PRODUCT GUIDE

## **Signal Amplifiers Line**



Leading The Way
In Waveform Generation



## **Signal Amplifiers Series**

Many applications require high voltage or high current signals that are well beyond the capabilities of most signal sources. Therefore, external amplifiers must be used together with dedicated waveform, function or pulse generators in order to achieve the required signal. The Tabor line of signal amplifiers was designed to operate in conjunction with its series of waveform generators thus providing a complete solution for all of your signal generation needs.

#### **Simple Operation**

All of the amplifiers in Tabor's product line offer short circuit protection and require virtually no adjustment or setting. They are simple and easy to use; simply connect the amplifier to the signal source and turn it on.

#### Various platforms and sizes

A common problem with PXI and PCI equipment is the inability to produce high voltages resulting from the low power supply rails. In addition to its bench top amplifiers and ultra-small 'snap-on' amplifiers, Tabor Electronics' amplifiers series also offers PCI and PXI amplifiers that output up to 180Vpp thus providing the ultimate solution for any instrument platform.

#### **Expanding Product line**

The Tabor line of signal amplifiers has been growing in the last few years and now offers more than 10 different signal amplifiers for various applications. The series includes high voltage amplifiers up to 400Vpp, high current amplifiers up to 1A and high bandwidth amplifiers with a bandwidth of up to 150MHz at 20Vpp.

#### **Optional Configurations**

All of Tabor's amplifiers arrive with a preconfigured fixed gain. However, for maximum flexibility Tabor offers custom gain configurations as well as customizable configurations of the input impedance, output impedance, floating or grounded output and DC or AC coupled output.



MODEL	9250	9260	9100 l 9200	9100A   9200A	9400
Channels	2 Single or Differential	2 Single or Differential	1   2	1   2	4
Max. Amplitude into matching Impedance	20Vp-p	34Vp-p	300Vp-p	400Vp-p	400Vp-p
Large Signal Bandwidth	15MHz	30MHz	500kHz	500kHz	500kHz
Small Signal Bandwidth	30MHz	45MHz	1MHz	1.5MHz	1.5MHz
Max. Output Current	200mA (50Ω)	750mA	150mA   100mA	125mA   100mA	50mA
Input Impedance	$50\Omega$ , $75\Omega$ or $1M\Omega$	$50\Omega$ , $75\Omega$ or $1M\Omega$	1ΜΩ	1ΜΩ	<b>1M</b> Ω
Output Impedance	$50\Omega$ , $75\Omega$ or $600\Omega$	$2.5\Omega$ , $50\Omega$ , $75\Omega$ or $600\Omega$	0.1Ω	0.1Ω	0.1Ω
Gain	10 (or custom)	10 (or custom)	15 (or custom)	50 (or custom)	50 (or custom)
Transition Time	<22ns	<15ns	<1.5µs	<1µs	<1µs
Platform	Bench	Bench	Bench	Bench	Bench

Now



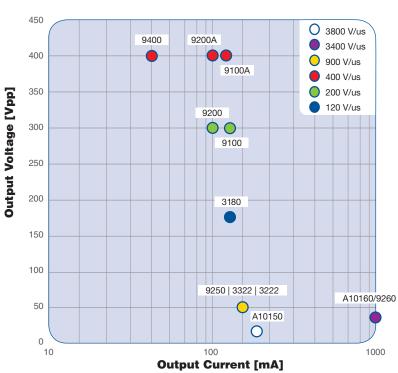
#### **Multi-Channel units**

Many applications require more than a single output to be amplified. For this reason Tabor's amplifier series offers dual and four channel amplifiers built in a small case size saving space and cost without compromising bandwidth or signal integrity.

#### **Target Applications**

Tabor's amplifiers are designed to extend the capabilities of low voltage or low current signal sources. While some were designed to offer a solution to specific applications such as MEMS, piezoelectronics and transducer characterization these are general purpose amplifiers suitable for countless applications in all industries.





