

# TEST CABLES

Test Cables &  
Interchangeable Port Connectors



Microwave test cables for vector network analyzers feature high flexibility while maintaining excellent electrical characteristics. Outstanding phase and amplitude stability are guaranteed by special construction techniques. A flexible armoring protects the microwave cable against mechanical damage.

Test cables are delivered as individual cable assemblies or cable sets including 2 cables with a length of 60 cm each. Custom-made types in other lengths are available on request. All standard cables are terminated at one end with a special reinforced testport connector, which mates with the connector on the measuring equipment. Test cables sets are supplied in stable wooden boxes.

## Overview

### VA26 Test Cables

with RPC- 3.50 and/or RPC- SL connectors: for applications up to 26.5 GHz  
with RPC- N (50  $\Omega$ ) and/or RPC- 7 connectors: for applications up to 18 GHz

### VA40 Test Cables

with RPC- 2.92 and/or RPC- SL connectors: for applications up to 40 GHz

### VA41 Test Cables

with RPC- 2.92, RPC- 2.40 and/or RPC- SL connectors: for applications up to 40 GHz

### VA50 Test Cables

with RPC- 2.40 connectors: for applications up to 50 GHz

### VA75 Test Cables

With RPC- N (75  $\Omega$ ) connectors: for applications up to 4 GHz

### Test Cables with Interchangeable Connector Heads

Rosenberger offers a wide range of connector heads for test setups which often require other connector series, e.g. N, PC- 7 or SMA connectors. Due to the special cable interface, mounting of changeable connector heads is very easy to handle, without any need for tools. Thus, test cables can be readily adapted to the required connector types already available on the DUT.

### Interchangeable Port Connector System

The **Rosenberger** Interchangeable Port Connector System was developed for use with test equipment featuring a test port that will be continually mated and re- mated. In a heavy use environment the test port is readily damaged and this can entail in large repair expenses. The **Rosenberger** Interchangeable Port Connector allows the equipment/device interface to be fully protected from damage.

The Interchangeable Port Connector consists of a panel mounting half and a sexless interface. This interface uses two spring loaded butt contacts, which ensure that no wear occurs during mating and allows no possibility of damage due to mismatching of the connector halves.

*Testkabel für vektorielle Netzwerkanalysatoren weisen eine hohe Flexibilität bei sehr konstanten elektrischen Werten auf. Konstruktionsbedingt werden ausgezeichnete Werte für die Phasen- und Amplitudenstabilität bei Biegung erreicht. Die Kabel sind durch eine flexible Spezialarmierung gegen Beschädigungen geschützt.*

*Die Testkabel werden als Einzelkabel oder als Kabelsatz, bestehend aus 2 Kabeln mit einer Standardlänge von 60 cm, geliefert. Sonderanfertigungen in anderen Längen sind möglich. Auf einer Seite weisen alle Standardkabel einen speziellen verstärkten Testportstecker auf, der zu den jeweiligen Messgeräteanschlüssen kompatibel ist. Die Lieferung von Kabelsätzen erfolgt in einer stabilen Holzschatulle.*

## Überblick

### VA 26- Testkabel

*Mit RPC- 3.50- und/oder RPC- SL Steckverbindern: für Anwendungen bis 26.5 GHz*

*Mit RPC- N (50  $\Omega$ )- und/oder RPC- 7-Steckverbindern: für Anwendungen bis 18 GHz*

### VA 40- Testkabel

*Mit RPC- 2.92- und/oder RPC- SL-Steckverbindern: für Anwendungen bis 40 GHz*

### VA 41- Testkabel

*Mit RPC- 2.92-, RPC- 2.40- und/oder RPC- SL- Steckverbindern: für Anwendungen bis 40 GHz*

