



Rapidtek

RF Coaxial Cable Assembly

RPLL-242 Series



Datasheet

RPLL-242 series semi-flexible low loss cable assemblies are optimized to the expecting frequency bands that work to 18 GHz. The features of RPLL-242 involve additive flexibility, extended flex life, superior electrical and mechanical performance for static and dynamic applications.

We accommodate several types of connectors and different lengths of RPLL-242 Cable to fulfill the custom demands.

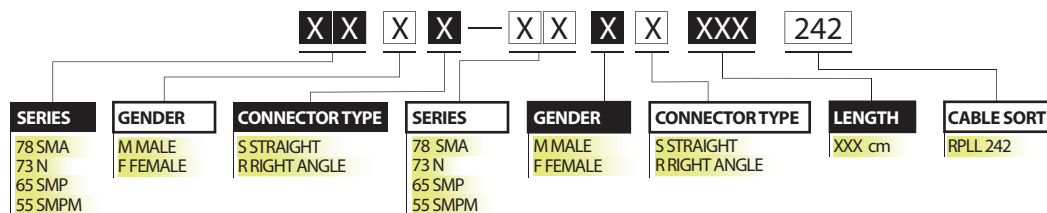
Advantage

- ⊙ Additive flexibility
- ⊙ Extended flex life
- ⊙ Superior electrical and mechanical performance
- ⊙ Lower insertion loss and return loss

Applications

- ⊙ Communication systems
- ⊙ Radar interconnects
- ⊙ RF test equipment

PART NUMBER



Before placing an order, please provide the following information. The naming rule follows the above rules, including a sequence rule. If numbers or letters are sorted earlier, they need to be placed at the front. Offering an example for reference.

Connector A + Connector B + Raw Cable Length + Cable Type

Example:

Connector A: SMA Male Straight
 Connector B: SMPM Female Straight
 Raw Cable Length: 100 cm

└ = SMA Male Straight + SMPM Female Straight + Raw Cable Length 100 cm + RPLL-242

└ = 78MS - 55FS 100 242

└ = 55FS - 78MS 100 242

* Make sure the specification of RPLL-242 and then select connector type.

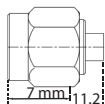


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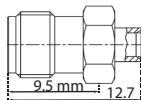
CONNECTOR-TYPE

SMA

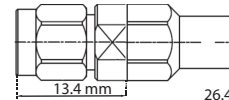
SMA Male Straight (Code: 78MS)
Maximum Frequency: 18 GHz



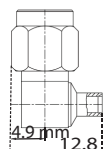
SMA Female Straight (Code: 78FS)
Maximum Frequency: 18 GHz



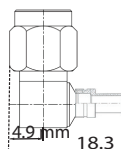
SMA(S) Male Straight (Code: 78MS)
, add "-R1" after cable sort
Maximum Frequency: 18 GHz



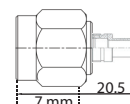
SMA Male Right Angle (Code: 78MR)
Maximum Frequency: 12.4 GHz



SMA(S) Male Right Angle (Code: 77MR)
Maximum Frequency: 12.4 GHz



SMA(S) Male Straight (Code: 77MS)
Maximum Frequency: 18 GHz



* This (S) type is designed for the particular product application, mainly in a dynamic test.

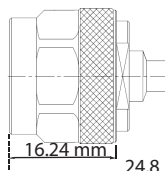
* (S) means strength.

* This (S) type is designed for the particular product application, mainly in a dynamic test.

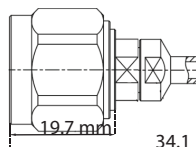
* (S) means strength.

