



Shenzhen Mooncell Electronics Co., Ltd

Receiving Card Series

L60D Product Specifications

Updates History

<i>File Version</i>	<i>Hardware Version</i>	<i>Release Date</i>	<i>History</i>
V3.6	V2.1	11/11/2022	

1 Product Overview

Product Introduction

L60D is a small sized receiving card that fully researched and developed by Mooncell; it adopted the high-precision DDR2 connector; it can supports the maximum 32 groups of the parallel connection data;the maximum loading capacity could reach up to 768*256 pixels; with strong processing ability, supper reliability and high competitive price.

Product Features

- It features the small size and thickness, saving a lot more space for the narrow cabinet and space of the led strip(bar).
- It features high precision connector, which is dust-proof & shock proof; with high reliability and stability.
- It supports dual card backup function,which has enhanced the reliability and stability.
- With strong LED Driver IC compatibility.

Application Scenarios

It could be widely used for high-end LED display area that requires high standards; and has significant advantages in application scenarios such as led rental display, TV Broadcast, LED display for respectable Event,High-end project,etc.

2 Function Introduction

Displaying Effect

It supports pixel level brightness and Chroma Calibration	Using it with the Mooncell Calibration Software to calibrate each one of the pixels on its brightness and Chroma. It can effectively eliminate the Chromatic aberration so as to enhance its consistency of the brightness and Chroma to a high level and result in a better displayed effects.
Multiple Solutions of the Displayed Effects are Supported	Using it with Monncell AutoLED Software, the Refresh and Grey Scale performances are able to take the precedence over other settings.
The Images on the led screen can be rotated 90 degree in a factor of multiple times	Using it with Mooncell AutoLED Software.
The images can be zoomed in or out	Using it with Mooncell AutoLED

Enhanced Operability:

The Receiving Card is Supported to detect its own Sequence number	Using the Network Port testing function on Mooncell AutoLED Software, the receiving card serial number and the Network Port Information will be displayed on the target cabinet. Users will be able to get to know the locations of the receiving cards as well as its Connection diagram.
Data Port User-Defined is supported	Using it with the Mooncell AutoLED Software, you can detect and edit the output data of the receiving cards.
To build up a complicated cabinet is supported	On AutoLED Software, there is an ‘Advanced Setting’ , from here you can quickly arrange or structure the modules at your option.
To structure a complicated Led Screen is supported	On AutoLED Software, there is a “Complicated Led Screen Connection”, from here you can quickly arrange or structure the cabinet modules on your option.
Intelligent Module is	The Intelligent Module consists of Flash and MCU.The

supported(Customized)	Flash can reserve the calibration data and information of the PCB Board. The MCU can be communicated with the receiving cards so as to detect the temperature, voltage and wiring connectivity of each module (on a module-level: module by module). With Intelligent Module, the monitor cards are not necessary for the Monitor Users, which means you can save a lot more space on the cabinets.
Module Self-Calibrated is supported(Customized)	When a module is replaced, the receiving card will automatically read the ID and its calibration data of the new one once the electricity power is connected, and the data will be reserved to the Flash.

Hardware Stability

Ethernet Cable Backup(Hot Backup)	The main cable will be having the loop connection. If there's one cable breaks then still there will have another one to make sure the led display work properly.
	Dual receiving cards backup is supported(Dual Circuit backup design) Customized :when the main working receiving card fails, the other one (backup) will take its job to keep the led display working properly.

