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Tashi InfoComm Private Limited

# TASHI INFOCOMM PRIVATE LIMITED

BIDDING DOCUMENT FOR SUPPLY OF

“Power Equipment’s and Fiber Splicing Machine for FY-2025”

Reference No: TIPL/PRO-01/2025/ 918

Date: 18 / 01 / 2025

Procurement Officer  
Procurement and Inventory Section  
Tashi InfoComm Pvt Ltd.  
Thimphu, Bhutan



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P.O Box 1502, Samten Lam, Thimphu, Bhutan



<https://www.tashicell.com>



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**Tashi InfoComm Private Limited**

**SECTION-I  
INVITATION OF BIDS FOR SUPPLY OF**

**“Power Equipment’s and Fiber Splicing Machine for FY-25”**

1. Tashi InfoComm Private Limited, referred to as **“Purchaser”** invites sealed bids from eligible Bidders for the supply of Power Equipment’s and Fiber Splicing Machine for FY-25.
2. Interested eligible bidder(s) may obtain further information on the bid form directly from our website- [www.tashicell.com](http://www.tashicell.com) or Procurement & Inventory Section, Samten Lam, Post Box No. 1502, Thimphu, Bhutan. Contact the Procurement & Inventory Section at the given contact details during office hours only.
3. The Purchaser shall not be responsible for any costs or expenses incurred by the Bidder(s) in connection with the preparation or delivery of bids.
4. All Bidders/Representatives of the Bidders may be present during the opening of the Bidding Documents.
5. All correspondences with regard to the Bidding Documents shall be made in writing or email to the following address. Telephone inquiries shall not be accepted.

**Address for communication/contact.**

Procurement & Inventory Section,  
Tashi InfoComm Limited,  
Samten Lam, Post Box No-1502,  
Thimphu, Bhutan.

Email:

[procurement@tashicell.com](mailto:procurement@tashicell.com)/[manager.procurement@tashicell.com](mailto:manager.procurement@tashicell.com)/[procurement.finance@tashicell.com](mailto:procurement.finance@tashicell.com)



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**Tashi InfoComm Private Limited**

**SECTION-II  
INSTRUCTION TO BIDDERS**

**A. GENERAL**

**1. Scope of Bid:**

- 1.1. The scope of the Bid shall be the supply of Power Equipment's and Fiber Splicing Machine for FY-2025.
- 1.2. All the Bids are to be completed and submitted to the Purchaser in accordance with the Instructions to Bidders.

**2. Eligibility:**

- 2.1. The invitation for Bid is open to all interested licensed national and global suppliers.

**3. Cost of Bidding:**

- 3.1. The Bidder(s) shall bear all costs associated with the preparation and delivery of its bids, and the purchaser shall in no case be responsible or liable for those costs.

**4. Bidding Documents:**

- 4.1. The goods/services to be procured, bidding procedures, and terms & conditions are prescribed in the Bidding Documents. In addition to the invitation for bids, the bidding document includes:
  - a) Instructions to bidders
  - b) General terms & conditions
  - c) Detailed list of goods/ and or services to be supplied along with detailed specifications.
- 4.2. The bidder(s) are expected to examine the bidding document, including all instructions, forms, terms, and specifications. Failure to furnish all information required by the bidding document or submission of a bid not substantially responsive to the bidding document in every respect will result in rejection of the bid.

**5. Bid Prices:**

- 5.1. The bidder(s) shall complete the appropriate price schedule included herein, stating unit prices, extended amount and the expected countries of origin of the goods to be supplied, if applicable



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- 5.2. Prices quoted by the bidders shall remain fixed and valid for the period stated in **Section II, Clause 6** of the bidding document, and will not be subject to variation on any account.
- 5.3. The bid currency shall be Ngultrum (Nu) for this bidding document. Except for third-country bidder(s), the bidder(s) from the rest of the countries are not allowed to quote in US Dollars.  
The third country bidder(s) who quoted in US Dollars shall be converted into Ngultrum at the prevailing exchange rate (Selling TT rate of any financial institution) as on the date of tender opening for evaluation purposes.
- 5.4. **Trade Terms shall be:**  
Unless otherwise stated, the following shall be the trade terms for this bidding document:
- DDP, TIPL Warehouse, Thimphu for local bidders.
  - CIF, TIPL Warehouse, Phuentsholing for Indian and other third-country bidder(s).
6. **Bid Validity:**
- 6.1. The Bids shall be valid for 12 months from the date of bid submission.
7. **Taxes/Duties & other levies:**
- 7.1. Unless otherwise stated, the applicable taxes/duties/any other levy both within and outside Bhutan shall be under the scope of the bidder.
- 7.2. The third country bidder(s) or bidder(s) from India may exclude applicable taxes/duties within Bhutan while submitting the bid. The applicable taxes including customs clearance within Bhutan shall be under the scope of the purchaser. However, applicable taxes/duties, etc shall be factored in during the time of evaluation to determine the final landing cost.
8. **Evaluation:**
- 8.1. The purchaser shall evaluate the quotations based on specifications given in the bidding document to ascertain the lowest evaluated bidder(s).
- 8.2. The evaluation shall not only be based on the quoted unit rate but the specifications and complete datasheet of the Power Equipment's and Fiber Splicing Machine against the purchaser's requirement.
- 8.3. The Evaluation Team & Management Tender Committee's evaluation decision shall be final and binding, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform and explain the affected bidder or



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bidders on the grounds of the evaluation team & Management Tender Committee's evaluation decisions and reports. In addition, the performance of previous tenders with the purchaser, if any shall also be factored in during the time of evaluation.

- 8.4. The lowest quoted unit rates alone do not guarantee the award of contract or Purchase Order.
- 8.5. The evaluation shall be based on lot-wise/package.