MODEL	3180	3222	3322	A10150	A10160
Channels	1	1	1	1	1
Max. Amplitude into matching Impedance	180Vp-p	20Vp-p	20Vp-p	20Vp-p	34Vp-p
Large Signal Bandwidth	300kHz	20MHz	20MHz	150MHz	30MHz
Small Signal Bandwidth	1MHz	50MHz	50MHz	200MHz	45MHz
Max. Output Current	150mA	200mA (50Ω)	200mA (50Ω)	250mA	750mA
Input Impedance	<b>50</b> Ω	50Ω, 1MΩ	<b>50</b> Ω, <b>1M</b> Ω	50Ω	<b>50</b> Ω
Output Impedance	0.1Ω	$50\Omega$ , $75\Omega$ or $600\Omega$	$50\Omega$ , $75\Omega$ or $600\Omega$	50Ω	2.5Ω
Gain	20 (or custom)	10 (or custom)	10 (or custom)	5 (or custom)	10 (or custom)
Transition Time	<1.5µs	<22ns	<22ns	<3ns	<15ns
Connectivity	PXI	PXI	PCI	Snap-On	Snap-On



## **Specification**





Part		9250	9260
Platform:	CONFIGURATION	0200	<u> </u>
Dutput Channels:   2 Single-Ended outputs or 1 Differential output   2 Single-Ended outputs or 1 Differential output   1 Single-Ended   Sin		Rench	Rench
INPUT CHARACTERISTICS   Single-Ended   Single-Ended   Front panel BNC   DC or AC   DC or A			
Type:		2 Single-Linded outputs of 1 Differential output	2 Single-Ended odtputs of 1 Differential odtput
Connectors:   Front panel BNC   Front panel BNC   Front panel BNC   SOQ, 75Q or 1MΩ   SOQ, 75Q or 1MQ   SOQ, 75Q or 1		Cingle Ended	Cingle Ended
Impedance			
DC or AC   Damage Level:   12Vp-p (-6V to +6V peaks)   12Vp-p (-6V to +6V peaks)   12Vp-p (-6V to +6V peaks)   DC to 45MHz			
Damage Level:   12Vp-p (-6V to -6V peaks)   DC to 15MHz   DC to 45MHz			
DC to 15MHz			
Single-Ended or Differential			
Single-Ended or Differential Connectors: Front panel BNC Front panel BNC Front panel BNC		DC to 15MHz	DC to 45MHz
Type:         Single-Ended or Differential           Connectors:         Front panel BNC         Front panel BNC           Impedance:         Front panel BNC         Front panel BNC           Source         500, 75Ω, or 600Ω         2.5Ω ± 5%, 50Ω or 75Ω           Load         N/A         N/A           Coupling:         DC or AC         DC or AC           Protection:         Short-circuit, 10 seconds         Short-circuit, 10 seconds           Gain:         x10 <sup>10</sup> , fixed         x10 <sup>10</sup> , fixed           Polarity:         Normal         Normal           Max. Amplitude:         Normal         Normal           Peak         20Vp-p into 50Ω <sup>20</sup> 34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω <sup>20</sup> 34Vp-p into 50Ω           Max. Output Current:         20mA         1A         1A           Continuous         200mA         750mA         50mA           SQUARE WAYE CHARACTERISTICS         22ns         <15ns			
Connectors:         Front panel BNC         Front panel BNC           Impedance:         500, 75Ω, or 600Ω         2.5Ω ± 5%, 50Ω or 75Ω           Source         50Ω, 75Ω, or 600Ω         2.5Ω ± 5%, 50Ω or 75Ω           Load         N/A         N/A           Coupling:         DC or AC         DC or AC           Protection:         Short-circuit, 10 seconds         Short-circuit, 10 seconds           Gain:         x10 <sup>10</sup> , fixed         x10 <sup>10</sup> , fixed           Polarity:         Normal         Normal           Max. Amplitude:         Normal         Normal           Peak         20Vp-p into 50Ω <sup>20</sup> 34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω <sup>20</sup> 34Vp-p into 50Ω           Max. Output Curent:         200mA         1A           Peak         200mA         1A           Continuous         200mA         1A           SQUARE WAVE CHARACTERISTICS         45mA         45mA           Transition Time (typ.):         <22ns	<del></del>		
Impedance:   Source   SoΩ, 75Ω, or 600Ω   2.5Ω ± 5%, 50Ω or 75Ω	Type:	Single-Ended	or Differential
Source         50Ω, 75Ω, or 600Ω         2.5Ω ± 5%, 50Ω or 75Ω           Load         N/A         N/A           Coupling:         DC or AC         DC or AC           Protection:         Short-circuit, 10 seconds         Short-circuit, 10 seconds           Gain:         x10 (1), fixed         X10 (1), fixed           Polarity:         Normal         Normal           Max. Amplitude:         Normal         Normal           Peak         20Vp-p into 50Ω (2)         34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω (2)         34Vp-p into 50Ω           Max. Output Current:         Peak         200mA         1A           Peak         200mA         1A         1A           Continuous         200mA         750mA         30MP-p into 50Ω           Max. Output Current:         Peak         200mA         1A         1A           Continuous         200mA         750mA         30MP-p into 50Ω         30MP-p into 50Ω           SQUARE WAVE CHARACTERISTICS         3         415ns         47%         45ns         47%         50mA         30MP-p into 50Ω         47%         50mA         30MP-p into 50Ω         47%         50mA         30MP-p into 50Ω         47%         50mA         40mP-p	Connectors:	Front panel BNC	Front panel BNC