N

N Male Straight (Code: 73MS)
Maximum Frequency: 12.4 GHz



N(R1) Male Straight (Code: 73MS)
, add "-R1" after cable sort
Maximum Frequency: 18 GHz

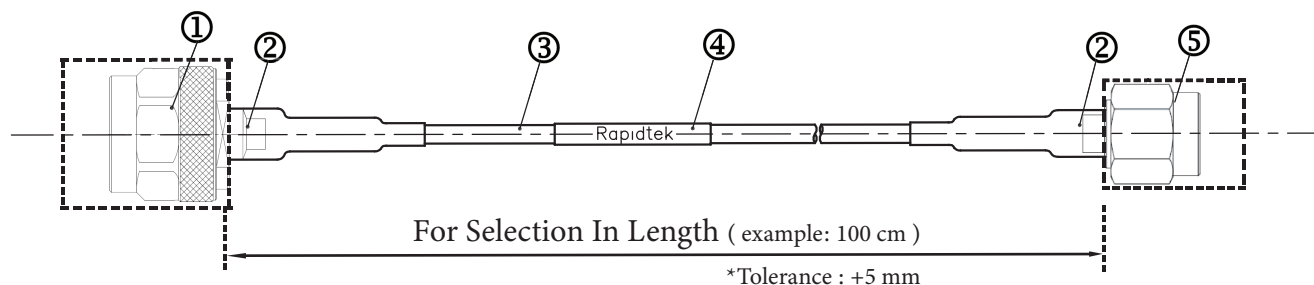


Cable		Connector-type							
		SMA Type				N Type			
		Male		Female		Male		Female	
P/N	Frequency	Straight	R/A	Straight	R/A	Straight	R/A	Straight	R/A
RPLL-242	DC~12.4 GHz	78MS	78MR	78FS	-	73MS	-	-	-
	DC~18GHz		-		-		-	-	-



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STANDARD DIMENSIONS



- ① CONNECTOR TYPE (example: N)
- ② HEAT SHRINK TUBE - $\Phi 6.5\text{mm}$
- ③ CABLE (example: RPLL-242) - $\Phi 4.14\text{mm}$
- ④ LABEL - $\Phi 5\text{mm}$
- ⑤ CONNECTOR TYPE (example: SMA)

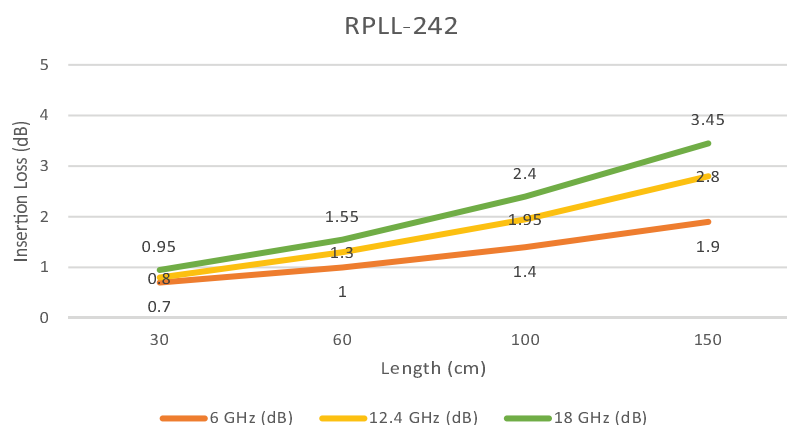
Label example :

Line 1 : P/N - MM/DD/YYYY - P/L 73MS-78MS100242-03/29/2022-A
 LINE 2 : Rapidtek website <http://www.rapidtek.net>

73MS-78MS100242-03/29/2022-A
<http://www.rapidtek.net>

TYPICAL PERFORMANCE

The insertion losses shown in this table include the connectors and the cable losses.