### 9. Award of Purchase Order/Contract:

- 9.1. The purchaser shall award the PO or supply contract to the successful bidder against the respective lot.

### 10. Delivery:

- 10.1. Delivery should be completed as per the given schedule:
- Within 60 days from the date of confirmed PO depending on the nature of the items(s) awarded to the respective successful bidder(s).
  - The detailed terms & conditions shall be mentioned in the confirmed Purchase Order/Supply Contract.
- 10.2. The purchaser (TIPL) may provide a delivery time extension beyond the actual delivery date taking into account the actual need-by-day and project schedule of TIPL. However, subject to the approval of the Management Tender Committee after levying the Liquidity Damaged (LD) Penalty.
- 10.3. The Time Extension request/provided may not exceed 15 days at the maximum OR depend on the approval granted by the Management Tender Committee of the purchaser. The supplier has to send an email/in writing requesting a time extension with genuine reasons (along with supporting documentation).

### 11. Inspection of Goods:

- 11.1. The goods are subject to Physical Inspection upon delivery at TIPL Warehouse and testing & commissioning in due course of time. The Goods found to be faulty, DOA, not meeting specifications/requirement of TIPL after the final inspection, installation, and testing shall be rejected at the cost of the bidder.

### 12. Warranty (If applicable):

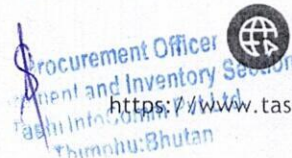
- 12.1. The Warranty shall be minimum 12 months from the date of delivery OR standard manufacturer's warranty, whichever is longer



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### 13. Payment:

- 13.1. The Payment shall be made 100% against delivery within 7 working days from the date of receiving of Bill/Invoice.
- 13.2. Advance payment up to a maximum of 30% of the total PO value may be released at Purchaser's discretion against furnishing equivalent amount of bank guarantee for the advance payment valid 6 months beyond the delivery deadline.

### 14. TDS/FCT:

- 14.1. TDS (Tax Deduction at Source) and or FCT (Foreign Contract Tax) shall be deducted as per the existing Rules and Regulations of the Department of Revenue & Customs, Bhutan (wherever applicable).

### 15. EMD (Earnest Money Deposit):

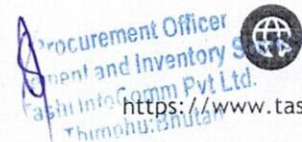
- 15.1. The bidder should submit **not less than 2% of the total quoted value** as part of the EMD along with the quotation in the form of a Demand Draft or Bank Guarantee from any of the financial institutions located in Bhutan. The bidder(s) other than Bhutanese national can furnish EMD from the financial institutions in their respective countries OR from any of the Bhutanese Financial Institutions. The EMD may be directly deposited into the Purchaser's bank account (please contact the Purchaser requesting bank details via email).
- 15.2. The bidder(s) failing to submit the EMD as per the requirement shall result in the rejection/cancellation of their bid.
- 15.3. The EMD shall be valid for 60 days beyond the submission/submission deadline of the bidding document. The EMD should be drawn in favor of "**Tashi InfoComm Private Ltd., Samten Lam, Thimphu, Bhutan**".
- 15.4. EMD of unsuccessful bidder(s) shall be returned promptly after the finalization of the quotation.
- 15.5. EMD shall be forfeited if:
  - a) A bidder withdraws its bids prior to the finalization of the bids in every respect.
  - b) The successful bidder fails to submit Performance Security as per the terms specified in the bidding document.
- 15.6. EMD of the successful bidder shall be returned promptly upon submission of Performance Security.



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### 16. Performance Security:

- 16.1. The successful bidder should submit not less than 10% of the total PO/contract value as Performance Security within 1 week from the date of PO/signing of the supply contract.
- 16.2. Performance Security shall be drawn in favor of “**Tashi InfoComm Private Ltd, Thimphu**” in the form of a Demand Draft or Bank Guarantee or can be deposited directly into the purchaser’s bank account (contact purchaser via email requesting bank details).
- 16.3. Performance Security shall be valid for the period of **1 YEAR** from the date of Purchase Order/Supply Contract.
- 16.4. If the successful bidder fails to submit the performance security within 1 week, the EMD shall be forfeited and the purchase order shall stand canceled and awarded to the second lowest evaluated bidder.
- 16.5. Performance Security shall be returned within 1 week from the date of successful completion of all obligations under the issued Purchase Orders or signed supply contract.
- 16.6. Performance Security shall be forfeited if:
  - a) The successful bidder fails to execute the supplies/works as per the terms and conditions stated in the purchase order in any manner deemed unsatisfactory by the purchaser (TIPL) or the end-user(s).
  - b) The successful bidder fails to deliver the goods on the given deadline and is not recommended by the end-user(s) for a time extension or replacement.
  - c) The goods supplied do not conform to the specifications/brands/requirements, etc stated in the purchase order/BOM.

### 17. Liquidity Damage (LD) Penalty:

- 17.1. The LD penalty shall be charged at 0.01% per day up to a maximum of 10% of the total PO value should the supplier fail to deliver on the specified deadline.

### 18. The purchaser Right:

- 18.1. The purchaser reserves the following rights without thereby incurring any liability to the affected bidder or bidders or any obligation to inform and explain the affected bidder or bidders on the grounds of the purchaser’s action:
  - a) The right to accept or reject any bid and reject all the bids at any time prior to issuance of Award Notification and or Purchase Order.



