



# N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

## RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

### Times Microwave Systems Connector Specification

#### Configuration

- N Male Connector
- 50 Ohms
- Right Angle Body Geometry
- Connector Interface Types: SPO-250, SPF-250, SPP-250-LLPL
- Low PIM Design

#### Features

- Max. Operating Frequency 6 GHz
- Good VSWR of 1.35:1
- PIM levels lower than -160 dBc
- Silver Plated Brass Contact
- 200  $\mu$ m contact plating

#### Applications

- General Purpose Test
- Custom Cable Assemblies
- Distributed Antenna Systems (DAS)
- Wireless Communications
- Low PIM Applications

#### Description

Times Microwave's TC-250-NM-RA-LP type N male right angle connector offered by Pasternack with solder/solder attachment for Times' SPO-250, SPF-250 and SPP-250-LLPL is part of our full line of RF components available for same-day shipping. Times Microwave's type N male connector operates up to a maximum frequency of 6 GHz and offers good VSWR of 1.35:1. The Times type N male connector also has low passive intermodulation of -160 dBc. Its right angle body geometry allows for easier connections in tight spaces.

Times Microwave's type N male right angle connector TC-250-NM-RA-LP datasheet specifications and drawing with dimensions are shown below in this PDF. Pasternack's broad catalog of RF, microwave and millimeter wave connectors allows designers to configure and customize their signal connections however they like. Whether the need is to provide an I/O for a board design, or simply create a custom cable assembly configuration, Pasternack has the right connector for the job. Pasternack can also expertly build your custom cable assemblies for you and ship same-day.

#### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		6	GHz
VSWR			1.35:1	
Insertion Loss			0.25	dB
Passive Intermodulation			-160	dBc
Operating Voltage (DC)			2,500	Vdc
Insulation Resistance	5,000			MOhms

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL TC-250-NM-RA-LP](#)



N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

RF Connectors  
Technical Data Sheet



TC-250-NM-RA-LP

**Performance by Frequency**

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 3	3 to 6				GHz
VSWR, Max	1.1:1	1.35:1				

Electrical Specification Notes:  
Insertion Loss is 0.1\*sqrt(FGHz)

**Mechanical Specifications**

**Size**

Length	1.01 in [25.65 mm]
Width/Dia.	0.94 in [23.88 mm]
Height	1.53 in [38.86 mm]
Mating Torque	15.05 in-lbs [1.70 Nm]

**Material Specifications**

Description	Material	Plating
Contact	Brass	Silver 200 µin
Insulation	PTFE	
Body	Brass	Tri-Metal 80 µin
Coupling Nut	Brass	Tri-Metal 80 µin
Gasket	Silicone	

**Environmental Specifications**

**Temperature**

Operating Range	-55 to +125 deg C
Shock	MIL-STD 202G, Method 213, Condition I
Vibration	MIL-STD 202G, Method 204, Condition B
Thermal Shock	MIL-STD 202G, Method 107, Condition B

**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

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### RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

