

## **Ku-band 6W BUC**

RF Frequency:

13.75 to 14.5 GHz and 14.0 to 14.5 GHz

### **Model No. NJT8306 series**

RF Frequency : 14.0 to 14.5 GHz / 13.75 to 14.5 GHz  
LO Frequency : 13.05 GHz / 12.80 GHz  
IF Frequency : 950 to 1,450 MHz / 950 to 1,700 MHz  
Output Power @ 1dB G.C.P. :  
+37.8 dBm (6W)  
IF / Ref. (10MHz) Input :  
N-type / F-type, Female Connector  
DC Power Input : IF Connector

## **Specifications**

**Rev.01 December 10, 2014**

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**New Japan Radio Co., Ltd.  
Microwave Components Division**

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2. To ensure the highest levels of reliability, NJRC products must always be properly handled. The introduction of external contaminants (e.g. dust, oil or cosmetics) can result in failures of microwave components.
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  - \* Power Generator Control Equipment (nuclear, steam, hydraulic)
  - \* Life Maintenance Medical Equipment
  - \* Fire Alarm/Intruder Detector
  - \* Vehicle Control Equipment (automobile, airplane, railroad, ship, etc.)
  - \* Various Safety Equipment
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## Model Number

### ● Numbering System

**N J T 8 3 0 6 U N**

**IF Interface Connector:**

**N: N-type (50 ohms), Female Connector**

**F: F-type (75 ohms), Female Connector**

**RF Frequency**

**Non Suffix: Standard Ku-band (14.0 to 14.5 GHz)**

**U: Universal Ku-band (13.75 to 14.5 GHz)**

**Output Power @ 1dB G.C.P.:**

**06: +37.8 dBm (6W)**

**Product Series Number**

### ● Line-up

Model No.	RF Frequency	Local Frequency	IF Frequency	Output Power @ P1dB	IF Connector	Power Supply
NJT8306N	14.0 to 14.5GHz (Standard Ku-band)	13.05 GHz	950 to	6W Linear (+37.8dBm min.)	N-type	+12 to +30 V DC Power
NJT8306F			1,450 MHz		F-type	
NJT8306UN	13.75 to 14.5GHz (Universal Ku-band)	12.80 GHz	950 to		N-type	
NJT8306UF			1,700 MHz		F-type	

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## 1. Electrical Specifications

1-1.	Output Frequency Range <Universal Ku-band> <Standard Ku-band>	13.75 to 14.5 GHz 14.0 to 14.5 GHz
1-2.	Input Frequency Range <Universal Ku-band> <Standard Ku-band>	950 to 1,700 MHz 950 to 1,450 MHz
1-3.	Maximum IF Input Level (without damage)	+13 dBm max.
1-4.	Conversion Type	Single, fixed L.O.
1-5.	L.O. Frequency <Universal Ku-band> <Standard Ku-band>	12.80 GHz 13.05 GHz
1-6.	Frequency Sense	Positive
1-7.	Output Power @ 1dB G.C.P. (P1dB)	+37.8 dBm min. over temperature
1-8.	Linear Gain	62 dB nom., 56 dB min.
1-9.	Gain Variation over frequency @ fixed temperature <Universal Ku-band>  <Standard Ku-band>	5 dBp-p max. over 750 MHz 2 dBp-p max. over 54 MHz 5 dBp-p max. over 500 MHz 2 dBp-p max. over 54 MHz
1-10.	Gain Stability over temperature @ fixed frequency	4 dBp-p max. 2 dBp-p typ.
1-11.	ACPR	-30 dBc typ., -24 dBc min. @ Pout = +37.8 dBm
1-12.	Requirement for External Reference [Frequency] [Input Power] [Phase Noise]	10 MHz (sine-wave) -5 to +5 dBm @ Input port -125 dBc/Hz max. @ 100 Hz -135 dBc/Hz max. @ 1 kHz -140 dBc/Hz max. @ 10 kHz
1-13.	L.O. Phase Noise	-60 dBc/Hz max. @ 100 Hz -70 dBc/Hz max. @ 1 kHz -80 dBc/Hz max. @ 10 kHz -90 dBc/Hz max. @ 100 kHz -100 dBc/Hz max. @ 1MHz
1-14.	Spurious @ P1dB Output [in band] [in receive band] [Out-of-band]	-50 dBc max. @ RF Frequency -70 dBm max. @ 10.95 to 12.75 GHz -50 dBc max.
1-15.	Receive Band Noise Density <Universal Ku-band>   <Standard Ku-band>	Tx: 14.0 to 14.5 GHz -156 dBm/Hz max. @10.95 to 12.75 GHz Tx: 13.75 to 14.0 GHz -156 dBm/Hz max. @10.95 to 12.25 GHz -125 dBm/Hz max. @12.25 to 12.75 GHz Tx: 14.0 to 14.5GHz -156 dBm/Hz max. @ 10.95 to 12.75 GHz

