

2.4 - 2.5 Meter Nomadic Antennas

The Kratos 2.4/2.5 m Nomadic is a highly flexible antenna system designed to operate on almost any satcom band and in many configurations. The entire reflector structure consists of lightweight carbon fiber panels, with multiple mounting scenarios, and can be ordered in motorized or nonmotorized versions. With feeds available to address L-, C-, X-, Ku-, K-, Ka-, and Q-bands, as well as low PIM capable feeds, few applications are beyond its capabilities.

This antenna supports a variety of interchangeable feeds which are engineered for simple removal and replacement in the field. The reflector is constructed with a precision-formed honeycomb core and a carbon fiber skin which assures durability and high performance. The reflector is readily available in one-, three-, and nine-piece versions - all sharing common RF design components and performance capabilities.

The Nomadic is designed to be lightweight, with maximum stiffness, yet offers compact and highly robust components. The versatile architecture makes it ideal for launching highly divergent equipment applications using a single, flexible, modular and cost-effective equipment base.

Electronically engineered to operate at multiple frequencies, Kratos 2.4/2.5 meter Nomadic is capable of transmitting and receiving signals under demanding wind loads and surviving winds up to 100 mph. Weighing less than 220 kg (480 lb), in fully motorized versions (including feeds), the tactical version can be deployed by two trained individuals within 30 minutes.



Features

- 2.4m with one-, three-, and nine-piece reflector panels
- 2.5m with one-piece reflector panel
- Motorized and non-motorized axes
- Pedestal, Tactical and Mobile Mounts
- Eight-case ISO shippable version
- Lightweight reflector , high accuracy tracking mount
- Interchangeable feed systems for quick field swaps
- Meets Mil-Spec standards,
- Designed to comply with MIL-STD-810F
- Various trailer configurations are available
- Low PIM X-band available

Compliance

ITU-R S.580-6, 465-6, 732-1	C, X, Ku, K, Ka Band
US FCC 25.209	X, Ku, K, Ka Band

2.4 - 2.5 Meter Nomadic Antennas

NOMADIC MILSAT



2.5M One Piece Reflector



2.4M Nine Piece Reflector on Tactical Mount
with Transit Cases

2.4 - 2.5 Meter Nomadic Antennas

The Nomadic Antennas are designed around a base configuration to provide modular flexibility and configurability. In addition, they are designed to be rugged and to allow for maximum compactability to withstand the demands and rigors of transport in military and commercial aircraft. The feeds are also palletized to allow for easy transport and for band changes in minutes.

Environmental Performances

Wind Loading			
Operational Winds	30 mph gusting 45 mph		
Survival	100 mph ballasted 125 mph stowed		
Temperatures		Operational	Survival
Range	-40°C to +60°C (-40°F to +140°F)	-58°C to +71°C (-50°F to +160°F)	
Seismic	1G Vertical and Horizontal; 8.3 Richter, 11 Mercalli		
Solar Radiation	360 BTU/h/ft ² (1135 watts/m ²)		
Rain	Up to 10 cm/h (4 in/h)		
Relative Humidity	0% to 100%		
Shock	As encountered by Air, Ship, Rail and Truck		
Atmospheric	As encountered in moderately corrosive coastal and industrial environments		
Altitude		Operational	Survival
Range	Up to 12,000 ft	Up to 40,000 ft	

Mechanical Performances

Reflector	Multi-Band Intergangeable		
Color	White (other color available)		
Material	Carbon Fiber		
Segments	One, Three, and Nine Segment Versions (2.4m) One Segment Version (2.5m)		
Feed Type	Prime Focus Offset		
Mount Type	Ei over Az Pedestal		
Boom/Positioner Capacity			
Size Limit	38" x 14" x 12" (96cm x 36cm x 30cm) Boom		
Weight Limit	220 pounds Boom	330 pounds Positioner	
Overall Dimensions (stow)	L	W	H
2.4m One Piece Relector	131"	86"	24"
2.4m Three Pieces Relector	131"	97.2"	24"
2.4m Nine Pieces Relector	131"	97.1"	24"
2.5m One Piece Relector	137.6"	96.6"	24"
Stow Height	<24 inches		
Pointing Range			
Azimuth	±150° Continuous (NOMINAL)		
Elevation	0° to 90° of Boresight (NOMINAL)		
Polarization	±100°		
Maximum Travel Limits	User defineable within mechanical limits		
Operate Limits	Hardware and Software Settable		

2.4 - 2.5 Meter Nomadic Antennas

Electrical Specifications

Controller Type	Multi Axis Tracking Controller with Auto Acquisition Assist
Controller Package	Single Box Outdoor Motor Controller 3RU 19" EIA Rack Mounted Indoor Controller
Prime Power	Indoor 110-220 VAC 50/60 Hz (Universal) Outdoor 24 VDC, 120 VAC (Field Configurable)
Power Consumption	20A or less @ 24VDC, 5A @ 120VAC (est.)
Motor (Az, El, and Pol)	24 VDC
Remote IDU Interconnect	Ethernet
Remote Interface	Remote Operation Software, SNMP V1 & V2c
IDU/ODU IFL	Multi Mode Fiber Optic Cable
Optional Sensors	GPS, Compass, and Inclinometers
Angle Transducers	19 bit optical encoder
Angle Resolution	0.0010°
Positioning Accuracy	0.0050° (est)