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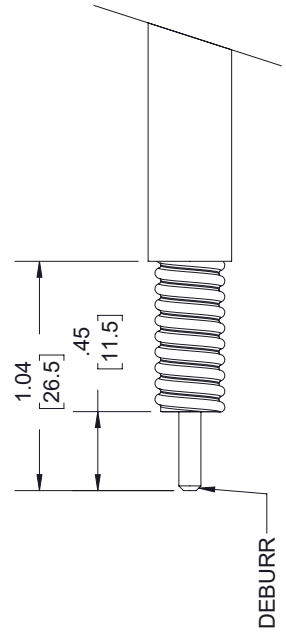
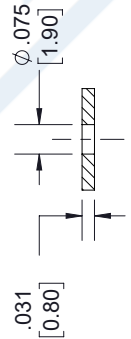
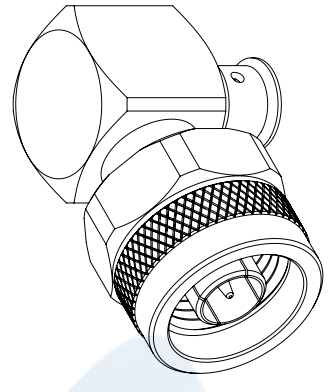
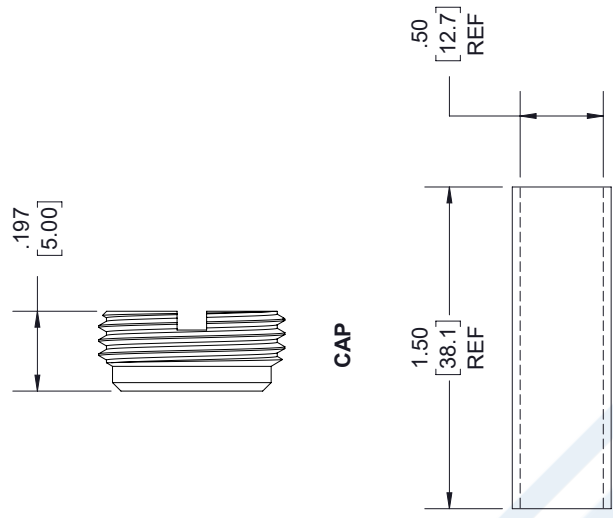
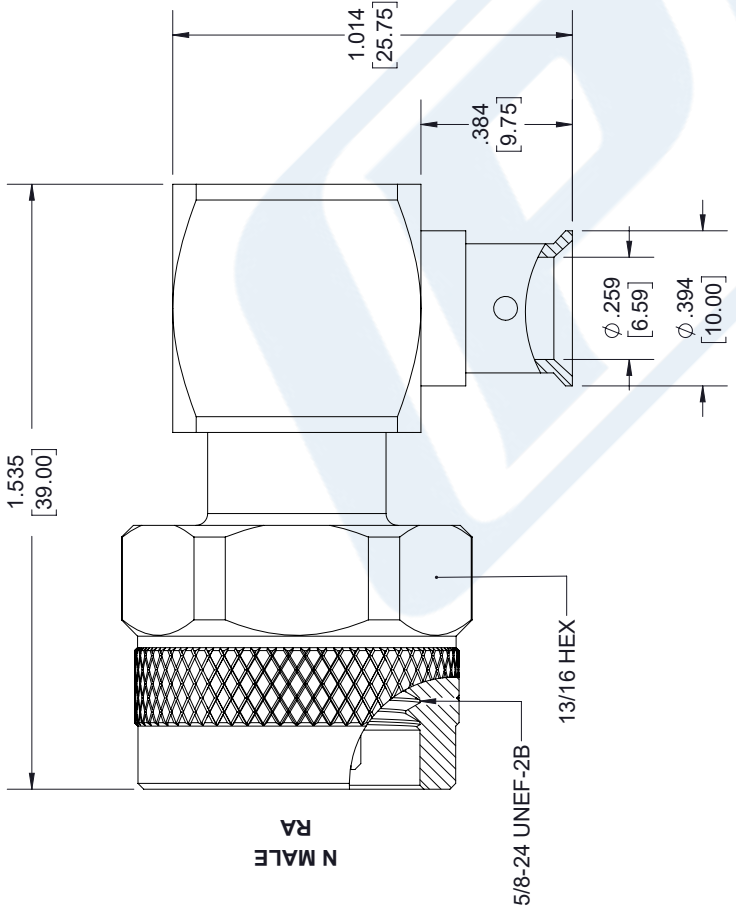
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**TIMES** MICROWAVE SYSTEMS **TC-250-NM-RA-LP CAD Drawing**  
 N Male Right Angle Low PIM Connector Solder Attachment  
 for SPO-250, SPF-250, SPP-250-LLPL

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	03/04/19	S.SELLIS



**STRIPPING DIMENSIONS**

- NOTES:**
- CABLE ATTACHMENT:
    - OUTER: SOLDER.
    - INNER: SOLDER.