N/A	Impedance:	·	·
N/A   N/A   N/A   Coupling:   DC or AC	Source	$50\Omega$ , $75\Omega$ , or $600\Omega$	$2.5\Omega \pm 5\%$ , $50\Omega$ or $75\Omega$
DC or AC   Protection: Short-circuit, 10 seconds   Sho	Load		,
Protection:         Short-circuit, 10 seconds         Short-circuit, 10 seconds           Gain:         x10 10, fixed         x10 10, fixed           Polarity:         Normal         Normal           Max. Amplitude:         Normal         Normal           Peak         20Vp-p into 50Ω ID         34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω ID         30Vp-p into 50Ω           Max. Output Current:         Peak         200mA         1A           Continuous         200mA         750mA           SQUARE WAYE CHARACTERISTICS           Transition Time (typ.):         <22ns	Coupling:		
Gain:         x10 (¹¹), fixed         x10 (¹¹), fixed           Polarity:         Normal         Normal           Max. Amplitude:         Normal         Normal           Peak         20Vp-p into 50Ω (²²)         34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω (²²)         30Vp-p into 50Ω           Max. Output Current:         Peak         200mA         1A           Continuous         200mA         750mA           SQUARE WAVE CHARACTERISTICS           Transition Time (typ.):         <22ns			
Polarity:   Normal   Normal   Normal     Max. Amplitude:     Peak   20Vp-p into 50Ω (2)   34Vp-p into 50Ω (2)     Continuous   20Vp-p into 50Ω (2)   30Vp-p into 50Ω (3)     Max. Output Current:     Peak   200mA   1A			
Max. Amplitude:         20Vp-p into 50Ω         34Vp-p into 50Ω           Peak         20Vp-p into 50Ω         34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω         30Vp-p into 50Ω           Max. Output Current:         200mA         1A           Peak         200mA         750mA           SQUARE WAVE CHARACTERISTICS           Transition Time (typ.):         <22ns			
Peak         20Vp-p into 50Ω (²)         34Vp-p into 50Ω           Continuous         20Vp-p into 50Ω (²)         30Vp-p into 50Ω           Max. Output Current:         Peak         200mA         1A           Continuous         200mA         750mA           SQUARE WAVE CHARACTERISTICS           Transition Time (typ.):         <22ns		INOTITIAI	Normal
Continuous         20Vp-p into 50Ω (²)         30Vp-p into 50Ω           Max. Output Current:         4           Peak         200mA         1A           Continuous         200mA         750mA           SQUARE WAVE CHARACTERISTICS           Transition Time (typ.):         <22ns		2014	0.07
Max. Output Current:         Peak         200mA         1A           Continuous         200mA         750mA           SQUARE WAVE CHARACTERISTICS           Transition Time (typ.):         <22ns         <15ns           Aberrations (typ.):         <7%         <7%           SINE WAVE CHARACTERISTICS           Bandwidth:         Small Signal         30MHz, at 2Vp-p         45MHz, at <10Vp-p           Large Signal         15MHz, at 20Vp-p         30MHz, at <34Vp-p           Accuracy (Sine wave at 1kHz):         ±(3% of full-scale amplitude range + 25mV)         ±(3% of full-scale amplitude range + 25mV)           Flatness (10Vp-p):         DC to 1MHz         5%         5%           IMHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS         N/A         N/A           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL			- In In 12 22
Peak         200mA         1A           Continuous         200mA         750mA           SQUARE WAVE CHARACTERISTICS           Transition Time (typ.):         <22ns         <15ns           Aberrations (typ.):         <7%         <7%           SINE WAVE CHARACTERISTICS           Bandwidth:         Small Signal         30MHz, at 2VP-p         45MHz, at <10VP-p           Large Signal         15MHz, at 20VP-p         30MHz, at <34VP-p           Accuracy (Sine wave at 1kHz):         ±(3% of full-scale amplitude range + 25mV)         ±(3% of full-scale amplitude range + 25mV)           Flatness (10VP-p):         5%         5%           DC to 1MHz         5%         5%           10%         10%           10%         10%           10%         10%           10%         10%           10%         10%           10%         10%           10%         10%           10%         0.1%, 10Hz to 100kHz           0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           0.1%, 10Hz to 100kHz         N/A <th></th> <th>20Vp-p into 50Ω <sup>(2)</sup></th> <th>30Vp-p into 50Ω</th>		20Vp-p into 50Ω <sup>(2)</sup>	30Vp-p into 50Ω
Continuous   200mA   750mA			