Smart Software and Hardware Stability

The receiving card can read the configuration data back from where it has been stored	You will be able to do this on Mooncell AutoLED Software.
It supports to detect the error rates of the network cable	On the Mooncell AutoLED Software, you can detect the network cable connectivity in real time to tell the condition of the network cables, so that you can get rid of any errors immediately.
Communication Monitoring Function	On Mooncell AutoLED Software, you can monitor the Working Status of the receiving cards in real time.
Dual Power Supplies Backup is supported	2 Power Supplies can be connected simultaneously and the working status can be detected. Whenever there's a power supply failure, it can be detected, the system then will automatically decrease the brightness of the led screen so that it can still keep working properly

LCD Module is supported(Customized)	The LCD Module can be connected to the HUB board to display the temperature, voltage, single running time and total running time of the receiving cards.
It supports to detect the voltage	It will detects the voltage status of the receiving cards.
It supports to detect the temperature	The operating temperature of the receiving cards could be detected.
It supports to detect the power status	The power status of the power supplies could be detected.
It supports the reset function	Once the online upgrading finished, it could automatically reset the hardware.

3 Product Parameters

Basic Parameters

RGB Parallel Groups	Maximum Capacity (Pixels)	Loading Capacity	Loading Capacity After lightness Calibrating (Pixels)	Loading Capacity after Color Calibrating(Pixels)
32	768*256	512*256		480*160

Cascading Connection QTY	Supported lines	Scan		
≤1000PCS	1-64 Scans			

Hardware Introduction



Output Port Definition

Port Definition of the 32 Groups of parallel connection data

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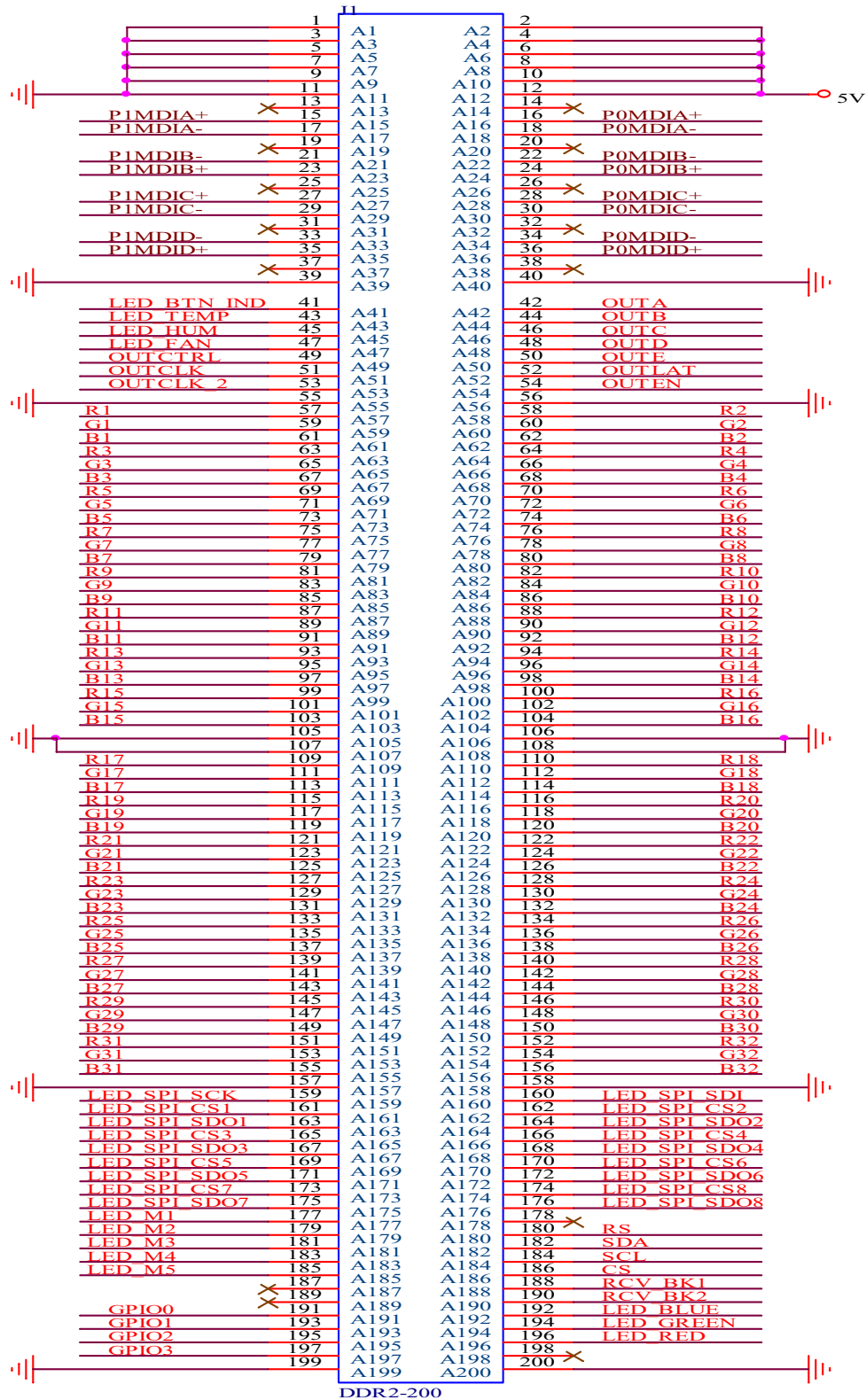