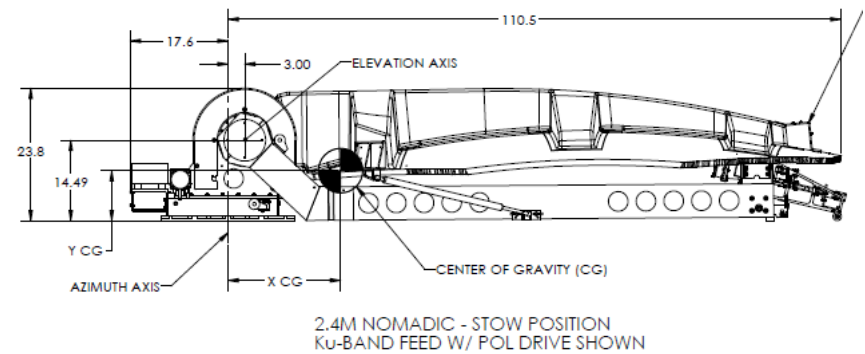
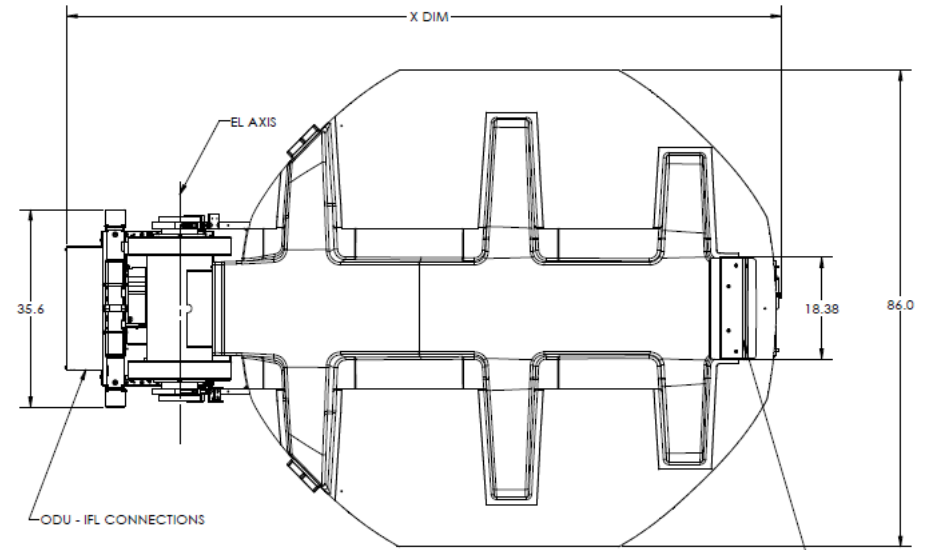
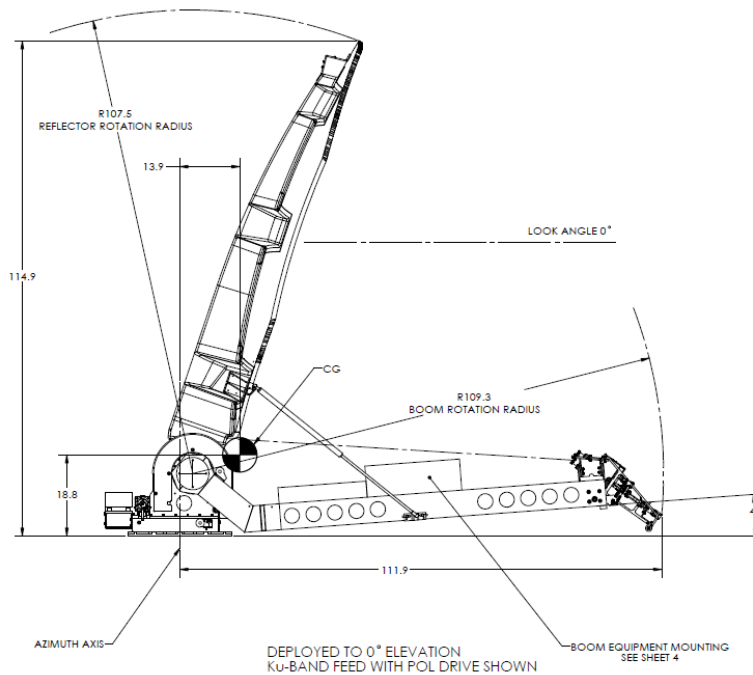
Shipping Information

Packing Options	
Standard Commercial Domestic Pack	Included
Service and materials For Ocean Transport Packaging of 2.4/2.5M product	CRATE-24-OCEAN
Service and materials For Air Transport Packaging of 2.4/2.5M product	CRATE-24-AIR
Service and materials for enclosed crating a 2.4/2.5M product for transport	CRATE-24-PACK
Required Shipping Container	
Standard 20 ft land/sea container	Quantity 1

Shipping container information is given for basic configuration and may vary depending on the selected options, please contact Kratos for specific container loading plan.