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- b) The right at the time of award of the purchase order to increase or decrease the quantity of goods specified in the bidding document, without any changes in the price or other terms & conditions.
- c) The right to reject all or in part, the item supplied during the time of physical inspection/testing or found to be non-standard/non-specific/unreliable in terms of quality/not meeting specification.
- d) The right to direct negotiation, call quotations and receive the same via email from the manufacturers; authorized distributors; authorized dealers; and frequent supplier(s) of similar goods in Bhutan/India/China/Other countries to compare the rates with those offered by the vendors through this Bidding Document. If need be, to procure directly. The Purchaser also reserves the right to negotiate with the lowest evaluated bidder(s) or all of the bidders at any time prior to the award of the Purchase Order/Signing of the Supply Contract.
- 18.2. Should the selected Bidder(s) fail to supply the full order quantity within the given deadline, the purchaser reserves the right to cancel the quantities not supplied and place the order to the Second Lowest Evaluated Bidder. In such a case, the Purchaser shall recover as part of Liquidated Damages, the difference amount between purchase order rate and the actual rate paid to the second-lowest evaluated bidder for the quantities not supplied. The amounts shall be either adjusted from the Performance Security or bill/invoice amount of the supplied quantity.

### 19. Force majeure:

- 19.1. Force Majeure shall mean such unforeseeable occurrences beyond the control of the Purchaser and Bidder which occur after the date of issuance of Purchase Order or signing of Supply Contract and which were not reasonably foreseeable at the time of issuance of Purchase Order or signing of Supply Contract and which effects are not capable of being overcome without the unreasonable expense and/or loss of time to the Purchaser and the Bidder concerned, including, provided that the aforementioned conditions are met, but not limited to:
- Natural catastrophes, earthquakes
  - Strikes and blockages
  - War or war-like conditions, mobilizations, revolutions or riots, an act of Public enemy, sabotage, terrorism.
  - Restriction by or actions, omissions, or interventions from Public Authorities (including but not limited to changes in laws, regulations or import/export, security restrictions).
  - The Party who wishes to plead Force Majeure shall inform the other party of the First party's perception of the effects of such force majeure on the fulfillment of issued purchase order/signed Supply Contract. Should any event of force majeure cause an increase in the time required for the performance of any part of the purchase order/signed Supply Contract, an equivalent adjustment shall be made in the time required for performance.



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However, if the force majeure situation continues for more than two months, the purchaser and bidder shall decide whether the contract should be terminated.

### 20. Termination:

20.1. In the event of any failure by the Bidder to perform any of its obligations under the issued purchase order or signed Supply Contract or upon unsatisfactory performance, the purchaser shall terminate the purchase order or signed Supply Contract by giving a prior written notice of Fifteen (15) days, without any obligation to the Bidder. However, the purchaser shall pay the actual due amount for the quantity supplied and accepted by the Purchaser to Bidder on termination of the issued purchase order or signed Supply Contract.

### 21. Indemnity:

21.1. The bidder(s) shall comply with all the laws in force in Bhutan and outside. The laws will include all national, provincial, municipal, or other laws that affect the performance of the issued purchase orders or signed Supply Contract and bind upon the Bidder(s). The Bidder(s) shall indemnify and hold harmless the Purchaser for and against any and all liabilities, damages, claims, fines, penalties, and expenses of whatever the nature arising or resulting from the violation of such laws by the Bidder(s).

### 22. Dispute Settlement:

22.1. If any dispute should arise in connection to the issued purchase order or signed Supply Contract, the Parties shall try to settle any such dispute through good faith and negotiations including escalation to senior Management where each party deems it appropriate. If negotiations fail, the matter shall be referred to the Court of Law.

### 23. Governing Law and Jurisdiction:

23.1. The terms and conditions in this Bidding Document or issued Purchase Order or signed Supply Contract shall be read and construed in accordance with the laws of the Kingdom of Bhutan and the District Court of Thimphu, Bhutan shall have jurisdiction over any disputes arising out of the Contract.



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SECTION-III  
GENERAL TERMS & CONDITIONS:

In this Bidding Document, the following terms shall be interpreted as indicated below:

“The Bid” means the proposal submitted by the Bidder

“The Purchaser” means the organization purchasing the Goods. In this case, M/s. Tashi InfoComm Private Limited (TIPL).

“Day” means a calendar day.

1. **Bid Submission:** The Bids should be submitted in a sealed envelope (Single Envelope Method- **copy not required**) addressed to “ **Procurement & Inventory Section, TIPL** against Reference No. TIPL/PRO-01/2025/918 ..... dated 18/01/2025 .....”
2. **Bid Submission:** 29/01/2025 ..... (Bhutan Standard Time);  
11:00AM .....
3. **Bid Opening Time:** 2:00PM : 29/01/2025 ..... at TIPL conference hall. Interested Bidder(s) may attend the bid opening on the given deadline and place.
4. Bidding Documents received after the deadline (time & date of submission) shall not be accepted and opened during the bid opening. The quotations shall automatically stand as “Rejected”.
5. The Purchaser shall not be responsible for any damages, losses, breakages, or shortages of any items while in transit for delivery of Goods to TIPL Store/warehouse.
6. The Bidder should enclose a Xerox copy of valid Trade License, Tax clearance, Power of Attorney, and other relevant documents.
7. **Clarification on Bidding Document:** The bidder(s) are expected to examine the Terms and Conditions stated in the Bidding Document, Bill of Materials, Specifications, Drawings, etc furnished along with the Bidding Document. Once the bids are submitted by the bidder(s), It shall mean:
  - a) The bidder(s) have examined, read, and accepted all the terms and conditions stated in the Bidding Document, the specifications of the goods/services, Drawings/Designs, etc furnished in the Bidding Document. Thereafter, no grievance, complaints, etc (whatsoever nature may be) shall be accepted.
  - b) The bidder(s) can seek clarification (through email/in writing) with regard to the terms & conditions of the Bidding Document, the specifications of the goods/services, Drawings/Designs, etc furnished in the Bidding Document before the submission of the Bids.