### VA 50- Testkabel

*Mit RPC- 2.40-Steckverbindern: für Anwendungen bis 50 GHz*

### VA 75- Testkabel

*Mit RPC- N (75  $\Omega$ )-Steckverbindern: für Anwendungen bis 4 GHz*

### Testkabel mit austauschbaren Wechselköpfen

*Für Messaufbauten mit anderen Steckverbinder- Serien, z.B. N, PC- 7 oder SMA, bietet Rosenberger eine Vielzahl von Steckerköpfen. Das spezielle Kabel- Interface ermöglicht dem Anwender, Steckerköpfe ohne Werkzeug selbst zu wechseln und Testkabel auf die gewünschte Steckverbinder- Serie umzurüsten.*

### Wechselport- Steckersystem

*Das **Rosenberger** Wechselport- Steckersystem wurde für Messgeräte entwickelt, deren Testports durch Serienmessungen stark beansprucht werden und die an die verschiedenen Steckerfamilien, ohne Einsatz von Übergängen, in kurzer Zeit angepasst werden müssen. Durch den Einsatz des **Rosenberger** Wechselport- Steckersystems wird der Ausgangsstecker des Messgerätes sicher vor Beschädigung geschützt.*

*Das Wechselport- Steckersystem besteht aus einem Gehäuseeinbauteil und einem speziell entwickelten Innenleitersystem, das eine Abnutzung der Innenleiterkontaktfläche verhindert. Die beiden federnden Innenleiter berühren sich nur auf ihren Kontaktflächen und gewährleisten so wiederholte Steckungen ohne Verschleiß.*

The interface between the panel mount and the adaptor is slotted. This ensures that at no time the mating faces will be allowed to rotate, thus preventing any damage. Adaptors can be interchanged and are available in different connector series.

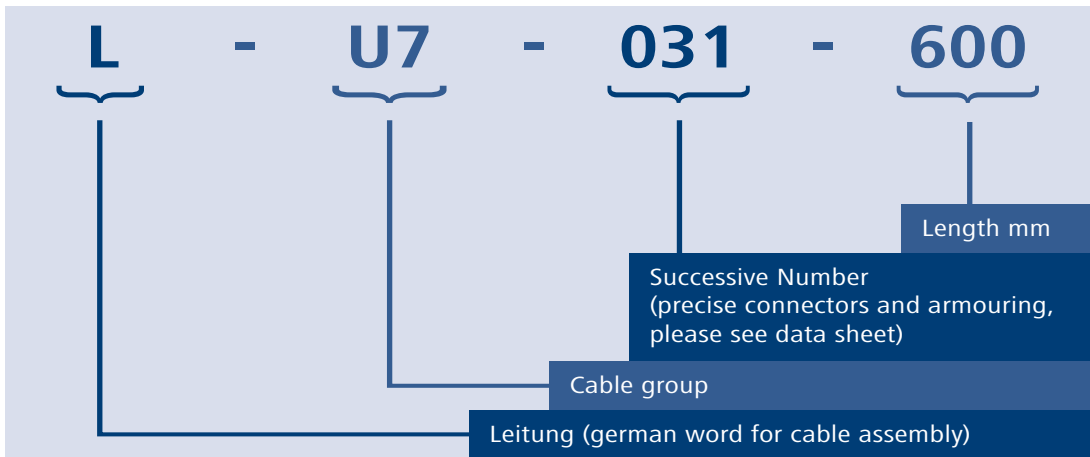
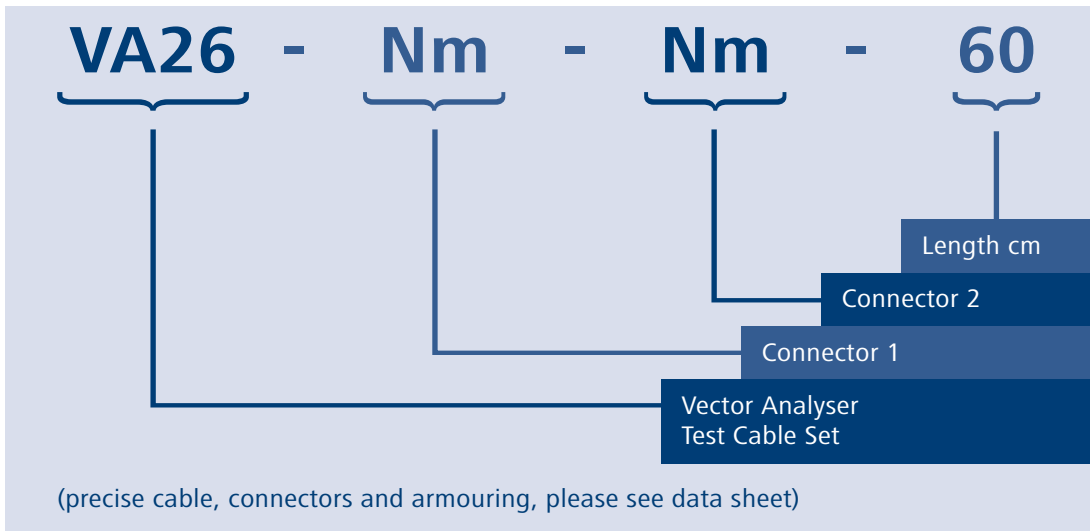
The connector heads for these two ranges are not compatible and can be used inside their own system only.