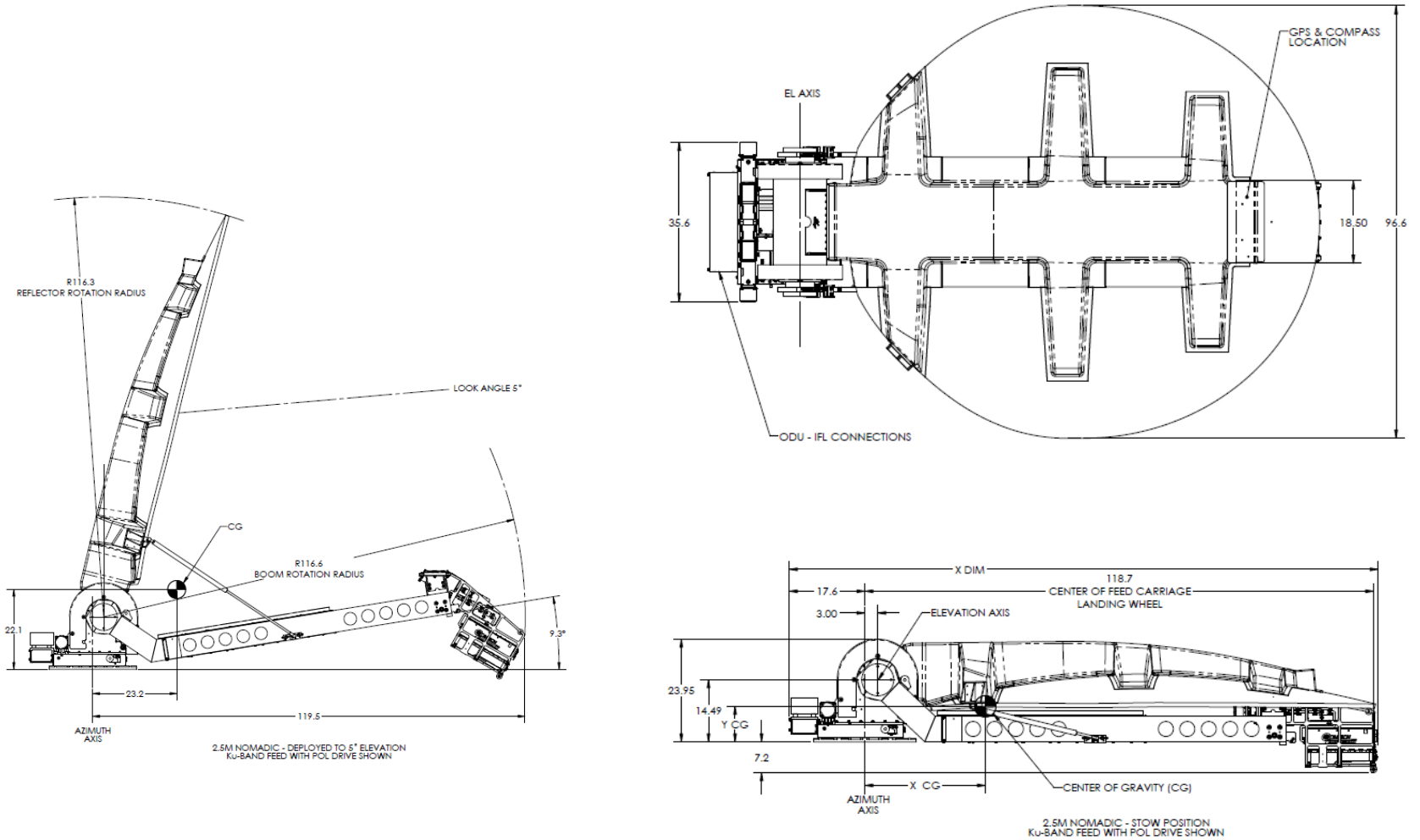
2.4 - 2.5 Meter Nomadic Antennas

2.4m Dimensional Drawings



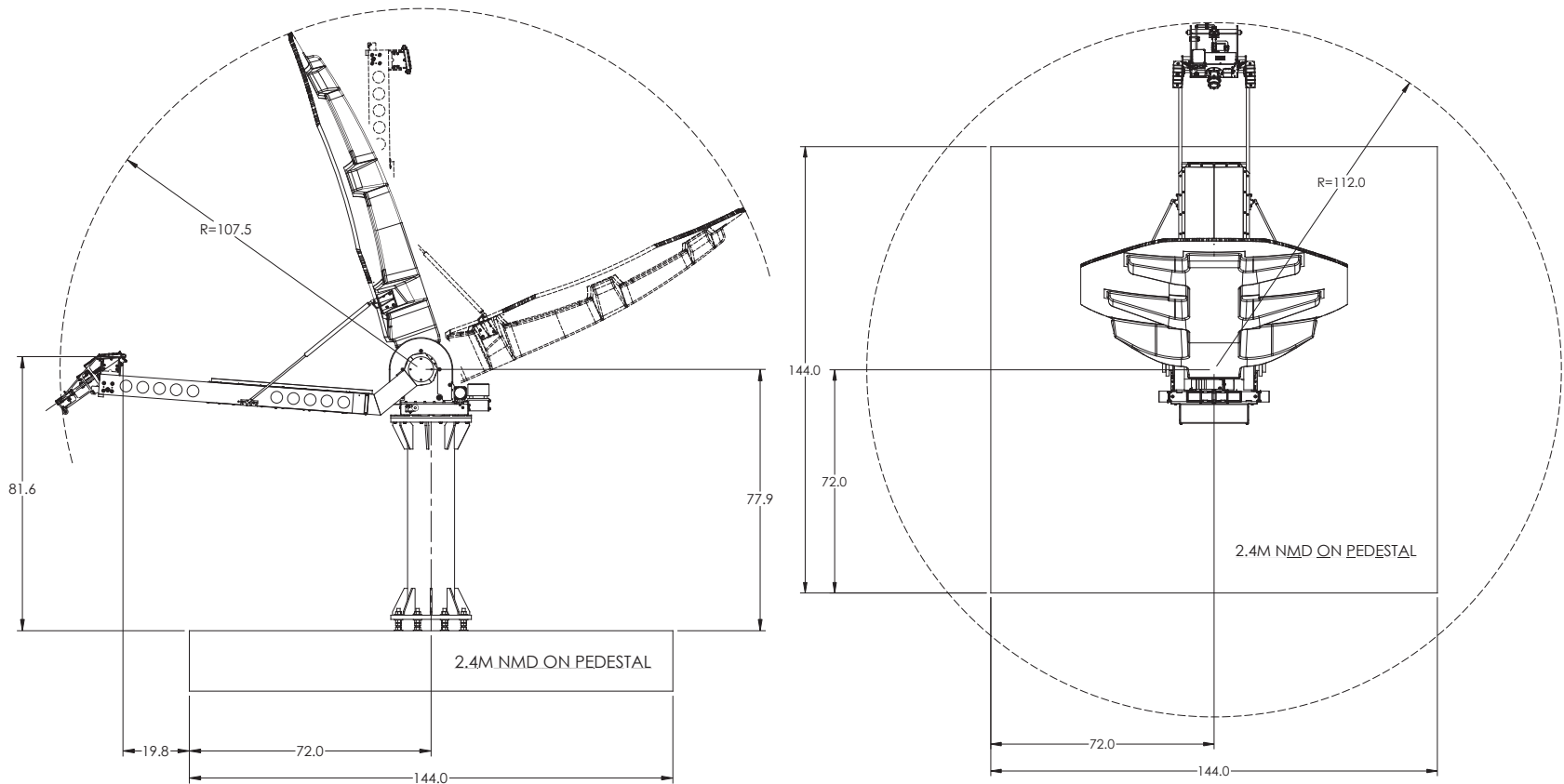
2.4 - 2.5 Meter Nomadic Antennas

