

## TA4310

### 5000-6000 MHz 50 W POWER AMPLIFIER

#### DESCRIPTION

This class AB GaN module is designed for both military and commercial applications. It is capable of supporting any signal type and modulation format, including but not limited to 3-4G telecom, WLAN, OFDM, DVB, and CW/AM/FM. The latest device technologies and design methods are employed to offer high power density, efficiency, and linearity in a small, lightweight package.



#### FEATURES

Forward Power Measurement	Over-Temperature Protection
Temp. Monitor Output	Optional Heatsink
Manual or Automatic Tx/Rx Switching Available	Tx / Rx Status Monitor

Specifications subject to change without notice. Typical performance at VDC +25°C, and in a 50Ω system.

RF / ELECTRICAL				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	5000		6000	MHz
PSat Power Output		+47.0		dBm
Gain		28.0		dB
Gain Flatness		1.0		dB <sup>1</sup>
Input Return Loss	-15			dB
Operating Voltage	+12		+28	VDC
Current Draw		6.0	7.0	A
Switching Time		1.0	2.0	μS

1 – Gain flatness recorded represents a peak-peak measurement across the **entire operating band**. Gain flatness is typically much lower across significant portions of this band. Consult the gain response plots for details if available.

## MECHANICAL

PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.3 x 3.25 x 0.6	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	21 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	13	oz.
Weight with Heatsink	35	oz.

## ENVIRONMENTAL / PROTECTIONS

PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Humidity Range	0-95		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	+17		dBm
PA Baseplate Shutoff Temperature	+ 85		°C

## INPUT/OUTPUT PINS

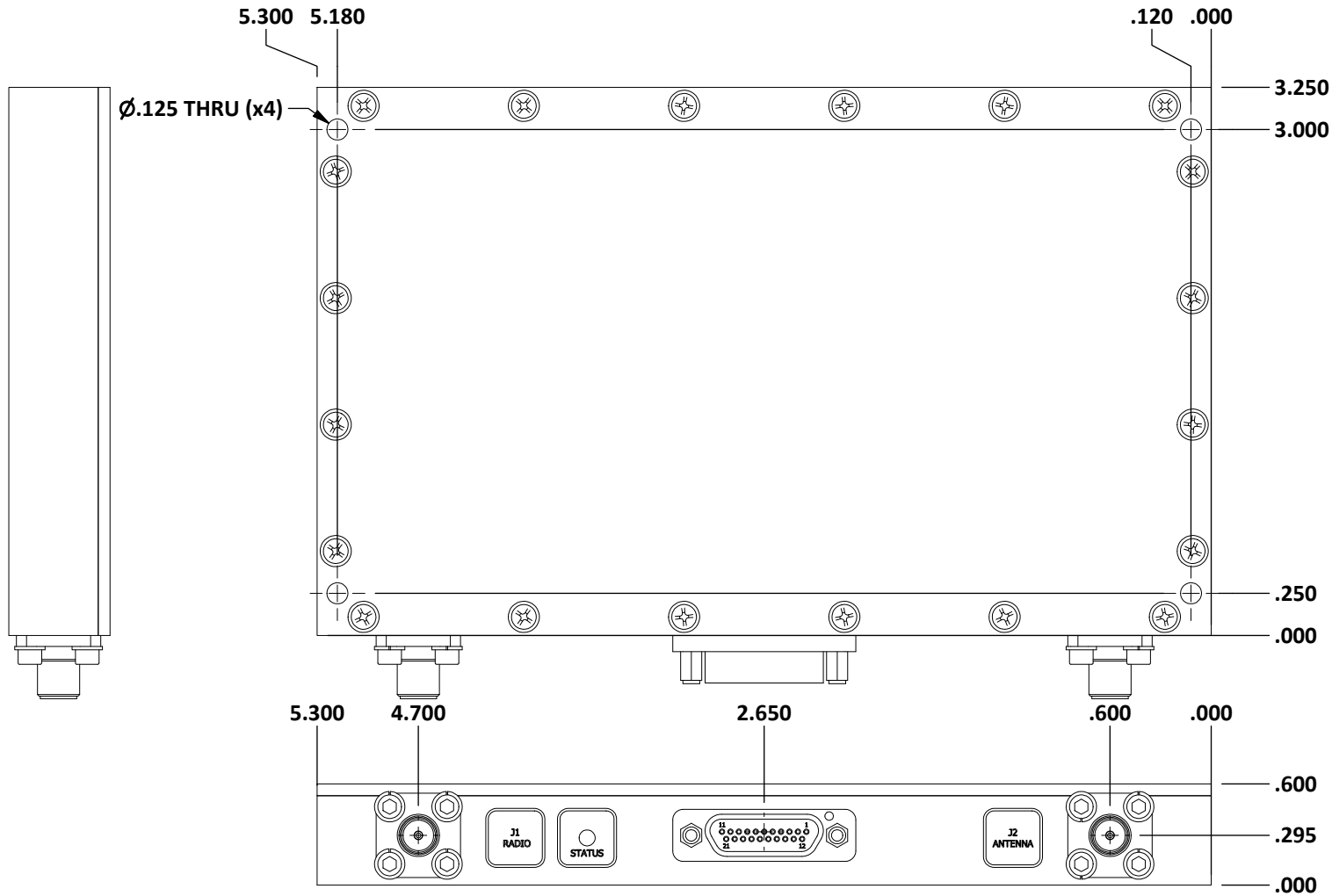
<b>AMPLIFIER CONNECTOR TYPE:</b>		21 PIN MICRO-D FEMALE
<b>TRIAD CABLE PART NUMBER:</b>		CBL58
PIN NUMBER	LABEL	DESCRIPTION
1-3,12-13	+VDC	Supply Voltage - Range Specified in Datasheet
4	FWD DET	Tx Amp RMS Power Detector
5	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) * 100
6	RAD DET	Radio Input RMS Power Detector
9-11,20-21	GND	+VDC Supply Return
7	Status	Amplifier Status - TTL High = Normal Operation, TTL Low = Error Condition
8	Amp Enable	TTL Hi or No Connection = Enable, TTL Lo = Disable
19	SGND	Signal Ground
14-18	Reserved	Reserved for future use