SQUARE WAVE CHARACTERISTICS   C22ns   C15ns			
Transition Time (typ.):         <22ns         <15ns           Aberrations (typ.):         <7%         <7%           SINE WAVE CHARACTERISTICS             Bandwidth:             Small Signal         30MHz, at 2Vp-p         45MHz, at <10Vp-p           Large Signal         15MHz, at 20Vp-p         30MHz, at <34Vp-p           Accuracy (Sine wave at 1kHz):         ±(3% of full-scale amplitude range + 25mV)         ±(3% of full-scale amplitude range + 25mV)           Flatness (10Vp-p):         5%         5%           DC to 1MHz         5%         5%           1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS         N/A         N/A           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A		200mA	750mA
Aberrations (typ.):	SQUARE WAVE CHARACTERISTICS		
SINE WAVE CHARACTERISTICS		<22ns	<15ns
Bandwidth:           Small Signal         30MHz, at 2Vp-p         45MHz, at <10Vp-p           Large Signal         15MHz, at 20Vp-p         30MHz, at <34Vp-p           Accuracy (Sine wave at 1kHz):         ±(3% of full-scale amplitude range + 25mV)         ±(3% of full-scale amplitude range + 25mV)           Flatness (10Vp-p):         5%         5%           DC to 1MHz         5%         5%           1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS         N/A         N/A           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A	Aberrations (typ.):	<7%	<7%
Small Signal         30MHz, at 2Vp-p         45MHz, at <10Vp-p           Large Signal         15MHz, at 20Vp-p         30MHz, at <34Vp-p           Accuracy (Sine wave at 1kHz):         ±(3% of full-scale amplitude range + 25mV)         ±(3% of full-scale amplitude range + 25mV)           Flatness (10Vp-p):           DC to 1MHz         5%         5%           1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A	SINE WAVE CHARACTERISTICS		
Large Signal         15MHz, at 20Vp-p         30MHz, at <34Vp-p	Bandwidth:		
Large Signal         15MHz, at 20Vp-p         30MHz, at <34Vp-p           Accuracy (Sine wave at 1kHz):         ±(3% of full-scale amplitude range + 25mV)         ±(3% of full-scale amplitude range + 25mV)           Flatness (10Vp-p):         ±(3% of full-scale amplitude range + 25mV)           DC to 1MHz         5%         5%           1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A	Small Signal	30MHz, at 2Vp-p	45MHz. at <10Vp-p
### Accuracy (Sine wave at 1kHz): #### ±(3% of full-scale amplitude range + 25mV) #### ±(3% of full-scale amplitude range + 25mV) ##### ±(3% of full-scale amplitude range + 25mV) ####################################	Large Signal		
Platness (10Vp-p):   DC to 1MHz	Accuracy (Sine wave at 1kHz):		
DC to 1MHz         5%         5%           1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A		±(070 of fail scale amplitude failige 1 20111V)	±(070 01 fall 30alc amplitude fallige 1 20111V)
1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A		E0/	E O/
THD:         0.1%, 10Hz to 100kHz         0.1%, 10Hz to 100kHz           OUTPUT MONITOR CHARACTERISTICS         N/A         N/A           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A			
OUTPUT MONITOR CHARACTERISTICS           Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A			
Connectors:         N/A         N/A           Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A		U.1%, TUHZ to TUUKHZ	U.1%, TUHZ to TUUKHZ
Source Impedance:         N/A         N/A           Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A			A174
Load Impedance:         N/A         N/A           Ratio:         N/A         N/A           GENERAL         N/A         N/A			
Ratio: N/A N/A GENERAL			
GENERAL			
		N/A	N/A
Voltage Range: 85VAC to 265VAC 85VAC to 265VAC			
		85VAC to 265VAC	85VAC to 265VAC
Frequency Range: 47Hz to 63Hz 47Hz to 63Hz		47Hz to 63Hz	47Hz to 63Hz
Power Consumption: 25W 25W		25W	25W
Signal Ground: Grounded to case ground Grounded to case ground	Signal Ground:	Grounded to case ground	Grounded to case ground
Dimensions:	Dimensions:	9	
<b>With Feet</b> 315 x 102 x 395 mm (WxHxD) 315 x 102 x 395 mm (WxHxD)		315 x 102 x 395 mm (WxHxD)	315 x 102 x 395 mm (WxHxD)
Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)			
Weight:		O TO A OO A GOO HILL (VVALIAD)	OTO A OO A OOO HIIII (WALLAD)
Without Package 3.5kg 3.5kg		2 5kg	2 5kg
y		4Kg	4Kg
Temperature:		000	000
Operating         0°C to 50°C         0°C to 50°C			
Storage         -40°C to 70°C         -40°C to 70°C			
Humidity: 80% RH, non condensing 80% RH, non condensing		, ,	
Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1			CE Marked, IEC61010-1
Calibration: 1 year 1 year	Calibration:	1 year	1 year
Warranty: 3 years standard 3 years standard	Warranty:		

