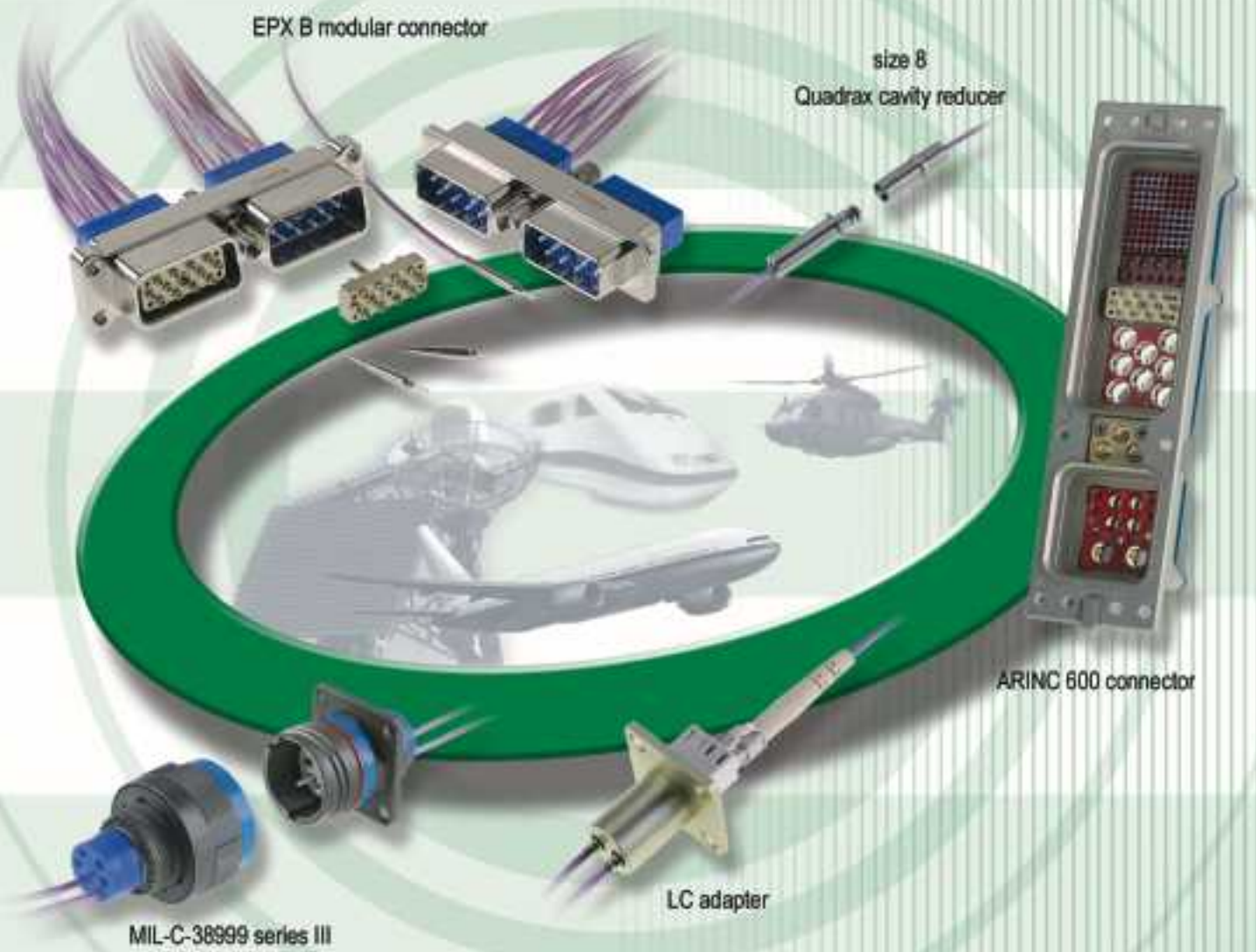
LuxCis®

A new high density termini for harsh environment



Fiber optic interconnect solution
ARINC 801 standard compliant

RADIALL
The next conneXion

COMPANY Profile

Founded in 1952 in France, RADIALL started as a family owned company making coaxial plugs. Today, RADIALL is an international and global manufacturer of interconnect components including ***RF coaxial connectors and cable assemblies****,* ***antennas****,* ***fiber optic components****,* ***microwave components,*** *and* ***multipin connectors*** *for the Automotive, Civil Aviation, Defense, Industrial, Medical, Space and Telecommunication markets.*

QSE (Quality Safety Environment) POLICY

RADIALL maintains a quality management system conforming to international standards, including for environmental protection. Our customers' recognition of our products quality and sustainability of our company, demonstrates the efficiency of our quality system.

CERTIFICATIONS

Certified ISO 9001 since 1994, RADIALL has a pro-active policy in terms of conforming to international standards. Today, all RADIALL sites are certified to **ISO 9001:2000** and some dedicated activities are AS9100 or TS 16949. Our process approach gives us the tool for continuous improvement in all our activities.

A major step in our environment policy was the **ISO 14001** certification of our Voreppe plant in 2001. RADIALL complies with European directives such as **RoHS** for hazardous substance restrictions and **EuP** for environmentally friendly designs of energy-using products.

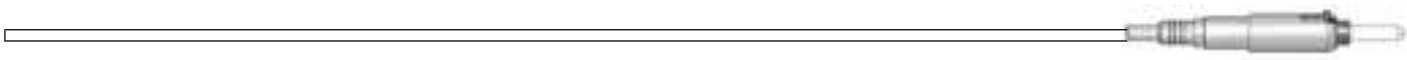
Some RADIALL product lines are on **MIL, ESA/SCC** Qualified Product Lists.

RADIALL is therefore proud to be recognized by leading industrial customers for its quality of service and products.

A WORLDWIDE ENGINEERING & MANUFACTURING CAPABILITY

RADIALL has expertise centers and manufacturing locations on 3 continents. Through 9 industrial sites, RADIALL offers customers the proximity they need to obtain the best quality service and delivery performance. Our facilities feature state of the art equipment for the many technologies involved in the design, manufacturing and assembly of interconnect products. This international organization allows RADIALL to offer its outstanding quality products at competitive prices.

Technical information and sales contacts are available on: www.radiall.com



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LuxCis® : A new flexible and upgradable interconnect solution for Multimode and Singlemode fiber for MIL-AERO and harsh environment

The Radiall concept, original and simple, is based on the use of identical fiber optic termini contacts that can be inserted in either plug or receptacle cavities of **multipin connectors (EPX**, **ARINC 600 and circular MIL-DTL-38999 series III**). A removable sleeve-holder ensures fine alignment and centring of the LuxCis® termini. This technology allows easy access to optical faces for inspection and cleaning operations.

LuxCis® termini contacts and connectors are in compliance with the ARINC 801 standard.

Radiall is recognized in the aerospace industry for its high quality and extensive product line as well as for its expertise in fiber optic interconnect for the telecommunication market.. **The new LuxCis® concept combines Radiall's know-how in multipin connectors and fiber optic solutions..**

The LuxCis® compact design is optimized for high-density solutions compatible with high level of vibration.

The LuxCis® termini has been qualified for aeronautic programs and can also be used in other applications such as military, naval, oil research, railway, medical, data, telecommunications and others.

The LuxCis® is recommended for all applications where :
- high data rates are required
- EMI is an issue
- Weight reduction is important
- fiber optic is used in harsh environment

The product range includes termini contacts, standard and interseries adapters, multipins connectors,cables assemblies, tooling, accessories for multipin connectors.
LuxCis® termini contacts are manufactured according to EN/AS/JISQ9100.

