SPECIFICATION

Part No.	:	**A.03.C.1001111**
Product Name	:	40dB GPS/GALILEO Hercules Heavy Duty Screw Mount Antenna For long cable lengths above 5M
Description	:	Three Stage 40dB Height 29mm Diameter 52mm
Applications	:	Location based services M2M Telematics Remote monitoring Timing for Base Stations Large vehicle fleet tracking



1. Introduction

The **A.03.C** Hercules is a 40dB LNA high performance thread mount GPS/GALILEO antenna designed for external use on vehicles and outdoor assets where long cable lengths above 5 metres (15 feet) are used. Designed for heavy duty work with one piece C&C machined nickel steel base plate and threads, there are also convenient side slots for running cables laterally. Durable UV resistant ABS housing is resistant to vandalism and direct attack. At only 29mm high it complies with the latest EU directives for height restrictions, whilst also enabling covert operation with a diameter of 52mm.

Cable lengths, types and connectors are fully customizable.

For cable lengths below 5M please use our 28dB LNA **A.01.C** model.

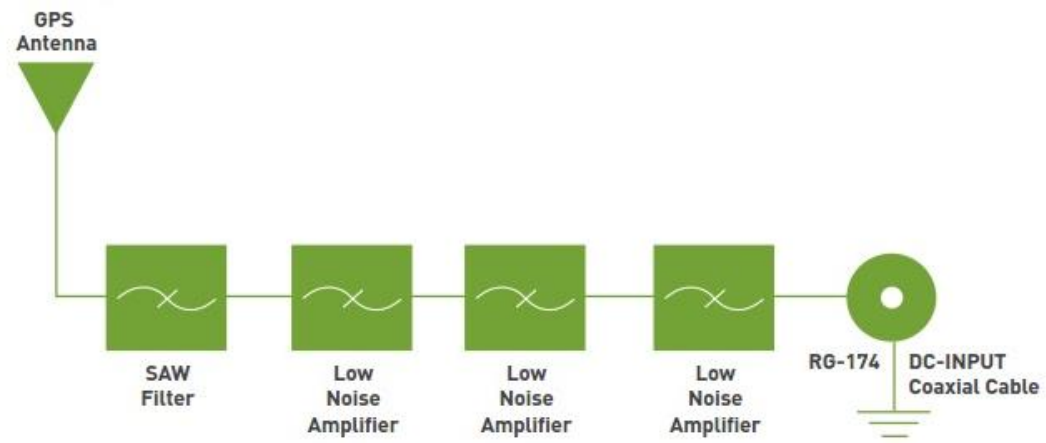
2. Specifications

ELECTRICAL	
Frequency	1575.42MHz±2MHz
Dimensions	Height 29mm Diameter 52mm Thread Diameter 18mm
Impedance	50 ohm
VSWR	2.0 Max
Gain	LNA Gain 40dB typically Passive Gain at Zenith 5.0dB Gain at 10 o elevation: -1.0 dBi typ. Antenna Gain at 90 degrees 41.5 ± dBic
Axial ratio	3.0 dB max
Polarization	RHCP
Noise Figure	1.5 dB max.
Operating Temperature	-40ºC ~ +85ºC
Out Band Rejection	fo = 1575.42MHz fo ± 20 MHz 7dB Min. fo ± 30 MHz 12dB Min. fo ± 50 MHz 20dB Min. fo ± 100 MHz 30dB Min.
Storage Temperature	-40ºC ~ +95ºC
Cable/Connectors	Standard RG174 , ψ2.7 ± 0.2mm , Black Cable Loss -1.3dB per Meter Standard Cable Length 10M SMA(M) Connector Cables and Connectors Fully Customizable
Input Voltage	At 1.8V Max 8mA At 3.0V Max 10mA At 5.0V Max 12mA
Protection	IP67 & IP69K