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1-16.	Noise Figure	23 dB max.
1-17.	Input Impedance <N-type Model> <F-type Model>	50 ohms nom. 75 ohms nom.
1-18.	Input V.S.W.R.	2 : 1 max.
1-19.	Output Load V.S.W.R. [Recommendation] [Non Damage]	1.3 : 1 max. 3 : 1 max.
1-20.	DC Power Requirement [Voltage Range] [Power Consumption]	+24 VDC (+12 to +30 VDC) 35 W typ. @ No IF signal 40 W typ., 48 W max. @ Pout = +37.8 dBm 3 W max. @ 10 MHz reference off (Mute on)
1-21.	Mute	Shut off the HPA in case of L.O. unlocked or no 10 MHz reference signal.
1-22.	LED Indicator	GREEN: L.O. locked RED: L.O. unlocked (or no 10 MHz reference signal)

## 2. Mechanical Specifications

2-1.	Input Interface <N-type Model> <F-type Model>	IF / Ref. / DC Input: N-type female connector, 50 ohms F-type female connector, 75 ohms
2-2.	Output Interface	Waveguide, WR-75 (with Groove)
2-3.	Dimension & Housing	174.9 (L) × 84 (W) × 59.2 (H) mm [6.89" (L) × 3.31" (W) × 2.33" (H)] without interface connectors and screws
2-4.	Weight	1.2 kg max. [2.6 lbs max.]

## 3. Environmental Specifications

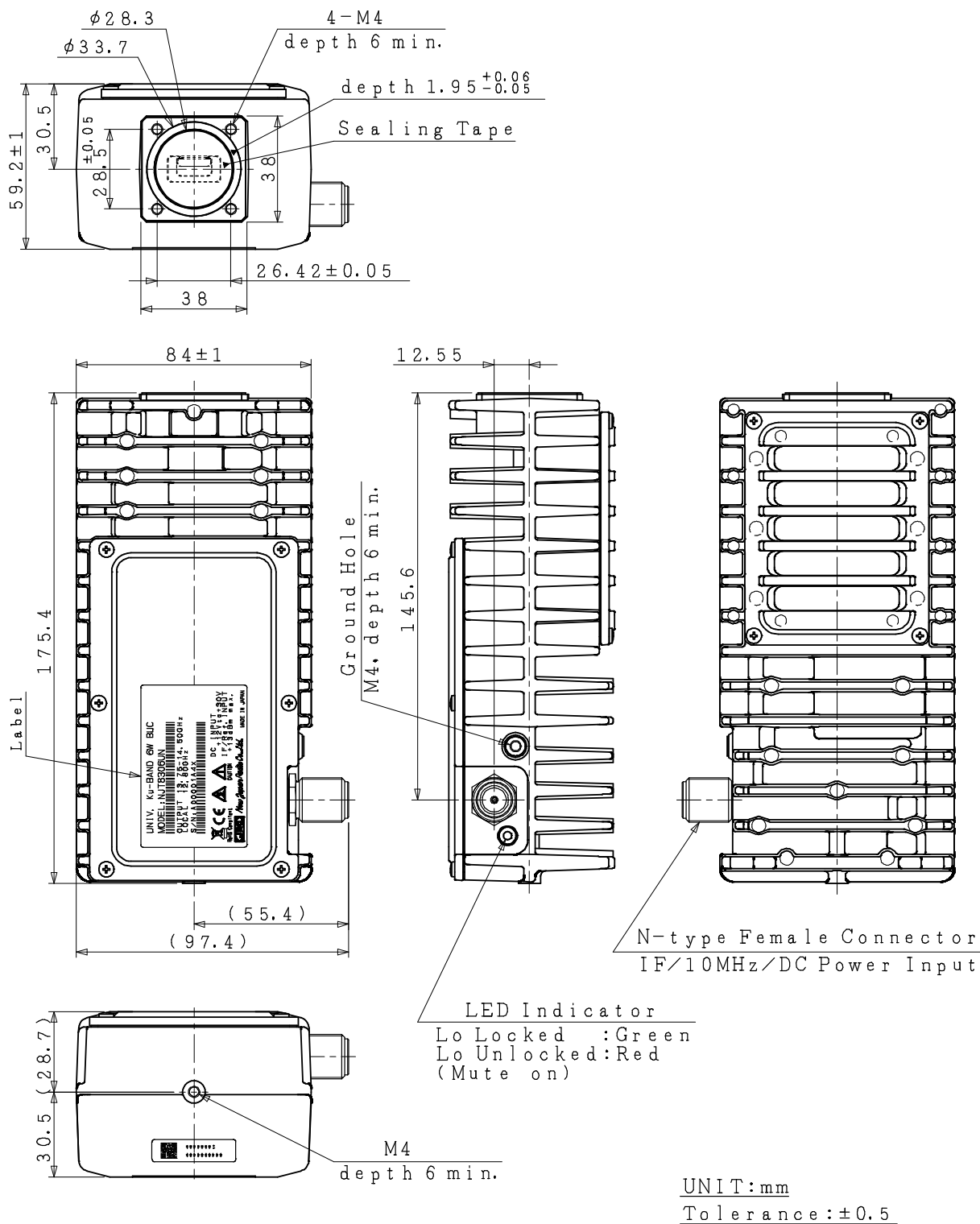
3-1.	Temperature Range (ambient) [Operating] [Storage]	Operation Guarantee: -40 to +65 °C Performance Guarantee: -40 to +60 °C -40 to +75 °C
3-2.	Humidity	0 to 100 %
3-3.	Altitude	15,000 feet (4,572 m)
3-4.	Vibration	5 G [49.03 m/s <sup>2</sup> ] (3 axis, 50 Hz to 2 kHz) 1 mm p-p (3 axis, 5 to 50 Hz)
3-5.	Shock	30 G [294.20 m/s <sup>2</sup> ] (3 axis)
3-6.	Waterproof / Dustproof (IP Code)	IP 67 *1
3-7.	Regulations	EU Directive (CE Marking) EMC (2004/108/EC) RoHS (2011/65/EU) Safety: EN60950-1
3-8.	Comply with RoHS (Restricting the use of Hazardous Substances) directives	