2.5m Dimensional Drawings



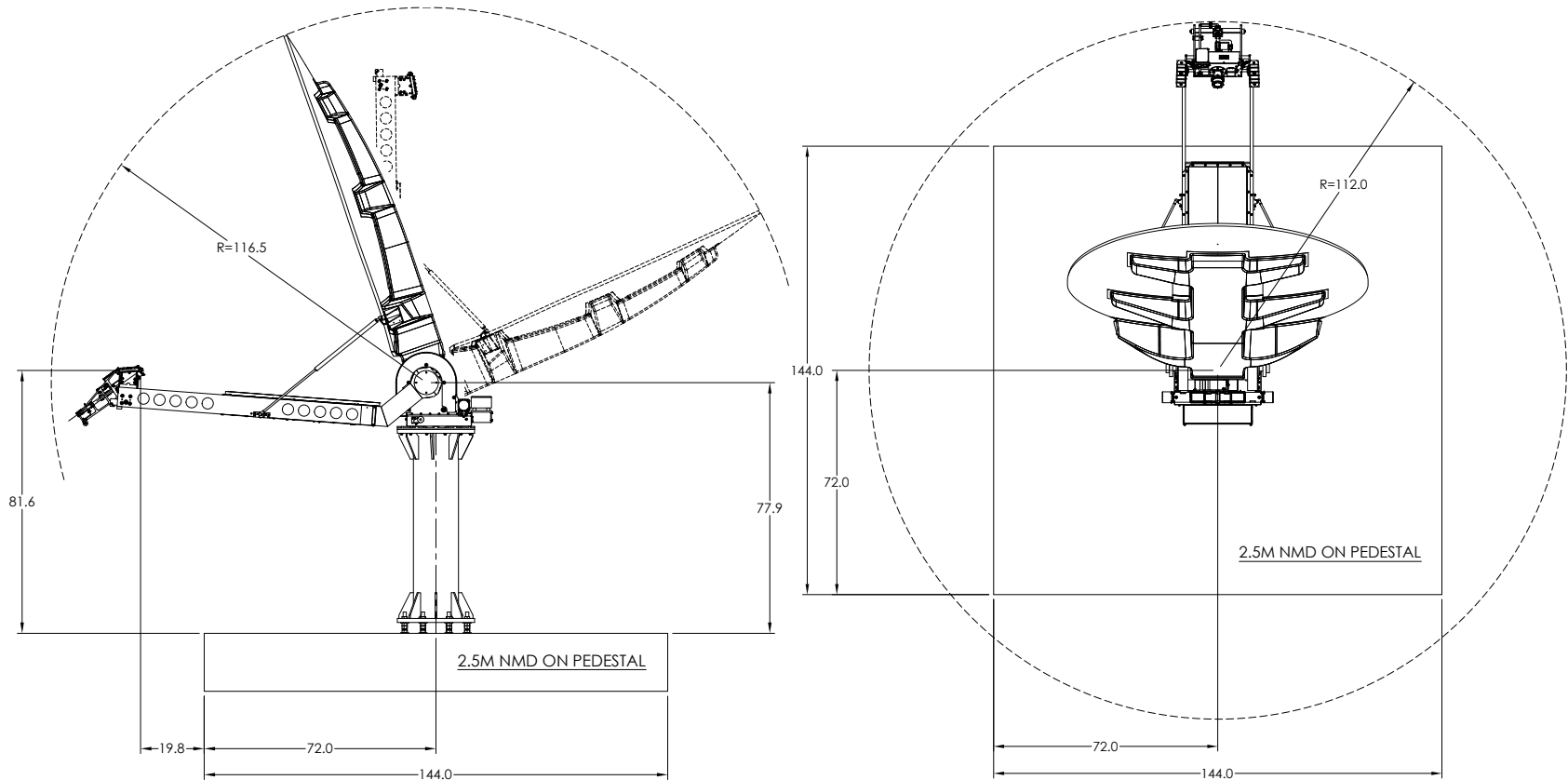
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2.4m Dimensional Drawings Ground Mount Pedestal