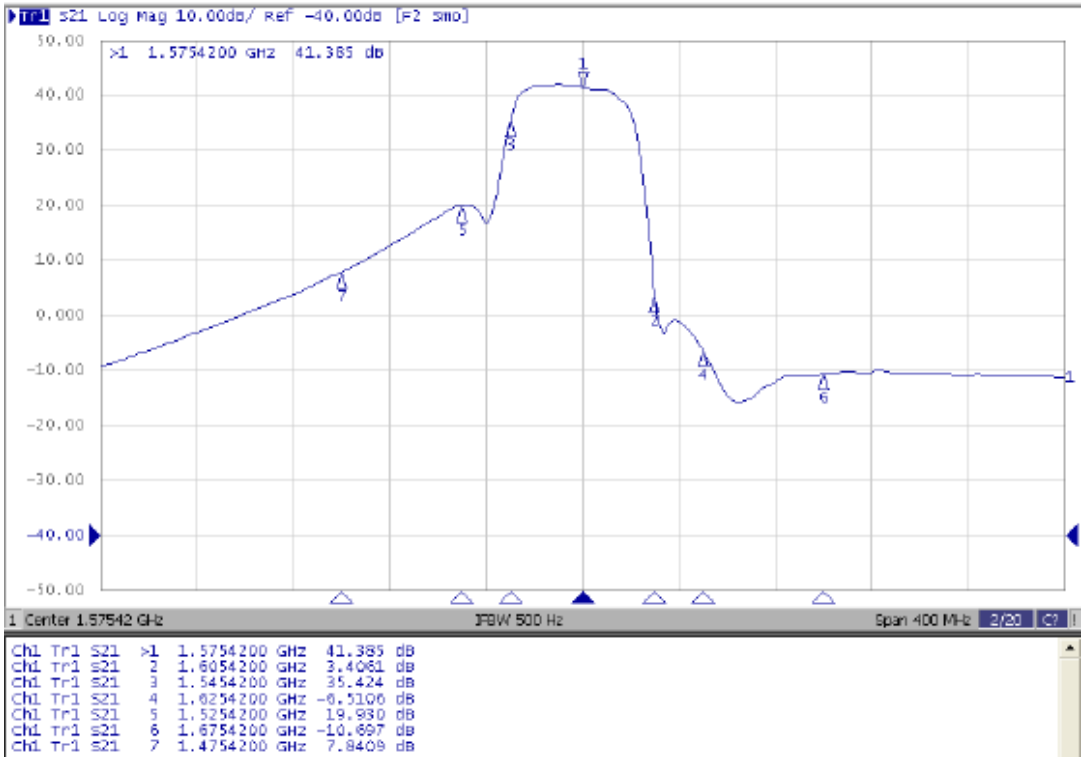
MECHANICAL	
Housing	UV resistant PC
Thread and Base Plate	One piece C&C'd Nickel Steel
Sealing Foam	CR4305 with 3M9448B double-side adhesive
Waterproof	IP67 & IP69K
Thread Diameter	18mm
Recommended Torque Setting for Mounting	24.5N·m
Maximum Torque Setting for Mounting	29.4N·m
Weight(g)	224
LNA	
Frequency Range	1575.42 ± 10 MHz
Gain	Typ.34dB (At 1.8V) Typ.40dB Min.38dB (At 3V) Typ.40dB Min.38dB (At 5V)
Noise Figure	1.5dB Max. (+ 25 ℃ ± 5℃)
Output Impedance	50Ω
Outer Band Attenuation	F0=1575.42MHz F0±50MHz 20dB min F0±100MHz 25dB min
Output VSWR	Max 2.0