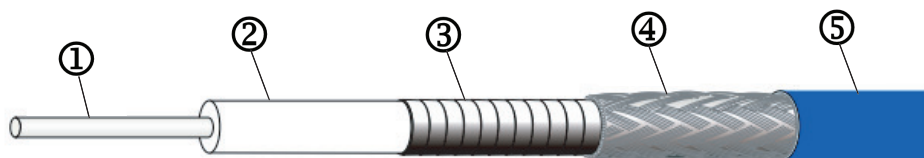


Length (cm)	30	60	100	150
6 GHz (dB)	0.7	1	1.4	1.9
12.4 GHz (dB)	0.8	1.3	1.95	2.8
18 GHz (dB)	0.95	1.55	2.4	3.45



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MECHANICAL & ELECTRICAL SPECIFICATION



Connector parts	Material	Diameter
① Inner Conductor	Copper Silver plated	0.94 mm
② Dielectric	PTFE	2.97 mm
③ Foil	Copper Silver plated	3.25 mm
④ Braid	Copper Silver plated	3.58 mm
⑤ Jacket	FEP	4.14 mm

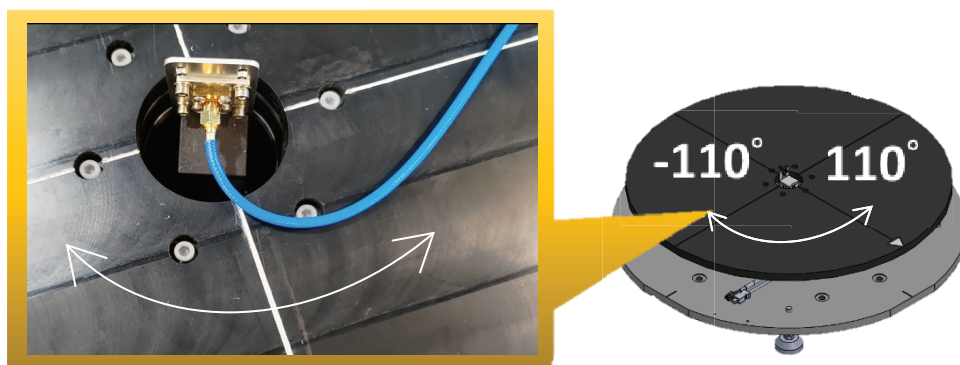
DESCRIPTION	SPECIFICATIONS
MIN BEND RADIUS	20.3 mm
WEIGHT	42 g/m
TEMPERATURE RANGE	-55°C ~ 200°C
RoHS (2011/65/EU)	Compliant

DESCRIPTION	TEST CONDITION	SPECIFICATIONS
IMPEDANCE	DC~ 18 GHz	$50 \pm 1 \Omega$
SCREENING EFFECTIVENESS	DC~ 18 GHz	$\geq 90\text{dB}$
VELOCITY OF PROPAGATION	DC~ 18 GHz	70% nom.
CAPACITANCE	DC~ 18 GHz	96.1 pF/m
OPERATING VOLTAGE MAX. (Vrms@60Hz)	DC~ 18 GHz	$\leq 1.9 \text{ kVms}$
SIGNAL DELAY	DC~ 18 GHz	4.72 ns/m
INSULATION RESISTANCE	DC~ 18 GHz	$\geq 1 \times 10^8 \text{ M}\Omega/\text{m}$
VSWR	DC~ 18 GHz	1.3 Max

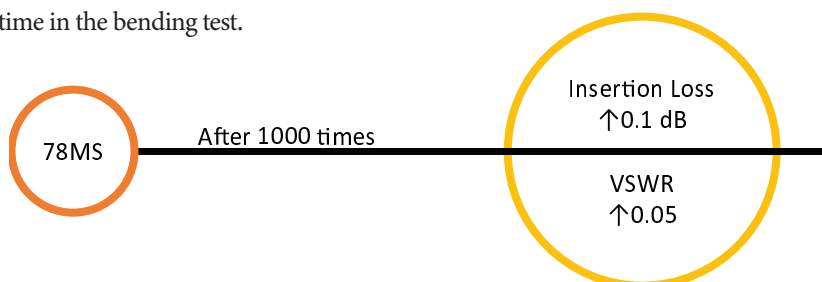


CONNECTOR STRENGTHENING

Using bending test device to test the service life of the RF cable products in dynamic bending could avoid errors in test verification. After fixing connectors, the device rotates back and forth at plus/minus 110 degrees to generate pressure on the soldering parts and verify the assembly's strength.