 $<sup>^{(1)}</sup>$  Custom gain from x10 to x20 can be ordered however, bandwidth may change  $^{(2)}$  Into matching impedance







Platform:   Bench		9100   9200	9100A   9200A   9400
Total   Tota	CONFIGURATION	· · · · · · · · · · · · · · · · · · ·	· · ·
Single-Ended	Platform:	Bench	Bench
Single-Ended	Output Channels:	1   2	1   2   4
Front panel BNC   Front panel BNC   Front panel BNC   Front panel BNC   IMO   1 IMO	INPUT CHARACTERISTICS		
Print panel BNC   Print panel BNC   Print panel BNC   Print panel BNC   1M2   1M2	Type:	Single-Ended	Single-Ended
DC   DC   DC   DC   DC   DC   DC   DC	Connectors:		Front panel BNC
Damage Level:	Impedance:	1ΜΩ	1ΜΩ
DC to 500kHz	Coupling:	DC	DC
DC to 500kHz	Damage Level:	50Vp-p	8Vp-p (+4V peaks)
Single-Ended   Single-Ended or Unipolar			
Single-Ended   Single-Ended   Single-Ended   Single-Ended or Unipolar		BO to GOON IL	Tail Toward Bo to cook in E. Strippeda Po to Leona in
Pront panel BNC   Front panel BNC   Front panel BNC   Front panel BNC   Front panel BNC	GENERAL		
Pront panel BNC   BNC	Type:	Single-Ended	Single-Ended or Unipolar
Impedance:   0,10	Connectors:		
Q.10		Trone parior Bivo	Trone parior Bive
Doad   Peather, limited by the cutput current, capacitive up to 16F   Coupling:   Co   Coupling:   Co   Coupling:   Co   Coupling:   Short-circuit, 10 seconds   Short-c		0.10	0.10
DC			
Protection:   Short-circuit, 10 seconds   Short-circuit, 10 seconds   X5 0 0 0, fixed			
Sale			
Normal			
Max. Amplitude:   Peak   300Vp-p   Full Power: 400Vp-p; Unipolar: +200V		·	
Peak   300Vp-p	-	ivoillai	Normal, Hall Wave rectilled
Continuous   S000/p-p   Full Power, 400/p-p; Unipiolar, 1-200V		0001/	Full Day on 4000 /a as I laise also 0000 /
Max. Output Current:   Peak			
Peak		300Vp-p	Full Power: 400vp-p; Unipolar: +200v
SQUARE WAVE CHARACTERISTICS   1,5µs		450 A L 400 A	105 11100 1150 1
SQUARE WAVE CHARACTERISTICS			
Transition Time (typ.):		I5UMA   IUUMA	125MA   100MA   50MA
Aberrations (typ.):   <15%   <10%		4.5	4
SINE WAVE CHARACTERISTICS			
Bandwidth:   Small Signal		<15%	<10%
Small Signal			
Large Signal		41411 4 0017	4.51411 1.0017
±(2% of full-scale amplitude range + 25mV)   ±(2% of full-scale amplitude range + 50mV)			
Flatness (10Vp-p):   DC to 1MHz			
DC to 1MHz		±(2% of full-scale amplitude range + 25mV)	±(2% of full-scale amplitude range + 50mV)
1MHz to 15MHz         10%         10%           THD:         0.1%, 10Hz to 10kHz; 1.2%, 10kHz to 200kHz         0.1%, 10Hz to 50kHz; 0.8%, 50kHz to 200kHz           CUTPUT MONITOR CHARACTERISTICS         N/A         Rear panel BNCs           Connectors:         N/A         Rear panel BNCs           Source Impedance:         N/A         1MΩ           Load Impedance:         N/A         1MΩ           Ratio:         N/A         100:1, ±10%           GENERAL         VOItage Range:         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C         -40°C to 70°C           Storage         -40°C to 70°C         -40°C to 70°C         -			
THD:         0.1%, 10Hz to 10kHz; 1.2%, 10kHz to 200kHz         0.1%, 10Hz to 50kHz; 0.8%, 50kHz to 200kHz           OUTPUT MONITOR CHARACTERISTICS         N/A         Rear panel BNCs           Connectors:         N/A         3kΩ           Source Impedance:         N/A         1MΩ           Load Impedance:         N/A         100:1, ±10%           GENERAL         Voltage Range:         100W/115V/230V         100W/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         Operating         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing         CE Marked, IEC61010-1         Ce Marked			
OUTPUT MONITOR CHARACTERISTICS           Connectors:         N/A         Rear panel BNCs           Source Impedance:         N/A         3kΩ           Load Impedance:         N/A         1MΩ           Ratio:         N/A         100:1, ±10%           GENERAL         Voltage Range:         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Without Package         6kg         6.5kg           Shipping Weight         7.6kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         0°C to 50°C         40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1         1 year			
Connectors:         N/A         Rear panel BNCs           Source Impedance:         N/A         3kΩ           Load Impedance:         N/A         1MΩ           Ratio:         N/A         100:1, ±10%           GENERAL         Voltage Range:         100W/115W/230V         100W/115W/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Without Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         0°C to 50°C         40°C to 70°C           Storage         40°C to 70°C         40°C to 70°C         40°C to 70°C           Humidity:         80% RH, non condensing			0.1%, 10Hz to 50kHz; 0.8%, 50kHz to200kHz