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS

**TOLERANCES:**

.X = ±.2 [5.08] FRACTIONS ± 1/32  
 .XX = ±.02 [.51] ANGLES ± 1°  
 .XXX = ±.005 [.13] CABLE LENGTH (L) TOLERANCES:  
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 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
 300 [7620] < L = +5% / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

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 Website: www.pasternack.com  
 E-mail: sales@pasternack.com

THIRD-ANGLE PROJECTION

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SHEET 1 OF 1  
 SCALE N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	K.DANG	TC-250-NM-RA-LP

REV A

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# N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

## RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

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#### Configuration

- N Male Connector
- 50 Ohms
- Right Angle Body Geometry
- Connector Interface Types: SPO-250, SPF-250, SPP-250-LLPL
- Low PIM Design

#### Features

- Max. Operating Frequency 6 GHz
- Good VSWR of 1.35:1
- PIM levels lower than -160 dBc
- Silver Plated Brass Contact
- 200 μin contact plating

#### Applications

- General Purpose Test
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#### Description

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Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		6	GHz
VSWR			1.35:1	
Insertion Loss			0.25	dB
Passive Intermodulation			-160	dBc
Operating Voltage (DC)			2,500	Vdc
Insulation Resistance	5,000			MOhms

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# N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

## RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 3	3 to 6				GHz
VSWR, Max	1.1:1	1.35:1				

Electrical Specification Notes:  
Insertion Loss is  $0.1 \cdot \sqrt{FGHz}$

### Mechanical Specifications

#### Size

Length	1.01 in [25.65 mm]
Width/Dia.	0.94 in [23.88 mm]
Height	1.53 in [38.86 mm]
Mating Torque	15.05 in-lbs [1.70 Nm]

### Material Specifications

Description	Material	Plating
Contact	Brass	Silver 200 $\mu$ in
Insulation	PTFE	
Body	Brass	Tri-Metal 80 $\mu$ in
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### Environmental Specifications

#### Temperature

Operating Range	-55 to +125 deg C
Shock	MIL-STD 202G, Method 213, Condition I
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## N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

### RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

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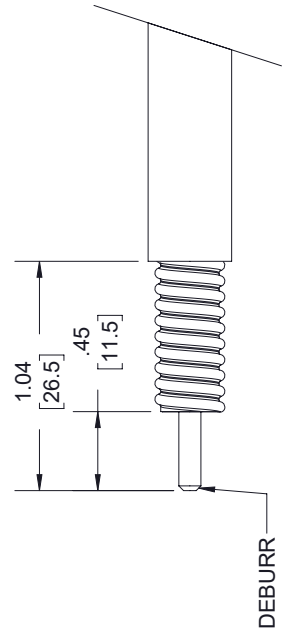
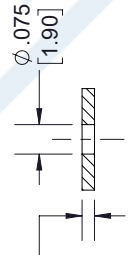
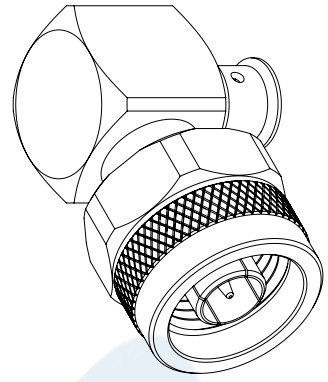
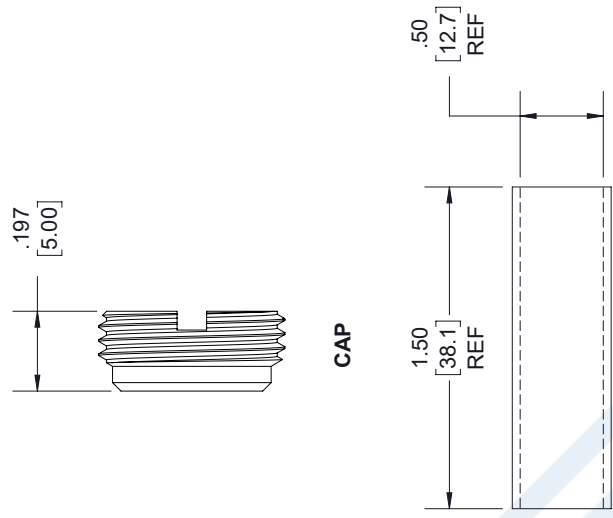
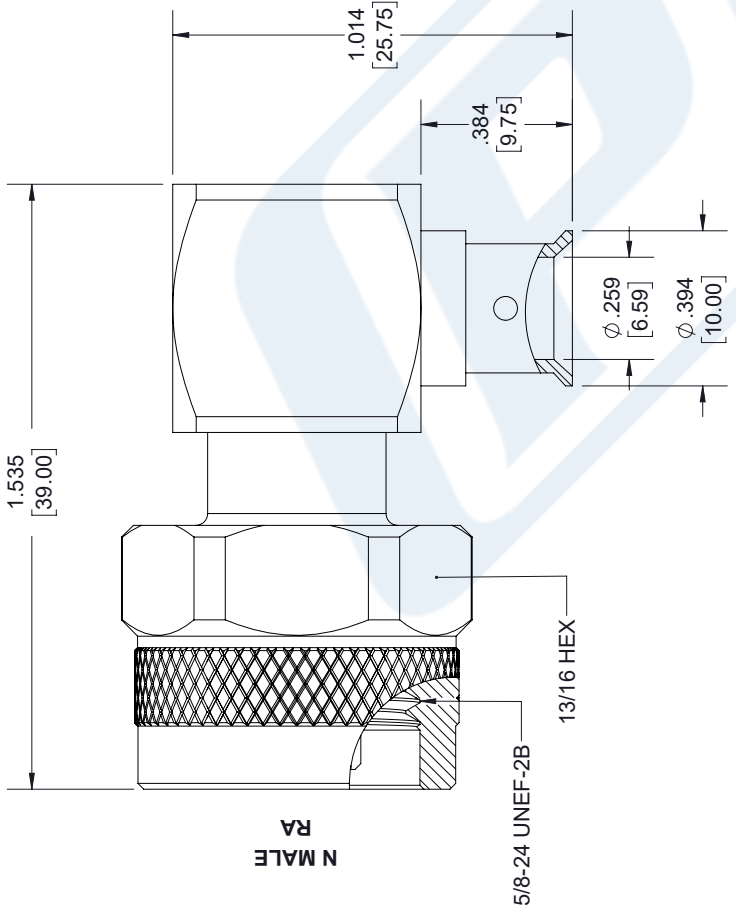
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THIRD-ANGLE PROJECTION

