# **BENCHTOP MODELS**

The all-new Lucid Series benchtop platform offers up to 4 phase coherent channels in a standalone compact unit. The series feature 3, 6 and 12 GHz models in single, dual or four channel versions, all sharing the very same industry leading highlighted features. Featuring extremely fast switching speed, superior signal integrity and purity, removable memory card for maximum security, all the necessary modulated signals for analog communication systems, built in LAN and USB interfaces, the Lucid Series is designed to meet today's most demanding specifications, needed from the R&D benches to the production lines.





LUCID SERIES

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## Signal Integrity and Purity

One of the most important requirements in today's testing and measurement applications is a high signal quality. With a typical SSB phase noise of -145dBc at 100MHz, and -132dBc at 1GHz, at 10 kHz carrier offset. Lucid delivers one of the best quality signals available on the market today.

## Multiple Ways to Control the Unit and Write Your Code

The Lucid Series has a dedicated software to control the instrument functions, modes and features via a graphical user interface (GUI). It also includes a complete set of drivers, allowing you to write applications in various environments, including LabVIEW, Python, CVI, C++, VB and MATLAB. You may also link the supplied DLL to other Windows-based API's or use low-level SCPI commands to program the instrument, regardless of whether the application is written for Windows, Linux or Macintosh operating systems.

### **Modulation Schemes**

Signal bursts and chirps have become common need in most aerospace or defense application. With Tabor's Lucid Series, any signal modulation is possible, no matter if "narrow" or "standard" signals are required. On top of its outstanding pulse modulation performance, the Lucid Series is also equipped with many CW interferers, and modulated signals such as AM, FM, PM, Pulse, Pattern and Sweep.

### Multi-channel, phase coherent, benchtop generator

Many test systems and experimental setups require multiple RF channels, either separate or synchronized. The Lucid series benchtop platform offers up to 4, separate or phase coherent, RF outputs in a single 19" 2U box, saving up to 4 times the space compared to available benchtop solutions on the market. You can save both valuable bench/rack space and investment capital without compromising performance.

### Easy to use

The benchtop platform offers a 5" touch screen with user friendly GUI to quickly and easily generate the required signal, while displaying all the critical information. For remote control, the series is equipped with Ethernet and USB interface enabling remote programming from PC.



TABOR ELECTRONICS

# LUCID SERIES

# **Specifications**

### FREQUENCY

Range:	
LS3081/2/4B:	9 kHz to 3GHz
LS6081/2/4B:	9 kHz to 6GHz
LS1291/2/4B:	9 kHz to 12GHz
Resolution:	0.001 Hz
Phase offset:	0.01 deg
Switching speed:	
Standard:	500 µs
FS Option:	100 µs

# FREQUENCY REFERENCE

Temp. Stability:	±25 ppb max.
Aging:	± 3 ppm for 20 years
Warm up time:	30 min

### AMPLITUDE

Max output power:		
Settable:	+20 dBm	
Calibrated:	+15 dBm <sup>(1</sup>	)
Min output power:		
Settable:	-100 dBm	
Calibrated:	-80 dBm	
Resolution:	0.01 dB	
Power Mute:	-95 dBm	
Output Return Loss:	-10 dBm	
Accuracy (dB):	-50dBm to +15dBm	-90dBm to -50dBm
Up to 100MHz:	±0.3 (typ.)	±0.5 (typ.)
100MHz to 3GHz:	±0.4 (typ.)	±0.6 (typ.)
3GHz to 9GHz:	±0.7 (typ.)	±0.9 (typ.)
Above 9GHz:	±1 (typ.)	±1.5 (typ.)

### PHASE NOISE (dBc/Hz)

Measured @ 10kHz offset	
1 GHz:	-138 (typ.)
2 GHz:	-133 (typ.)
3 GHz:	-130 (typ.)
6 GHz:	-124 (typ.)
12 GHz:	-118 (typ.)

HARMONICS (dBc)		
Up to 100 MHz:	-30 dBc	
100 MHz to 12 GHz:	-50 dBc <sup>(2)</sup>	
SUB-HARMONIC	CS (dBc)	
6 to 12 GHz:	-55 dBm	
NON-HARMONI	CS (dBc)	
Up to 12 GHz:	-90dBc (typ.) <sup>(3,4)</sup> -60dBc max. <sup>(5)</sup>	
MODULATION		
FREQUENCY MODUL	ATION	
Maximum Deviation:	10 MHz	
Resolution:	0.1% or 1 Hz (the greater)	
Modulation Rate:	1 MHz	
Resolution:	1 Hz	
AMPLITUDE MODULA	ATION (6)	
AM Depth:		
Туре:	Linear	
Maximum settable:	90%	
Resolution:	0.1% of depth	
Modulation rate:	DC to 100 kHz	
PHASE MODULATION		
Peak Deviation:	360 deg	
Modulation Rate:	DC to 100 kHz	
PULSE MODULATION (PLS OPTION)		
On/off ratio:	60 dB	
Rise/fall time (10%- 90%):	15ns (typ.)	
Resolution:	6.4ns	
Minimum Width:	32ns	
Repetition frequency:	DC to 10 MHz	