3. LNA

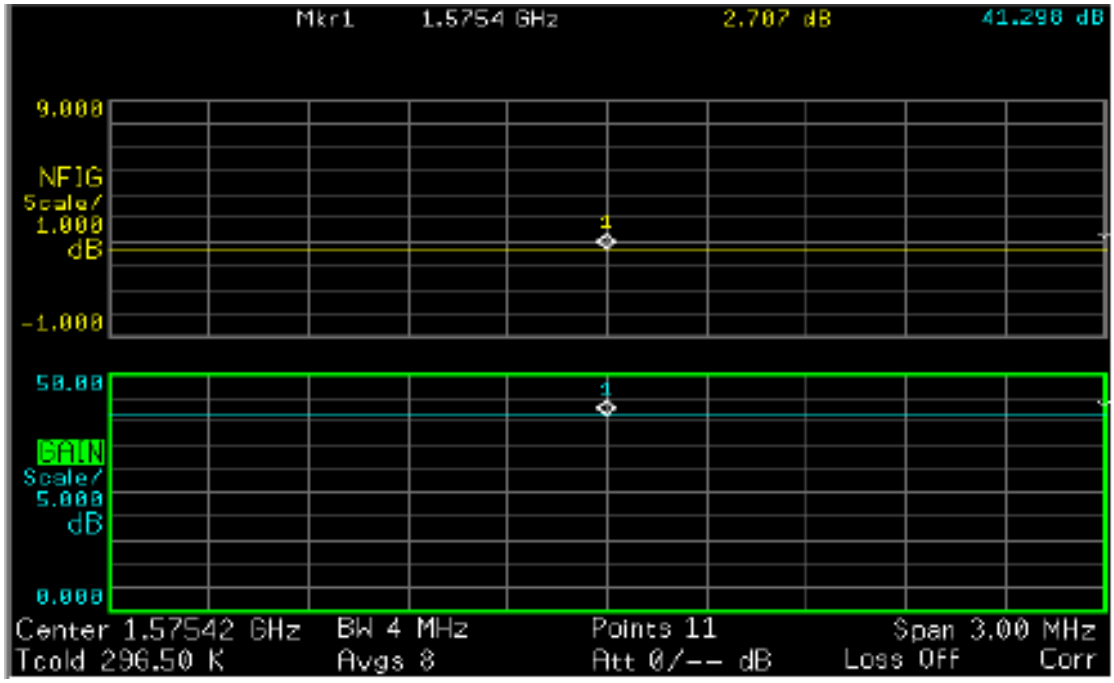
3.1. LNA Functional Circuit



3.2. LNA Gain at DC 3V

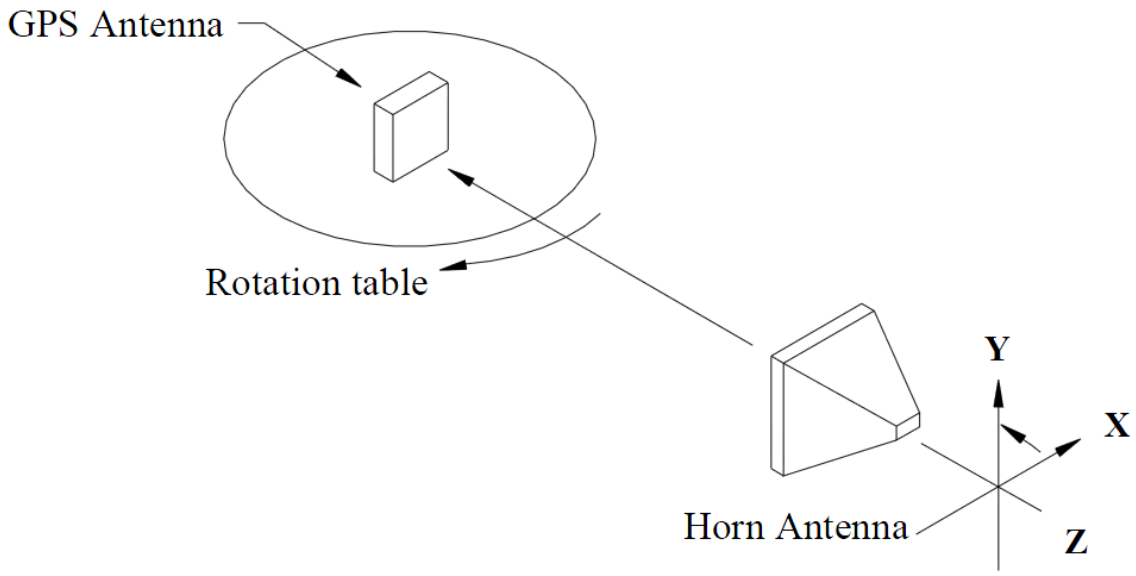


3.3. LNA Noise Figure at DC 3V

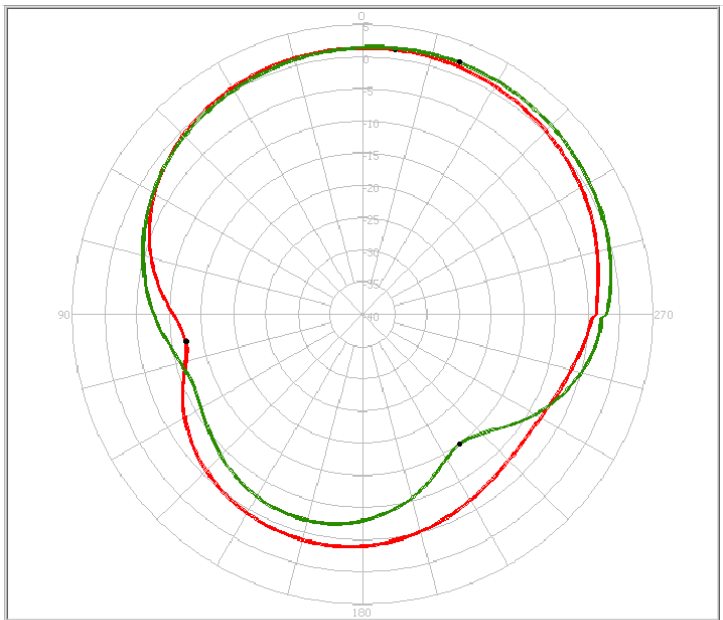


4. Radiation Patterns

4.1. Test Setup