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SHEET 1 OF 1  
 SCALE N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	K. DANG	TC-250-NM-RA-LP
REV	A		

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## Low Loss SPP-250-LLPL Plenum Rated Corrugated Coax Cable with Blue FEP Jacket Superflexible

### RF Cables Technical Data Sheet


**SPP-250-LLPL**

### Times Microwave Systems Coax Cable Specification

#### Configuration

- Low Loss, Plenum Corrugated Cable

#### Features

- PIM < -160 dBc
- UL910 Plenum Rated Cable
- Lightweight and Extremely Flexible
- Low Loss
- Great Shielding >100 dB
- UV Resistant Jacket

#### Applications

- Distributed Antenna Systems (DAS)
- Plenum Installations
- Small Cells
- Multi-Carrier Communication Systems
- PIM Testing

#### Description

SPP-250-LLPL low loss plenum rated coax cable by Times Microwave is part of our full line of RF components available for same-day shipping. The SPP-250-LLPL coaxial cable features a low loss dielectric, solid copper center conductor and a helically corrugated, copper outer conductor. These features combine to make the Times Microwave SPP-250-LLPL an extremely flexible, low PIM coax cable that is well suited for Distributed Antenna Systems (DAS), plenum installations or small cells. The tough, FEP jacket provides moisture and UV protection.

Our datasheet specifications and drawing with dimensions for Times Microwave SPP-250-LLPL coax cable are shown below in this PDF. Whether the need is to provide a low PIM jumper connection, low PIM feeder cable or simply create a custom cable assembly configuration, Pasternack has the right SPP-250-LLPL cable assemblies for the job.

#### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		5.8	GHz
Impedance		50		Ohms
Velocity of Propagation		76		%
Shielding Effectiveness	100			dB
Passive Intermodulation			-160	dBc
Inner Conductor DC Resistance			3	Ohms/1000ft
Nominal Capacitance		27 [88.58]		pF/ft [pF/m]
Nominal Inductance		0.067 [0.22]		uH/ft [uH/m]

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Low Loss SPP-250-LLPL Plenum Rated Corrugated Coax Cable with Blue FEP Jacket Superflexible SPP-250-LLPL](#)



## Low Loss SPP-250-LLPL Plenum Rated Corrugated Coax Cable with Blue FEP Jacket Superflexible

### RF Cables Technical Data Sheet



**SPP-250-LLPL**

#### Performance by Frequency Band

Description	F1	F2	F3	F4	F5	Units
Frequency	0.45	1.9	2.3	4.9	5.8	GHz
Attenuation, Typ	3.8	8.1	9	13.5	14.8	dB/100ft
	12.47	26.57	29.53	44.29	48.56	dB/100m
Input Power (CW), Max	1,010	470	430	280	260	Watts