Source Impedance:         N/A         3kΩ           Load Impedance:         N/A         1MΩ           Ratio:         N/A         100:1, ±10%           GENERAL         Voltage Range:         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 8x x 395 mm (WxHxD)         315 x 8x x 395 mm (WxHxD)           Weight:         6kg         6.5kg           Without Package         6kg         6.5kg           Shipping Weight         7.5kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing         80% RH, non condensing         CE Marked, IEC61010-1         CE Marked, IEC661010-1			
Load Impedance:         N/A         1MΩ           Ratio:         N/A         100:1, ±10%           GENERAL         Voltage Range:         100V/115V/230V         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         6kg         6.5kg           Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1         1 year           Calibration:         1 year			
Ratio:         N/A         100:1, ±10%           GENERAL         Voltage Range:         100V/115V/230V         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			
Voltage Range:         100V/115V/230V         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year	•		
Voltage Range:         100V/115V/230V         100V/115V/230V           Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year		N/A	100:1, ±10%
Frequency Range:         47Hz to 63Hz         47Hz to 63Hz           Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         80			
Power Consumption:         60W         120W           Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         The same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         6kg         6.5kg           Shipping Weight         7.5kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         -40°C to 70°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			
Signal Ground:         Floated to the same level as the source, 250VDC max.         Floated to the same level as the source, 250VDC max.           Dimensions:         With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         6kg         6.5kg           Without Package         6kg         7.5kg           Shipping Weight         7.5kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			
Dimensions:           With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         Without Package         6kg         6.5kg           Shipping Weight         7.5kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			1-211
With Feet         315 x 102 x 395 mm (WxHxD)         315 x 102 x 395 mm (WxHxD)           Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year	3	Floated to the same level as the source, 250VDC max.	Floated to the same level as the source, 250VDC max.
Without Feet         315 x 88 x 395 mm (WxHxD)         315 x 88 x 395 mm (WxHxD)           Weight:         6kg         6.5kg           Without Package         6kg         7.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year		0.5 100 00- 100 -	
Weight:         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			, ,
Without Package         6kg         6.5kg           Shipping Weight         7kg         7.5kg           Temperature:         Operating         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year		315 x 88 x 395 mm (WxHxD)	315 x 88 x 395 mm (WxHxD)
Shipping Weight         7kg         7.5kg           Temperature:         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year	•		
Temperature:         0°C to 50°C         0°C to 50°C           Operating         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			
Operating         0°C to 50°C         0°C to 50°C           Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year		7kg	7.5kg
Storage         -40°C to 70°C         -40°C to 70°C           Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			
Humidity:         80% RH, non condensing         80% RH, non condensing           Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year			
Safety:         CE Marked, IEC61010-1         CE Marked, IEC61010-1           Calibration:         1 year         1 year		-40°C to 70°C	
Calibration: 1 year 1 year			
.,,	Safety:	CE Marked, IEC61010-1	CE Marked, IEC61010-1
Warranty: 3 years standard 3 years standard	Calibration:	1 year	1 year
	Warranty:	3 years standard	3 years standard