## Configuration Options

Model Number	Description
TA4310	No Heat Sink Included
TA4310 – HS	Standard Heat Sink
TA4310 – HSF	Heat Sink with Integrated Cooling Fan
TA4310 – HSX	Custom Heat Sink Configuration
TA4310 – DOX	Custom Amplifier Configuration (issued by Triad upon customer request)

MATERIAL: ALLOY 6061      FINISH: MIL-DTL-5541 TYPE 2 CLASS 3

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	01/31/18	SC
1	E18365	08/13/18	SC
2	E20567	02/18/20	AK



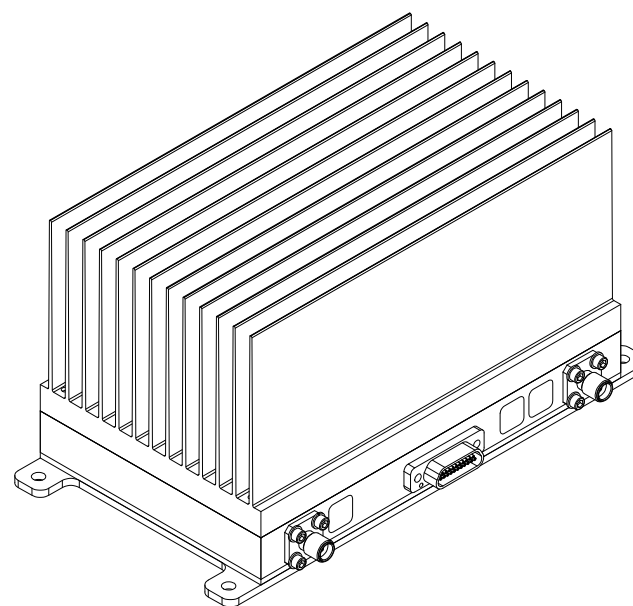
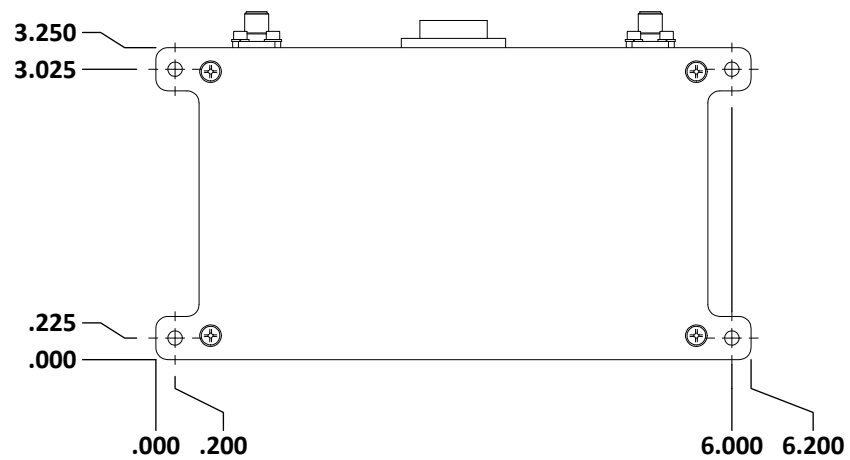
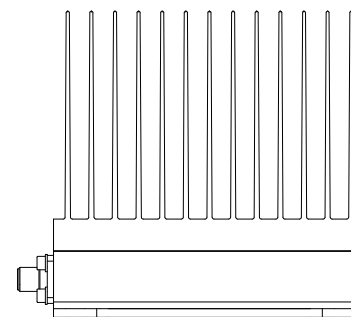
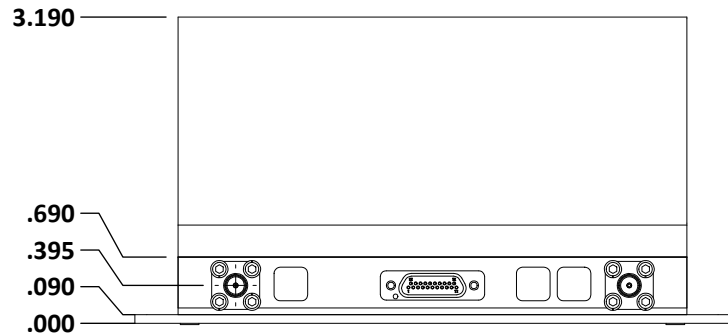
DRAWN	Anthony	2/18/2020
DESIGNED	DMC	5/11/2017
CHECKED		
ENG APPROVED		11/27/2019
MFG APPROVED		11/27/2019

