

- Distributed Antenna Systems (DAS) have become a critical part of both carrier cellular networks and enterprise infrastructure. Networks include cellular, enterprise small cell, off-air (repeater), base transceiver station (BTS), and public safety (Bi-Directional Amplifier (BDA)) applications. These networks often utilize cables of long and irregular lengths that are largely terminated in the field, necessitating specialized tooling. The cables often run inside building plenums, requiring special flame-retardant 'plenum-rated' cable sheaths that resist burning and do not emit toxic fumes. Moreover, these cables are of the air-core type, using a multi-ribbed polymer spacer between the outer and inner conductors to minimize dielectric loss over extensive distances.
- Gamma's N compression connectors comprise two halves. After the cable has been properly stripped, the connector's lower half can be slipped over the stripped cable end, snapping into the first corrugation of the metal shield. The connector's upper half can then be placed over the exposed and chamfered center conductor, allowing the threads of the two halves to engage and be torqued together (see figures). These connectors are compatible with multiple brands of 1/2 inch corrugated cable (see chart below).



## Connector General Information

| General             | Specification  |
|---------------------|----------------|
| Interface / General | N Male         |
| Weight              | 2.5 oz         |
| Weatherproofing     | PN: SDL-CX-125 |

## Connector Materials and Finishing

| Connector Part   | Type N                          |
|------------------|---------------------------------|
| Center Conductor | Phosphor Bronze, Silver Plating |
| Insulator        | PTFE                            |
| Gasket           | Silicone                        |

## Connector Electrical Properties

| Electrical                      | Specification | Comment                  |
|---------------------------------|---------------|--------------------------|
| Impedance, Ohms                 | 50            |                          |
| Operating Frequency Range, MHz  | 0-6 GHz       |                          |
| PIM (2*43 dBm) 2X20 watts       | ≤ -155 dBc    | Typical -160 to -165 dBc |
| Center Contact Resistance       | ≤ 1.0 M ohm   |                          |
| Outer Contact Resistance        | ≤ 0.25 M ohm  |                          |
| Dielectric Withstanding Voltage | ≥ 5000 M ohm  |                          |
| Insertion Loss Typical          | ≥ .10 dBm     | Per Connector            |

## Frequency Range

| Frequency Band | VSWR  | RL     |
|----------------|-------|--------|
| 0 -1 GHz       | 1.030 | 36.000 |
| 1 - 2.7 GHz    | 1.040 | 34.000 |
| 2.7 - 3.7 GHz  | 1.080 | 28.000 |
| 3.7 - 5 GHz    | 1.100 | 26.000 |
| 5 - 6 GHz      | <1.25 | 19.000 |



# N Compression Connectors

## Mechanical Data

| Tools Required                       | Gamma PN   | Requirement |
|--------------------------------------|------------|-------------|
| Cable Prep                           | PLNST-7020 | Per Spec    |
| 19mm Wrench & 19mm Torque Wrench     | N/A        |             |
| Backshell Compression - Use Wrenches | N/A        | 20 N M      |
| N Mating Torque                      |            | 1.35 N M    |

## Cable Compatibility

| Cable Brand (Type, Shield Material) | Part Number   |
|-------------------------------------|---|
| RFS (Plenum, Copper)                | ICA12-50JPL<br>ICA12-50JPLW<br>ICA12-50JPLR<br>ICA12-50JPLB     |
| RFS (Plenum, Aluminum)              | ICA12-50JPLL<br>ICA12-50JPLLW<br>ICA12-50JPLLR<br>ICA12-50JPLLB |
| Commscope (Plenum, Copper)          | HL4RPV-50<br>HL4RPV-50B<br>HL4RPV-50G                           |
| Commscope (Plenum, Aluminum)        | AL4RPV-50<br>AL4RPV-50R   |
| Gamma (Plenum, Copper)              | PLN-CU-50-BLU<br>PLN-CU-50-WHT<br>PLN-CU-50-RED                 |
| Gamma (Plenum, Aluminum)            | PLN-AL-50-BLU<br>PLN-AL-50-WHT<br>PLN-AL-50-RED                 |
| Gamma (Annular, Copper)             | STF50-LSZH-1/2  |
| Commscope (Annular, Copper)         | LDF4-50A  |



## N Compression Connectors

### Ordering Information

| Connector Types         | Specification |
|-------------------------|---------------|
| Type N Male             | NM-50PLN      |
| Type N Female           | NF-50PLN      |
| Type N Right Angle Male | RANM-50PLN    |