## **Specification**





CONFIGURATION	3222   3322	3180
CONFIGURATION		
Platform:	PXIBus   PCIBus	PXIBus
Output Channels:	1	1
INPUT CHARACTERISTICS		
Туре:	Single-Ended	Single-Ended
Connectors:	Front panel BNC	Front panel BNC
Impedance:	50Ω or 1MΩ	50Ω
Coupling:	DC	DC
Damage Level:	$50\Omega$ , ±2V peaks; $1M\Omega$ , ±5V peaks	±25V peaks
Frequency Range:	DC to 20MHz	DC to 1MHz
OUTPUT CHARACTERISTICS		
GENERAL		
Type:	Single-Ended	Single-Ended
Connectors:	Front panel BNC	Front panel BNC
Impedance:	Tioni panel bino	Tiont paner bivo
Source	$50\Omega$ , $75\Omega$ , or $600\Omega$	0.1Ω
Load	·	
	N/A	N/A
Coupling:	DC	DC
Protection:	Short-circuit, 10 seconds	Short-circuit, 10 seconds
Gain:	x10 <sup>(1)</sup> , fixed	x20 <sup>(1)</sup> , fixed
Polarity:	Normal or inverted	Normal
Max. Amplitude:		
Peak	20Vp-p <sup>(2)</sup>	180Vp-p
Continuous	N/A	N/A
Max. Output Current:		
Peak	200mA	150mA
Continuous	200mA	150mA
SQUARE WAVE CHARACTERISTICS		
Transition Time (typ.):	<22µs	<1.5µs
Aberrations (typ.):	<7%	<15%
SINE WAVE CHARACTERISTICS	1770	11070
Bandwidth:		
Small Signal	50MHz, at 2Vp-p	1MHz, at 20Vp-p
Large Signal		
Accuracy (Sine wave at 1kHz):	20MHz, at 20Vp-p	300kHz, at 180Vp-p
	±(3% of full-scale amplitude range + 25mV)	±(2% of full-scale amplitude range + 25mV)
Flatness (10Vp-p): DC to 1MHz	N//	
	N/A	N/A
1MHz to 15MHz	N/A	N/A
THD:	0.1%, 10Hz to 100kHz	0.1%, 10Hz to 10kHz; 1.2%, 10kHz to 200kHz
OUTPUT MONITOR CHARACTERISTIC	S	
Connectors:	N/A	N/A
Source Impedance:	N/A	N/A
Load Impedance:	N/A	N/A
Ratio:	N/A	N/A
GENERAL		
Voltage Range:	+5V, 3.5A max.	+12V, 0.4A max.; -12V, 0.4A max.; +5V, 0.1A max.
Frequency Range:	N/A	N/A
Power Consumption:	7.2W max.	11W max.
Signal Ground:	Floated to the same level as the source, 250VDC max.	Grounded
Dimensions:	Single slot PXI   Single slot PCI	Single slot PXI
With Feet	N/A	N/A
Without Feet		
	N/A	N/A
Weight: Without Package	0.51	O Elec
	0.5kg	0.5kg
Shipping Weight	1kg	1kg
Temperature:		
Operating	0°C to 50°C	0°C to 50°C
Storage	-40°C to 70°C	-40°C to 70°C
Humidity:	80% RH, non condensing	80% RH, non condensing
		OF Marked JECC1010 1
Safety:	CE Marked, IEC61010-1	CE Marked, IEC61010-1
Safety: Calibration:	CE Marked, IEC61010-1  1 year	1 year