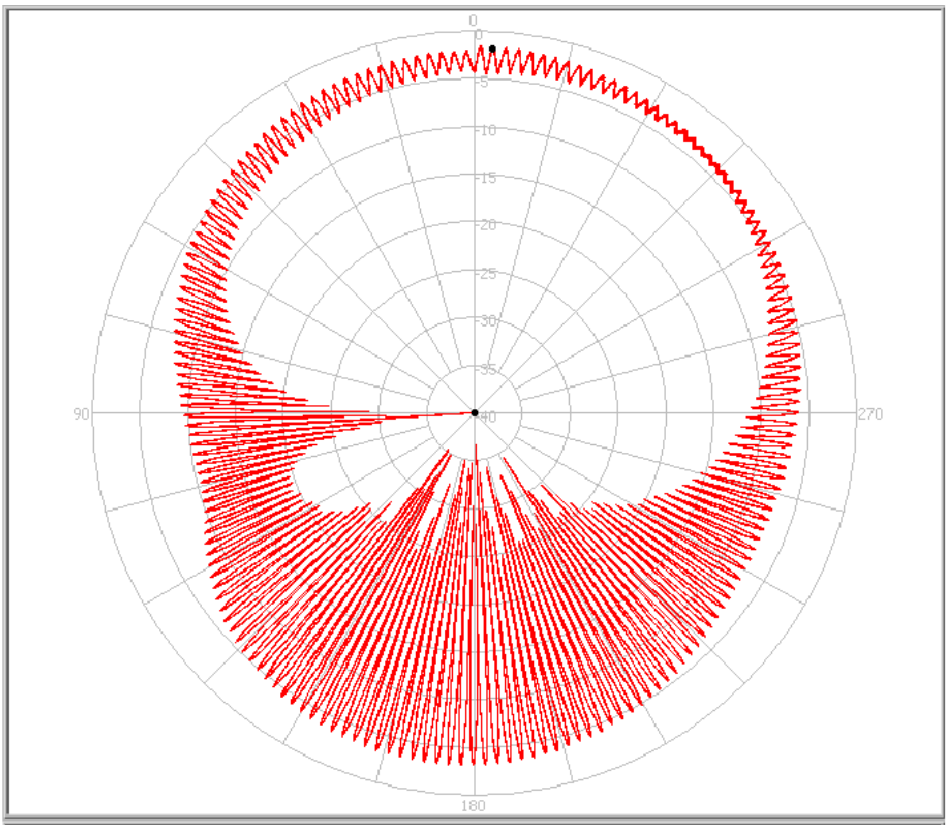


4.2. XZ and YZ Plane Cuts



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	A-03	XZ	1575.42	1.36 / 353.00	-12.30 / 99.00	-2.46	RHCP	2009/11/2
2	A-03	YZ	1575.42	1.81 / 339.00	-14.85 / 217.00	-2.35	RHCP	2009/11/2