**TRIAD** RF SYSTEMS  
 11 HARTS LANE SUITE 1  
 EAST BRUNSWICK, NJ 08816  
 855-558-1001

DIMENSIONS ARE IN INCHES  
 UNLESS SPECIFIED OTHERWISE  
 TOLERANCES  
 DECIMALS      FRACTIONS      ANGLES  
 .XX ±.01      ± 1/32      ± 2°  
 .XXX ±.005

SIZE	DWG NO.	REV
A	OL_170	
SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 5

# HEATSINK



DRAWN	Anthony	2/18/2020			
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 5

A

B

C

D

E

1

1

2

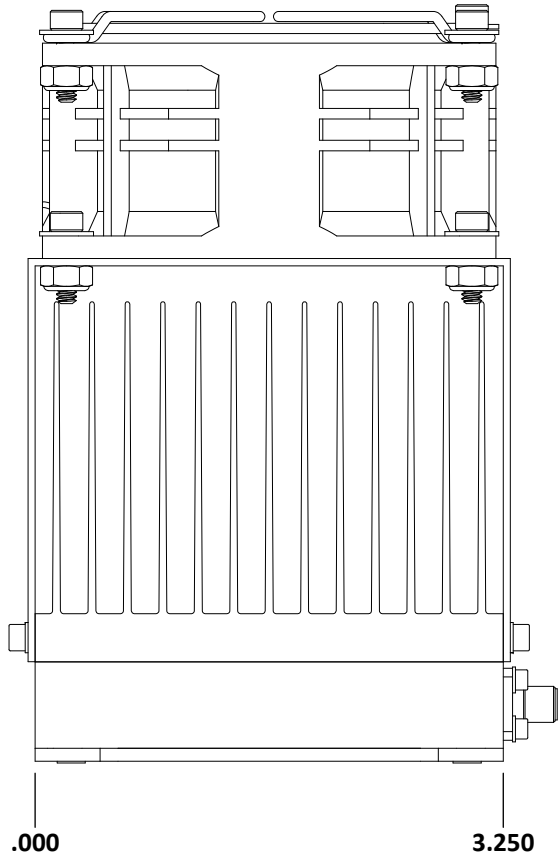
2

3

3

4

4



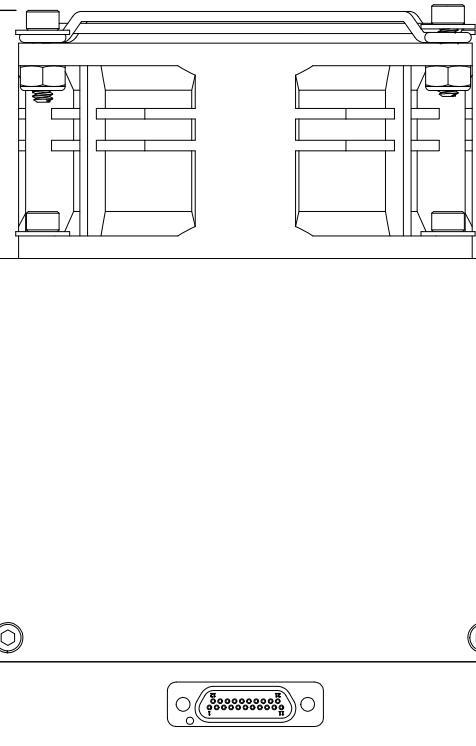
5.215

3.491

.000

.000

6.200



DRAWN	Anthony	2/18/2020			
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 5