 $<sup>^{(1)}</sup>$  Custom gain from x10 to x20 can be ordered however, bandwidth may change  $^{(2)}$  Into matching impedance







	A10150	A10160
CONFIGURATION		
Platform:	"Snap-On" Module	"Snap-On" Module
Output Channels:	1	1
INPUT CHARACTERISTICS		
Type:	Single-Ended	Single-Ended
Connectors:	SMAs	SMAs
Impedance:	50Ω	50Ω
Coupling:	DC	DC
Damage Level:	6Vp-p (-3V to +3V peaks)	6Vp-p (-3V to +3V peaks)
Frequency Range:	DC to 150MHz	DC to 45MHz
OUTPUT CHARACTERISTICS	DO to 130IVII IZ	DO 10 45IVII IZ
GENERAL		
Type:	Single-Ended	Single-Ended
Connectors:	BNC	BNC
Impedance:	DIVO	DINO
Source	50Ω ±1%	2.5Ω ±5%
Load	N/A	N/A
Coupling:	DC	DC
Protection:	Short-circuit, 10 seconds	Short-circuit, 10 seconds
Gain:	x5 <sup>(1)</sup> , fixed	x10 <sup>(1)</sup> , fixed
Polarity:	Normal	Normal
Max. Amplitude:	Normal	Noma
Peak	16Vp-p (20Vp-p optional) (2)	24Va a into 500
Continuous	N/A	34Vp-p into 50Ω
Max. Output Current:	IV/A	30Vp-p into 50Ω
Peak	0F0m A	4 A
Continuous	250mA 250mA	1A 750mA
SQUARE WAVE CHARACTERISTICS	ZOUNA	/ 5UITIA
Transition Time (typ.):	01/ 0400 11 0001 101/ 0400 10 000	<10ns
Aberrations (typ.):	2V Step, <1.2ns; 10V Step, <2.6ns	
SINE WAVE CHARACTERISTICS	2V Step, <5%; 10V Step, <10%	10V, <5%; 34V, <10%
Bandwidth:		
Small Signal	200MHz, at 2Vp-p	45MUz. at 10Va.a
9		45MHz, at 10Vp-p
Large Signal	150MHz, at 10Vp-p	30MHz, at 34Vp-p
Large Signal Accuracy (Sine wave at 1kHz):		
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p):	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)	30MHz, at $34$ Vp-p $\pm$ (2% of full-scale amplitude range + 25mV)
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV) N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV) N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV) N/A N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV) N/A N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV) N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV) N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV) N/A N/A N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV) N/A N/A N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV) N/A N/A N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV) N/A N/A N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A +15VDC (±18VDC with option x20) N/A	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package Shipping Weight	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Weight: Without Feet Weight: Without Package Shipping Weight Temperature:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A  **15VDC (±18VDC with option x20) N/A TW max. Grounded 45 x 30 x 85 mm (W x H x D) N/A N/A N/A  115g 1.25kg	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package Shipping Weight Temperature: Operating	150MHz, at 10Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package Shipping Weight Temperature: Operating Storage	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package Shipping Weight Temperature: Operating Storage Humidity:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package Shipping Weight Temperature: Operating Storage Humidity: Safety:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/
Large Signal Accuracy (Sine wave at 1kHz): Flatness (10Vp-p): DC to 1MHz 1MHz to 15MHz THD: OUTPUT MONITOR CHARACTERISTICS Connectors: Source Impedance: Load Impedance: Ratio: GENERAL Voltage Range: Frequency Range: Power Consumption: Signal Ground: Dimensions: With Feet Without Feet Weight: Without Package Shipping Weight Temperature: Operating Storage Humidity:	150MHz, at 10Vp-p ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	30MHz, at 34Vp-p  ±(2% of full-scale amplitude range + 25mV)  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/







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Lambda Photometrics Limited Lambda House Batford Mill Harpenden Herts AL5 5BZ United Kingdom

E: info@lambdaphoto.co.uk W: www.lambdaphoto.co.uk T: +44 (0)1582 764334 F: +44 (0)1582 712084





