

### 3. TECHNICAL SPECIFICATION

MODEL		MSL-1821	MSL-3021	MSL-3031	MSL-3051	
OUTPUT	VOLTAGE	0 to 18V	0 to 32V	0 to 32V	0 to 32V	
	CURRENT	0 to 2A	0 to 2A	0 to 3A	0 to 5A	
Constant Voltage	Load regulation (0 to 100% load variation)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	
	Line regulation (0 to 10% line variation)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	
	Ripple & Noise (rms)	≤1mV	≤1mV	≤1mV	≤1mV	
Constant Current	Load regulation (0 to 100% load variation)	≤(0.2%+3mA)	≤(0.2%+3mA)	≤(0.2%+3mA)	≤(0.2%+3mA)	
	Line regulation (0 to 10% line variation)	≤(0.1%+3mA)	≤(0.1%+3mA)	≤(0.1%+3mA)	≤(0.1%+5mA)	
	Ripple & Noise (rms)	≤3mA	≤3mA	≤3mA	≤5mA	
Display	Voltmeter	Type	3 digits			
		Accuracy	≤±(1%rdg+2digits)			
		Resolution	100mV			
	Ammeter	Type	3 digits			
		Accuracy	≤±(1%rdg+2digits)			
		Resolution	10mA			
LED indicators	Green LED for CV and red LED for CC					
Temperature	Operating Temp	0°C to 40°C @ 10 to 80% RH				
	Storage Temp	-20°C to 60°C @ 10 to 80% RH				
	Cooling method	Fan				
Resistance	Max. Voltage to ground	±200V				
	Insulation Resistance	30MΩ@ 500V DC :AC input to Chassis 30MΩ@ 500V DC :AC input to Terminal				
Dimensions	Size (mm) W X H X D	100X170X315			150X170X315	
	Weight (Kg)	3.6	4.5	4.9	6	
Accessories	Power cord.....	1				
	Instruction manual.....	1				
	Test lead.....	1 set				

MODEL		MSL-1822	MSL-3022	MSL-3032	MSL-3052	
OUTPUT	VOLTAGE	OUTPUT CH1 and CH2				
		0 to 18V	0 to 32V	0 to 32V	0 to 32V	
	CURRENT	0 to 2A	0 to 2A	0 to 3A	0 to 5A	
Constant Voltage	Load regulation (0 to 100% load variation)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	
	Line regulation (0 to 10% line variation)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	≤(0.01%+3mV)	
	Ripple & Noise (rms)	≤1mV	≤1mV	≤1mV	≤1mV	
Constant Current	Load regulation (0 to 100% load variation)	≤(0.2%+3mA)	≤(0.2%+3mA)	≤(0.2%+3mA)	≤(0.2%+3mA)	
	Line regulation (0 to 10% line variation)	≤(0.1%+3mA)	≤(0.1%+3mA)	≤(0.1%+3mA)	≤(0.1%+5mA)	
	Ripple & Noise (rms)	≤3mA	≤3mA	≤3mA	≤5mA	
	Series output	0~36V/2A	0~64V/2A	0~64V/3A	0~64V/5A	
	Parallel output	0~18V/4A	0~32V/4A	0~32V/6A	0~32V/10A	
	Tracking Error	≤ 300mV				
Display	Voltmeter	Type	3 digits			
		Accuracy	≤±(1%rdg+2digits)			
		Resolution	100mV			
	Ammeter	Type	3 digits			
		Accuracy	≤±(1%rdg+2digits)			
		Resolution	10mA			
LED indicators	Green LED for CV and red LED for CC					
Temperature	Operating Temp	0°C to 40°C @ 10 to 80% RH				
	Storage Temp	-20°C to 60°C @ 10 to 80% RH				
	Cooling method	Fan				
Resistance	Max. Voltage to ground	±200V				
	Insulation Resistance	30MΩ@ 500V DC :AC input to Chassis 30MΩ@ 500V DC :AC input to Terminal				
Dimensions	Size (mm) W X H X D	260X170X315				
	Weight (Kg)	12.9	13.3	14.1	15	
Accessories	Power cord.....	1				
	Instruction manual.....	1				
	Test lead.....	2 sets				

MODEL		MSL-1823		
OUTPUT	VOLTAGE	OUTPUT CH1 and CH2 0 to 18V	OUTPUT CH3 3.3V/5V(fixed)	
	CURRENT	0 to 2A	3A	
Constant Voltage	Load regulation (0 to 100% load variation)	$\leq (0.01\%+3mV)$	$\leq \pm(3\%+5mV)$	
	Line regulation (0 to 10% line variation)	$\leq (0.01\%+3mV)$	$\leq \pm 5mV$	
	Ripple & Noise (rms)	$\leq 1mV$	$\leq 2mV$	
Constant Current	Load regulation (0 to 100% load variation)	$\leq (0.2\%+3mA)$	N/A	
	Line regulation (0 to 10% line variation)	$\leq (0.1\%+3mA)$		
	Ripple & Noise (rms)	$\leq 3mA$		
Series output	0~36V/2A			
Parallel output	0~18V/4A			
Tracking Error	$\leq 300mV$			
Display	Voltmeter	Type	3 digits	N/A
		Accuracy	$\leq \pm(1\%rdg+2digits)$	
		Resolution	100mV	
	Ammeter	Type	3 digits	
		Accuracy	$\leq \pm(1\%rdg+2digits)$	
		Resolution	10mA	
	LED indicators		Green LED for CV and red LED for CC	Overload Red LED
Temperature	Operating Temp	0°C to 40°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling	Fan		
Resistance	Max. Voltage to ground	$\pm 200V$		
	Insulation Resistance	30M $\Omega$ @ 500V DC :AC input to Chassis 30M $\Omega$ @ 500V DC :AC input to Terminal		
Dimensions	Size (mm) W X H X D	260 x 170 x 315		
	Weight (Kg)	13.2		
Accessories	Power cord.....1			
	Instruction manual.....1			
	Test lead.....2 sets			