MAIN FEATURES and BENEFITS

Key Features	Benefits
Industry standard 1.25 ceramic ferrule	- High optical performances - High density solution - Compatible with high level of vibration - Easy termination (telecom standard) by bonding/polishing
Single termini (hermaphrodite)	- Single contact for plug / receptacle - Same contact for all types of connectors
Full pull-proof design *(when used with loose cable structure, refer to page 6 for information on cable structure)*	- No need for complex backshell.
Orientation key	- Anti-rotation - Contact directly compatible with multimode, singlemode PC and APC applications
High cable retention	- The cable jacket is crimped on the external body of the LuxCis® termini
Removable sleeve holder	- Ease of maintenance for the pin contact and the sleeve

OPTICAL PERFORMANCES

	Singlemode (UPC) 1310/1550nm	Singlemode/APC 1310/1550nm	Multimode (PC) 850nm /1310nm
Attenuation **- Mean** **- Standard deviation** (against a reference plug, IEC 61300-3-4 Method B)	**0,15 dB** **0,10 dB**	**0,20 dB** **0,12 dB**	**0.10 dB** **0.07 dB**
Return loss (maximum low variation : IEC 61300-3-6)	**> 50 dB**	**> 60 dB**	**> 20 dB**

MECHANICAL and ENVIRONMENTAL PERFORMANCES

Test	Standard	LuxCis® in EPX® connector	LuxCis® in MIL-DTL 38999 connector	LuxCis® in ARINC 600 connector
Thermal Shocks	SAE-AS-13441met 1003.1	-55°C / +125°C	-55°C / +125°C	-55°C / +125°C
Temperature endurance	TIA/EIA 455-20A	1000h at +100°C	1000h at +100°C	1000h at +100°C
Vibration	TIA/EIA 455-11	8h /axis, 3.8g^2/Hz 43 G rms	8h /axis, 3.8g^2/Hz 43 G rms	8h /axis, 0.2g^2/Hz 16.4 G rms
Shocks	TIA/EIA 455-14 A	300G – 3 ms	300G – 3 ms	50G – 11 ms
Mating / unmating	*EPX and Arinc 600* SAE-AS-13441met 2016 *38999* TIA/EIA 455-21A	100 Cycles	500 Cycles	100 Cycles
Maintenance aging	SAE-AS-13441 met 2002-1	10 Cycles	10 Cycles	10 Cycles
Salt Spray	SAE-AS-13441 met 1001.1 cond C	96 h	500 h	48 h
Cable retention (1.8 mm)	SAE-AS-13441met 2009-1	68N	68N	68N
Cable retention (900 µm)	SAE-AS-13441met 2009-1	7N	7N	7N
Humidity	*EPX and 38999* TIA/EIA 455-5 met B 7A *Arinc 600* TIA/EIA 455-5 met B	10 cycles / 24h, 90% RH, -25°C/+65°C	10 cycles / 24h, 90% RH, -25°C/+65°C	10 cycles / 24h, 90% RH, -25°C/+65°C
Altitude immersion	TIA/EIA 455-15	75,000 feet (3.39 kPa)	75,000 feet (3.39 kPa)	75,000 feet (3.39 kPa)
Fluid test	-	MIL-STD-1344 method 1016	MIL-STD-1344 method 1016	Fluid test per ARINC 600 § 19.4.27

LuxCis® TERMINI CONTACTS

3 types of LuxCis® termini are available depending on cable structure :

ML for **loose** or **tight** cable structure from 1.5 to 2.2mm diameter

MT for **ultra tight** cable structure from 1.5 to 2.2mm diameter

A simplified version is compatible with 0.9mm buffer types (see below).

LuxCis® TERMINI CONTACT PART NUMBERS (# 16)

Cable Dia.	Cable structure type **ML** (loose) **MT** (tight)	Singlemode fiber		Multimode fiber		
		optical ceramic **125.3 µm for PC/UPC termination**	optical ceramic **125.3 µm for APC termination**	optical ceramic **128 µm for PC termination**	optical ceramic **140 µm for PC termination**	optical ceramic **230 µm for PC termination**
0.9mm buffer	-	**F725 000 118**	**F725 050 118**	**F725 003 118**	**F725 004 118**	-
1.2mm	**ML**	-	-	**F725 003 319**	-	-
1.5 to 2.2mm	**ML**	**F725 000 419** *(LS=Arinc 801 spec)*	**F725 050 419** *(LSA=Arinc 801 spec)*	**F725 003 419** *(LM=Arinc 801 spec)*	**F725 004 419**	**F725 005 419**
1.5 to 2.2mm	**MT**	**F725 000 519** *(TS=Arinc 801 spec)*	**F725 050 519** *(TSA=Arinc 801 spec)*	**F725 003 519** *(TM=Arinc 801 spec)*	**F725 004 519**	**F725 005 519**

Consult with Radiall for all other cable dimensions and types.

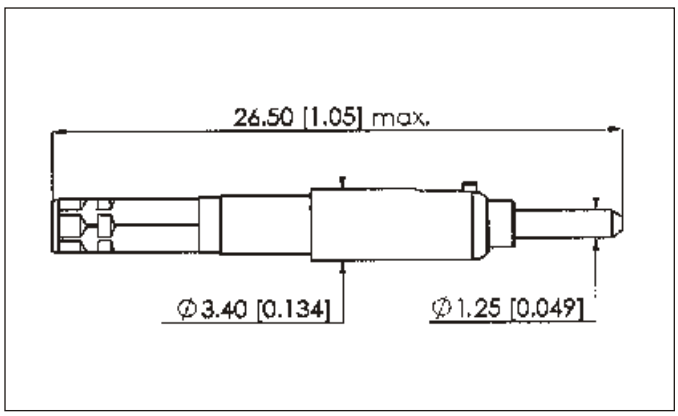
ACCESSORIES

Dust cap for LuxCis® termini (bag of 10)	**F718 176 104**

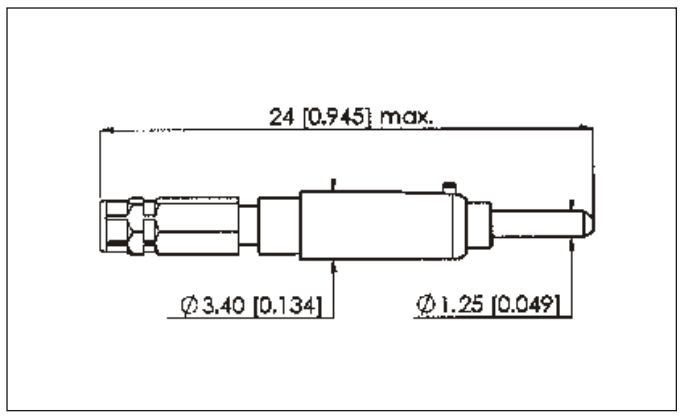
CABLE STRUCTURE

Cable structure	Arinc 802 specification and description
Loose	"MGL cable is general purpose multimode cable having a modified loose structure that allows slight movement between the inner jacket and the outer strength members."
Tight	"MGT cable is general purpose multimode cable having a tight structure that allows no movement between the inner jacket and the outer strength members."

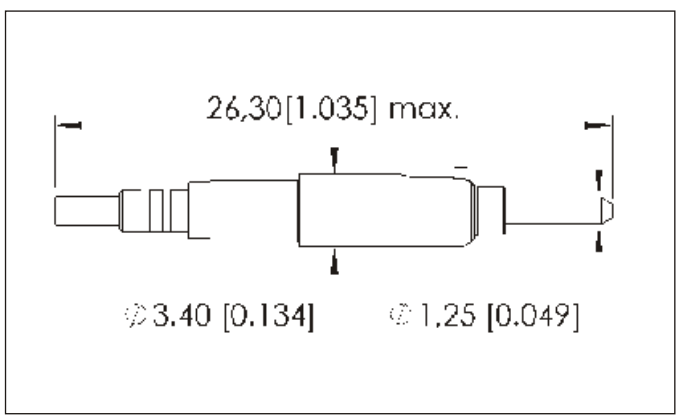
LuxCis® TERMINI DIMENSIONS



ML version dimensions (mm/inches)



MT version dimensions (mm/inches)



0.9mm buffer version dimensions (mm/inches)

Please refer to following pages for information on specific parts to be ordered to insert the LuxCis® termini inside multipin connectors:

EPXB
Pages 14-15

MIL-DTL-38999
Pages 20-21-22

ARINC 600/NSX
Pages 16-17-18-19

ADAPTERS

Type	Version	Alignement sleeve	Part number	Dimensions	
LuxCis® to LuxCis®	Simplex *Bulkhead feedthrough type*	Ceramic zirconia	**F725 701 100**	Fig. 1	
LuxCis® to LuxCis®	Simplex *Straight*	Ceramic zirconia	**F725 700 100**	Fig. 2	
LuxCis® to LC	Simplex *LC panel cutout*	Ceramic zirconia	**F719 060 000**	Fig. 3	
LuxCis® to LC	Duplex *LC panel cutout*	Ceramic zirconia	**F719 058 010**	Fig. 4	
LuxCis® to LC	Duplex *MIL-DTL-38999 panel cutout*	Ceramic zirconia	**F719 058 000**	Fig. 5	

TOOLS

For extraction of the LuxCis® termini from the adapters:

Description / function	Part number	
Plastic Extraction tool (M81 969/14-03)	**282 515**	

ADAPTER DIMENSIONS

Fig. 1 **LuxCis® to LuxCis® / Bulkhead feedthrough**

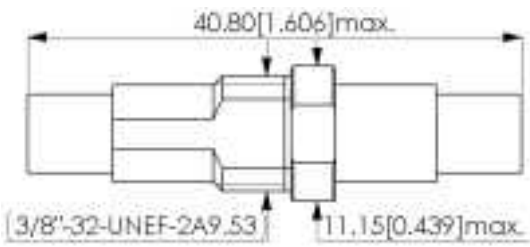


Fig. 2 **LuxCis® to LuxCis® / Straight**

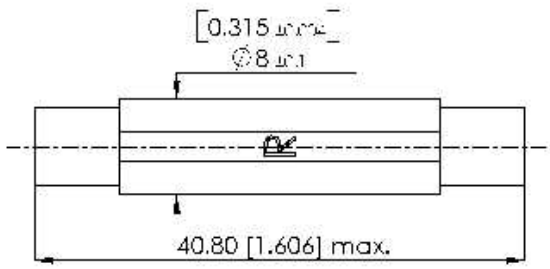


Fig. 3 **LuxCis® to LC simplex**

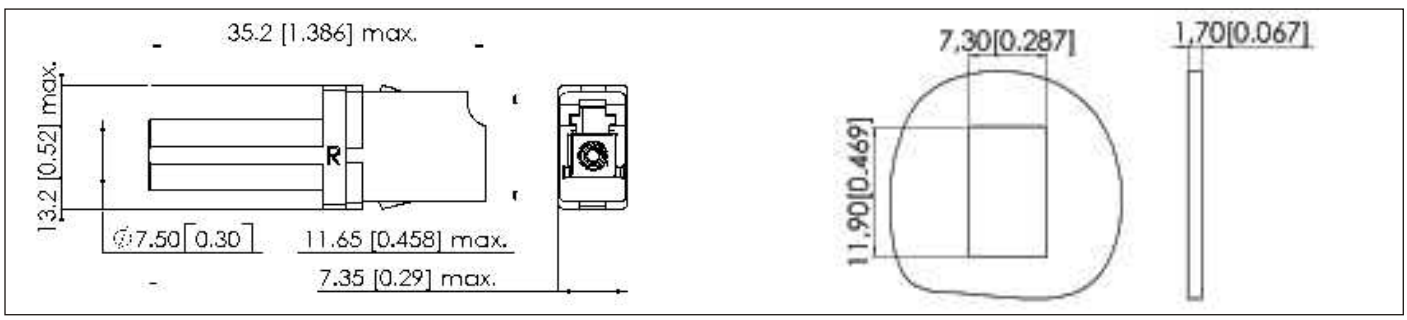


Fig. 4 **LuxCis® to LC duplex, LC panel**

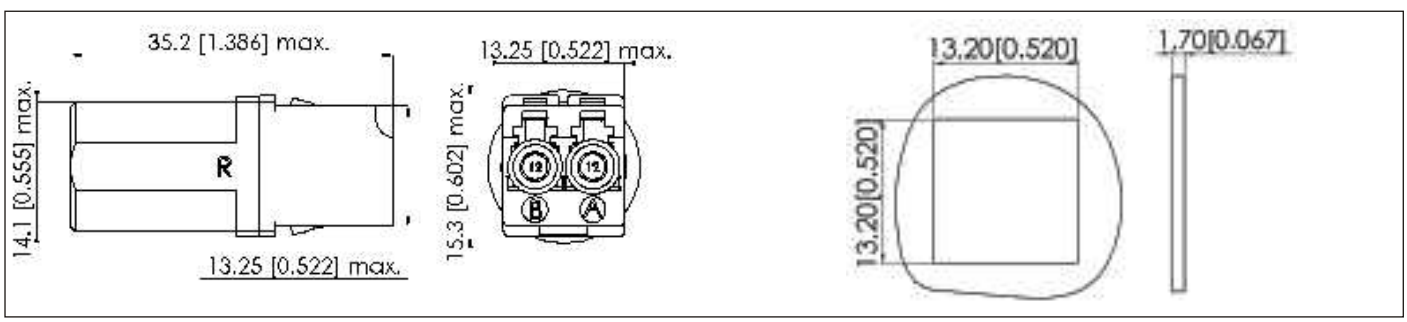
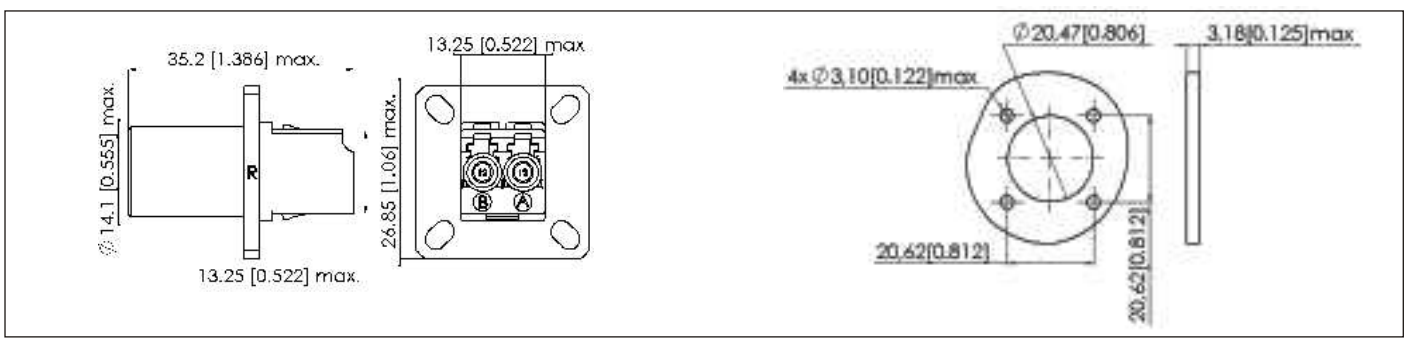


Fig. 5 **LuxCis® to LC duplex, MIL-DTL-38999 panel cutout**



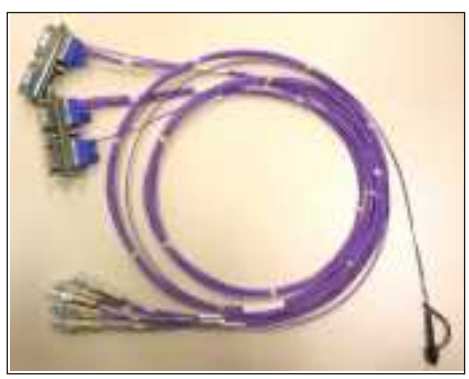
HARNESSES

RADIALL designs and manufactures **custom HARNESSES** for on-board (aeronautic, navy, ….) or land (railways, removed antenna…) equipment or communication system using rectangular multipin connectors **(EPX, ARINC 600**) and circular connectors **(MIL-DTL-38999).**

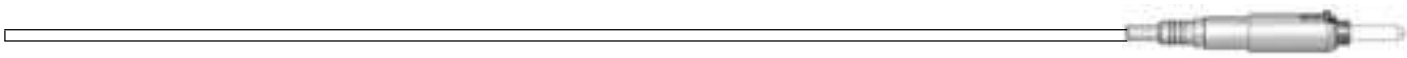
Fig. 1 **Harness with MIL-DTL-38999 circular connector and LC duplex fiber optic connectors.**

Fig. 2 **Harness with MIL-DTL-38999 square flange receptacle and LC duplex fiber optic connectors.**

Fig. 3 **Harness with EPX connectors and LC simplex fiber optic connectors.**

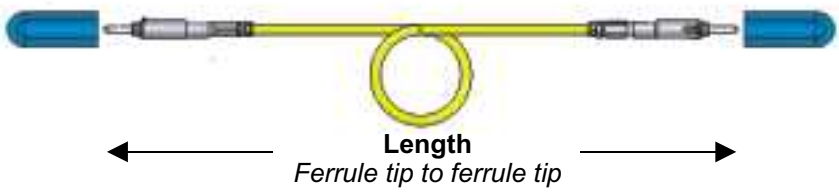


(See end cover catalog for contact information)



CABLE ASSEMBLIES general features

Example : LuxCis® to LuxCis® typical cable assembly

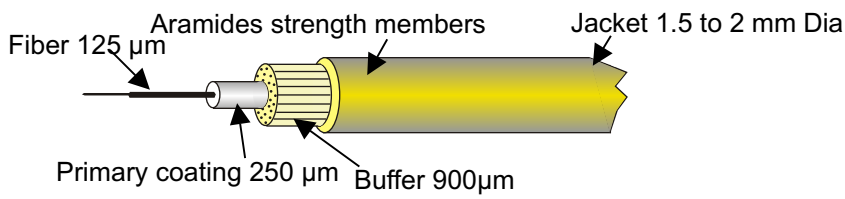


PERFORMANCES

	Multimode PC 850nm/1310nm	Singlemode UPC 1310nm/1550nm	Singlemode APC8° 1310nm/1550nm
Attenuation IEC 61300-3-4 method B	0.50 dB max (*)	0.50 dB max (*)	0.50 dB max (*)
Return Loss IEC 61300-3-6	> 20 dB	> 50 dB	> 60dB

(*) These values are given for length > 10 meters (33 feet).