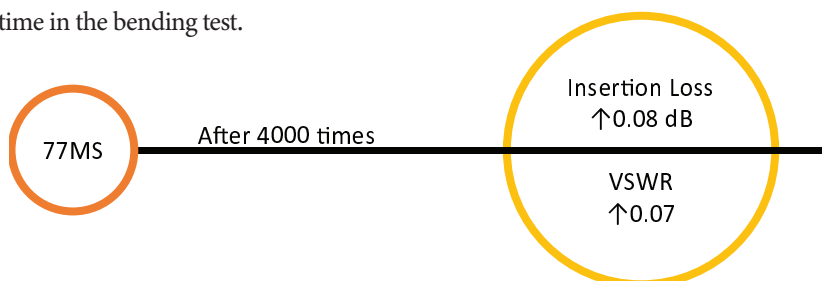


The connector of 78MS shows the lifetime in the bending test.



DESCRIPTION	TEST CONDITION	SPECIFICATIONS
DYNAMIC BENDING LIFE	20.3 mm	1000 times
	> 20.3 mm	1100 times

The connector of 77MS shows the lifetime in the bending test.



DESCRIPTION	TEST CONDITION	SPECIFICATIONS
DYNAMIC BENDING LIFE	20.3 mm	4000 times
	> 20.3 mm	4500 times