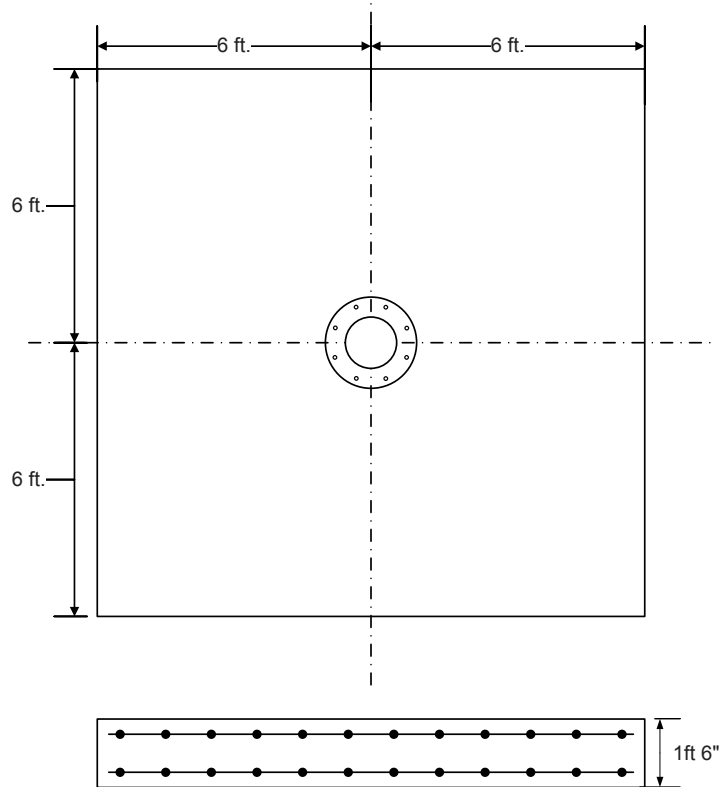
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2.5m Dimensional Drawings Ground Mount Pedestal



2.4 - 2.5 Meter Nomadic Antennas

2.4m and 2.5m Typical Foundation Design (with PEDMNT-4)

