full brightness setting 80% 1H, full brightness setting 100% 1H (brightness gradually increases and aging).
	Dust-proof requirements	Indoor products have no protection level or IP30, and the display should not be exposed to heavy dusty environments, such as decoration and renovation. Special protection is required to protect the display. Installing LED display screen during decoration is strictly prohibited.
	Avoiding corrosive gas	Corrosive gas contains salt or acid gas in the environment, may cause corrosion of electronic components, crystallization, leakage and so on.

	Avoiding electromagnetic radiation	The display screen should not be installed in an environment where electromagnetic radiation and radio frequency radiation exceed the field strength of 5V/m interference source.
	Avoid strong light	Strong light will affect the display effect and life span of screen. It should be install in the direction where there is shorter direct sun shining.

 Environmental Precautions	Keep away from water	Indoor products have low level of protection, water can make the module short circuit, and leads to circuit device damage, so it is necessary to keep away from the water source.
	Electrostatic hazard, Prevent lightning strikes	The metal components of the screen, the shell of power supply and the cabinet should be grounded well, and the grounding resistance should be less than 10 Ω . Prevent electrostatic damage to electronic devices in humid environment, while avoiding electric leakage to harm human body.
	Personal injury	The angle and height of the display installation should be appropriate, and the sharp corners should be packaged to prevent damage to the human body from the tough outer casing.
	Special environment	Display screen for special environment (1, seaside, swimming pool, bathing room, basement, tunnel; 2, chemical environment, vulcanization environment, halogen environment; 3, dust, dusty environment; 4, strong ultraviolet environment; 5, the environment of strong electromagnetic fields; 6, less than -20 degrees, higher than +40 degrees of the environment), The review process is required before placing the order.
	Static Protection	The worker must wear an anti-electrostatic wrist strap and anti- electrostatic glove. Various tools must be strictly grounded during assembly
	Product batch control	Different batches of products cannot be installed in the same screen, otherwise there will be color blocks (mosaic) on the display.

Operational precautions	Product wiring	The module cannot be directly connected to 220V, and the module positive and negative poles connection must be right.
	Disassembly and transportation	Do not throw, push, squeeze or press the module to avoid damaging the display screen.
	Disassembly and maintenance liquid protection	Sweat or other liquid cannot be dripped on the display screen during disassembly and assembly operation. If it is dripped, then use alcohol to clean the product, to prevent the liquid from corroding the product.
	Installation Torque Control	In connection with power supply, it is necessary to ensure tightening of terminal joint screw to prevent joint position from loosening, resulting in wire burning or product damage caused by high contact resistance. Torque of M4 screw is

Operational precautions		6.0-8.0 Kgf.cm, and that of M3 screw is 4.0-6.0 Kgf.cm.
	Prohibited work with electricity	It is forbidden to assemble the LED module when the power is on. The LED module should be assembled with the main power input disconnected. It is not allowed to insert the power wire and signal cable when there are with electricity.
	Prohibited touch with electricity	It is forbidden for people to touch the LED display screen when the LED screen is in usage, so as to avoid electrostatic breakdown of LED lights and chips and other components caused by human body friction.
	Environmental inspection	Temperature and humidity meters should be equipped on the installation site to monitor the surrounding environment of the screen in time. After heavy rain, it is necessary to check whether there are any problems such as dampness, water droplets and over humidity in the screen in time.
		Within 10% ~ 65% RH relative humidity range, it is recommended to turn on the display 1 time per day, and work at least 4 hours to remove moisture on the display.