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- c) Clarification can be sought through email or in writing to any of the given officials during office hours. Email ID: [manager.procurement@tashicell.com](mailto:manager.procurement@tashicell.com) OR [procurement.finance@tashicell.com](mailto:procurement.finance@tashicell.com) OR [procurement@tashicell.com](mailto:procurement@tashicell.com).

Address: Manager, Procurement & Inventory Section, Tashi InfoComm Private Ltd., Samten Lam, Post Box No. 1502, Thimphu, Bhutan.

8. The Bids not substantially responsive to the Bidding Document in every respect will result in the rejection of the Bids.
9. For any complaints or grievances, the bidder(s) may write directly to the Management Tender Committee of the Purchaser through email. The Email ID is [procurement@tashicell.com](mailto:procurement@tashicell.com).
10. Product samples, catalog/brochures containing details of technical and functional specifications shall be submitted along with the Bids wherever applicable. Failing which, shall result in rejection of the Bidding Document.
11. The decision of the Corporate/Management Tender Committee shall be final and binding.

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SECTION-IV

The complete **Bill of Materials (BOM)** is as stated in **Annexure-I**. The Bids should be submitted in the below format in your company Quotation Form.

**Appendix-I:**

S/L	Description	UoM	Qty	Unit Rate	Amount
1.	1. Detail as given in Annexure-I				

Total

**Note:**

1. Please attached details of the technical and functional specifications along with Bidding Doc. Failing to do so, will result in the rejection of your bidding document.
2. Mention the Country of origin of goods in the bidding document.



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**Annexure-I Bill of Materials**

SL	Description	UoM	Qty	Rate	Amount	Lot
1	1.5 tone split type Air Conditioners with indoor mounting bracket, outdoor wall mounting brackets, R-32 gas, LG brand and tubing should be complete copper	Set	50			Lot-I
2	Free Cooling Unit (Ventilation), 48 volts DC Operating system. The controller should be able to control operation between FCU and Air conditioner base on the present value (Above 18 DegC to 25 DegC Ventilation should operate and when temperature goes above 26 DegC AC should start and Vice Versa). The set includes additional 3 sets of filters for both Inhouse and exhaust units.	Set	8			
<b>Total for Lot-I</b>						
1	UTP Cable outdoor (Cat 6)	Rolls	50			Lot-II
2	UTP Cable Indoor (cat5e)	Rolls	200			
3	RJ45 connector (D-Link)	Packet	80			
<b>Total for Lot-II</b>						
1	120Ah DEG starting batteries, maintenance free. Brand: Exide power safe, sealed lead acid batter	Nos	20			Lot-III
2	Technician Tool Bags	Nos	50			
3	RJ 45 to USB Console Cable	Nos	6			
4	USB to USB console cable	Nos	2			
5	Cable Tie 8 inches		30			
6	Insulation		30			
7	Screw Driver		4			
8	Crimping Tools		8			
9	Uni-UT203+ Digital Clamp Meter AC/DC current auto range true RMS/Min Backlight Multimeter		5			
10	Hetkrishi Map Ruler Mirror Scale Navigation Compass Scout		5			
11	Single Sleeve Manila Rope Pulley		2			
12	Safety Belt ( work positioning belt with lanyard		15			
13	Prokit PK-9472B, Fiber Optic & Telecom Installation Tool Kit		3			
14	Telescope Ladder 7 meters		8			
15	Swap out connector SC/UPC		12			
16	GPON Power Meter		6			
17	Revit Gun		1			
18	Performance Angle Grinder		1			
19	Tool Box with 5 trays and double handle		1			
<b>Total for Lot-III</b>						
1	Splicing Machine Sumitomo Type-82C+		2			Lot-IV
2	Splicing Machine Sumitomo T-402S		2			
3	OTDR EXFO-MaxTester 730D PON/metro OTDR		6			
<b>Total for Lot-IV</b>						

  
 Procurement Officer  
 Equipment and Inventory Section  
 Tashi Info Comm Pvt Ltd.  
 Thimphu, Bhutan

1	AFL Fujikura Fusion Splicer Machine 90R		2			Lot-V
2	AFL OTDR KIT, 1310/1550nm, FS200-100, Flexscan OTDR, VFL, UPC Basic Kit		2			
<b>Total for Lot-V</b>						


 Procurement Officer  
 Procurement and Inventory Section  
 Bhutan InfoComm Pvt Ltd.  
 Thimphu, Bhutan



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# Tashi InfoComm Private Limited

I.R #-----

Date: 11.01.2025

## GOODS ISSUE REQUISITION

F-III (a)

Kindly arrange to issue the below-listed goods to the undersigned applicant.

Need-By-Date: 11.01.2025

Goods Requested From:----(Store Name)---

S/L	PO#	Goods Description	UoM	Qty	Dzongkhag	Site Location
1		1.5 Ton Split type Air Conditioners, R-32 including mounting brackets/kits for ODU and IDU. The tubing materials between IDU and ODU should be of complete Coppers Brand preferred:	Nos.	42 43		Site list is mentioned in the next page.

Name: Tshering Tashi  
 Designation: Sr. Technician  
 Department: AND, P & U  
 Employee ID: 175  
 (Applicant)

Received on  
13/1/25 At 11:08 AM

For,

Name: Diptho  
 Designation: Acting Manager  
 Section/Department: PKU, AND  
 Employee ID: 846

Sheyomi  
Sonam Chozom

(Approving Authority)



བཀྲིས་བད་དོན་བརྒྱུད་འབྲེལ་སྒྲེ་ཚང་འཛིན།།

# Tashi InfoComm Private Limited

I.R #-----

Date: 11.01.2025

## GOODS ISSUE REQUISITION

F-III (a)

Kindly arrange to issue the below-listed goods to the undersigned applicant.