*Durch die im Gehäuse- Verbindungsstück eingefräste Nut ist eine definierte Positionierung der verwendeten Adapter gewährleistet. Die Adapter können leicht gewechselt werden und sind für verschiedene Steckerfamilien lieferbar.*

*Die Steckerköpfe sind nur innerhalb ihres Systems verwendbar und nicht untereinander austauschbar.*

Number Designation

Nummernschlüssel



Technical Data

Technische Daten

Cable Type	VA26	VA26	VA40 / VA41	VA 50
Length	60 cm	60 cm	60 cm	60 cm
Max. frequency range	18 GHz	26.5 GHz	40 GHz	50 GHz
Insertion loss	< 1.3 dB @ DC to 18 GHz	< 1.5 dB @ DC to 26.5 GHz	< 2.0 dB @ DC to 40 GHz	< 2.8 dB @ DC to 50 GHz
Return loss	28 dB @ DC to 4 GHz 20 dB @ 4 GHz to 18 GHz	26 dB @ DC to 4 GHz 20 dB @ 4 GHz to 26.5 GHz	26 dB @ DC to 4 GHz 17 dB @ 4 GHz to 40 GHz	26 dB @ DC to 4 GHz 17 dB @ 4 GHz to 50 GHz
Max. phase deviation <sup>1</sup> (after 90° bending)	< 0.5° @ DC to 4 GHz < 2.0° @ 4 GHz to 18 GHz	< 1.0° @ DC to 4 GHz < 3.0° @ 4 GHz to 26.5 GHz	< 1.3° @ DC to 4 GHz < 6.0° @ 4 GHz to 40 GHz	< 1.3° @ DC to 4 GHz < 7.0° @ 4 GHz to 50 GHz
max. phase deviation <sup>1</sup> (straight after 3x90° bending)	< 0.5° @ DC to 4 GHz < 1.5° @ 4 GHz to 18 GHz	< 0.5° @ DC to 4GHz < 1.5° @ 4 GHz to 26.5 GHz	< 1.0° @ DC to 4 GHz < 4.0° @ 4 GHz to 40 GHz	< 1.0° @ DC to 4 GHz < 4.5° @ 4 GHz to 50 GHz
Amplitude stability <sup>1</sup>	< 0.03 dB @ DC to 4 GHz < 0.05 dB @ 4 GHz to 18 GHz	< 0.03 dB DC to 4 GHz < 0.05 dB @ 4 GHz to 26.5 GHz	< 0.03 dB @ DC to 4 GHz < 0.08 dB @ 4 GHz to 40 GHz	< 0.03 dB @ DC to 4 GHz < 0.08 dB @ 4 GHz to 50 GHz
Return loss stability <sup>2</sup>	> 48 dB @ DC to 4 GHz > 40 dB @ 4 GHz to 18 GHz	> 48 dB @ DC to 4 GHz > 40 dB @ 4 GHz to 26.5 GHz	> 45 dB @ DC to 4 GHz > 35 dB @ 4 GHz to 40 GHz	> 45 dB @ DC to 4 GHz > 35 dB @ 4 GHz to 50 GHz