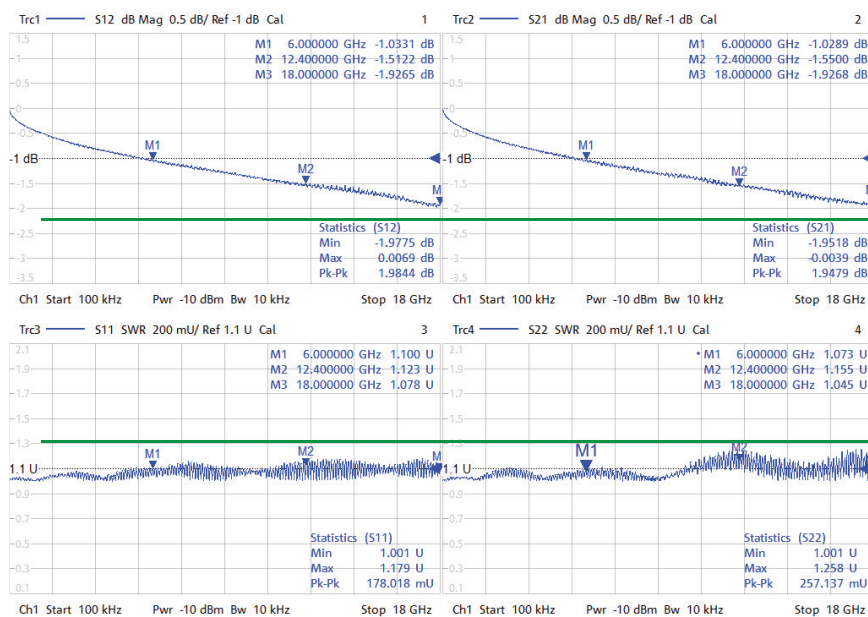


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TEST REPORTS

73MS-78FS90242

* N Male Straight - SMA Male Straight - 90 cm - RPLL-242 ~18 GHz



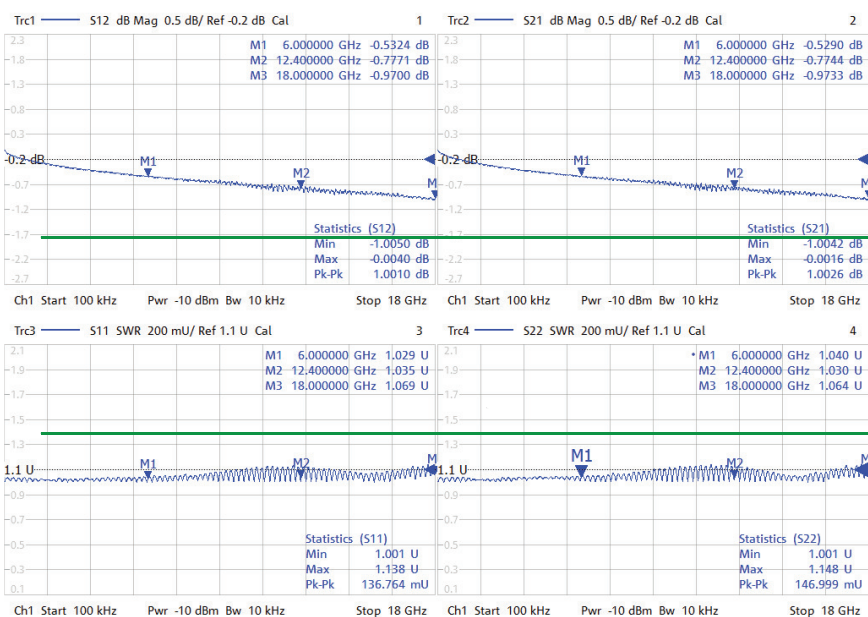
The S-parameters are shown in the specification mark below:

I/L : 2.2

VSWR : 1.3

78MS-78MS50242

* SMA Male Straight - SMA Male Straight - 50 cm - RPLL-242 ~18 GHz



The S-parameters are shown in the specification mark below:

I/L : 1.8

VSWR : 1.4

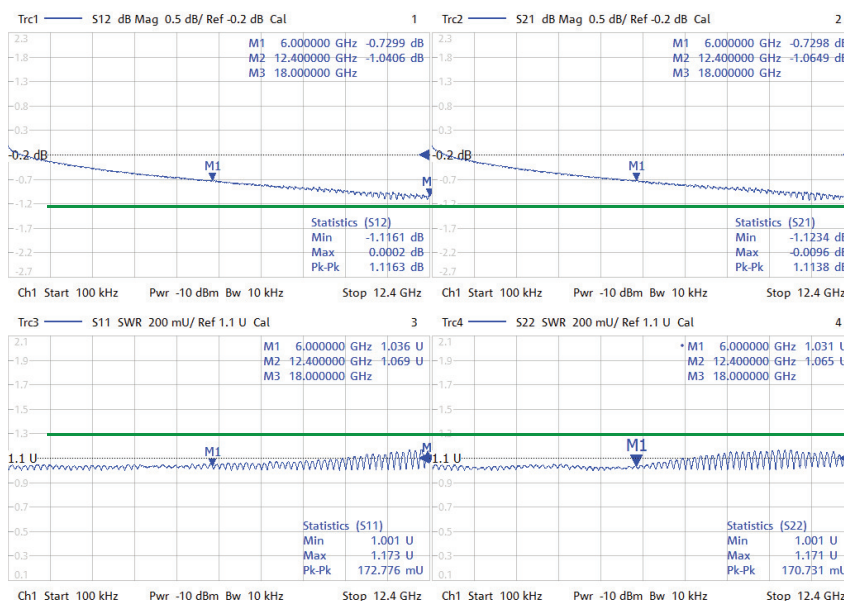


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TEST REPORTS

78MR-78MS60242

* SMA Male Right Angle - SMA Male Straight - 60 cm - RPLL-242 ~12.4 GHz



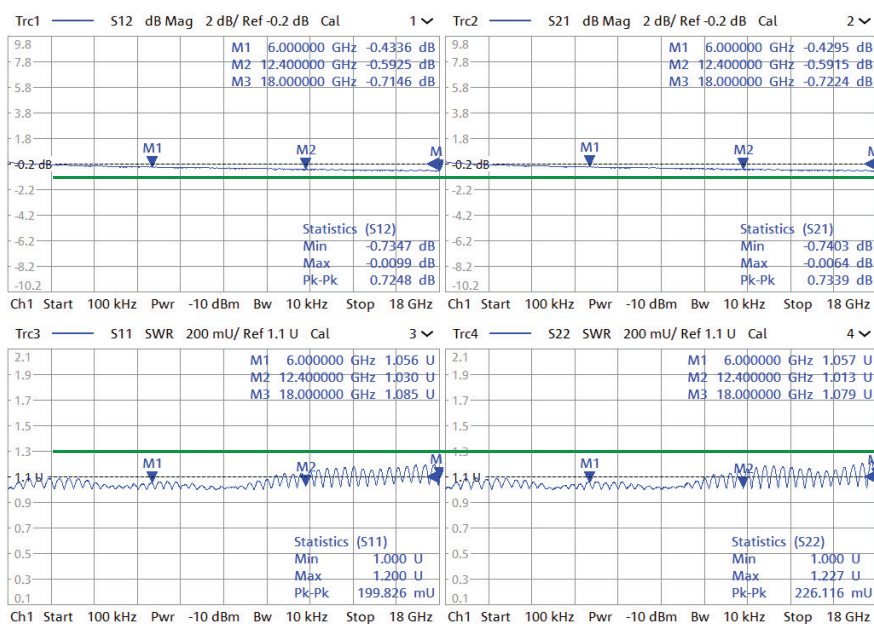
The S-parameters are shown in the specification mark below:

I/L : 1.2

VSWR : 1.3

73MS-73MS30242R1

* N Male Straight R1 - N Male Straight R1 - 30 cm - RPLL-242 ~18 GHz



The S-parameters are shown in the specification mark below:

I/L : 1.2

VSWR : 1.3



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TOOLS

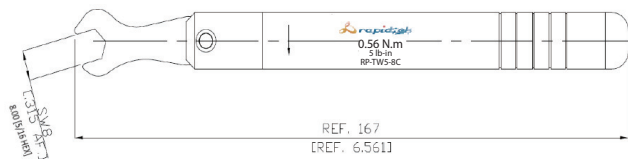
Tools could assist operators in connecting efficiently and accurately—vice versa.