5. Axial Ratio

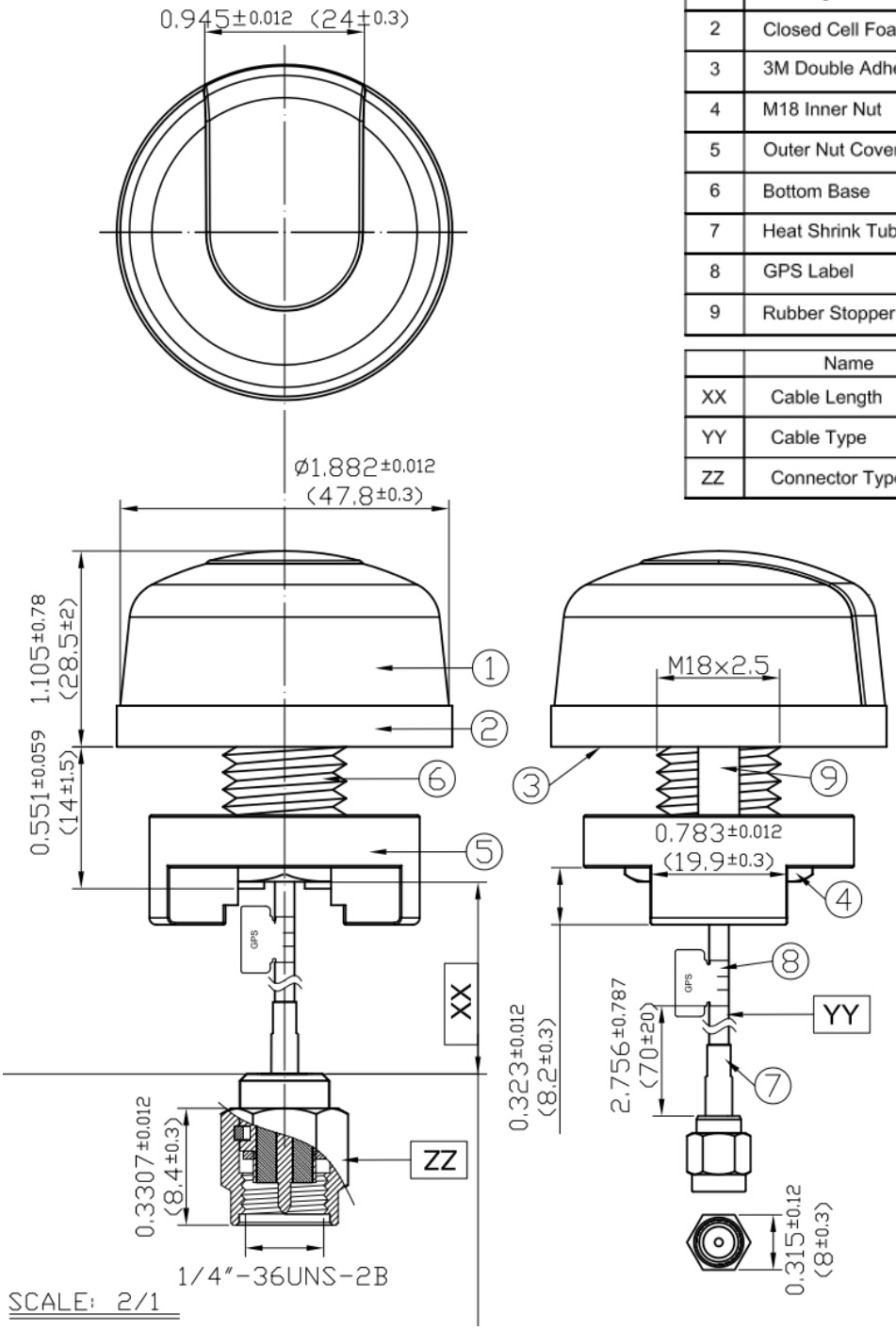


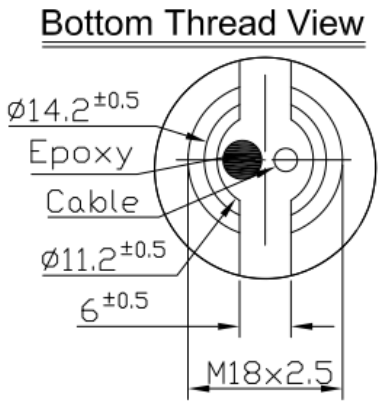
Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	A-03	Axial Ratio	1575.42	-1.80 / 357.09	-43.93 / 93.46	-6.27	CP	2009/11/2