Operational precautions	Requirements for moisture proof	Rental screen display:	After finished the display, need to put it back to flight case, sealed and stored. (please check whether there is any failure of the desiccant or hygroscopic bag in the aviation, it needs to be replaced every 2 months, and more desiccant can increase the dryness inside the box.)
			When the display screen is not in use for a long time, it is necessary to reduce the brightness of the whole screen by 50% in advance and play it for 12 hours, and preheat it for "dehumidification" 12H to avoid damaging the light tube after the LED screen is damped.
			While renting, do not touch the display screen with water. If there is any water, make sure that the water on the screen is dried. After 2H, light the display screen 2H, and evaporate the water by lamp and IC heat.
			It is strictly forbidden to use indoor rental screens as outdoor rental screens, especially in the open air environment.
	Avoid construction work to the installed LED screen	It is strictly forbidden to rebuild after the installation of the LED display screen, so as to prevent the LED display screen from being affected by the impact of high current and dust, such as welding, electric saw and other equipment.	

4. Technical Specification

4.1. Screen

Brightness	$\geq 600\text{cd/m}^2$	Brightness Uniformity	> 0.95
Horizontal Viewing Angle	140 ± 10 degree	Vertical Viewing Angle	130 ± 10 degree
Best Viewing Distance	$\geq 1.9\text{m}$	Operation Environment	Indoor
Max Power Consumption	$\leq 439\text{W/m}^2$		
Distribution power (maximum power per square $\div 78\% \div 85\%$)		$\leq 663\text{W/m}^2$	
Grayscale	13-14bits (RGB each)	Display Color	4398 Billion
Frame Frequency	≥ 60 frame/sec	Refresh Frequency	$\geq 3840\text{Hz}$

Control Mode	Computer control, Point-to-point Video synchronization Real-time display	Brightness Adjustment	256-grade manual / automatic
Input Signal	DVI/VGA , Video (multiple formats)RGBHV 、 Composite video signal 、 S-VIDEO YpbPr(HDTV)		
Life Span	$\geq 100,000$ hours	Average Failure Free Time	$\geq 10,000$ hours
Attenuation (3 years later)	$\leq 15\%$	Continuous out of control point	0
Discrete Out of Control Point	< 0.0001 , 0 when leaving the factory	Blind spot rate	< 0.0003 , 0 when leaving the factory
Operating temperature range	$-20-40^\circ\text{C}$	Operating Humidity	10 % -65 % RH(No condensation)
Protection performance	Over temperature / overload / power down / image compensation /various correction technologies / overcurrent / overvoltage / lightning protection (optional)		