\*1: Conditioned on connection with waveguide.

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## 4. Outline Drawing

- N-type Model

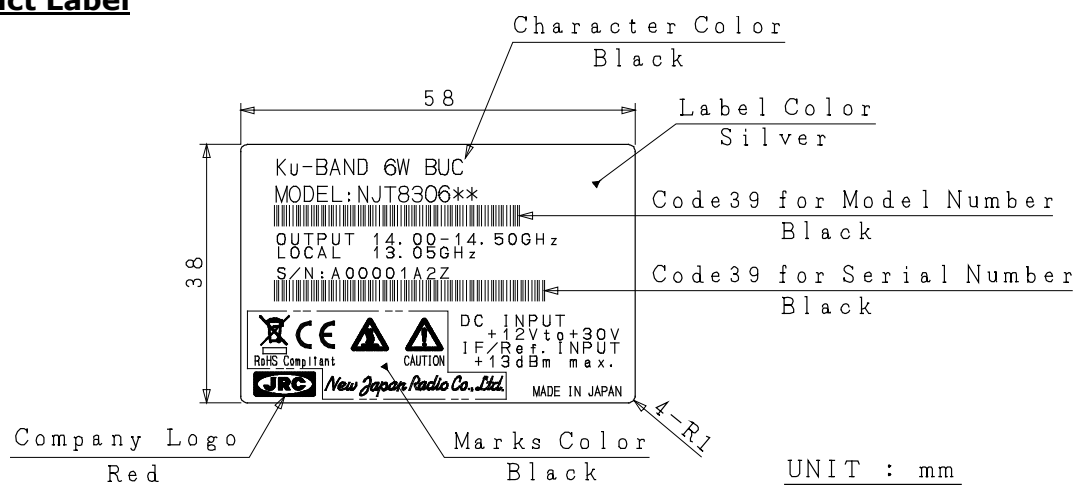


**Caution:** DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.

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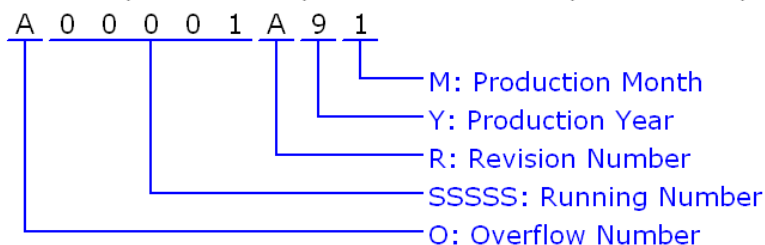


## 5. Label Product Label



### Definition of Serial Number

Serial Number (OSSSSSRYM) - ALPHANUMERIC (9 characters)



O: Overflow Number - ALPHABET (1 character)

"A" to "Z", e.g.: A99999 ⇒ B00001

SSSSS: Running Number - NUMBER (5 digits)

"00001" to "99999"

R: Revision Number - ALPHABET (1 character)

"A" to "Z"

Y: Production Year - NUMBER (1 digit)

Calendar Number, e.g.: 2009:9, 2010:0, 2011:1, 2012:2 ....