Illustration	Definition	Pin	Pin	Definition	illustration
	GND	1	2	NC	
	GND	3	4	NC	
	GND	5	6	NC	
	GND	9	10	NC	
	GND	11	12	NC	
		13	14	NC	
	P1MDIA+	15	16	POMDIB+	
	P1MDIA-	17	18	POMDIA-	
		19	20		
	P1MDIB-	21	22	POMDIB-	
	P1MDIB+	23	24	POMDIB+	
		25	26		
	P1MDIC+	27	28	POMDIC+	
	P1MDIC-	29	30	POMDIC-	
		31	32		
	P1MDID-	33	34	POMDID-	
	P1MDID+	35	36	POMDID+	
		37	38		
	GND	39	40	GND	
Indicator light is shared with the push button switch.	LED_BTNIND	41	42	OUTA	
Temperature monitoring (requires connection to the ADC pin)	LED_TEMP	43	44	OUTB	
Humidity monitoring	LED_HUM	45	46	OUTC	
Fan control	LEDFAN	47	48	OUTD	
	OUTCTTRL	49	50	OUTE	
	OUTCLK	51	52	OUTLAT	
	OUTCLK_2	53	54	OUTEN	
	NC	55	56	GND	
	R1	57	58	R2	
	G1	59	60	G2	
	B1	61	62	B2	
	R3	63	64	R4	
	G3	65	66	G4	
	B3	67	68	B4	

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	R5	69	70	R6	
	G5	71	72	G6	
	B5	73	74	B6	
	R7	75	76	R8	
	G7	77	78	G8	
	B7	79	80	B8	
	R9	81	82	R10	
	G9	83	84	G10	
	B9	85	86	B10	
	R11	87	88	R12	
	G11	89	90	G12	
	B11	91	92	B12	
	R13	93	94	R14	
	G13	95	96	G14	
	B13	97	98	B14	
	R15	99	100	R16	
	G15	101	102	G16	
	B15	103	104	B16	
	GND	105	106	GND	
	GND	107	108	GND	
	R17	109	110	R18	
	G17	111	112	G18	
	B17	113	114	B18	
	R19	115	116	R20	
	G19	117	118	G20	
	B19	119	120	B20	
	R21	121	122	R22	
	G21	123	124	G22	
	B21	125	126	B22	
	R23	127	128	R24	
	G23	129	130	G24	
	B23	131	132	B24	
	R25	133	134	R26	
	G25	135	136	G26	
	B25	137	138	B26	
	R27	139	140	R28	
	G27	141	142	G28	
	B27	143	144	B28	
	R29	145	146	R30	
	G29	147	148	G30	
	B29	149	150	B30	