CABLE STRUCTURE

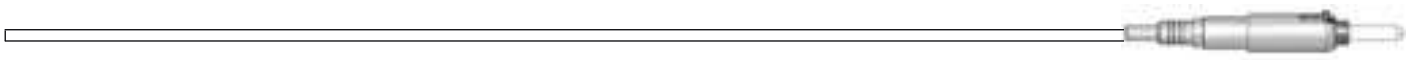


	Loose structure	Tight structure	Ultra tight structure
Movement between coated fiber and 900µm buffer	Yes	No	No
Movement between 900µm and cable jacket	Yes	Yes	No

STANDARD LENGTH SPECIFICATION

Length	Tolerances *
0/50 cm	0/+5 cm
51/500 cm	0/+10 %
From 501 cm	0/+50 cm

*Other: please consult Radiall with your specific requirement.



CABLE ASSEMBLIES
ORDERING INFORMATION

Select each element from the matrix below in order to build your part number

MULTIMODE FIBER OPTIC — **LUXCISMM 52 LC L100**

A - Connector or Termini 1

LUXCISMM	LuxCis® termini / PC polished, return loss 20dB

B - Fiber/Cable (see table below "recommended cable types")

Code	*Fiber size*	*Cable diameter*	*Structure*	*Type*
14	62.5/125	0.9mm	Loose	Simplex
15	62.5/125	0.9mm	Tight	Simplex
23	62.5/125	2mm .	Tight	Simplex
52	62.5/125	1.8mm	Loose	Simplex
52D	62.5/125	2 x 1.8mm	Loose	Duplex
53	62.5/125	1.8mm	Ultra tight	Simplex
53D	62.5/125	2 x 1.8mm	Ultra tight	Duplex

C - Connector or Termini 2

LUXCISMM	LuxCis® termini / PC polished, return loss 20dB
LC	LC connector / PC polished, return loss 20dB
X	Pigtail

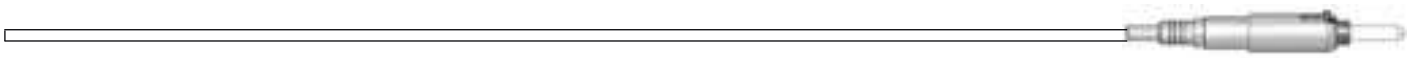
D - Length (see page 11 for standard length specification)

L.... (In cm)

Part Number Example:
Patchcord: LUXCISMM 52 LC L150 / Pigtail: LUXCISMM 53 X 100

Multimode fiber recommended cables types

Applications	Reference	Structure and type	Diameter	Fiber	Operating temperature	Radiall key code
Aerospace and harsh environment	BMS 13-71702C01GA	Loose	0.9mm	62.5/125	-55/+100°C	**14** (Simplex)
Aerospace and harsh environment	ABS0963-003LF (core only)	Tight	0.9mm	62.5/125	-55/+100°C	**15** (Simplex)
Aerospace and harsh environment	BMS 13-71T01C01GA	Loose	1.8mm	62.5/125	-55/+100°C	**52** (Simplex) **52D** (Duplex)
Aerospace and harsh environment	ABS0963-003LF	Tight	1.8mm	62.5/125	-55/+125°C	**53** (Simplex) **53D** (Duplex)
Telecom environment	Standard Telecom	Tight	2.00mm	62.5/125	-20/+70°C	**23** (Simplex)



CABLE ASSEMBLIES
ORDERING INFORMATION

Select each element from the matrix below in order to build your part number

SINGLEMODE FIBER OPTIC (G652) **LUXCISSM50 52 LC50 L100**

A - Connector or Termini 1

LUXCISSM50	LuxCis® termini / PC polished/ return loss 50dB
LUXCISSM8	LuxCis® termini / 8° angled polished/ return loss 60 dB

B - Fiber/cable (see table below "recommended cable types")

Code	*Fiber size*	*Cable diameter*	*Structure*	*Type*
58	9/125	0.9mm	Loose	Simplex
60	9/125	0.9mm	Tight	Simplex
73	9/125	2mm .	Tight	Simplex

C - Connector or Termini 2

LUXCISSM50	LuxCis® termini / PC polished, return loss 50dB
LUXCISSM8	LuxCis® termini / 8° angled polished, return loss 60dB
LC50	LC connector / UPC polished, return loss 50dB
LC8	LC connector / 8° angled polished, return loss 60dB
X	Pigtail

D - Length (see page 11 for standard length specification)

L.... (In cm)

Part Number Example:
Patchcord: LUXCISSM 73 LC50 L200 / Pigtail: LUXCISSM50 92 X L100

Singlemode fiber recommended cables types

Applications	Reference	Structure and type	Diameter	Fiber	Operating temperature	Radiall key code
Telecom environment	Standard Telecom	Tight	2.00mm	9/125	-20/+70°C	**73** (Simplex)
Telecom environment	Standard Telecom	Loose	0.9mm	9/125	-10/+60°C	**58** (Simplex)
Telecom environment	Standard Telecom	Tight	0.9mm	9/125	-10/+70°C	**60** (Simplex)

Consult us for aerospace and harsh environment singlemode fiber cable.

LuxCis® FIBER OPTIC TERMINI IN EPXB CONNECTORS

EPXB series is a new high density unique concept of rectangular modular and versatile connectors suitable for disconnect panels or equipment with three mounting styles : rack, cable to cable and panel mounting.

MAIN FEATURES

- Slim shell design with high contact density
- Stackable shells that do not require additional space for locking and unlocking the connectors
- Optional ground blocks (to meet FAA HIRF requirements)
- Inserts can be wired in the shop and later installed in the shells
- Inserts and shells are keyed to prevent mismating
- Inserts for pin or socket contacts can be installed in either plug or receptacle shells

EPXB2 equipped of 24 LuxCis termini..

A specific insert allows connecting up to 12 fiber optic channels in an EPXB1 or to double the capacity up to 24 fiber optic channels in EPXB2. Because of the great flexibility and modularity of the EPX concept, the number of electrical and optic combinations is unlimited.
Refer to the next page for insert part numbers.

Insert extraction

For detailed information on EPX series, please refer to our latest EPXA and B catalog, available on paper or at radiall.com.

LuxCis® FIBER OPTIC TERMINI IN EPXB CONNECTORS (cont'd)

ORDERING INFORMATION

This section includes all specific parts used to accommodate the LuxCis® termini in EPXB multipin connectors.