A

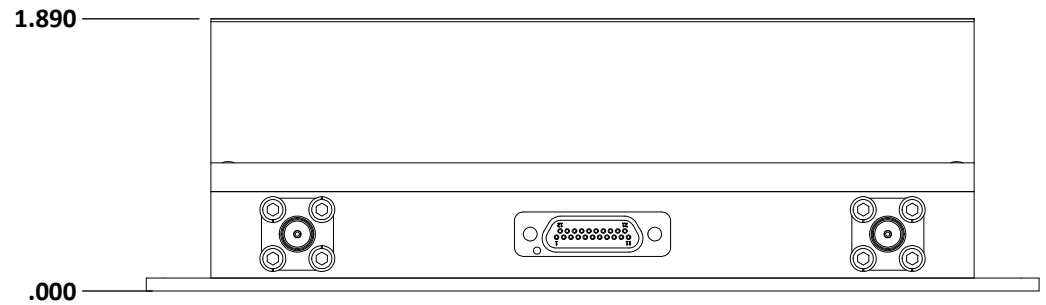
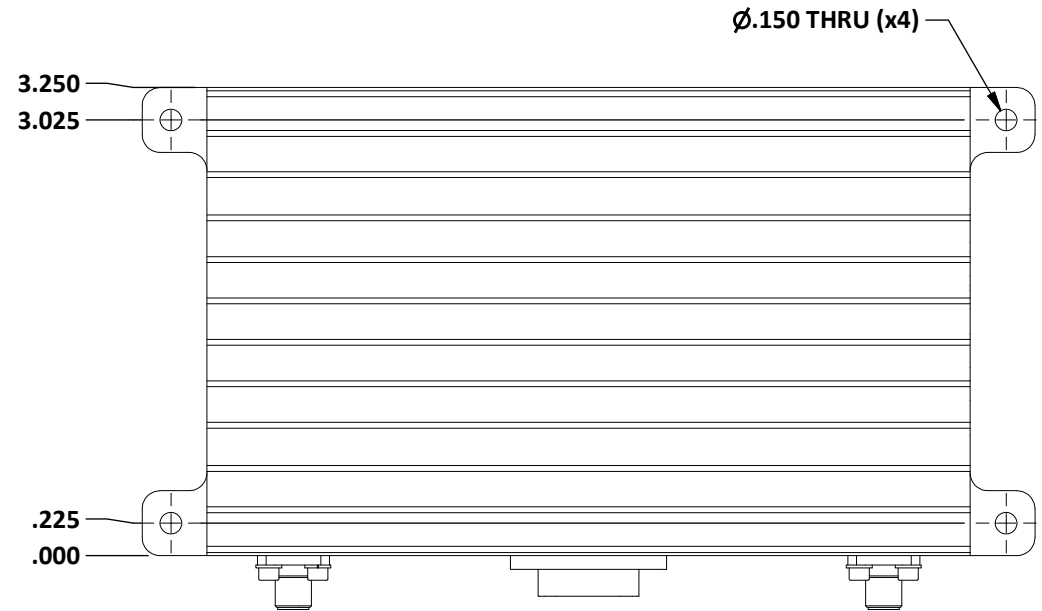
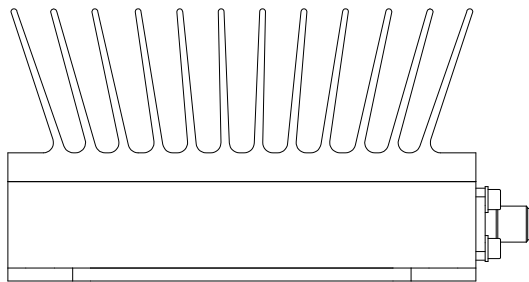
B