Resolution:	6.4ns	
Minimum Width:	32ns	
Repetition frequency:	DC to 10 MHz	
PATTERN MODULATION (PAT OPTION)		
Number of steps:	1 to 2048	
Step Repetition:	1 to 65535	
On/off time:	32 ns to 20 days	
SWEEP		
Range:	Same as freq. range	
Modes:	Frequency step, Amplitude step, List	
Dwell time:	10 µs to 1000 s	

Resolution:	1 µs
Number of points:	
List:	2 to 4,096
Step:	2 to 65,535
Step change:	Linear
Trigger:	Free run, External, Bus, Timer

INPUTS		
MODULATION INPUT		
Connector Type:	BNC	
Input Impedance:	50Ω	
Max. input voltage:	±1V	
Input damage level:	±3.5V	
PULSE / TRIGGER INPUT		
Connector type:	BNC (per channel)	
Input Impedance:	50Ω	
Input voltage:	TTL, CMOS compatible	
Threshold:	1.5V	
Damage level:	-0.42V or 5.42V	
EXTERNAL REFERENCE INPUT		
Connector type:	BNC (per channel)	
Input Impedance:	50Ω	
Waveform:	Sine or Square	
Frequency:	10/100MHz	
Power:	-3 dBm to +10 dBm	
Absolute Max. Level:	+15 dBm	
Locking Range:	±2 ppm	

OUTPUTS	
RF OUT	
Impedance:	50Ω
Connector type:	SMA
Number of outputs:	
LS3081/6081/1291B:	1
LS3082/6082/1292B:	2
LS3084/6084/1294B:	4
REFERENCE OUT	
Impedance:	50Ω
Connectors type:	2 x BNC
Frequency:	10 MHz or 100 MHz
Shape:	Sine
Power:	3 to 7 dBm

<sup>(1)</sup> Above 25kHz; <sup>(2)</sup> 750MHz to 900MHz -35dBc (typ.); <sup>(3)</sup> -60dBm max. @ 1GHz, 1.5GHz, 2.5GHz and 3GHz; <sup>(4)</sup> -75dBm max. @ -15dBm to +15dBm and f>6GHz; <sup>(5)</sup> Boundary spurs which may apear @ -100MHz to +100MHz offset from CW. <sup>(6)</sup> Specified for >100MHz.



# LUCID SERIES

# Specifications

GENERAL	
Voltage Range:	90VAC to 264VAC
Frequency Range:	47Hz to 63Hz
Power Consumption:	100W
Display Type:	5", TFT capacitive touch screen
Interface:	
Host:	2 x front panel USB type A 1 x rear panel USB type A
Device: USB: LAN:	1 x rear panel USB type B 1 x rear panel 1000/100/10 BASE-T
Storage:	Removable SD card
Dimensions (W x H x D):	
Without feet	315 X 88 x 425 mm
With feet	315 X 102 x 425 mm
Weight:	
Without Package:	6.0 kg
Shipping Weight:	6.5 kg
Temperature:	
Operating:	0°C to +40°C
Storage:	-40°C to +70°C
Warm up time:	15 minutes
Humidity:	85% RH, non-condensing
Safety:	CE Marked, EC61010-1:2010
EMC:	IEC 61326-1:2013
Calibration:	2 years
Warranty*:	3 year standard * 1 year standard in India

ORDERING INFORMATION		
MODEL	DESCRIPTION	
LS3081B	3GHz Single Channel RF Analog Signal Generator	
LS3082B	3GHz Dual Channel RF Analog Signal Generator	
LS3084B	3GHz Four Channel RF Analog Signal Generator	
LS6081B:	6GHz Single Channel RF Analog Signal Generator	
LS6082B	6GHz Dual Channel RF Analog Signal Generator	
LS6084B	6GHz Four Channel RF Analog Signal Generator	
LS1291B	12GHz Single Channel RF Analog Signal Generator	
LS1292B	12GHz Dual Channel RF Analog Signal Generator	
LS1294B	12GHz Four Channel RF Analog Signal Generator	
OPTIONS		
PLS	Pulse Modulation	
PAT	Pattern Modulation	
ELP	Extended Low Power (-150dBc)	
EPR	Extended Power Range (-130dBc to +27dB)	
FS	Fast Switching	
EMU	Emulator pack for Keysight, R&S, Anapico & Holzworth	
W-Rack	Rack mount kit	



#### 绿测科技有限公司

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