LuxCis® TERMINI INSERT RANGE

	Material	Part number for cavity A	Part number for cavity B
Pin insert for 12 LuxCis® termini	Aluminium alloy	**EPXBEF12PA**	**EPXBEF12PB**
	Fiberglass filled thermosetting	**EPXBEF12CPA**	**EPXBEF12CPB**
Socket insert (with sleeve holder) for 12 LuxCis® termini	Insert and sleeve holder: aluminium alloy	**EPXBEF12SA**	**EPXBEF12SB**
	Insert: fiberglass thermosetting Sleeve holder: high grade thermoplastic	**EPXBEF12CSA**	**EPXBEF12CSB**
Hybrid pin insert for 6 electrical contact and 6 FO LuxCis® termini	Fiberglass filled thermosetting	**EPXBE12F6PA**	**EPXBE12F6PB**
Hybrid socket insert for 6 electrical contact and 6 FO LuxCis® termini (with sleeve holder)	Insert: fiberglass thermosetting Sleeve holder: high grade thermoplastic	**EPXBE12F6SA**	**EPXBE12F6SB**

- Socket insert is always supplied with sleeve holder.
- Pin and socket insert can be mounted in either plug or receptacle shells.
- For shell receptacles and shell plugs, as well as for further details and part numbers on EPXB connector series, please consult our Radiall's catalog or web site.
- Refer to page 6 of this catalog for LuxCis® contacts part numbers or to pages 12 and 13 for cable assemblies.
- A sealing cap for unused cavity is available under part number **616 912**

TOOLS

Description / function	Part number	
Hexagonal key 5/64 inch(2mm)/flats for sleeve holder removal	**F780 855 000**	
Plastic Insertion/extraction tool for LuxCis® termini (Mil M81 969/14-03)	**282 515**	

HERMAPHRODITE ELECTRICAL CONTACTS FOR HYBRID INSERTS

Size	Wire size	Part number	Crimping tool	Positioner	Ins/Ext tool
16	16-18-20	**617 235 003**	**282 291** (M22520/1-01)	**282 581 013**	**282 515** (M81969/1-03)
	20-22-24	**617 235 002**			

LuxCis® FIBER OPTIC TERMINI IN NSX (ARINC 600) CONNECTORS

The NSX series are multipin rack and panel connectors used on high performance aeronautical equipment. Radiall NSX series conforms to ARINC 600 avionics standard.

MAIN FEATURES :

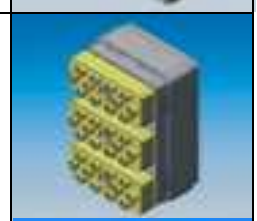
- High contact density (up to 800 contacts) in multi signal configuration
- Numerous contact arrangements
- Numerous shell polarization possibilities for maximum mating security
- Low mating forces
- EMI/RFI shielding provided by shell to shell conductivity
- Wide range of contact types and sizes

Specific inserts allow the installation up to 36 LuxCis® termini in a cavity A/B. A wide range of inserts allow mixing electrical and fiber optic channels. Quadrax cavities can be used for fiber optic contact by means of a dedicated adapter. Please refer to the next page for a general overview of the available insert range.

For detailed information on NSX series, please refer to our latest NSX catalog, available on paper or at radiall.com.

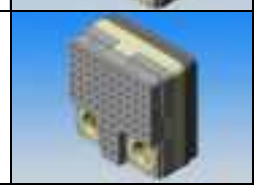
ARINC 600 INSERTS FOR LuxCis® TERMINI CONTACTS

RR/RR = Contacts are REAR RELEASE / REAR REMOVABLE
FR/FR = Contacts are FRONT RELEASE/ FRONT REMOVABLE
Consult with Radiall for any specific requirement.

Cavity	Number of LuxCis® fiber optic termini	Number of Quadrax contacts	Other contacts	Insert types	
A or B	12 (RR/RR)	8 cts # 8 *Type :* *FR/FR (unsealed version)* *RR/RR (sealed version)*	-	20F12Q8	
A or B	36 (RR/RR)	-	-	36F36	
C	12	2 cts # 8 *Type :* *FR/FR (unsealed version)* *RR/RR (sealed version)*	3 # 16 *Type :* *FR/FR (unsealed version)* *RR/RR (sealed version)*	17F12Q2	
A or B	-	2 cts # 8 *Type :* *RR/RR*	118 cts # 22 *Type :* *RR/RR*	118Q2	
A or B	-	11 cts # 8 *Type :* *RR/RR*	-	Q11	
C	-	6 cts # 8 *Type* *RR/RR*	-	Q6	
C	-	2 cts # 8 *Type :* *RR/RR*	4 cts # 20 3 cts # 16 4 cts # 12 *Type :* *RR/RR*	11Q2	

Arinc 600 inserts for LuxCis® termini contacts (cont'd)

RR/RR = Contacts are REAR RELEASE / REAR REMOVABLE
FR/FR = Contacts are FRONT RELEASE, FRONT REMOVABLE
Consult with Radiall for any specific requirement.

Cavity	Number of LuxCis® fiber optic termini	Number of Quadrax contacts	Other contacts	Insert types	
C	-	4 cts # 8 *Type : RR/RR*	20 cts # 20 *Type : RR/RR*	20Q4	
C	-	2 cts # 8 *Type : RR/RR*	60 cts # 22 2 cts # 16 *Type : RR/RR*	62Q2	
C	-	2 cts # 8 *Type : RR/RR*	68 cts # 22 *Type : RR/RR*	68Q2	

ORDERING INFORMATION

This section includes all specific parts used to accommodate the LuxCis® termini in NSX (ARINC 600) multipin connectors.

- The sleeve holder is delivered already installed on the LuxCis® insert (receptacle side) **17F12Q2 / 20F12Q8 / 36F36**.
- Adapters and sleeve holder for quadrax cavities have to ordered separately.
- For shell receptacles and shell plugs, as well as for further details and part numbers on ARINC 600 connector series, please consult our Radiall's catalog or web site.
- A sealing cap for unused cavity is available under part number **616 912**.
- Refer to page 6 of this catalog for LuxCis® contact part numbers and to pages 12 and 13 for cable assemblies.

Contact Radiall to get part number and Technical Data Sheet of the product that meets your requirements.

QUADRAX ADAPTERS & SLEEVE HOLDER

Description / function	Part number	
Pin quadrax adapter for LuxCis® termini in quadrax FR type cavity/with sleeve holder (*FR : Front Release/Front Removable)*	**620 946 001**	
Pin quadrax adapter for LuxCis® termini in quadrax RR type cavity/with sleeve holder (*RR : Rear Release/Rear Removable)*	**620 946 002**	
Socket quadrax adapter for LuxCis® termini in quadrax RR type cavity (*RR : Rear Release/Rear Removable)*	**620 946 003**	
Sleeve holder for pin quadrax adapter	**620 946 004**	

TOOLS

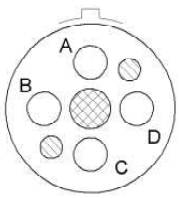
Description / function	Part number	
Hexagonal key 5/64 inch(2mm)/flats for sleeve holder removal	**F780 855 000**	
Key for quadrax sleeve holder removal	**F780 858 000**	
Plastic Insertion/extraction tool for LuxCis® termini (M81 969/14-03)	**282 515**	
Extraction tool for quadrax adapter RR type (M81 969/28-03)	**282 549 001**	
Extraction tool for quadrax adapter FR type	**282 549 009**	

LuxCis® FIBER OPTIC TERMINI IN MIL-DTL-38999 CONNECTOR STYLE

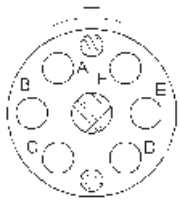
MAIN FEATURES:

- Cable to cable and disconnect panel applications
- Mating security with a polarized shell
- Scoop proof design
- Rear accessories threads

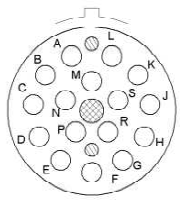
CONTACT LAYOUT



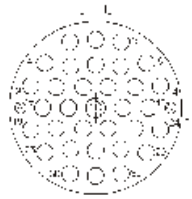
Size 13
4 LuxCis® termini



Size 15
6 LuxCis® termini



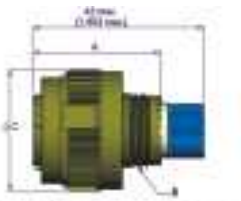
Size 21
16 LuxCis® termini



Size 25
32 LuxCis® termini

DIMENSIONS

Plug

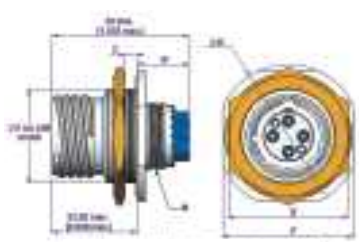


shell size	A Max. mm inch	B Thread	C Max. mm inch
T 13	31,00 1,220	M 18 x 1-6g	29,40 1,157
T 15	31,00 1,220	M 18 x 1-6g	32,50 1,280
T 19	31,00 1,220	M 18 x 1-6g	38,50 1,516
T 21	31,00 1,220	M 18 x 1-6g	41,70 1,642
T 23	31,00 1,220	M 18 x 1-6g	44,90 1,768
T 25	31,00 1,220	M 18 x 1-6g	48,00 1,890