Need-By-Date: 11.01.2025

Goods Requested From:----(Store Name)---

S/L	PO#	Goods Description	UoM	Qty	Dzongkhag	Site Location
1 ✓		Free Cooling Unit (Ventilation), 48Volts DC operating system. The controller should be able to control operation between FCU and Air conditioner base on the present value (Above 18 DegC to 25DegC Ventilation should operate and when temperature goes above 26 DegC AC should start and vice versa). The set includes additional 3 sets of filters for both Inhouse and exhaust units. Brand preferred: ICON/BSMC/Any equivalent brand.	Nos.	8	Tsirang Tsirang SJK Pema Gyaltsé SJK Pema Gyaltsé Pema Gyaltsé Pema Gyaltsé	Samachu Deorali Pheydi Yonglagonpa Zimzor Thonphu Raydingla Tshatshe

Name: Tshering Tashi  
Designation: SR. Technician  
Department: AND, P & U  
Employee ID: 175

(Applicant)

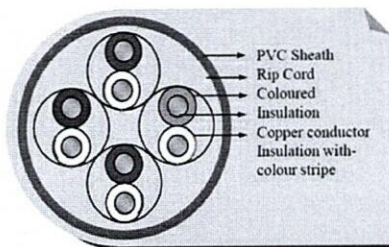
Dupho

Name:-----  
Designation:----- Acting Manager  
Section/Department:----- P&U, AND  
Employee ID:----- 846

(Approving Authority)

Received on 13/1/25  
At 11:08 AM  
(Shegomyi)  
Sonam chozom





## Cat5E UTP Cable

### INTRODUCTION

D-Link solid cables are the best twisted-pair cables in the market for transmitting data over local area Networks (LANs). These cables exceed performance requirements specified by TIA/EIA-568C.2 and IEC 60603-7-4 standards.

As streaming video and multimedia over LAN are gaining popularity, users demand faster data transmission and reduced waiting time. D-Link cables are ideal for simple, cost-effective and high-speed transmission performance. They support a higher signal-to-noise ratio, providing better reliability for current applications and higher data rates for future applications.

### CAT5E UTP CABLE

The Category 5E cable, an enhanced version of Category 5, adheres to more stringent standards specified by TIA/EIA-568C.2 and IEC 60603-7-4. These cables are made using 24 gauge (AWG) copper wires with about three twists per inch enabling them to transmit data at 1000 Mbps (~1 Gigabit per second) with a frequency of 100 MHz. They are suitable for 10BASE-T, 100BASE-TX Fast Ethernet and 1000BASE-T Gigabit Ethernet.

### SPECIFICATIONS

- 4 Pairs Unshielded Twisted Pair (UTP) Cable
- Conductor Metal: Solid Bare Copper
- Color Code: Blue/ Grey
- Conductor Diameter: 0.5mm Nominal, 24 AWG
- Insulation Diameter: 0.860 Nominal, Insulation Material: HD-PE
- Jacket Material: PVC UL94V-0
- Cable Diameter: 5.0mm nominal

### APPROVAL / CERTIFICATION

- Verified compliant with TIA/EIA-568C.2 standards by ETL
- CUL listed
- RoHS

### TECHNICAL DETAILS

- Mutual Capacitance: 5.6nF/100m nominal
- Characteristic Impedance: 100Ω±15%
- Nominal Velocity of Propagation: 69%
- Conductor Resistance: < 9.80Ω/100m
- Resistance Unbalance: 5 % Max
- Capacitance Unbalance: 330pF/100m
- Delay Skew: < 45nS
- Bending Radius: < 4 X Cable Diameter (mm) at -20°C ± 1°C
- Pulling Force: 100 N
- Temperature Range: -20°to +70°C

### TRANSMISSION CHARACTERISTICS PER 100M

Frequency (MHz)	Insertion Loss (dB/100m)	RL (dB)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	PSACR (dB)
1	2.0	20.0	65.3	62.3	63.8	60.8	63.3	60.3
4	4.1	23.0	56.3	53.3	51.8	48.8	52.2	49.2
8	5.8	24.5	51.8	48.8	45.7	42.7	46.0	43.0
10	6.5	25.0	50.3	47.3	43.8	40.8	43.8	40.8
16	8.2	25.0	47.2	44.2	39.7	36.7	39.0	36.0
20	9.3	25.0	45.8	42.8	37.8	34.8	36.5	33.5
25	10.4	24.2	44.3	41.3	35.8	32.8	33.9	30.9
31.25	11.7	23.3	42.9	39.9	33.9	30.9	31.2	28.2
62.5	17.0	20.7	38.4	35.4	27.9	24.9	21.4	18.4
100	22.0	19.0	35.3	32.3	23.8	20.8	13.3	10.3

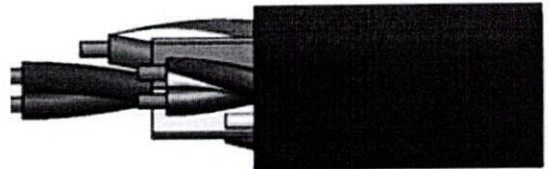
Product No.	Description	Color
NCB-5EUBLUR-305	Cat5E UTP 24 AWG solid, 305 Mtr/Roll	Blue
NCB-5EUGRYR-100	Cat5E UTP 24 AWG solid, 100 Mtr/Roll	Gray
NCB-5EUGRYR-305	Cat5E UTP 24 AWG solid, 305 Mtr/Roll	Gray

**Product Description:**

Enhanced performance cable for transmission of high speed data, digital and analogue voice and video (RGB) signals on LANs. Supports Gigabit Ethernet (1000 BaseT) standard. Operates at bandwidth of 250 MHz. This cable well exceeds the requirements of TIA/EIA568-C.2 and ISO/IEC 11801 and RoHS compliant.