	R31	151	152	R32	
	G31	153	154	G32	
	B31	155	156	B32	
	GND	157	158	GND	
	LED_SOI_SCK	159	160	LED_SPI_SDI	
	LED_SPI_CS1	161	162	LED_SPI_CS2	
	LED_SPI_SD01	163	164	LED_SPI_SD02	
	LED_SPI_CS3	165	166	LED_SPI_CS4	
	LED_SPI_SD03	167	168	LED_SPI_SD04	
	LED_SPI_CS5	169	170	LED_SPI_CS6	
	LED_SPI_SD05	171	172	LED_SPI_SD06	
	LED_SPI_CS7	173	174	LED_SPI_CS8	
	LED_SPI_SD07	175	176	LED_SPI_SD08	
Power Detection	LED_M1	177	178	R	
	LED-M2	179	180	RS	
	LED_M3	181	182	SDA	
	LED_M4	183	184	SCL	
	LED_M5	185	186	CS	
Nc		187	188	BCV_BK1	
Nc		189	190	RCV_BK2	
LCD Screen	return	GP100	191	192	LED_BLUE
	downword	GP101	193	194	LED_GREEN
	Up	GP102	195	196	LED_RED
	Settings	GP103	197	198	
	GND	199	200	GND	

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96 Groups of Serial Connection Data Port