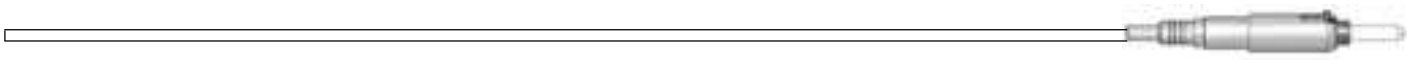
Square flange receptacle

shell size	A Max. mm in ch	B Max. mm in ch	C Max. mm in ch	D Thread	E mm in ch	F mm in ch	G mm in ch	H mm in ch	J mm in ch
T 13	20,90 0,823	10,60 0,417	2,50 0,980	M 18 x 1-6g	28,60 1,126	23,01 0,906	20,62 0,812	3,25 0,128	4,93 0,194
T 15	20,90 0,823	10,60 0,417	2,50 0,980	M 22 x 1-6g	31,00 1,220	24,61 0,969	23,01 0,906	3,25 0,128	4,39 0,173
T 19	20,90 0,823	10,60 0,417	2,50 0,980	M 28 x 1-6g	36,50 1,437	29,36 1,156	26,97 **1,062**	3,25 0,128	4,93 0,194
T 21	20,10 0,791	11,60 0,449	3,20 0,126	M 31 x 1-6g	39,70 1,563	31,75 1,250	29,36 **1,156**	3,25 0,128	4,93 0,194
T 23	20,10 0,791	11,60 0,449	3,20 0,126	M 34 x 1-6g	42,90 1,689	34,93 1,375	31,75 **1,250**	3,91 0,154	6,15 0,242
T 25	20,10 0,791	11,60 0,449	3,20 0,126	M 37 x 1-6g	46,00 1,811	38,10 1,500	34,93 **1,375**	3,91 0,154	6,15 0,242

Jam-nut receptacle



shell size	A Max. mm inch	B Max. mm inch	C Max. mm inch	D Max. mm inch	E Max mm inch	F mm inch	G Thread
T 13	23,82 0,938	9,90 0,390	3,20 0,126	38,40 1,511	32,00 1,260	34,90 1,374	M 18 x 1-6g
T 15	26,97 1,062	9,90 0,390	3,20 0,126	41,60 1,637	36,00 1,417	38,10 1,500	M 22 x 1-6g
T 19	33,32 1,312	9,90 0,390	3,20 0,126	49,50 1,948	41,00 1,614	46,00 **1,811**	M 28 x 1-6g
T 21	36,50 1,437	9,90 0,390	3,20 0,126	52,70 2,074	46,00 1,811	49,20 **1,937**	M 31 x 1-6g
T 23	39,67 1,562	9,90 0,390	3,20 0,126	55,90 2,200	50,00 1,969	52,40 **2,063**	M 34 x 1-6g
T 25	42,85 1,687	9,90 0,390	3,20 0,126	59,00 2,322	51,23 2,017	55,60 **2,189**	M 37 x 1-6g



LuxCis® FIBER OPTIC TERMINI IN MIL-DTL-38999 CONNECTOR STYLE (cont'd)

PART NUMBERING and ORDERING INFORMATION

Shell plugs and receptacles

R8 R 15 0 6F0 P X B

Series:
R8

Shell type:
W Plug without EMI spring
R Wall-mount receptacle
N Jam-nut receptacle

Shell size:
13/15/21 shell size according to MIL-DTL-38999
(Other size contact us)

Shell material:
0 Aluminium olive drab cadmium

Contacts layout:
4FO 4 LuxCis® termini for shell size 13
6FO 6 LuxCis® termini for shell size 15
16FO 16 LuxCis® termini for shell size 21
32FO 32 LuxCis® termini for shell size 25
2FO2E 2 LuxCis® termini+2 electric contacts # 16 for shell size 13 (*) **See note 1**
(*) Consult with Radiall for other size or arrangement

Insert type(See note 1):
P Insert without sleeve holder
S Insert with sleeve holder

Contact termination:
X **Without optical contact (See note 2)**

Polarization:
N-A-B-C-D-E

Note 1: Electrical contacts are not delivered installed in the insert.
Note 2: Refer to page 6 of this catalog for LuxCis® contacts part numbers or to pages 12 and 13 for cable assemblies.
Note 3: A sealing cap for unused cavity is available under part number **616912**

Contact Radiall to get part number and Technical Data Sheet

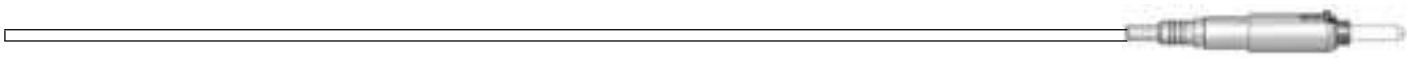
LuxCis® FIBER OPTIC TERMINI IN MIL-DTL-38999 CONNECTOR STYLE (cont'd)

ORDERING INFORMATION (cont'd)

TOOLS

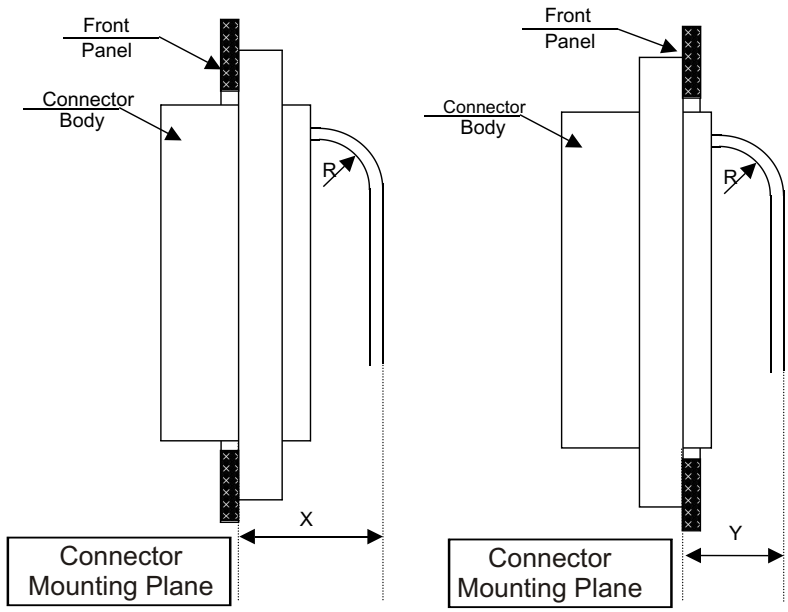
Description / function	Part number	
Hexagonal key 5/64 inch(2mm)/flats for sleeve holder removal	**F780 855 000**	
Plastic Insertion/extraction tool for LuxCis® termini (M81 969/14-03)	**282 515**	

MINIMUM BEND RADIUS



The values indicated in the table below are based on the cable manufacturer's specifications (diameter and bend radius) which are tightly linked to our connector dimensions. We advise following these values in order to meet the mechanical and optical performances provided by our specifications.

BACK PANEL MOUNTING **FRONT PANEL MOUNTING**



LuxCis® contact into #16 LuxCis® cavity

		Cable type	
Connector Type	**Dim.**	**1.8 mm DIA**	**900 µm DIA**
EPX Receptacle with rear grommet	**R**	> 20 mm [0.8 inches]	> 15 mm [0.6 inches]
	X	> 48 mm [1.9 inches]	> 42 mm [1.65 inches]
	Y	EPX B1 : NA EPX B2 : > 45 mm [1.8 inches]	EPX B1 : NA EPX B2 : > 39 mm [1.55 inches]
EPX Receptacle without rear grommet	**R**	> 20 mm [0.8 inches]	> 15 mm [0.6 inches]
	X	> 43 mm [1.7 inches]	> 37 mm [1.46 inches]
	Y	EPX B1 : NA EPX B2 : > 40 mm [1.6 inches]	EPX B1 : NA EPX B2 : > 34 mm [1.36 inches]
MIL-DTL-38999 Receptacle with rear grommet	**R**	> 20 mm [0.8 inches]	> 15 mm [0.6 inches]
	X	> 39.5 mm [1.56 inches]	> 33.5 mm [1.32 inches]
	Y	> 37 mm [1.46 inches]	> 31 mm [1.22 inches]
ARINC 600 Receptacle without rear grommet	**R**	> 20 mm [0.8 inches]	> 15 mm [0.6 inches]
	X	> 60 mm [2.37 inches]	> 54 mm [2.13 inches]
	Y	NA	NA
ARINC 600 Plug with rear grommet	**R**	> 20 mm [0.8 inches]	> 15 mm [0.6 inches]
	X	> 32 mm [1.26 inches]	> 26 mm [1.02 inches]
	Y	NA	NA

R: Depend to the cable manufacturing requirement.