**Features**

- PE Sheathed for greater protection
- UV Resistant
- Suitable for Outdoor Installations

**Electrical Parameters**

- CONDUCTOR RESISTANCE (DC): 9.38  $\Omega$  /100MTR@20°C. MAX.
- RESISTANCE UNBALANCE: 4 %MAX
- DIELECTRIC STRENGTH: 1.7 KV AC for 2S
- INSULATION RESISTANCE: 5000 M $\Omega$  /km
- MUTUAL CAPACITANCE: 5.6 nF/100 mtrs MAX.
- CAPACITANCE UNBALANCE PAIR/GROUND: 330 pF/100M MAX
- PROPAGATION DELAY: 536 nS/100m max @ 250 MHz
- DELAY SKEW:  $\leq$ 45 nS/100M
- NORMAL VELOCITY OF PROPAGATION: 69%
- TENSILE STRENGTH: >9MPa, (9000KN/Square Meter)
- IMPEDANCE: 100  $\pm$  15%  $\Omega$

**Construction:**

Conductor	<i>Solid Bare Electrolytic Grade Copper</i>
Nominal Conductor Diameter	<i>(23 AWG)</i>
Insulation	<i>Polyethylene</i>
Insulation Diameter	<i>0.973 <math>\pm</math> 0.05 mm</i>
Insulation Thickness	<i>0.217mm</i>
Sheath Thickness	<i>0.5 <math>\pm</math> 0.15 mm</i>
Outer Jacket:	<i>UV-PE</i>
Color of Jacket	<i>Blue</i>
Sequential Marking	<i>At Every Meter</i>
Filler	<i>Yes. Central Slit Film Cross Filler</i>
Approximate OD	<i>7.1 mm</i>

**Flame Test**

- NEC article 800

**Material and Construction**

- UL 444

**Applicable Standard**

- ANSI/TIA-568-C.2 (2009)
- ISO/IEC 11801 (Edition 2.2)
- IEC 61156-5 (Edition2.0)
- IEC 60332-1-2
- EN50288-6-1 & EN50173-1

**HIGH FREQUENCY PARAMETER**

FREQ	Ins. Loss	RL	NEXT	ELFEXT	PSNEXT	PSELFEXT
(MHz)	(dB/100)	(dB)	(dB/100)	(dB/100)	(dB/100)	(dB/100)
	Max.	Min	Min.	Min.	Min.	Min.
1	2.1	20	75	68	72.3	65
4	3.8	23	66.3	56	63.3	53
10	6	25	60.3	48	57.3	45
16	7.6	25	57.2	43.9	54.2	40.9
20	8.5	25	55.8	42	52.8	39
31.25	10.7	23.6	52.9	38.1	49.9	35.1
62.5	15.5	21.5	48.4	32.1	45.4	29.1
100	19.9	20.1	45.3	28	42.3	25
200	29.1	18	40.8	22	37.8	19
250	33	17.3	39.3	20	36.3	17

**MECHANICAL PROPERTIES**

- BEND RADIUS: 8 X CABLE DIAMETER
- TENSILE STRENGTH: >9MPa, (9000KN/Square Meter)
- STORAGE TEMPERATURE: -20°C to 60°C
- OPERATING TEMPERATURE: -20°C to 60°C

**PACKAGING - 305M – Reel****Ordering Information**

NCB-C6UBLKR-305-O	CAT 6 UTP Outdoor Cable Black – 305 mtr.
-------------------	--

**D-Link (India) Limited**  
Kalpataru Square, 2nd Floor, Kondivita Lane, Andheri-East, Mumbai-400059  
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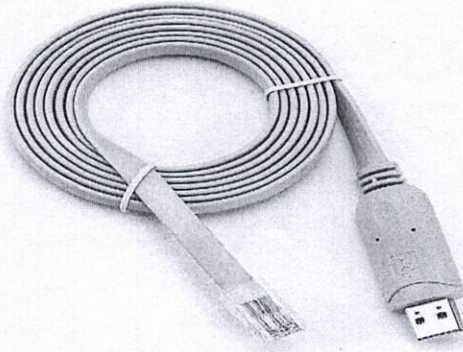
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## Tashi InfoComm Private Limited

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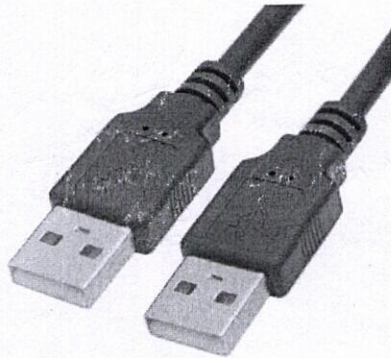
### 1. RJ 45 to USB Console cable

- USB to RJ45 Console Cable 1.8m RS-232 Adapter Converter for Switch Router Windows Linux Mac.
- Compatible Device: Cisco Switches, TP-Link Routers, Cisco Routers, Juniper , Huawei, ZTE Routers Switches, Raisecom etc.