MODEL		MSL-3023		
OUTPUT	VOLTAGE	OUTPUT CH1 and CH2 0 to 32V	OUTPUT CH3 3.3V/5V(fixed)	
	CURRENT	0 to 2A	3A	
Constant Voltage	Load regulation (0 to 100% load variation)	$\leq (0.01\%+3mV)$	$\leq \pm(3\%+5mV)$	
	Line regulation (0 to 10% line variation)	$\leq (0.01\%+3mV)$	$\leq \pm 5mV$	
	Ripple & Noise (rms)	$\leq 1mV$	$\leq 2mV$	
Constant Current	Load regulation (0 to 100% load variation)	$\leq (0.2\%+3mA)$	N/A	
	Line regulation (0 to 10% line variation)	$\leq (0.1\%+3mA)$		
	Ripple & Noise (rms)	$\leq 3mA$		
Series output	0~64V/2A			
Parallel output	0~32V/4A			
Tracking Error	$\leq 300mV$			
Display	Voltmeter	Type	3 digits	N/A
		Accuracy	$\leq \pm(1\%rdg+2digits)$	
		Resolution	100mV	
	Ammeter	Type	3 digits	
		Accuracy	$\leq \pm(1\%rdg+2digits)$	
		Resolution	10mA	
	LED indicators		Green LED for CV and red LED for CC	Overload Red LED
Temperature	Operating Temp	0°C to 40°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling	Fan		
Resistance	Max. Voltage to ground	$\pm 200V$		
	Insulation Resistance	30M $\Omega$ @ 500V DC :AC input to Chassis 30M $\Omega$ @ 500V DC :AC input to Terminal		
Dimensions	Size (mm) W X H X D	260 x 170 x 315		
	Weight (Kg)	13.6		
Accessories	Power cord.....1			
	Instruction manual.....1			
	Test lead.....2 sets			

MODEL		MSL-3033		
OUTPUT	VOLTAGE	OUTPUT CH1 andCH2 0 to 32V	OUTPUT CH3 3.3V/5V(fixed)	
	CURRENT	0 to 3A	3A	
Constant Voltage	Load regulation (0 to100% load variation)	$\leq(0.01\%+3mV)$	$\leq\pm(3\%+5mV)$	
	Line regulation (0 to 10% line variation)	$\leq(0.01\%+3mV)$	$\leq\pm5mV$	
	Ripple & Noise (rms)	$\leq1mV$	$\leq2mV$	
Constant Current	Load regulation (0 to100% load variation)	$\leq(0.2\%+3mA)$	N/A	
	Line regulation (0 to 10% line variation)	$\leq(0.1\%+3mA)$		
	Ripple & Noise (rms)	$\leq3mA$		
Series output	0~64V/3A			
Parallel output	0~32V/6A			
Tracking Error	$\leq300mV$			
Display	Voltmeter	Type	3 digits	N/A
		Accuracy	$\leq\pm(1\%rdg+2digits)$	
		Resolution	100mV	
	Ammeter	Type	3 digits	
		Accuracy	$\leq\pm(1\%rdg+2digits)$	
		Resolution	10mA	
LED indicators		Green LED for CV and red LED for CC	Overload Red LED	
Temperature	Operating Temp	0°C to 40°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling	Fan		
Resistance	Max. Voltage to ground	$\pm200V$		
	Insulation Resistance	30MΩ@ 500V DC :AC input to Chassis 30MΩ@ 500V DC :AC input to Terminal		
Dimensions	Size (mm) W X H X D	260 x 170 x 315		
	Weight (Kg)	14.4		
Accessories	Power cord.....1			
	Instruction manual.....1			
	Test lead.....2 sets			

MODEL		MSL-3053		
OUTPUT	VOLTAGE	OUTPUT CH1 andCH2 0 to 32V	OUTPUT CH3 3.3V/5V(fixed)	
	CURRENT	0 to 5A	3A	
Constant Voltage	Load regulation (0 to100% load variation)	$\leq(0.01\%+3mV)$	$\leq\pm(3\%+5mV)$	
	Line regulation (0 to 10% line variation)	$\leq(0.01\%+3mV)$	$\leq\pm5mV$	
	Ripple & Noise (rms)	$\leq1mV$	$\leq2mV$	
Constant Current	Load regulation (0 to100% load variation)	$\leq(0.2\%+3mA)$	N/A	
	Line regulation (0 to 10% line variation)	$\leq(0.1\%+5mA)$		
	Ripple & Noise (rms)	$\leq5mA$		
Series output	0~64V/5A			
Parallel output	0~32V/10A			
Tracking Error	$\leq300mV$			
Display	Voltmeter	Type	3 digits	N/A
		Accuracy	$\leq\pm(1\%rdg+2digits)$	
		Resolution	100mV	
	Ammeter	Type	3 digits	
		Accuracy	$\leq\pm(1\%rdg+2digits)$	
		Resolution	10mA	
LED indicators		Green LED for CV and red LED for CC	Overload Red LED	
Temperature	Operating Temp	0°C to 40°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling	Fan		
Resistance	Max. Voltage to ground	$\pm200V$		
	Insulation Resistance	30MΩ@ 500V DC :AC input to Chassis 30MΩ@ 500V DC :AC input to Terminal		
Dimensions	Size (mm) W X H X D	260 x 170 x 315		
	Weight (Kg)	15.4		
Accessories	Power cord.....1			
	Instruction manual.....1			
	Test lead.....2 sets			