TERMINATION KIT F780 853 000 (110 V) - F780 854 000 (220 V)

Most of the tools which are included in the Termination Kit are commonly used in fiber optic field (Strippers, cutting pliers and all accessories for fiber and cable preparation).

The items printed in bold in the table below are specially made for the LuxCis® termination. Their use is highly recommended to achieve mechanical and optical performances according to our specification.

Cabling instructions as well as directions for use of each tool are clearly described in the ASSEMBLY INSTRUCTIONS MANUAL delivered with the Termination Kit.

CONTENTS AND PART NUMBERS

Description	Qty	Part number
Ceramic scissors	1	F 780 039 000
Cutting pliers for aramid members (HS 6000)	1	F 780 034 000
T-stripper outer jacket stripper	1	F 780 033 000
Miller primary stripper (for coating 900µm)	1	F 780 025 000
Waste container	1	F 780 811 000
Inner ferrule insertion and shaping tool	1	**F 780 290 000**
Alcohol dispenser	1	F 780 809 000
Bag of 6 353 ND epoxy resin	1	F 780 242 010
Resin injector	1	**F 780 503 000**
Pack for resin injector (capillaries)	1	**F 780 504 000**
Crimping tool	1	**F 780 057 000**
Curing oven	1	**F 780 495 000 220V/F 780 496 000 110V**
Scoring blade	1	F 780 136 000
Bag of 10 abrasive strips 12µm	1	F 780 508 000
Bag of 10 cleaning pipes 1.25 mm	1	F 780 856 000
Bag of 10 cleaning sticks 1.25 mm	1	F 780 857 000
Manual Polishing tool (standard LC)	1	**F 780 633 000**
Soft rubber polishing base	1	**F 780 812 000**
Bag of 10 polishing 3 µm films (Alumina)	1	F 780 825 000
Bag of 10 polishing 1 µm films (Alumina)	1	F 780 826 000
Bag of 10 polishing 0.3 µm films (Alumina)	1	F 780 827 000
Bag of 6 pockets cleaning papers	1	F 780 527 000
Microscope X200	1	**F 780 545 000**
Resin applicator	1	F 780 132 000
Plastic insertion and extraction tool (Mil M81 969/14-03	1	282 515
Hexagonal key 5/64 inch(2mm) / flats	1	**F 780 855 000**

Other accessories : ruler, tweezers, cleaning tips, roller adhesive tape, moss cable support, goggles, thermometer, permanent ink markers.
Necessary material not included in the kit : Alcohol, canned air, clean cloth
(Clean cloth can be ordered under **PN F 780 552 000**)

CLEANING KIT - F780 533 000

Delivered with maintenance procedure.

CONTENTS AND PART NUMBERS

Description	Quantity	Part number
Alcohol dispenser	1	**F780 809 000**
Bag of 10 cleaning pipes 1.25 mm (for optical ferrule)	1	**F780 856 000**
Bag of 10 cleaning sticks 1.25 mm (for alignment sleeve)	1	**F780 857 000**
Bag of 6 pockets cleaning papers	1	**F780 527 000**
Microscope x 200	1	**F780 545 000**
Insertion and extraction tool ((Mil M81969/14-03)	1	**282 515**
Hexagonal key 5/64 inch(2mm) / flats	1	**F780 855 000**
Bag of 10 protective caps for LuxCis® contact	1	**F718 176 201**

Other : roller adhesive tape.

OPTIONAL

Description	Part number
LuxCis® metal unit block for Radiall curing oven	**F780 494 00**
LC multimode master cord for measurement. Multimode 62.5/125 fiber (ST standard fitted at the other end). 3 meters long.(see note 1)	**MASTER LC 21 STC L300**
LC singlemode master cord for measurement. Singlemode 9/125 fiber (FC standard fitted at the other end). 3 meters long (see note 1)	**MASTER LC50 63 FC50 L300**

Note 1
Master cords must be used with inter-series adapters. Please refer to page 8 of this catalogue for inter-series adapters part numbers and to page 26 for insertion losses measurement procedure.

INSERTION LOSSES MEASUREMENT PROCEDURE

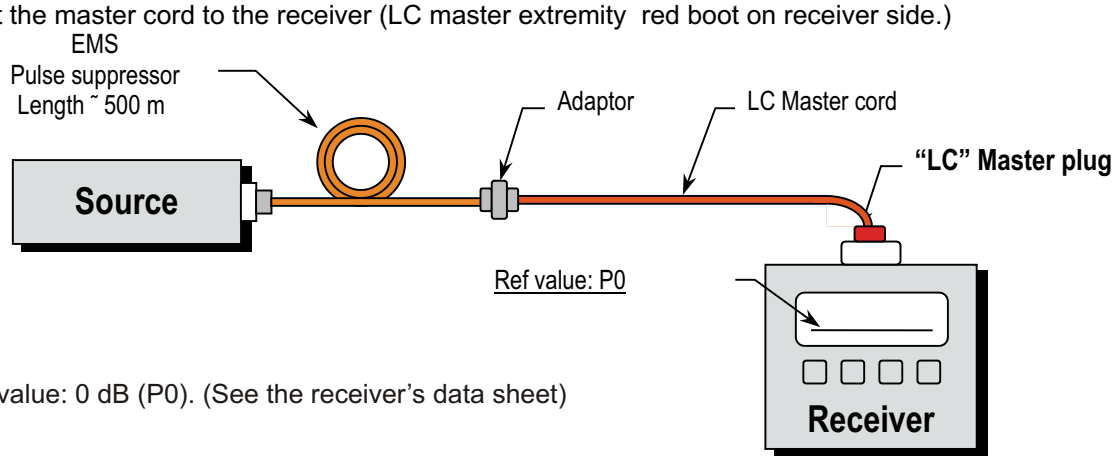
TESTING PROCEDURE IS IN ACCORDANCE WITH CECC 86000 - METHOD 7 / CEI 61300 3-4 - METHOD B

REQUIRED MATERIAL

- Optical light source
- Power meter (Receiver)
- Pulse suppressor (for multimode fiber)
- LC master cord (multimode or singlemode), see part number page
- LC / LuxCis® inter-series adapter F719 060 000

EQUIPMENT CALIBRATION

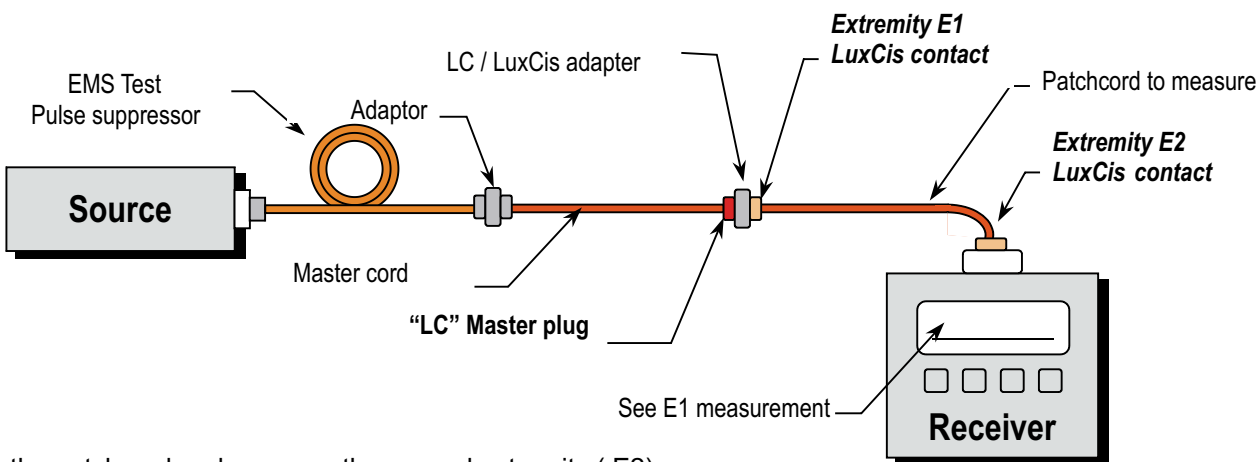
1. Actuate the source and the receiver
2. Connect the pulse suppressor to the source for Equilibrium Mode Distribution, then connect it to the connector adapter
3. Connect the master cord to the receiver (LC master extremity red boot on receiver side.)