#### Mechanical Specifications

Diameter	0.28 in [7.11 mm]
Weight	0.072 lbs/ft [0.11 Kg/m]
Min. Bend Radius (Installation)	1.25 in [31.75 mm]
Bending Moment	0.8 lbs-ft [1.08 N-m]

#### Construction Specifications

Description	Material and Plating	Diameter
Inner Conductor	Copper, 1 Strands	0.068 in [1.73 mm]
Conductor Type	Solid	
Dielectric	PTFE	0.19 in [4.83 mm]
Outer Conductor	Copper Corrugated	0.25 in [6.35 mm]
Jacket	FEP, Blue	0.28 in [7.11 mm]

#### Environmental Specifications

<b>Temperature</b>	
Operating Range	-55 to +200 deg C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Low Loss SPP-250-LLPL Plenum Rated Corrugated Coax Cable with Blue FEP Jacket Superflexible SPP-250-LLPL](#)



## Low Loss SPP-250-LLPL Plenum Rated Corrugated Coax Cable with Blue FEP Jacket Superflexible

### RF Cables Technical Data Sheet



**SPP-250-LLPL**

**Compliance Certifications** (see [product page](#) for current document)

#### Plotted and Other Data

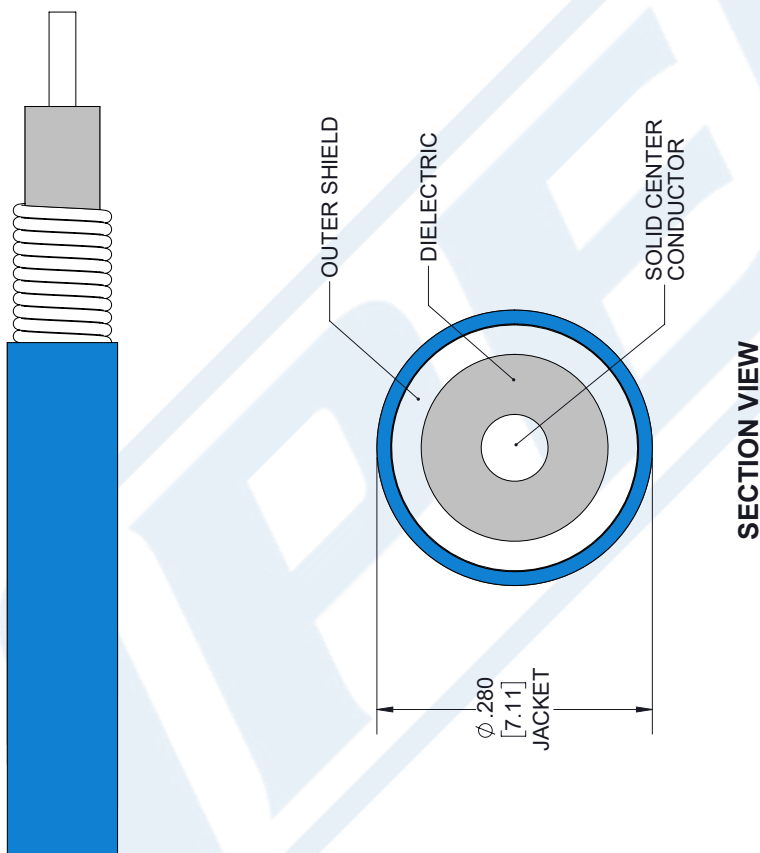
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STANDARD TOLERANCES	
.X	±0.2
.XX	±0.01
.XXX	±0.005

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

**PE PASTERNAK**  
 THE ENGINEER'S RF SOURCE  
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 P.O. Box 16759 | Irvine | CA | 92623  
**Phone:** (949) 261-1920 | **Fax:** (949) 261-7451  
**Website:** www.pasternack.com | **E-Mail:** sales@pasternack.com

DWG TITLE  
**SPP-250-LLPL**  
 CAGE CODE **53919**

NOTES:  
 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME  
 3. DIMENSIONS ARE IN INCHES [mm].

CAD FILE 022118      SCALE N/A      SIZE A      7361