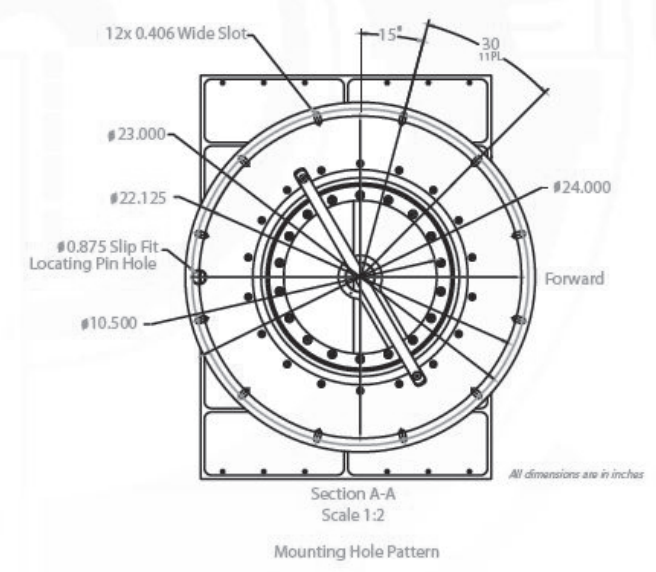
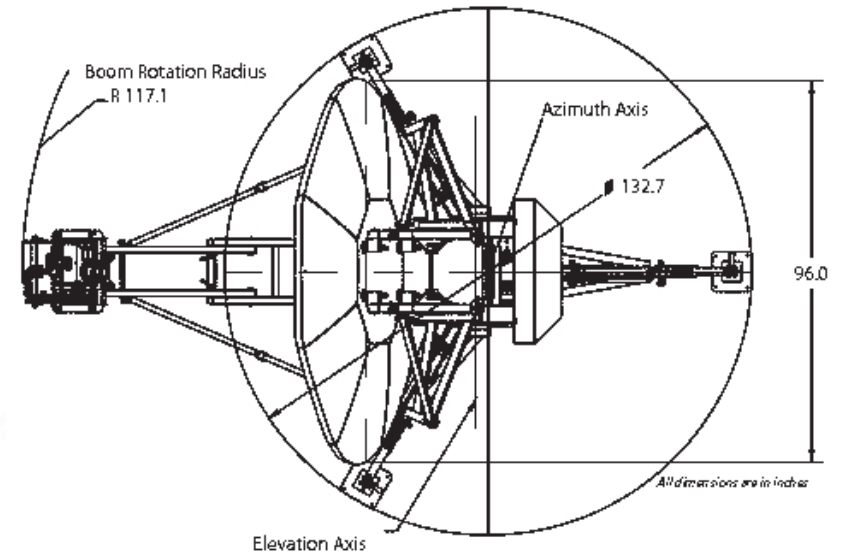
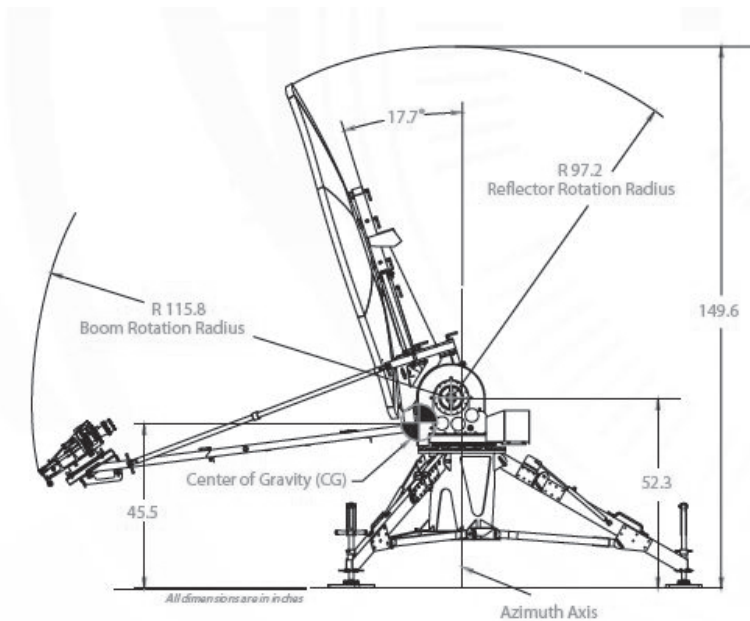


Foundation information are provided in bulletin 7588871 (2.4m) and 7588872 (2.5m), please contact Kratos.

Soil Bearing Capacity,	2000 lb/ft ² (9770 kg/m ²)
Reinforcing Steel,	821 lbs (372 kg)
Concrete Compressive Strength,	3000 psi (211 kg/cm ²)
Foundation Size:	(for specific standard soil and typical design)
Length	12 ft (3.66 m)
Width	12 ft (3.66 m)
Depth	1 ft 6 in (0.457 m)
Concrete Volume	8 yd ³ (6.1 m ³)
NOTE: Other typical foundation designs are available. Soil borings and foundation analysis should be performed by a qualified civil engineer.	