1. The test cable is terminated with a short circuit and tested on a calibrated vector network analyzer with a mandrel of 10 cm diameter. The one-way transmission phase stability is determined by dividing the two-way transmission phase measurement by two. The one-way transmission loss stability is determined by dividing the two-way transmission loss measurement by two. The DATA/MEM feature provides an indication of both stabilities.
2. The test cable is terminated with a fixed load and tested on a calibrated vector network analyzer with a mandrel of 10 cm diameter. The DATA/MEM feature provides an indication of the return loss stability.

1. Das Testkabel ist mit einem Kurzschluss abgeschlossen und wird an einem kalibrierten Netzwerkanalysator mit einem Biegedurchmesser von 10 cm getestet. Die Durchgangs-Phasenstabilität erhält man, indem man die Rückfluss-Phasenstabilität durch zwei teilt. Die Durchgangs-Amplitudenstabilität erhält man, indem man die Rückfluss-Amplitudenstabilität durch zwei teilt. Die DATA/MEM Funktion liefert eine Darstellung beider Stabilitäten.
2. Das Testkabel ist mit einem Festabschluss abgeschlossen und wird an einem kalibrierten Netzwerkanalysator mit einem Biegedurchmesser von 10 cm getestet. Die DATA/MEM Funktion liefert eine Darstellung der Rückfluss-Dämpfungsstabilität.