### 2. USB to USB console cable

- Manufacturer: Cisco
- Part Number: A900-CONS-KIT-U
- Product Name: USB-to-USB cable for ASR920 Router
- Type: USB Cable
- Connector 1: USB-A Male
- Connector 2: USB-A Male
- Length: 6 ft



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Address: P.O. Box # 1502, Norzin Lam, Thimphu, Bhutan  
Phone: +975 77889977 Website: [www.tashicell.com](http://www.tashicell.com)

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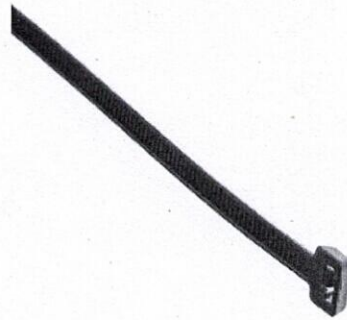
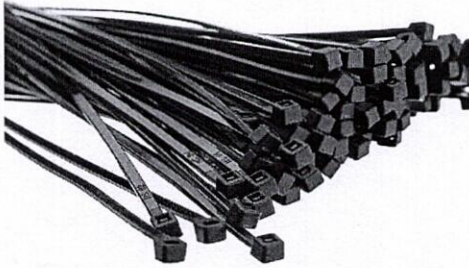
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## Tashi InfoComm Private Limited

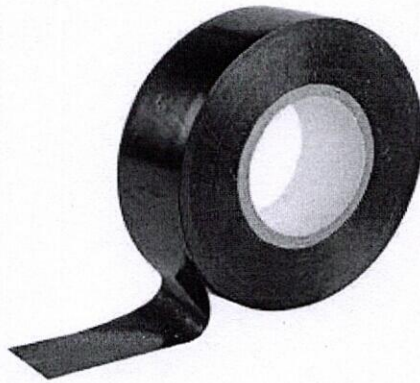
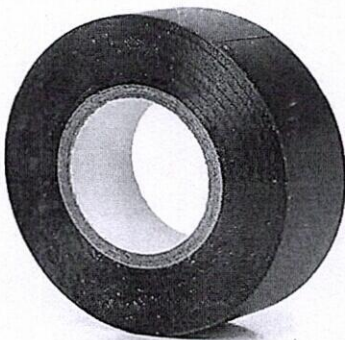
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### 3. Cable Tie

- 8 Inches Nylon Cable Tie, 8kg weight limit, 100 Pieces/pack.
- Color: Black
- Length: 8 inches
- Style: Zip



### 4. PVC Insulation Electrical Tape



*hyck*

---

Address:  
Phone:

P.O. Box # 1502, Norzin Lam, Thimphu, Bhutan  
+975 77889977

Website: [www.tashicell.com](http://www.tashicell.com)

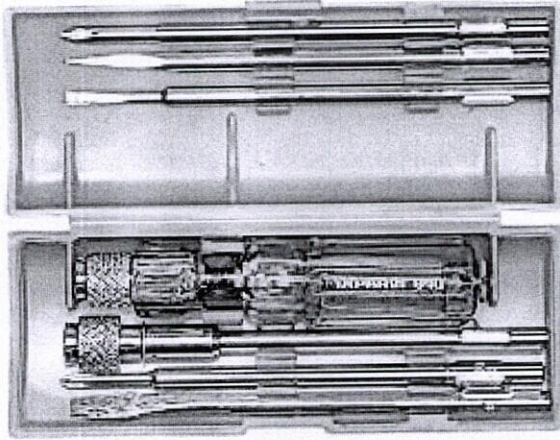
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Tashi InfoComm Private Limited

#### 5. Srew Driver set



#### 6. Crimping Tools

- All-In-One Tool, cuts, strips and crimps paired-conductor cables (round STP/UTP and flat-satin phone cable).
- Crimps 4, 6, and 8 position modular connectors (RJ22, RJ11/RJ12, and RJ45).
- Steel body with black-oxide finish for excellent performance and durability
- Cable parameters: 28-22 AWG (.08 - .34 mm<sup>2</sup>) flat or round; solid or stranded telephone & data.



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Tashi InfoComm Private Limited

I.R #-----

Date:13.01.2025

GOODS ISSUE REQUISITION

F-III (a)

Kindly arrange to issue the below-listed goods to the undersigned applicant.

➤ Need-By-Date: 13.01.2025

S/L	PO#	Goods Description	UoM	Qty	Location
1		Technician Tool bags	Nos.	50	

Name: Tshering Tashi  
Designation: Sr. Technician  
Department: AND  
Employee ID:175  
(Applicant)

Received on 13/1/25  
11:08 AM  
Shaypa  
Sonam Chozom

For

Name:-----  
Designation: Acting Manager  
Section/Department: PUS, AND  
Employee ID: 846

(Approving Authority)



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## Tashi InfoComm Private Limited

1.

Item 10: Tool Bag

STANLEY 1-95-611 Heavy-Duty 600 Denier Fabric Tool Backpack-50 Pockets



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## SPECIFICATION:

- AC current: 400 A
- AC current frequency response: 45 Hz-400 Hz
- DC Current: 400 A
- DC current frequency response: 45 Hz-400 Hz
- AC voltage: 600 V
- DC voltage: 600 V
- Display count: 4000
- Temperature: -40 °C - 1000 °C
- Frequency: <30V (on Hz position)
- Jaw opening: 28 mm



## GENERAL CHARACTERISTICS:

- Brand: UNI-T
- Model: UT203+
- Power Source: Battery Powered (1.5V battery x 2)
- Style: Digital
- Colour: Red, Black
- Display: 37 mm x 25 mm
- Product net weight: around 240g
- Product size: 215mm x 63mm x 36mm
- Standard accessories: Batteries, test leads
- Standard individual packing: Gift box, Carrying bag



*Signature*



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# Tashi InfoComm Private Limited

## 4. GPON Power meter.

PON Optical Power meter + Normal Optical Power Meter Module + VFL  
English display