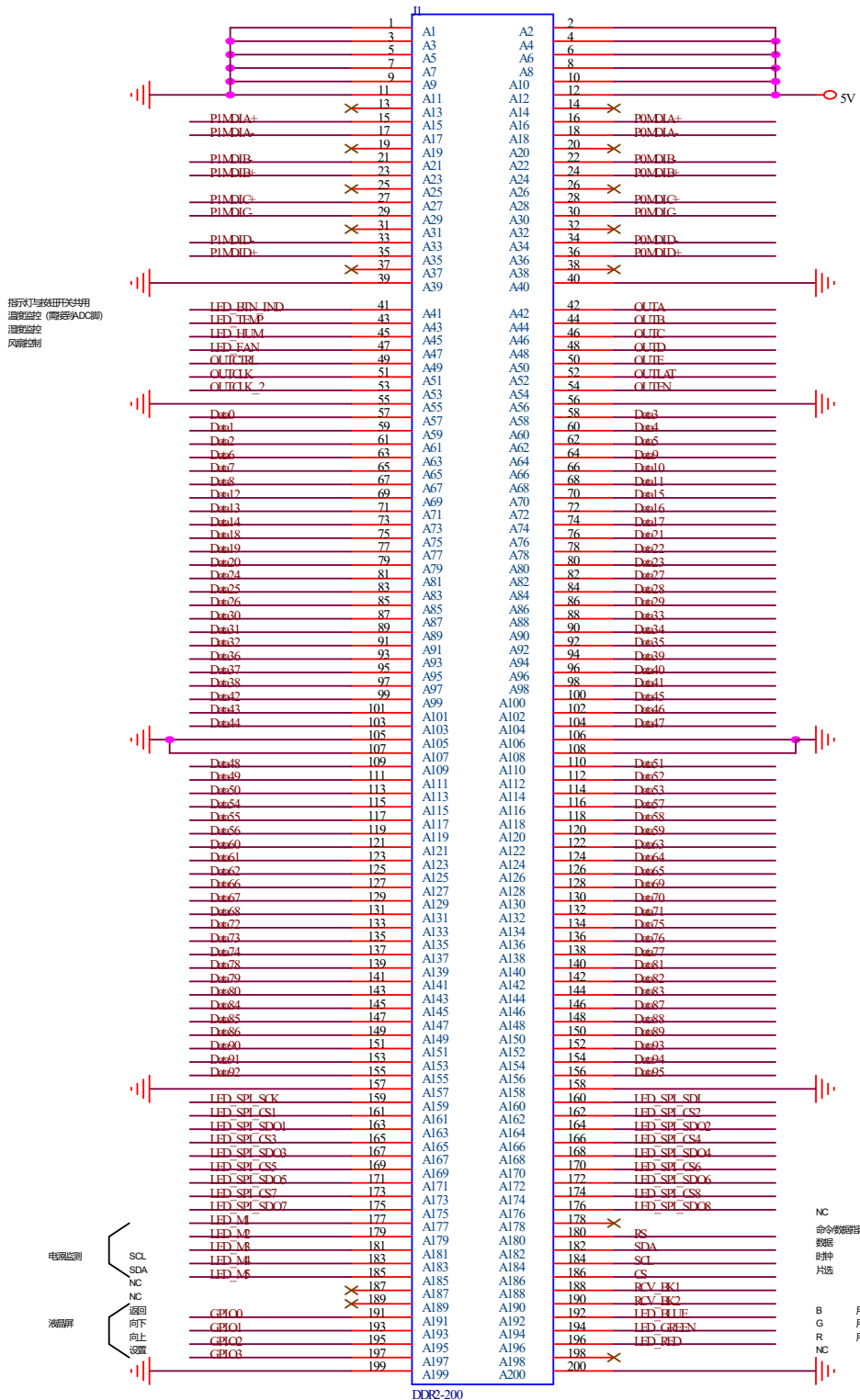


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	GND	5	6	NC	
	GND	7	8	NC	
	GND	9	10	NC	
	GND	11	12	NC	
		13	14		
	P1MDLA+	15	16	P1MDLA+	
	P1MDLA-	17	18	P1MDLA-	
		19	20		
	P1MDLB-	21	22	P1MDLB-	
	P1MDLB+	23	24	P1MDLB+	
		25	26		
	P1MDLC+	27	28	P1MDLC+	
	P1MDLC-	29	30	P1MDLC-	
		31	32		
	P1MDLD-	33	34	P1MDLD-	
	P1MDLD+	35	36	P1MDLD+	
		37	38		
	GND	39	40	GND	
Indicator light is shared with the push button switch.	LED_BTN_LND	41	42	OUTA	
Temperature monitoring (requires connection to the ADC pin)	LED_TEMP	43	44	OUTB	
Humidity monitoring	LED_HUM	45	46	OUTC	
Fan control	LED_FAN	47	48	OUTD	
	OUTCTRL	49	50	OUTE	
	OUTCLK	51	52	OUTLAT	
	OUTCLK_2	53	54	OUTEN	
	GND	55	56	GND	
	Data0	57	58	Data3	
	Data1	59	60	Data4	
	Data2	61	62	Data5	
	Data6	63	64	Data9	
	Data7	65	66	Data10	
	Data8	67	68	Data11	
	Data12	69	70	Data15	

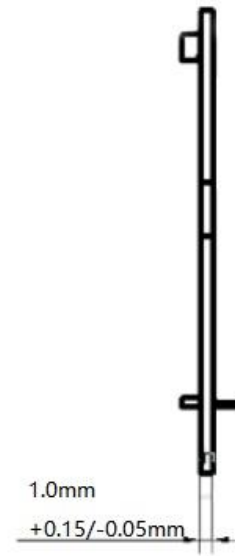
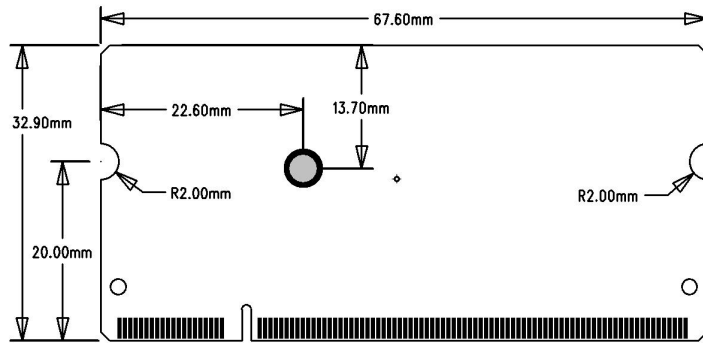
	Data13	71	72	Data16	
	Data14	73	74	Data17	
	Data18	75	76	Data21	
	Data19	77	78	Data22	
	Data20	79	80	Data23	
	Data24	81	82	Data27	
	Data25	83	84	Data28	
	Data26	85	86	Data29	
	Data30	87	88	Data33	
	Data31	89	90	Data34	
	Data32	91	92	Data35	
	Data36	93	94	Data39	
	Data37	95	96	Data40	
	Data38	97	98	Data41	
	Data42	99	100	Data45	
	Data43	101	102	Data46	
	Data44	103	104	Data47	
	GND	105	106	GND	
	GND	107	108	GND	
	Data48	109	110	Data51	
	Data49	111	112	Data52	
	Data50	113	114	Data53	
	Data54	115	116	Data57	
	Data55	117	118	Data58	
	Data56	119	120	Data59	
	Data60	121	122	Data63	
	Data61	123	124	Data64	
	Data62	125	126	Data65	
	Data66	127	128	Data69	
	Data67	129	130	Data70	
	Data68	131	132	Data71	
	Data72	133	134	Data75	
	Data73	135	136	Data76	
	Data74	137	138	Data77	
	Data78	139	140	Data81	
	Data79	141	142	Data82	
	Data80	143	144	Data83	
	Data84	145	146	Data87	
	Data85	147	148	Data88	
	Data86	149	150	Data89	
	Data90	151	152	Data93	