C

D

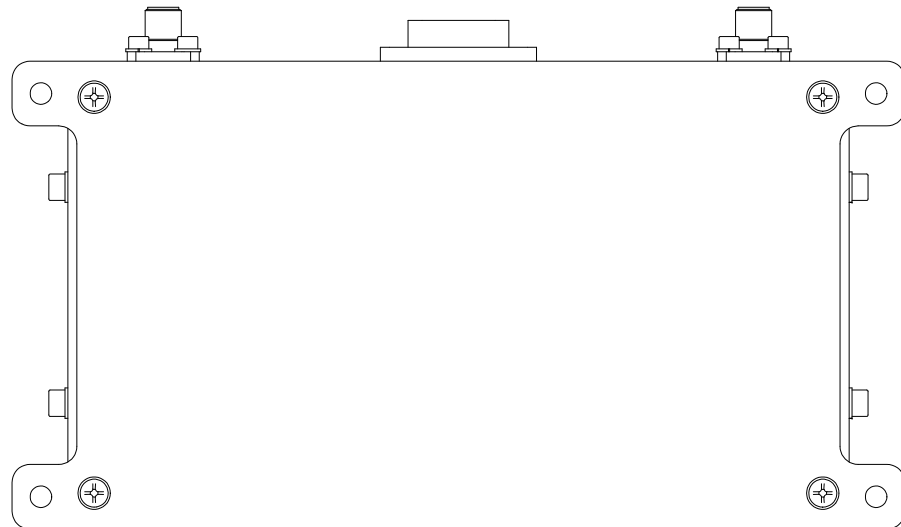
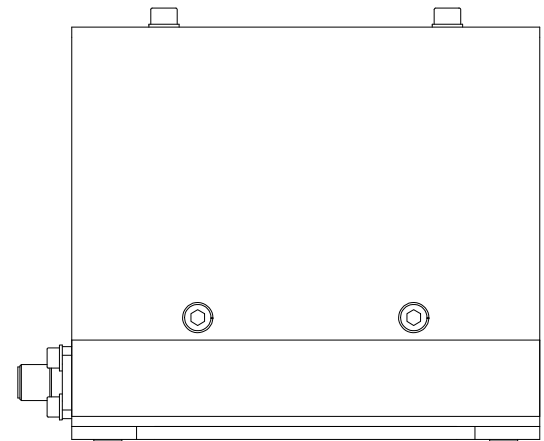
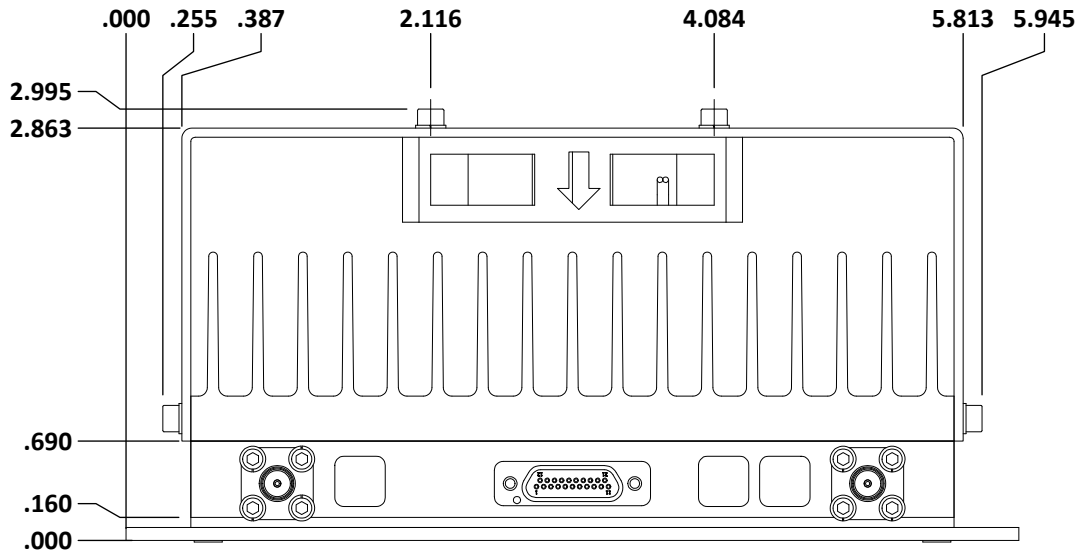
E

LOW PROFILE OPTION  
 CONFIRM USABILITY WITH TRIAD BEFORE ORDERING



DRAWN	Anthony	2/18/2020			
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 4 OF 5

# LOW PROFILE HEATSINK FAN



DRAWN	Anthony	2/18/2020			
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED		11/27/2019	A	OL_170	
MFG APPROVED		11/27/2019	SCALE: NONE	CAGE CODE 67DZ3	SHEET 5 OF 5