M: Production Month - ALPHANUMERIC (1character)

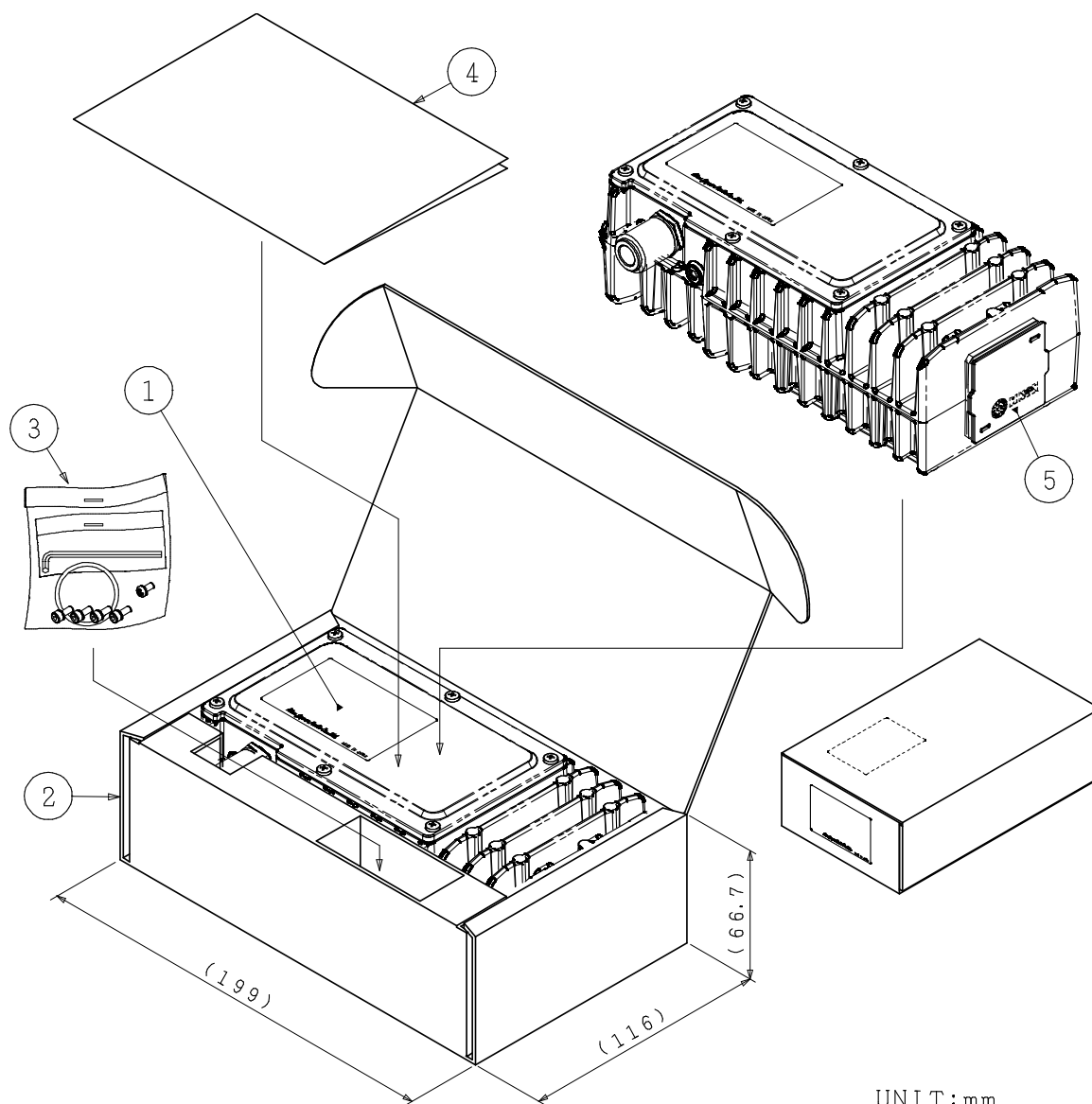
"1" to "9", "X" as October, "Y" as November, "Z" as December