		Data91	153	154	Data94	
		Data92	155	156	Data95	
		GND	157	158	GND	
		LED_SPI_SCK	159	160	LDED_SPI_SDI	
		LED_SPI_CS1	161	162	LED_SPI_CS2	
		LED_SPI_SDO1	163	164	LED_SPI_SDO2	
		LED_SPI_CS3	165	166	LED_SPI_CS4	
		LED_SPI-SD03	167	168	LED_SPI_SDO4	
		LED_SPI_CS5	169	170	LED_SPI_CS6	
		LED_SPI-SD05	171	172	LED_SPI_SDO6	
		LED_SPI_CS7	173	174	LED_SPI_CS8	
		LED_SPI-SD07	175	176	LED_SPI_SDO8	
Power Detection		LED_M1	177	178		NC
		LED_M2	179	180	RS	Command/Data Indication
		LED_M3	181	182	SDA	Data
	SCL	LED_M4	183	184	SCL	Clock
	SDA	LED_M5	185	186	CS	Chip Selection
NC			187	188	RCV_BK1	
NC			189	190	RCV_BK2	
LCD Screen	Return	GPI00	191	192	LED_BLUE	B10
	Downwards	GPI01	193	194	LED_GREEN	G10
	Up	GPI02	195	196	LED_RED	R10
	Settings	PGI03	197	198		NC
		GND	199	200	GND	

Indicator Illustration

Indicator	Position	Status	Illustration
Status Indicator (Green)	U6	Flickering Slowly at a constant	The receiving card is working properly, The Ethernet Cable Connection is fine, No DVI Signal Input
		Flickering Fast at a constant	The receiving card is working properly, The Ethernet Cable Connection is fine, with DVI Signal Input
		It goes out	No Gigabit Ethernet Signal
		Fast Flickering 3 Tunes	The receiving card is working properly, The Ethernet Cable Loop Connection is fine, DVI Signal Input
Status Indicator	U5	Long Lasting On	Power is On

Dimensions



4 Product Specifications

Specifications

Electric Parameters	Input Voltage	DC3.5-5.5V
	Rated Current	0.6A
	Rated Power	3W
Operating Environment	Operating Temperature	-20°C - 70°C
	Operating Humidity	10%RH-90%RH
Storage Environment	Temperature	-25°C~125°C
Dimensions	67.6mmX32.9mm	
Net Weight	8.5g	
Certifications	It conforms to RoHS and CE-EMC standards.	

Precautions

1. The testing (debugging) and installation should be done by the qualified professionals
2. Anti-Static, Water-Proof and Dust-Proof Required