Referential value: 0 dB (P0). (See the receiver's data sheet)

CABLE ASSEMBLY MEASUREMENT (OUT OF THE MULTIPIN CONNECTOR)

1. Insert the LC / LuxCis® adapter then connect the LuxCis® patchcord and measure the first extremity (E1)

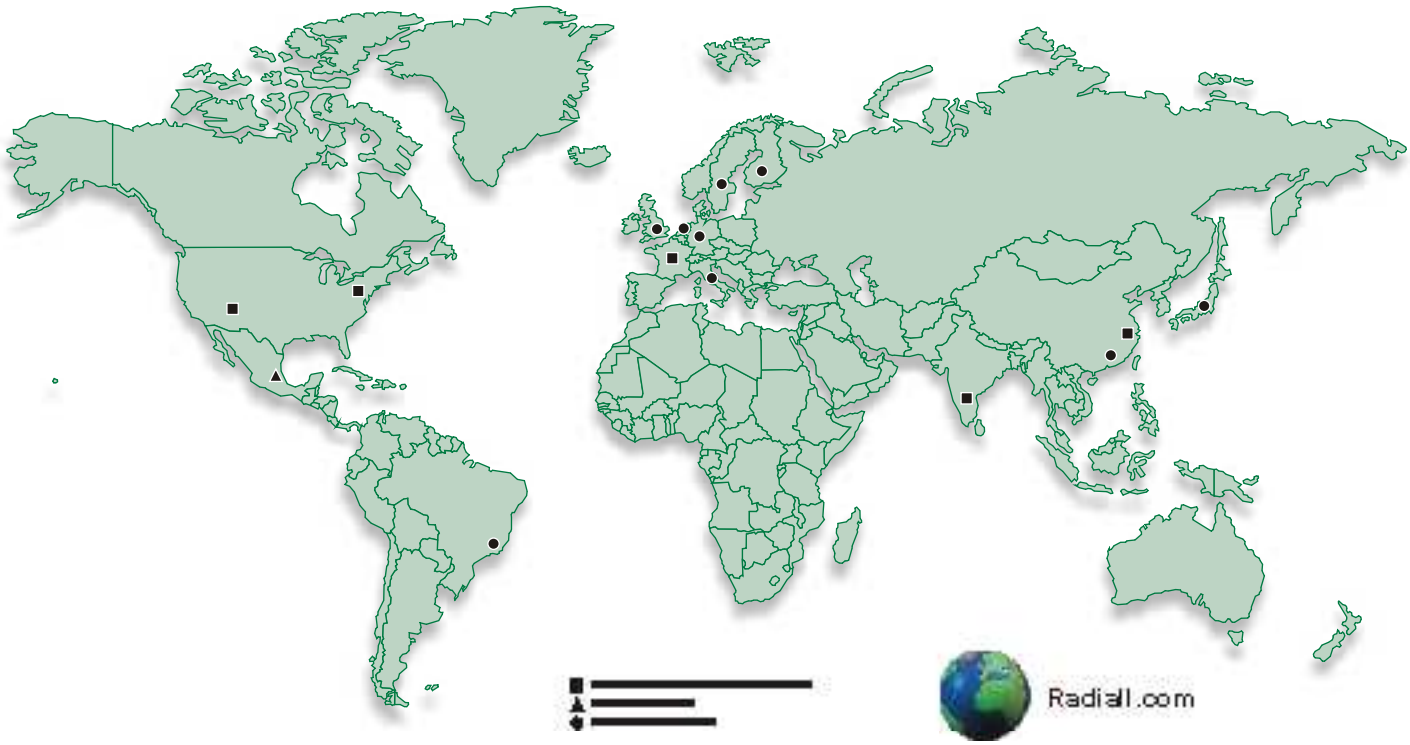


2. Reverse the patchcord and measure the second extremity (E2).

Both measurements (1 -> 2 / 2 -> 1) must be performed to define the patchcord's insertion loss

NUMERICAL INDEX

Part number	Description	Page
282 549 001	Extraction tool for quadrax adapter	19
282 549 009	Extraction tool for quadrax adapter	19
282 515	Plastic Extraction tool (M81 969/14-03)	8/15/19/22
616 912	Sealing cap	15/19/21
617 235 002	Electrical contact #20-22-24	15
617 235 002	Electrical contact #16-18-20	15
620 946 001	Pin quadrax adapter for LuxCis® termini in quadrax FR type cavity	19
620 946 002	Pin quadrax adapter for LuxCis® termini in quadrax RR type cavity	19
620 946 003	Socket quadrax adapter for LuxCis® termini in quadrax RR type cavity	19
620 946 004	Sleeve holder for pin quadrax adapter	19
EPXBE12F6PA	Hybrid pin insert/Cavity A	15
EPXBE12F6PB	Hybrid pin insert/Cavity B	15
EPXBE12F6SA	Hybrid socket insert/Cavity A	15
EPXBE12F6SB	Hybrid socket insert/Cavity B	15
EPXBEF12CPA	Pin insert for 12 LuxCis® termini/Cavity A/thermosetting	15
EPXBEF12CSA	Socket insert for 12 LuxCis® termini/Cavity A/thermosetting	15
EPXBEF12PA	Pin insert for 12 LuxCis® termini/Cavity A/metal version	15
EPXBEF12CPB	Pin insert for 12 LuxCis® termini/Cavity B/thermosetting	15
EPXBEF12CPB	Socket insert for 12 LuxCis® termini/Cavity B/thermosetting	15
EPXBEF12PB	Pin insert for 12 LuxCis® termini/Cavity B/metal version	15
EPXBEF12SA	Socket insert (with sleeve holder) for 12 LuxCis® termini/Cavity B/metal version	15
EPXBEF12SB	Socket insert (with sleeve holder) for 12 LuxCis® termini/Cavity B/metal version	15
F718 176 104	Dust cap for LuxCis® termini contact	6
F719 058 000	LuxCis® to LC adapter/Duplex/MIL-DTL-38999 panel cutout	8
F719 058 010	LuxCis® to LC adapter/Duplex/LC panel cutout	8
F719 060 000	LuxCis® to LC adapter/Simplex/LC panel cutout	8
F725 000 118	LuxCis® termini/125.3µm singlemode ceramic/0.9µm buffer	6
F725 000 419	LuxCis® termini/125.3µm singlemode ceramic/1.5 to 2.2mm cable diameter	6
F725 000 519	LuxCis® termini/125.3µm singlemode ceramic/1.5 to 2.2mm cable diameter	6
F725 003 118	LuxCis® termini/128µm multimode ceramic/0.9µm buffer	6
F725 003 319	LuxCis® termini/128µm multimode ceramic/1.2mm	6
F725 003 419	LuxCis® termini/128µm multimode ceramic/1.5 to 2.2mm cable diameter	6
F725 003 519	LuxCis® termini/128µm multimode ceramic/1.5 to 2.2mm cable diameter	6
F725 004 419	LuxCis® termini/140µm multimode ceramic/1.5 to 2.2mm cable diameter	6
F725 004 519	LuxCis® termini/140µm multimode ceramic/1.5 to 2.2mm cable diameter	6
F725 005 419	LuxCis® termini/230µm multimode ceramic/1.5 to 2.2mm cable diameter	6
F725 005 519	LuxCis® termini/230µm multimode ceramic/1.5 to 2.2mm cable diameter	6
F725 050 118	LuxCis® termini/125.3µm APC singlemode ceramic/0.9µm buffer	6
F725 050 419	LuxCis® termini/125.3µm singlemode ceramic/1.5 to 2.2mm cable diameter	6
F725 050 519	LuxCis® termini/125.3µm singlemode ceramic/1.5 to 2.2mm cable diameter	6
F725 700 100	LuxCis® to LuxCis® adapter/Simplex/Straight	8
F725 701 100	LuxCis® to LuxCis® adapter/Simplex/Screw-in	8
F780 … …	All tooling accessories	24/25
F780 533 000	Cleaning Kit	25
F780 853 000	Termination kit/110 V	24
F780 854 000	Termination kit/220 V	24
F780 855 000	Hexagonal key 5/64 inch (2mm) flats for sleeve holder removal	15/19/22
F780 858 000	Key for quadrax sleeve holder removal	19
LC 21 STC L300	Master cord Multimode	25
LC50 63 FC50 L300	Master cord Singlemode	25



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