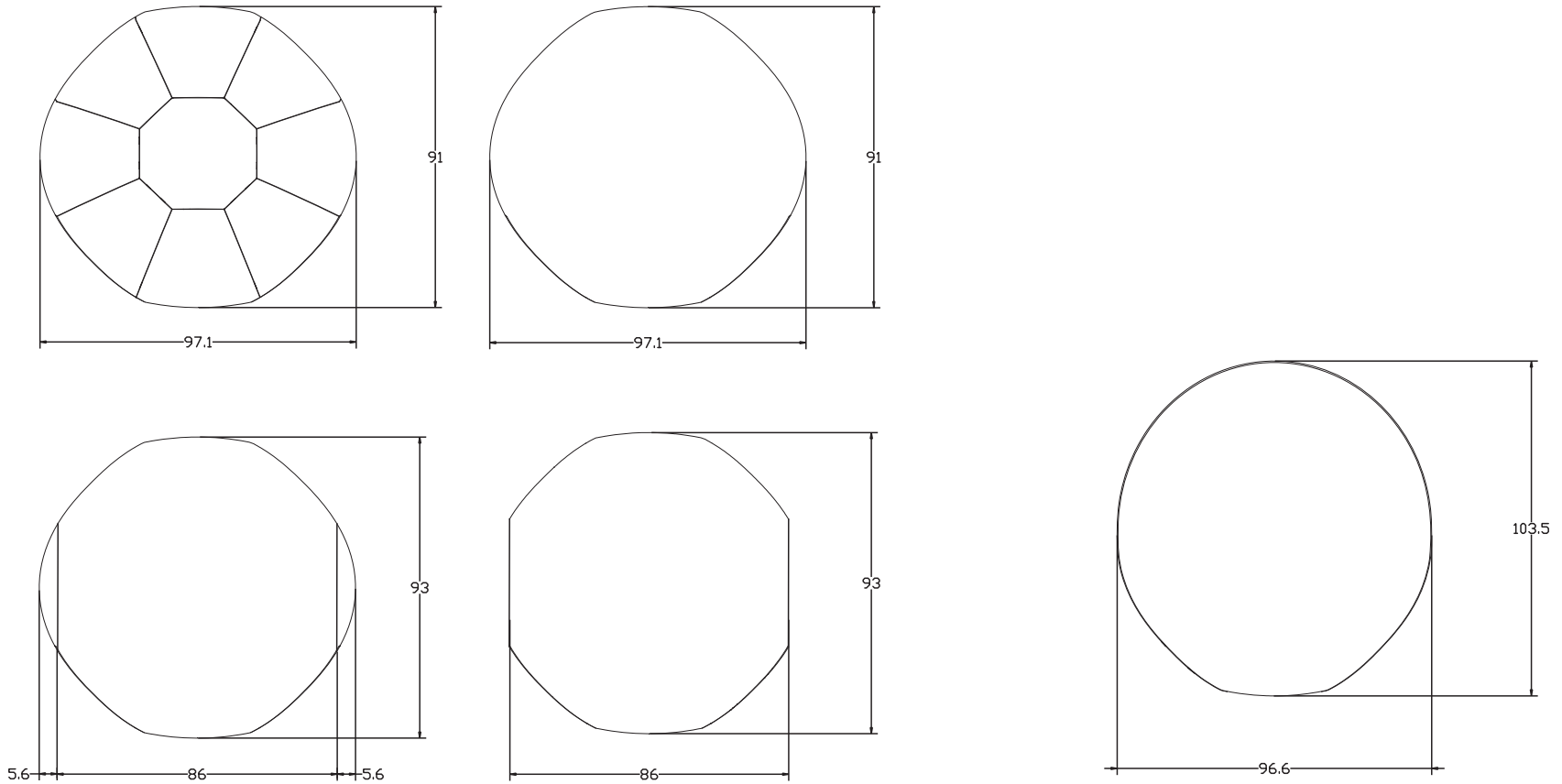
2.4 - 2.5 Meter Nomadic Antennas

2.4m 9 Piece Tactical Mount Dimensional Drawings



2.4 - 2.5 Meter Nomadic Antennas

2.4m & 2.5m Dimensional Drawings



2.4m Reflector

2.5m Reflector

2.4 - 2.5 Meter Nomadic Antennas

Motorization

One motorization system is available for this antenna: the NGC tracking system that can support Steptrack, Smartrack and Ephemeris orbital tracking.

Motor Kit

Azimuth/Elevation Motor Kit is part of the motorizable positioner

Polarization Drive Kit (DC Step Motors)

Standard Temperature (> -20°C) NGC-PK24-24

Outdoor Unit Controller

Power 24VDC 5 AMPS NGC-ODU-NMD

Antenna controller, motorization and options are detailed in specific bulletins, please contact Kratos.

Antenna Configurations

Reflectors

Single Piece Lightweight 2.4 Meter Off-Set Feed Antenna Reflector	NMD-24-1
Three Pieces Lightweight 2.4 Meter Off-Set Feed Antenna Reflector	NMD-24-3
Nine Pieces Lightweight 2.4 Meter Off-Set Feed Antenna Reflector	NMD-24-9
Single Piece Lightweight 2.5 Meter Off-Set Feed Antenna Reflector	NMD-25-1
Single Piece Lightweight 2.5 Meter Off-Set Feed Low PIM Antenna Reflector	NMD-25-LP-1

Positioners

Tactical Tripod Mounting System - Motorizable	NMD-TAC-M
Tactical Tripod Mounting System - Manual	NMD-TAC-NM
Vehicle Mounting System - Motorizable, suitable for mounting on a vehicle, trailer, pedestal, or tactical mount	NMD-VEH-M
Vehicle Mounting System - Manual, suitable for mounting on a vehicle, trailer, pedestal, or tactical mount	NMD-VEH-NM

Motorization and NGC Options

Indoor	
NGC2-IDU	NGC Rack Mounted Antenna Controller W/LCD Touch Panel, 4 RU Unit
NGC2-IDU-1	NGC Rack Mounted Antenna Controller, 1 RU Unit
NGC2-IDU-2	NGC Rack Mounted Antenna Controller, 2 RU Unit
NGC2-002-06	NGC2-IDU Spectrum Analyzer Card - Analog; 1 X 6 Multi-Input Switch
NGC2-002-EDR	NGC2-IDU Spectrum Analyzer Card - Analog; Enhanced Dynamic Range
NGC2-002-EDR-06	NGC2-IDU Spectrum Analyzer Card - Analog; 1 X 6 Multi-Input Switch; Enhanced Dynamic Range
NGC2-004-03	NGC2 IDU, L-Band Internal Beacon Receiver
NGC2-006	NGC2-IDU Emergency Stop Button
NGC2-007	NGC2-IDU 10 MHz Reference GPS Based Source
NGC2-008	NGC2-IDU Power Supply
NGC2-009	NGC2-IDU Rack Slides
NGC2-100	NGC2-IDU HEO Tracking Software
NGC2-101	NGC2-IDU Step Tracking Software
NGC2-102	NGC2-IDU Smartrack Software
NGC2-103	NGC2-IDU Predictive Tracking Software
NGC2-104	NGC2-IDU Full Tracking Capability Software
NGC2-105	NGC2-IDU Acquisition Assist
NGC2-106	NGC2-IDU Remote Access Software Package
NGC2-107	NGC2-IDU Enhanced Spectrum Analyzer Function Software
NGC2-108	NGC2 Receive Pattern Testing Tool
NGC2-109	Redundancy/Switching Control Software
NGC2-111	Sand/Dust Deviator Feature
NGC2-112	Carrier Monitoring
NGC2-119	NGC2 Redundancy Control Software
Outdoor	
7586787	NGC Handheld Terminal with Mil Spec Connector
NGC-NMD-LIMIT	NOMADIC POSITIONER LIMIT SWITCH KIT, CABLE & HDW
NGC-NMD-LOCKOUT	Nomadic Positioner Stow Kit Cable & HDW
24VDCSPS	Nomadic switching power supply, 24VDC
NGC-SEN-4-VN-NMD	Nomadic INS Sensor Kit, High Accuracy