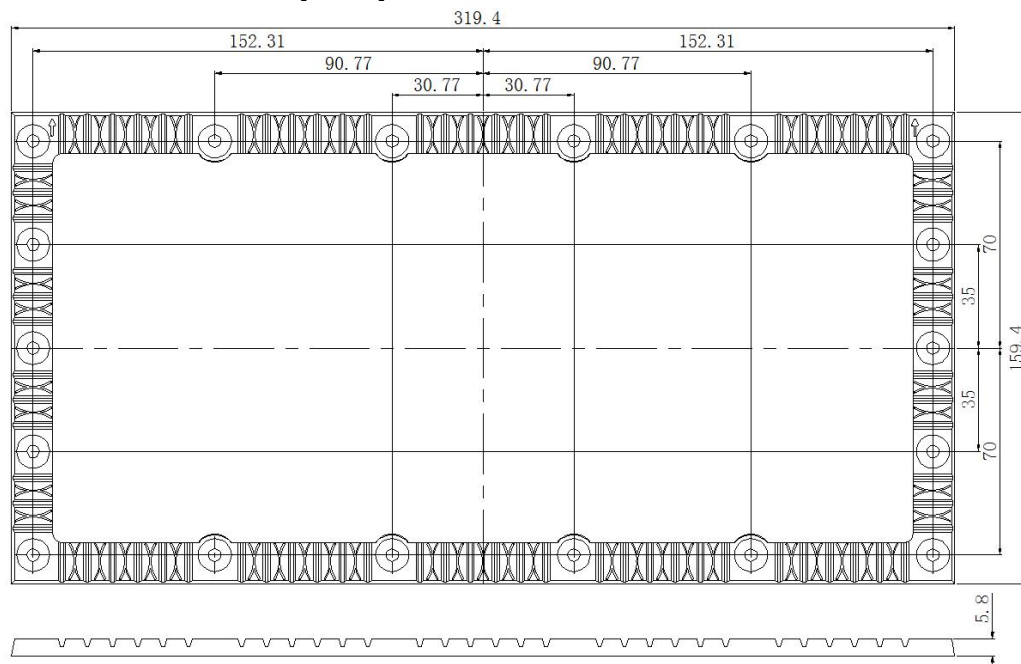
4.2. Module

Pixel Pitch	1.86mm	Pixel Density	288906Dots/m ²
Configuration	1R1G1B	LED Lamp	SMD1515
Size (Width*Height*Thickness)	320*160*7.5mm	Weight	0.27kg \pm 0.01kg
Structure	Light drive in one	Resolution	172*86=14792Dots

Input Voltage (DC)	4.5±0.1V	Maximum Current	≤5A
Power Consumption	≤23W	Driving Method	Constant Current 1/43 Scan
40A Power Supply for	5-6pcs module	80A Power Supply for	7-8 pcs module
40A PFC Power Supply for	7-8pcs module	50A Power Supply for	10-12 pcs module
PCB Layer	2 Layers		
IC Group Model(Reference)	DP32020A/RUL5158C+SM16380SC/DP3364		

7. Mounting Hole Bitmap

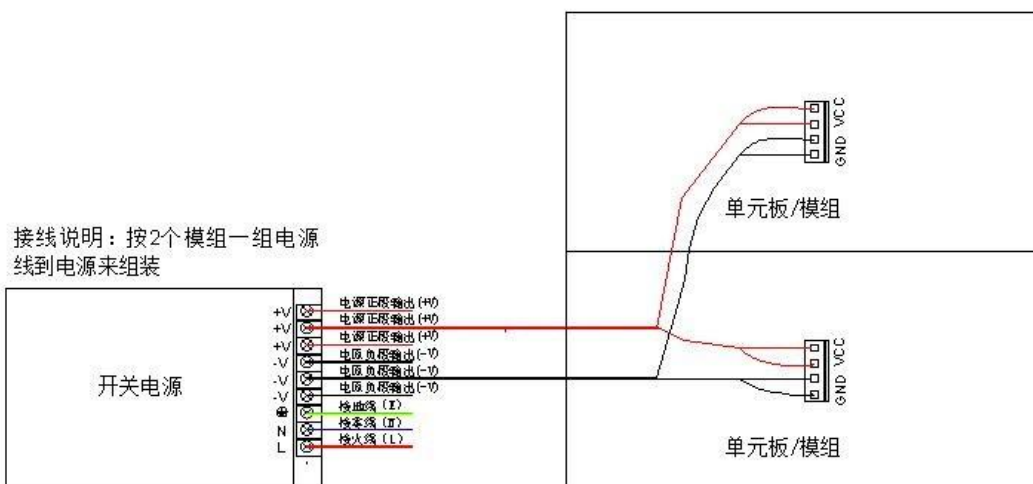
7.1. Installation hole bitmap of panel:



Remarks: "If you need to make a cabinet, please inform the office in advance and confirm the hole bitmap of the ordered product. Please refer to the CAD drawing for details." All dimensions are in mm.

