

# High Performance L-Band Low Noise Amplifiers

## General Information

Intended for either indoor or outdoor environments, the CPI Locus Microwave L31 Series L-Band Low Noise Amplifier (LNA) provides a combination of superior performance, reliability and cost effectiveness.

## Features

- Outdoor packaging
- Integral Fault Alarm



## L-Band LNA L31 Series

11557 DS Rev B

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# L31 Series Low Noise Amplifiers

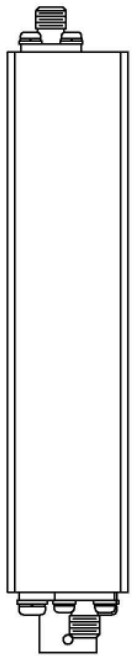


|                                  | Range              |                    |                    | Units               | Notes                          |
|----------------------------------|--------------------|--------------------|--------------------|---------------------|--------------------------------|
| <b>Electrical Specifications</b> |                    |                    |                    |                     |                                |
| Frequency                        | 1.510-1.577        | 1.525-1.561        | 1.500-1.700        | GHz                 |                                |
| Noise Temperature                | 30 or 35 max.      | 30 or 35 max.      | 35 or 40 max.      | K                   | @+23°C                         |
| Gain                             | 50 or 60 min.      | 50 or 60 min.      | 50 or 60 min.      | dB                  |                                |
| Gain Flatness                    | +/-0.5 max.        | +/-0.5 max.        | +/-1.0 max.        | dB                  | per full band                  |
| Gain Slope                       | +/-0.25 max.       | +/-0.25 max.       | +/-0.25 max.       | dB                  | per 10 MHz                     |
| P <sub>1dB</sub>                 | +10, 12 or 18 min. | +10, 12 or 18 min. | +10, 12 or 18 min. | dBm                 |                                |
| VSWR                             |                    |                    |                    |                     |                                |
| Input                            | 1.3 typ., 1.5 max. | 1.3 typ., 1.5 max. | 1.5 typ., 2.0 max. | :1                  |                                |
| Output                           | 1.3 typ., 1.5 max. | 1.3 typ., 1.5 max. | 1.5 typ., 2.0 max. | :1                  |                                |
| Input Overdrive                  | 0 max.             | 0 max.             | 0 max.             | dBm                 | non-damaging                   |
| AM/PM Conversion                 | 0.1 max.           | 0.1 max.           | 0.1 max.           | °/dB                | @-5 dBm output                 |
| Group Delay                      |                    |                    |                    |                     |                                |
| Linear                           | 0.01 max.          | 0.01 max.          | 0.01 max.          | ns/MHz              | per 40 MHz                     |
| Parabolic                        | 0.001 max.         | 0.001 max.         | 0.001 max.         | ns/MHz <sup>2</sup> | per 40 MHz                     |
| Ripple                           | 0.1 max.           | 0.1 max.           | 0.5 max.           | ns p-p              | per full band                  |
| Power Requirement                |                    |                    |                    |                     | 110/220 VAC available          |
| Input Voltage                    | +12 to +24         | +12 to +24         | +12 to +24         | VDC                 |                                |
| Current                          | 220 nom.           | 220 nom.           | 220 nom.           | mA                  | current sensing                |
| Fault Alarm                      | contact closure    | contact closure    | contact closure    | Form 'A'            |                                |
| <b>Mechanical Specifications</b> |                    |                    |                    |                     |                                |
| Outline                          | LMI Dwg #11490     |                    |                    | inches              |                                |
| Weight                           | 0.65               |                    |                    | lbs.                |                                |
| Finish                           | paint              |                    |                    | white               | other options available        |
| Connectors                       |                    |                    |                    |                     |                                |
| RF Input                         | N or SMA           |                    |                    | Female              |                                |
| RF Output                        | N or SMA           |                    |                    | Female              |                                |
| Power/Alarm                      | 4 pin              |                    |                    | MS-type             | mate included                  |
| <b>Environmental</b>             |                    |                    |                    |                     |                                |
| Operating Temperature            | -40 to +60         |                    |                    | °C                  | consult factory for VAC option |
| Humidity                         | 100                |                    |                    | %                   | with condensation              |

Seal all connectors using appropriate weatherproofing materials. Failure to seal connectors could result in down time and repair expenses that are not covered under warranty.

Specifications are subject to change at the discretion of CPI Locus Microwave, Inc.

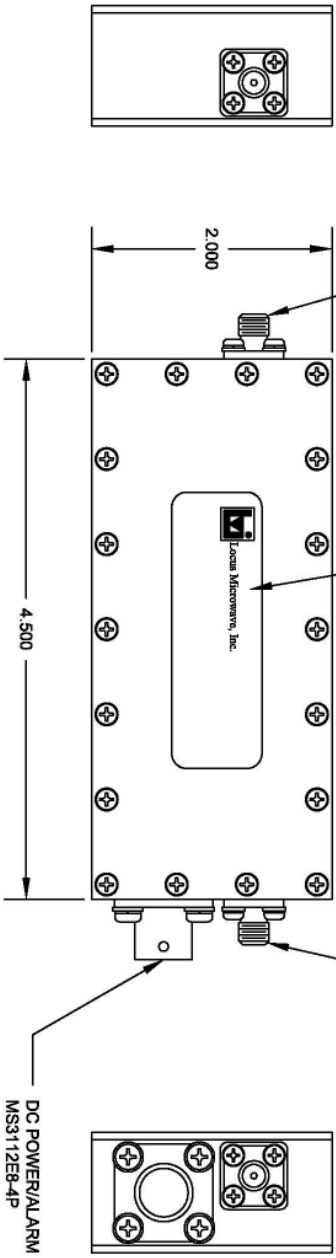
| REVISION HISTORY |     |           |                 |        |         |          |
|------------------|-----|-----------|-----------------|--------|---------|----------|
| ZONE             | REV | CHANGE NO | DESCRIPTION     | DWN BY | APPR BY | DATE     |
| -                | -   | -         | INITIAL RELEASE | SES    | SES     | 11/02/25 |