SMA

RP-TW5-8C

Connector-type: SMA

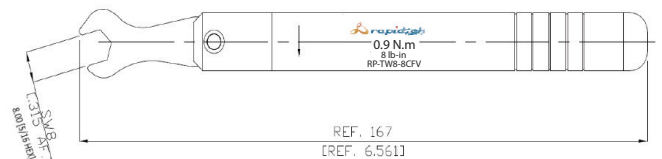
Force: 5 lb-in



RP-TW8-8CFV

Connector-type: SMA

Force: 8 lb-in

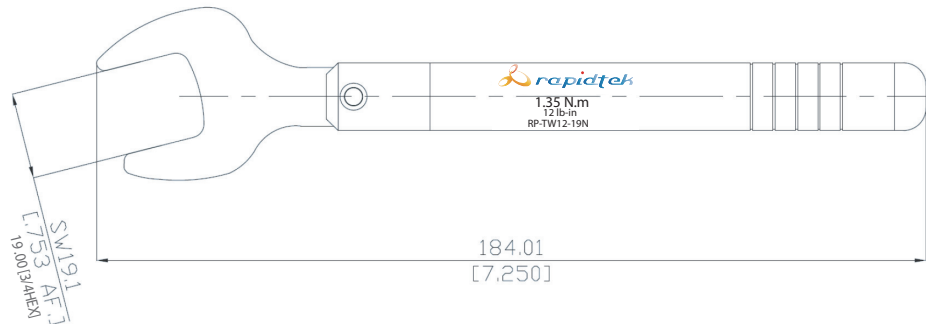


N

RP-TW12-19N

Connector-type: N

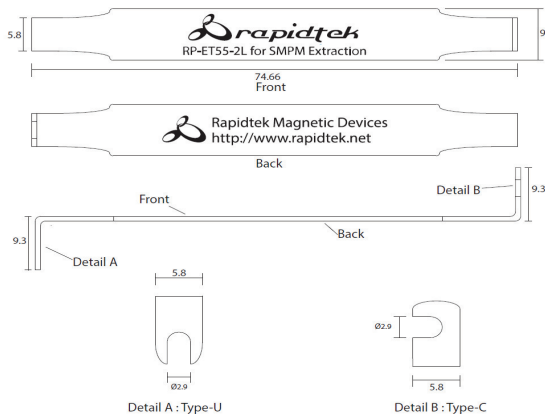
Force: 12 lb-in



SMPM

RP-ET55-2L

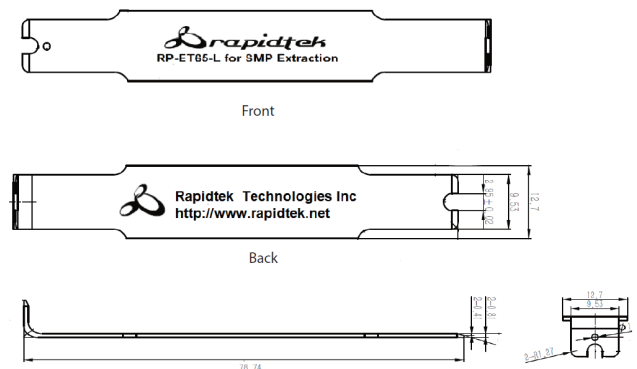
Connector-type: 55 SMPM



SMP

RP-ET65-L

Connector-type: 65 SMP

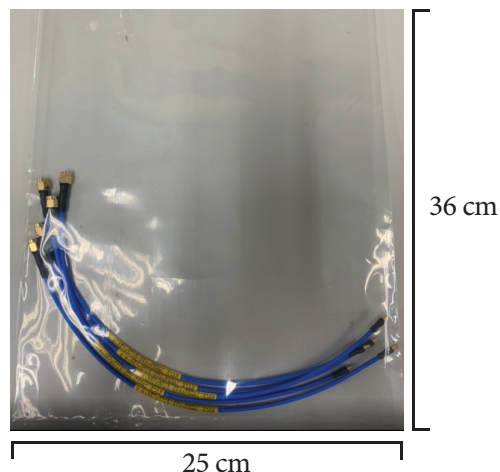


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PACKAGE

For 6 to 20 pieces and under 2 meter per piece in Length. Plastic packing bag size : 45.5 cm x 30 cm

For the quantity is less than six pieces. Plastic packing bag size: 36 cm x 25 cm.

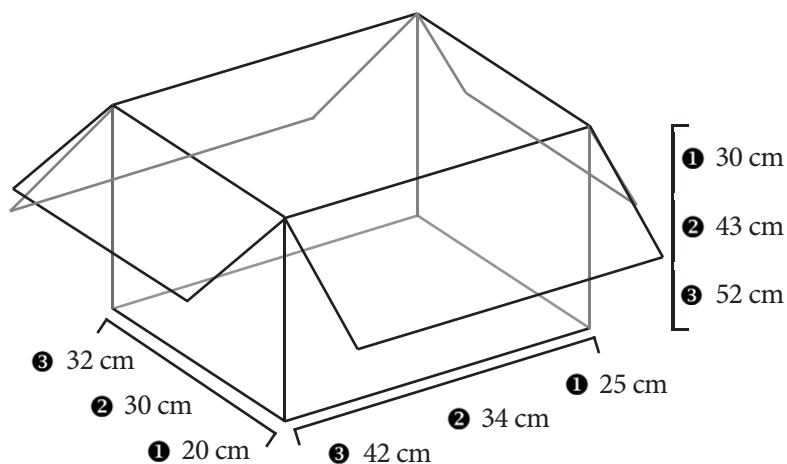


According to the quantity, the packing boxes will be divided into three sizes, including the size of large, medium, and small.

Size	Length (cm)	Width (cm)	Height (cm)	Box capacity (bag)
① Small Box	25	20	30	1 ~ 10
② Medium Box	34	30	43	11 ~ 20
③ Large Box	42	32	52	21 ~ 30

*The weight limit is below 20 kg.

Label:



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