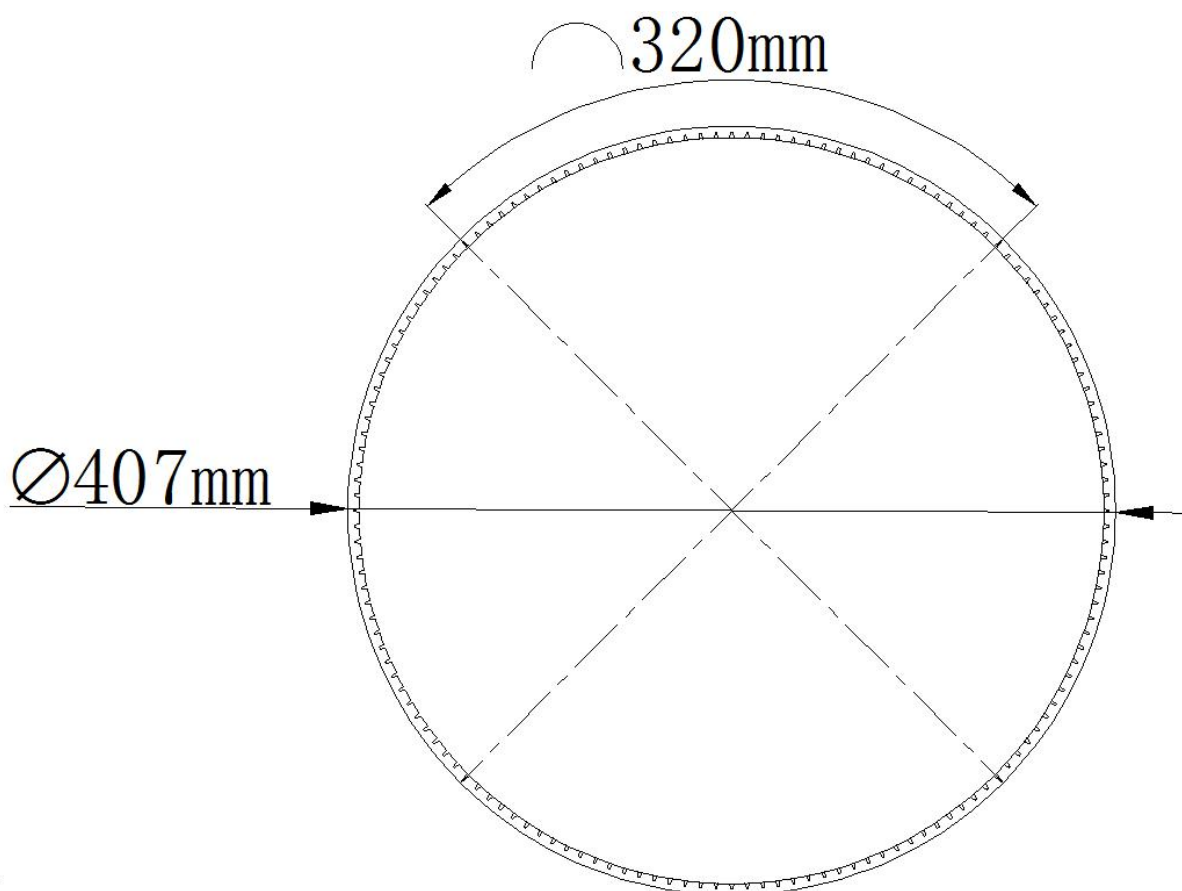
8. Installation Instructions

8.1. Diagram of wiring between power supply and panel (this picture is for reference only, and the specific wiring method refers to the actual product):

