LUCID SERIES
THINK RF THINK LUCID

# Specifications

| FREQUENCY | |
|---|---|
| **Range:** | |
| LS3081/2/4/16R: | 9 kHz to 3GHz |
| LS6081/2/4/16R: | 9 kHz to 6GHz |
| LS1291/2/4/16R: | 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 [1] | |
| **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 [2] |

| SUB-HARMONICS (dBc) | |
|---|---|
| **6 to 12 GHz:** | -55 dBm |

| NON-HARMONICS (dBc) | |
|---|---|
| **Up to 12 GHz:** | -90dBc (typ.) [3,4]<br>-60dBc max.[5] |

| MODULATION | |
|---|---|
| **FREQUENCY MODULATION** | |
| **Maximum Deviation:** | 10 MHz |
| Resolution: | 0.1% or 1 Hz (the greater) |
| **Modulation Rate:** | 1 MHz |
| Resolution: | 1 Hz |
| **AMPLITUDE MODULATION** [6] | |
| **AM Depth:** | |
| Type: | 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 |
| **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:** | |
| LS3081/6081/1291R: | 1 |
| LS3082/6082/1292R: | 2 |
| LS3084/6084/1294R: | 4 |
| LS30816/60816/12916R: | 16 |
| **REFERENCE OUT** | |
| **Impedance:** | 50Ω |
| **Connectors type:** | 2 x BNC |
| **Frequency:** | 10 MHz or 100 MHz |
| **Shape:** | Sine |
| **Power:** | 3 to 7 dBm |

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

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# Specifications

| GENERAL | |
|---|---|
| **Voltage Range:** | 90VAC to 264VAC |
| **Frequency Range:** | 47Hz to 63Hz |
| **Power Consumption:** | |
| 1U box: | 100W |
| 3U box: | 400W |
| **Interface:** | |
| Host: | 2 x front panel USB type A<br>1 x rear panel USB type A |
| Device:<br>USB:<br>LAN: | <br>1 x rear panel USB type B<br>1 x rear panel 1000/100/10 BASE-T |
| **Storage:** | Removable SD card |
| **Dimensions (W x H x D):** | |
| 1U box: | 450 X 43 x 500 mm |
| 3U box: | 450 X 129 x 500 mm |
| **Weight:** | |
| Without Package: | |
| 1U box: | 6.0 kg |
| 3U box: | 12 kg |
| Shipping Weight: | |
| 1U box: | 7.0 kg |
| 3U box: | 13 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<br>* 1 year standard in India |

| ORDERING INFORMATION | |
|---|---|
| **MODEL** | **DESCRIPTION** |
| **LS3081R:** | 3GHz 1CH Rack-Mounted Analog Signal Generator |
| **LS3082R:** | 3GHz 2CH Rack-Mounted Analog Signal Generator |
| **LS3084R:** | 3GHz 4CH Rack-Mounted Analog Signal Generator |
| **LS30816R:** | 3GHz 16CH Rack-Mounted Analog Signal Generator |
| **LS6081R:** | 6GHz 1CH Rack-Mounted Analog Signal Generator |
| **LS6082R:** | 6GHz 2CH Rack-Mounted Analog Signal Generator |
| **LS6084R:** | 6GHz 4CH Rack-Mounted Analog Signal Generator |
| **LS60816R:** | 6GHz 16CH Rack-Mounted Analog Signal Generator |
| **LS1291R:** | 12GHz 1CH Rack-Mounted Analog Signal Generator |
| **LS1292R:** | 12GHz 2CH Rack-Mounted Analog Signal Generator |
| **LS1294R:** | 12GHz 4CH Rack-Mounted Analog Signal Generator |
| **LS12916R:** | 16GHz 4CH Rack-Mounted 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 |