## Test Cables

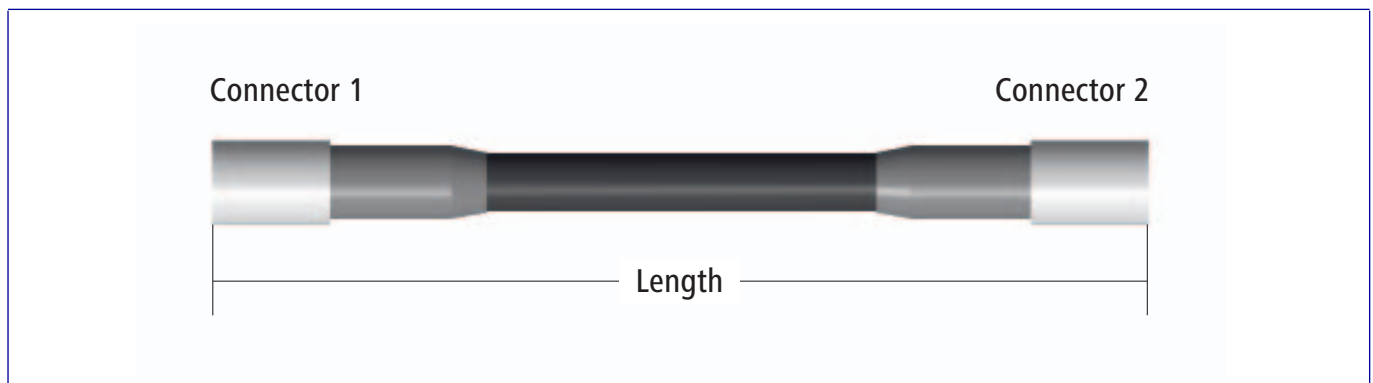
## Testkabel



## Test Cable Sets

## Testkabelsets

Ordering Number	Return Loss	Frequency	Length	Cable	Cable Assemblies	Connector 1	Connector 2
VA26- 3.50m- 3.50f- 60	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	2x LU7- 055- 600	RPC- 3.50 male 03 S 123- 2U7S3	RPC- 3.50 female 03 K 123- 2U7S3
VA26- Nm- Nm- 60	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	2x LU7- 042- 600	RPC- N 50 Ω male 05 S 123- 2U7S3	RPC- N 50 Ω male 05 S 123- 2U7S3
VA26- PC7- PC7- 60	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	2x LU7- 070- 600	RPC- 7 07 P 123- 2U7S3	RPC- 7 07 P 123- 2U7S3
VA26- TP- 3.50- 60	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	1x LU7- 039- 600 1x LU7- 043- 600	RPC- 3.50 ruggedized female 03 KR 123- 2U7S3	RPC- 3.50 male and female 03 S 123- 2U7S3 03 K 123- 2U7S3
VA26- TP- N- 60	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	1x LU7- 069- 600 1x LU7- 056- 600	RPC- 3.50 ruggedized female 03 KR 123- 2U7S3	RPC- N 50 Ω male and female 05 S 123- 2U7S3 05 K 123- 2U7S3
VA26- TP- PC7- 60	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	2x LU7- 031- 600	RPC- 3.50 ruggedized female 03 KR 123- 2U7S3	RPC- 7 07 P 123- 2U7S3
VA26- TP- W- 60	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	2x LU7- 035- 600	RPC- 3.50 ruggedized female 03 KR 123- 2U7S3	RPC- SL 26.5 GHz female 04 K 123- 2U7S3
VA40- TP- 2.92- 60	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	1x LU1- 005- 600 1x LU1- 006- 600	RPC- 2.92 ruggedized female 02 KR 123- 2U1S3	RPC- 2.92 male and female 02 S 123- 2U1S3 02 K 123- 2U1S3
VA40- TP- W- 60	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	2x LU1- 022- 600	RPC- 2.92 ruggedized female 02 KR 123- 2U1S3	RPC- SL 40 GHz female P4 K 123- 2U1S3
VA41- TP- 2.40- 60	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	1x LU1- 003- 600 1x LU1- 025- 600	RPC- 2.40 ruggedized female 09 KR 123- 2U1S3	RPC- 2.40 male and female 09 S 123- 2U1S3 09 K 123- 2U1S3
VA41- TP- 2.92- 60	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	1x LU1- 034- 600 1x LU1- 045- 600	RPC- 2.40 ruggedized female 09 KR 123- 2U1S3	RPC- 2.92 male and female 02 S 123- 2U1S3 02 K 123- 2U1S3
VA41- TP- W- 60	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	2x LU1- 004- 600	RPC- 2.40 ruggedized female 09 KR 123- 2U1S3	RPC- SL 40 GHz female P4 K 123- 2U1S3
VA50- TP- 2.40- 60	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 50 GHz	DC to 50 GHz	600 mm	RTK 125	1x LU8- 005- 600 1x LU8- 006- 600	RPC- 2.40 ruggedized female 09 KR 123- 2U1S3	RPC- 2.40 male and female 09 S 123- 2U1S3 09 K 123- 2U1S3
VA75- Nm- Nm- 60	≥ 28 dB @ DC to 3 GHz ≥ 23 dB @ 3 GHz to 4 GHz	DC to 4 GHz	600 mm	RG 216/U	2x L20- 001- 600	RPC- N 75 Ω male P5 S 123- 320CS	RPC- N 75 Ω male P5 S 123- 320CS