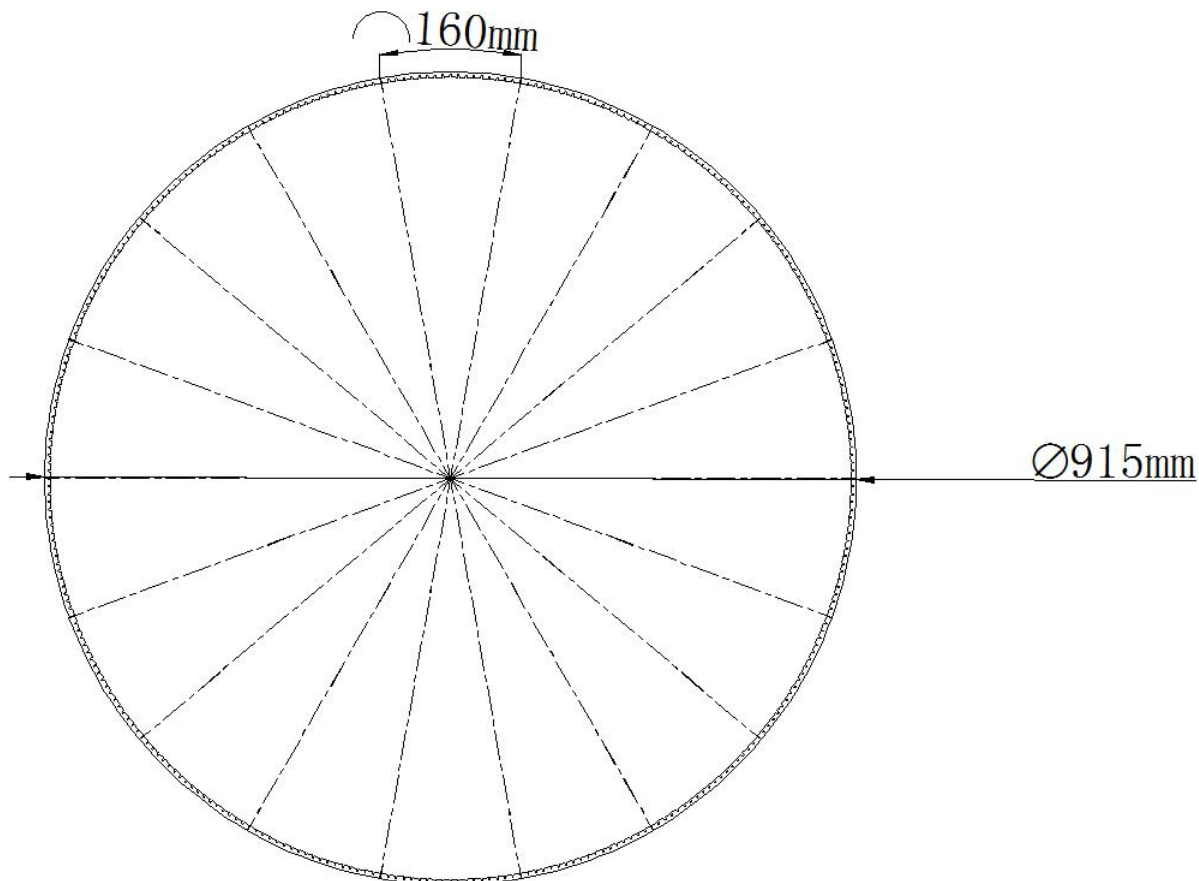


8.2.Assembly mode:

Horizontal assembly: inside and outer arc are 4, minimum cylinder installation diameter is 407mm(displaysurface)

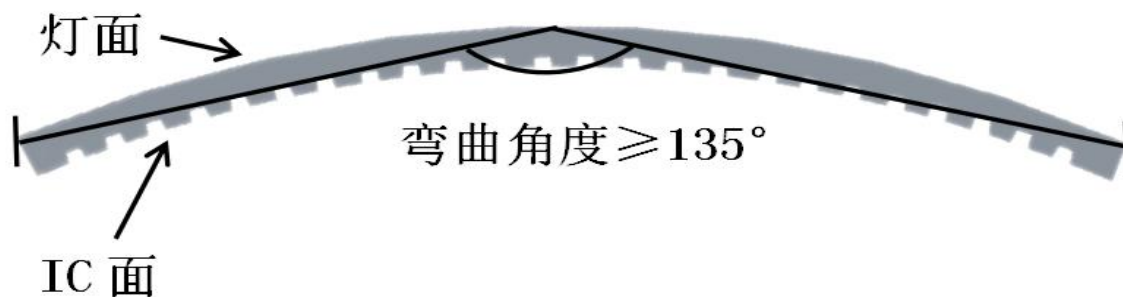


8.2.2 Vertical assembly: inside and outer arc are 18, the minimum cylinder installation diameter is 915mm (display surface)



amplitude range:

Schematic bending angle: outer arc bending angle 135 and inner arc bending angle

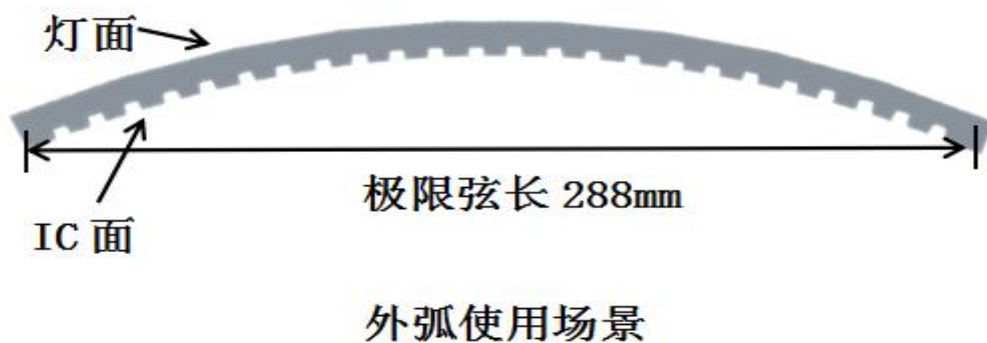
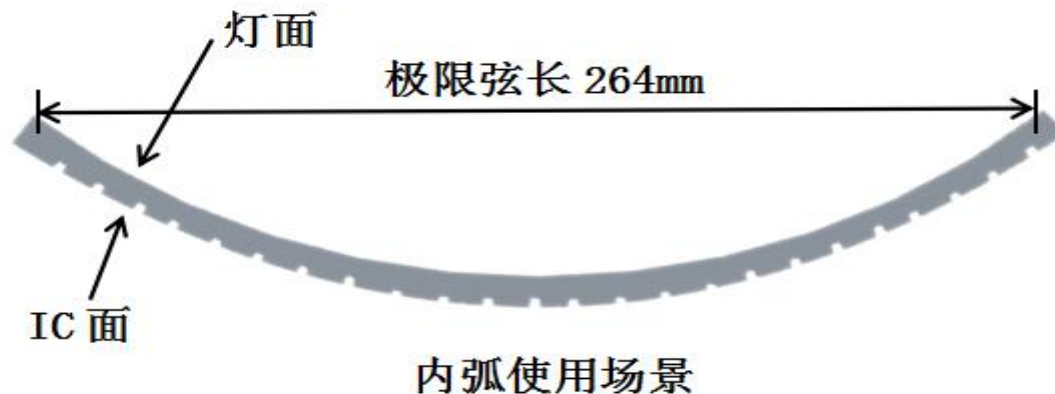


外弧使用场景

120°

Note: No excessive bending to prevent module damage!

String length diagram: outer arc curved string length 288-320mm,
inner arc curved string length 246-320mm



Note: No excessive bending to prevent module damage!

8.3. Installation Introduction:

8.3.1. Display installation: can be used as indoor rental, with strong magnetic adsorption, magnetic suction, lifting and wall installation, but also support bending installation, to meet the needs of various indoor installation environments.

8.4. Requirements and methods for acceptance of display screen:

8.4.1. Screen body brightness: adjust the screen body to the full light state, adjust the brightness efficiency of the test software to 80% on the computer, and measure the brightness of the screen body with a light gun within 10 minutes. Measurement of brightness requires that the light gun should be aligned with the screen body. It is best to measure that the time gun can keep horizontal with the screen body to ensure that the black position of the observation window covers more than 16 pixels and adjust the focal length for measurement.

8.4.2. Grounding: the switch power supply shell, box and screen structure is correctly grounded, the contact site is correctly connected to the landmark mark, and the spot inspection every six months;

8.4.3. Lightning protection treatment: the building is required to have lightning rod or lightning belt facilities and effective grounding, the distribution box is required to have a surge protector, and the lightning protection facilities should be checked every six months.