RF INPUT  
SMA FEMALE SHOWN  
N FEMALE AVAILABLE

PRODUCT LABEL  
LOCATION

RF OUTPUT  
SMA FEMALE SHOWN  
N FEMALE AVAILABLE



2-56 UNC-2B x .188" DEEP  
4 PLACES  
THIS SIDE ONLY

|  |             |                      |             |
|--|-------------|----------------------|-------------|
| UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES |             | LOCUS MICROWAVE INC. |             |
| FUNCTIONS  | DECIMALS    | OUTLINE, L-BAND LNA  |             |
| TOLERANCE  | FRACTIONS   | SIZE                 | CORE DRAWN  |
| ±.005  | XX & .01    | B                    | 34TH3       |
| ±.01   | .005 & .008 | DWG NO.              | 11490       |
| ±.02   |             | SCALE                | 1:1         |
| THIRD ANGLE PROJECTION                               |             | PROU:                |             |
|  |             |                      | PAGE 1 OF 1 |

# Outline Drawing

4 3 2 1

A B C D

# L31 Series Low Noise Amplifiers



## Model Number Configuration

**1 2 3 4 5 6 7**

**L 3 1 x x x x - x x x - x x**

| <b>1</b> Frequency     | <b>2</b> Gain | <b>3</b> P <sub>1dB</sub> | <b>4</b> Power     | <b>5</b> Noise Temp |
|------------------------|---------------|---------------------------|--------------------|---------------------|
| 0 = 1.510-1.577 GHz    | 5 = 50 dB     | 1 = 10 dBm                | D = 12-24 VDC *2   | 030 K               |
| 1 = 1.525-1.561 GHz    | 6 = 60 dB     | 2 = 12 dBm                | A = 110/220 VAC *4 | 035 K               |
| 2 = 1.500-1.700 GHz *1 |               | 4 = 18 dBm                |                    | 040 K               |

| <b>6</b> Input Type | <b>7</b> Output Type | <b>A</b> Accessories      | <b>B</b> Finish  | Federal Standard |
|---------------------|----------------------|---------------------------|------------------|------------------|
| S = SMA (F)         | S = SMA (F) *2       | 0 = None                  | 0 = White        | 37925            |
| N = N (F)           | N = N (F) *3         | 1 = 4 Pin Mate DC Only    | 1 = Dark Green   | 34094            |
|                     |                      | 2 = 4 Pin Pigtail DC Only | 2 = Desert Tan   | 33446            |
|                     |                      | 3 = 6 Pin Mate AC Only    | 3 = Beige        | 37722            |
|                     |                      | 4 = 6 Pin Pigtail AC Only | 4 = Sand         | 33303            |
|                     |                      |                           | 5 = Forest Green | 34083            |
|                     |                      |                           | 6 = Metalast     |                  |

\*1 NOTE: 35K Noise Temp Minimum

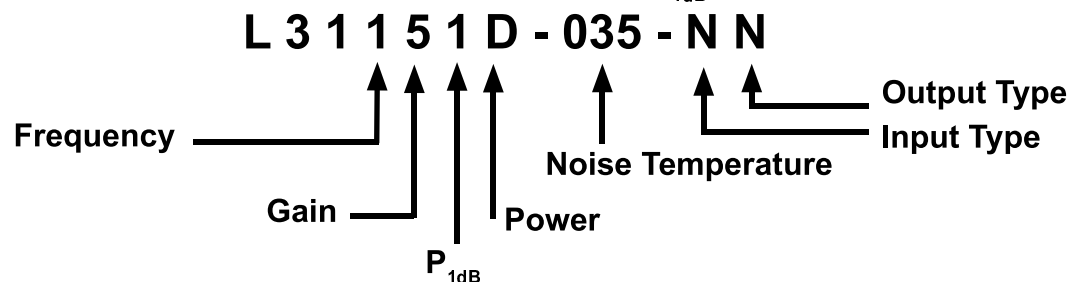
\*2 NOTE: LNAs ordered as components of a Redundancy system require DC power and an SMA (F) output connector.

\*3 NOTE: SMA (M) to N (F) adapter supplied.

\*4 NOTE: AC version uses 6 pin MS connector for power and alarms.

*Selections shaded in gray will require Engineering review.*

**Example: 1.525-1.561 GHz, 50 dB Gain, +10 dBm P<sub>1dB</sub>, DC Power, 35K Noise**



Please confirm configurations against product specifications, and with factory, prior to order.