6. Mechanical Drawing

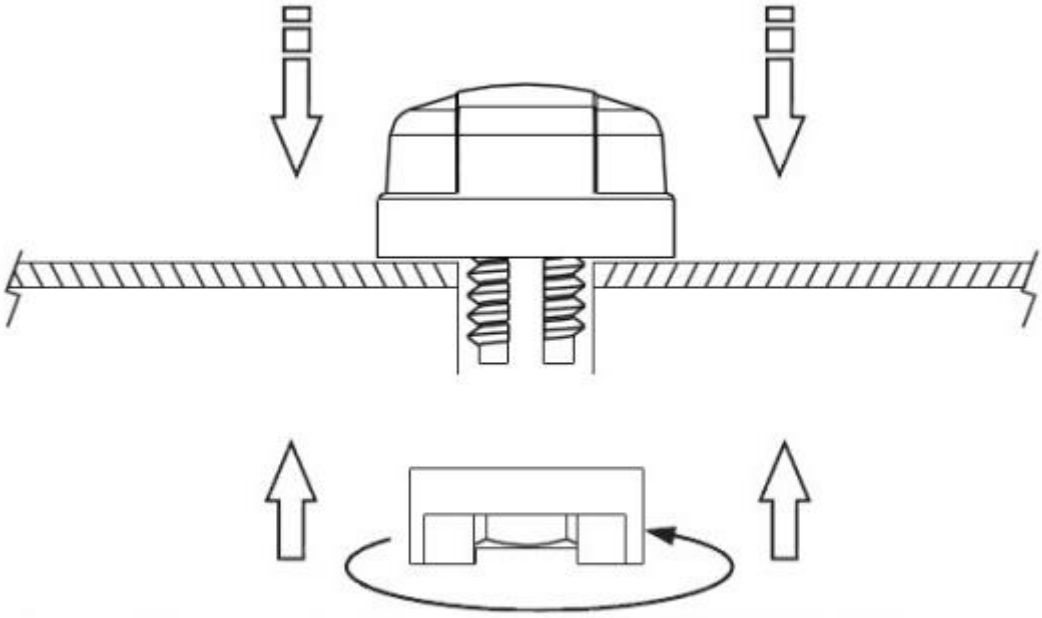
	Name	Material	Finish	QTY
1	Housing	PC	Black	1
2	Closed Cell Foam	CR 4305	Black	1
3	3M Double Adhesive	3M 9448 WC	White Liner	1
4	M18 Inner Nut	Carbon Steel	Ni Plated	1
5	Outer Nut Cover	ABS	Black	1
6	Bottom Base	Zinc alloy	Ni Plated	1
7	Heat Shrink Tube	PE	Black	1
8	GPS Label	Coated Paper	Orange	1
9	Rubber Stopper	Siliocn Rubber	Black	1

	Name	Spec	Finish	QTY
XX	Cable Length	10000 ±150 mm		1
YY	Cable Type	RG 174	Black	1
ZZ	Connector Type	SMA(M) Straight	Gold	1





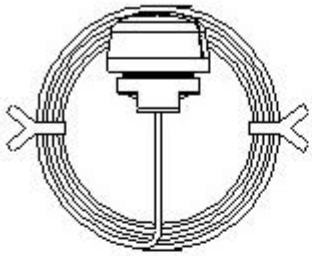
7. Installation

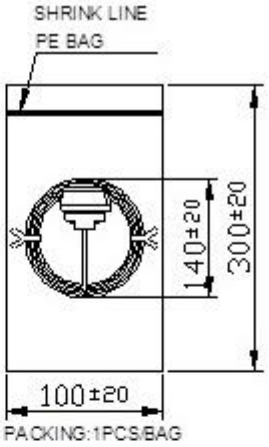


Recommended torque for Mounting is 24.5N·m
Maximum torque for mounting is 29.4 N·m

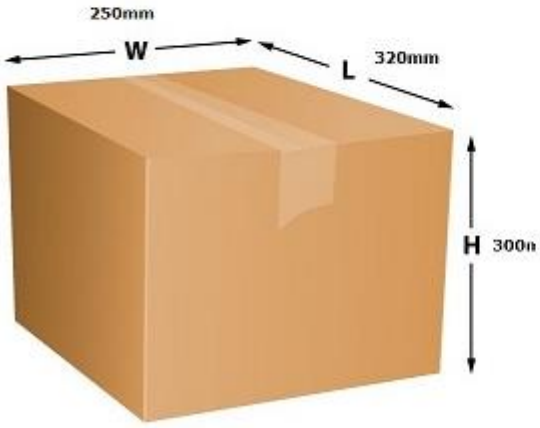
8. Packaging

1 piece A.03 per PE Bag
Weight 224g

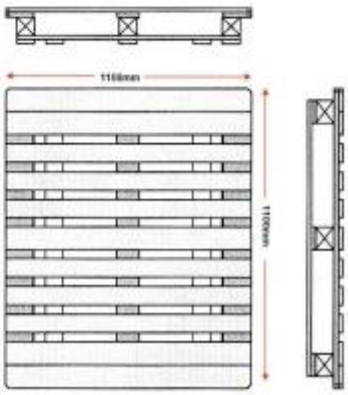




50 pieces per Carton
Weight 11.7kg



60 Cartons per pallet
Pallet Dims: 110*110*15cm
3000 pcs per pallet



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