2.4 - 2.5 Meter Nomadic Antennas

Feed Matrix 2.4 and 2.5m

L- BAND FEED SYSTEMS	PORT	CP	LP	Motorized	RX 3.625 - 4.2 GHz	TX 5.850 - 6.425 GHz
2CPL-2x-1	2	X			X	X

C- BAND FEED SYSTEMS	PORT	CP	LP	Motorized	RX 3.625 - 4.2 GHz	TX 5.850 - 6.425 GHz
2CPNC-2x-109	2	X			X	X

X- BAND FEED SYSTEMS	PORT	CP	LP	Low PIM	RX 7.25 - 7.75 GHz	TX 7.9 - 8.4 GHz
2CPXF-2x	2	X			X	X
4CPX-2x	4	X			X	X
2CPMX-2x-8	2	X		X	X	X

Ku- BAND FEED SYSTEMS	PORT	CP	LP	Motorized	RX 10.7 - 12.75 GHz	TX 13.75- 14.8 GHz
2LPKU-2x-1	2		X			X
2CPKU-2x-1	2	X				X
4LPKU-24-M	4		X		X	X

K- BAND FEED SYSTEMS	PORT	CP	LP	Motorized	RX 10.7 - 12.75 GHz	TX 17.3 - 18.4 GHz
2LPKK-2x-NM	2		X		X	X
2CPKK-2x	2	X			X	X

KA- BAND FEED SYSTEMS	PORT	LP	CP	Motorized	RX 17.7 - 21.2 GHz	RX 20.2 - 21.2 GHz	TX 27.5 - 31.0 GHz	TX 30.0 - 31.0 GHz
2CPKA-2x-1	2		X			X		X
4CPWWKA-2x-NM-1	4		X		X		X	
4LPWWKA-2x-VP	4	X		X	X		X	

Q- BAND FEED SYSTEMS	PORT	CP	LP	Motorized	RX 20.2 - 21.2 GHz	TX 43.5 - 45.5 GHz
4CPQ-2x	4	X			X	X

RF Feed Specifications are detailed in specific bulletins, please contact Kratos.

2.4 - 2.5 Meter Nomadic Antennas

Antenna Options and Spares

Anchor Bolt and Template Kits Option	
302689	Anchor Bolt and Template Kit for 2.4/2.5 Meter Nomadic with PEDMNT
Heating Options	
GSS-24-1	2.4M Passive Snow Shield Cover
SSH12K-24-1	2.4M 4KW Electric Heater System
WSS-IC-100	Interface Cable; 100ft
WSS-RMDP7	Rack Mounted Remote Monitor Panel
Color Options	
NMD-33510	Sandstone Color Painting for Reflector FS33510
NMD-34096	Olive Drab Color Painting for Reflector FS34096
NMD-NPN-LG	Custom Color Painting for Reflector
Other Options	
NMD-24-LP	LOW PIM Antenna Configuration & Range Certification Test Service
NMD-TAC-TCASE	Tactical System Transit Case for 2.4M
PEDMT-24	Pedestal Mount for 2.4/2.5 Meter; Galvanized
PEDMT-24-FSxxxxx	Pedestal Mount for 2.4/2.5 Meter; Powder Coated to Match FS Color (xxxxx)
PEDMT-24-INT	Galvanized Pedestal Mount Interface Kit for 2.4/2.5 Meter
FTST	Feed System Testing

Tactical System Transit Case

NMD-TAC-TCASE Used with 2.4m nine piece reflector (approximate)		
Equipment	Case	Case Dims (inches nominal)
7588954 Case Back Structure	1	101.80 x 39.90 x 20.79
7588813 Case Feed Boom	2	62.25 x 27.25 x 29.69
7588811 Case Platform Azimuth	3	44.00 x 44.00 x 18.00
7588812 Case Platform Elevation	4	42.75 x 30.75 x 27.34
7588925 Case Reflector 9 Pieces	5	55.00 x 43.00 x 52.69
7588938 Case Tripod Legs	6	84.43 x 28.43 x 43.81
7588936 Case Tripod Pedestal Column	7	37.38 x 37.38 x 38.43

NMD-FEED-TCASE-xx Single Feed Transit Case		
Equipment	Case	Case Dims (inches nominal)
PN to be defined depends on feed system part number for foam cutout	8+	TBD



KRATOS[®]
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