Cable Assemblies

Cable Assemblies

Ordering Number	Return Loss	Frequency	Length	Cable	Connector 1	Connector 2	Armouring
L20- 001- 600	≥ 28 dB @ DC to 3 GHz ≥ 23 dB @ 3 GHz to 4 GHz	DC to 4 GHz	600 mm	RG 216/U	RPC- N 75 Ω male, P5 S 123- 320CS	RPC- N 75 Ω male, P5 S 123- 320CS	Protection braid
LU1- 003- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.40 female ruggedized, 09 KR 123- 2U1S3	RPC- 2.40 male, 09 S 123- 2U1S3	ETFE Tubing with protection braid
LU1- 004- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.40 female ruggedized, 09 KR 123- 2U1S3	RPC- SL 40 GHz female, P4 K 123- 2U1S3	ETFE Tubing with protection braid
LU1- 005- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.92 female ruggedized, 02 KR 123- 2U1S3	RPC- 2.92 male, 02 S 123- 2U1S3	ETFE Tubing with protection braid
LU1- 006- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.92 female ruggedized, 02 KR 123- 2U1S3	RPC- 2.92 female, 02 K 123- 2U1S3	ETFE Tubing with protection braid
LU1- 022- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.40 female ruggedized, 02 KR 123- 2U1S3	RPC- 2.40 female, P4 K 123- 2U1S3	ETFE Tubing with protection braid
LU1- 025- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.40 female ruggedized, 09 KR 123- 2U1S3	RPC- 2.40 female, 09 K 123- 2U1S3	ETFE Tubing with protection braid
LU1- 034- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.40 female ruggedized, 09 KR 123- 2U1S3	RPC- 2.92 male, 02 S 123- 2U1S3	ETFE Tubing with protection braid
LU1- 045- 600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 40 GHz	DC to 40 GHz	600 mm	RTK 106	RPC- 2.40 female ruggedized, 09 KR 123- 2U1S3	RPC- 2.92 female, 02 K 123- 2U1S3	ETFE Tubing with protection braid
LU5- 009- 150	≥ 23 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	150 mm	RTK 092	SMP female, 19 K 101- 2U5E4	SMA male, 32 S 101- 2U5E3	N/A
LU5- 010- 150	≥ 23 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	150 mm	RTK 092	SMP male, 19 K 101- 2U5E4	SMA male, 32 S 101- 2U5E3	N/A
LU7- 031- 600	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 to 18 GHz	DC to 18 GHz	600 mm	RTK 162	RPC- 3.50 female ruggedized, 03 KR 123- 2U7S3	RPC- 7, 07 P 123- 2U7S3	ETFE Tubing with protection braid
LU7- 035- 600	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	RPC- 3.50 female ruggedized, 03 KR 123- 2U7S3	RPC- SL 26.5 GHz female, 04 K 123- 2U7S3	ETFE Tubing with protection braid
LU7- 039- 600	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	RPC- 3.50 male, 03 S 123- 2U7S3	RPC- 3.50 female ruggedized, 03 KR 123- 2U7S3	ETFE Tubing with protection braid
LU7- 042- 600	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	RPC- N 50 Ω male, 05 S 123- 2U7S3	RPC- N 50 Ω male, 05 S 123- 2U7S3	ETFE Tubing with protection braid
LU7- 043- 600	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	RPC- 3.50 female, 03 K 123- 2U7S3	RPC- 3.50 female ruggedized, 03 KR 123- 2U7S3	ETFE Tubing with protection braid
LU7- 055- 600	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 26.5 GHz	DC to 26.5 GHz	600 mm	RTK 162	RPC- 3.50 male, 03 S 123- 2U7S3	RPC- 3.50 female, 03 K 123- 2U7S3	ETFE Tubing with protection braid

Ordering Number	Return Loss	Frequency	Length	Cable	Connector 1	Connector 2	Armouring
LU7-056-600	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	RPC- 3.50 female ruggedized, 03 KR 123- 2U7S3	RPC- N 50 Ω female, 05 K 123- 2U7S3	ETFE Tubing with pro- tection braid
LU7-069-600	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	RPC- 3.50 female ruggedized, 03 KR 123- 2U7S3	RPC- N 50 Ω male, 05 S 123- 2U7S3	ETFE Tubing with pro- tection braid
LU7-070-600	≥ 28 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	DC to 18 GHz	600 mm	RTK 162	RPC- 7, 07 P 123- 2U7S3	RPC- 7, 07 P 123- 2U7S3	ETFE Tubing with pro- tection braid
LU8-005-600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 50 GHz	DC to 50 GHz	600 mm	RTK 125	RPC- 2.40 male, 09 S 123- 2U8S3	RPC- 2.40 female ruggedized, 09 KR 123- 2U8S3	ETFE Tubing with pro- tection braid
LU8-006-600	≥ 26 dB @ DC to 4 GHz ≥ 17 dB @ 4 GHz to 50 GHz	DC to 50 GHz	600 mm	RTK 125	RPC- 2.40 female, 09 K 123- 2U8S3	RPC- 2.40 female ruggedized, 09 KR 123- 2U8S3	ETFE Tubing with pro- tection braid



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