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## 6. Package

### Individual Package



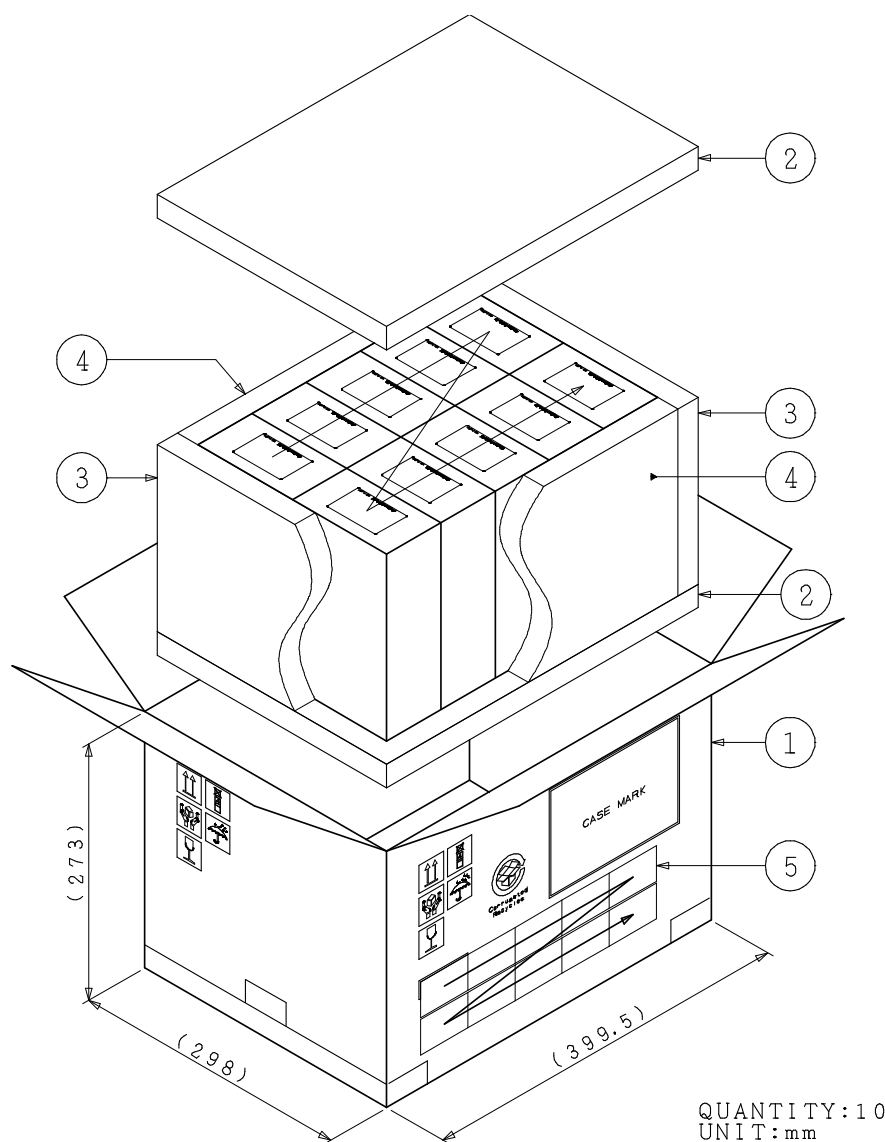
- ①: BUC
- ②: Single Wall Corrugated Fiberboard
- ③: Accessories
- ④: Data Sheet
- ⑤: Flange Cover (Polypropylene)

#### Accessories

- O-RING
- Cross Recessed Head Machine Screw  
M4×6 1 Piece (SUS, SW) for Ground Hole
- Hexagon Socket Head Bolts  
M4×10 4 Pieces (SUS, SW and W) for Waveguide Flange Holes
- Hexagon Wrench Keys (M4 Type)

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## Shipping Package



### Pictorial Marking for Handling of Goods



THIS WAY UP



FRAGILE



KEEP DRY



HANDLE WITH CARE



LAYERS LIMIT:4



CORRUGATED RECYCLES

- ①:Double Wall Corrugated Fiberboard
- ②:Polystyrene Foam For Package Cushioning
- ③:Polystyrene Foam For Package Cushioning
- ④:Polystyrene Foam For Package Cushioning
- ⑤:Label

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