### SPTK-3213 SERIES

PON Optical Power Meter



✓



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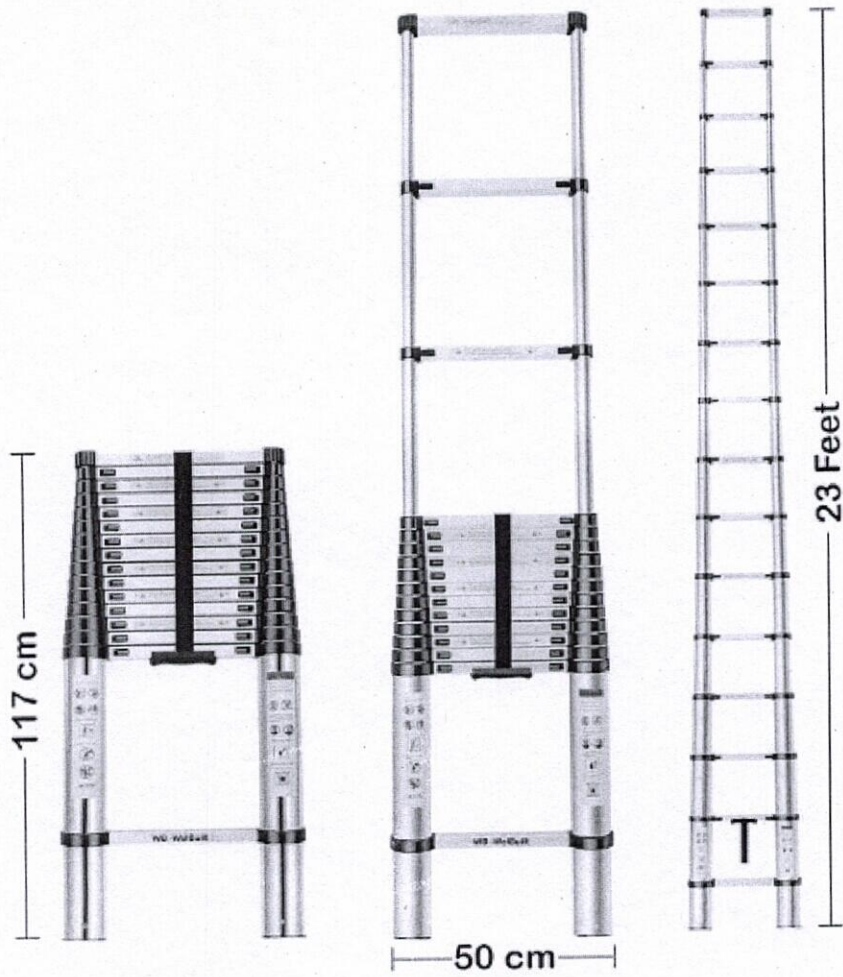
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5. Telescope ladder 7 mtrs

Material	Aluminium
Dimensions	49W x 700H Centimeters
Colour	Any
Special Feature	Foldable
Load-Capacity:	150



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6. Revit Gun

Makita 4.8Ø



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**Tashi InfoComm Private Limited**

### 8. Performance Angle Grinder

BOSCH Professional GWS 800 Angle Grinder | 800W Power | No-load Speed of 11000 RPM | Versatile Cutting and Grinding Tool | M10 Grinding Spindle Thread | 100 mm Disc. Complete set of accessories



**TECHNICAL DATA**

- NO-LOAD SPEED 11000 RPM
- POWER INPUT 800 W
- GRINDING SPINDLE THREAD M10
- WEIGHT 1.7 KG
- DISC DIAMETER 100 MM



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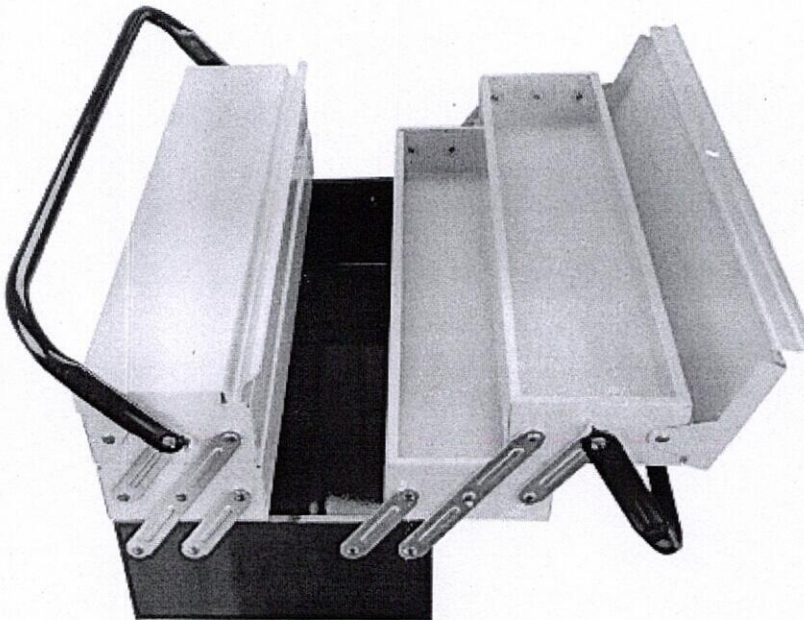


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**Tashi InfoComm Private Limited**

**9. Tool Box with 5 Trays and Double Handle**

STANLEY 1-94-738 18" 460 mm Cantilever Tool Box with 5 Trays & Double Handles for Easy & Convenient Storage.



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**Tashi InfoComm Private Limited**

**1.a Splicing machine**

TYPE-82C+ Sumitomo



✓



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1.b Sumitomo

T-402S



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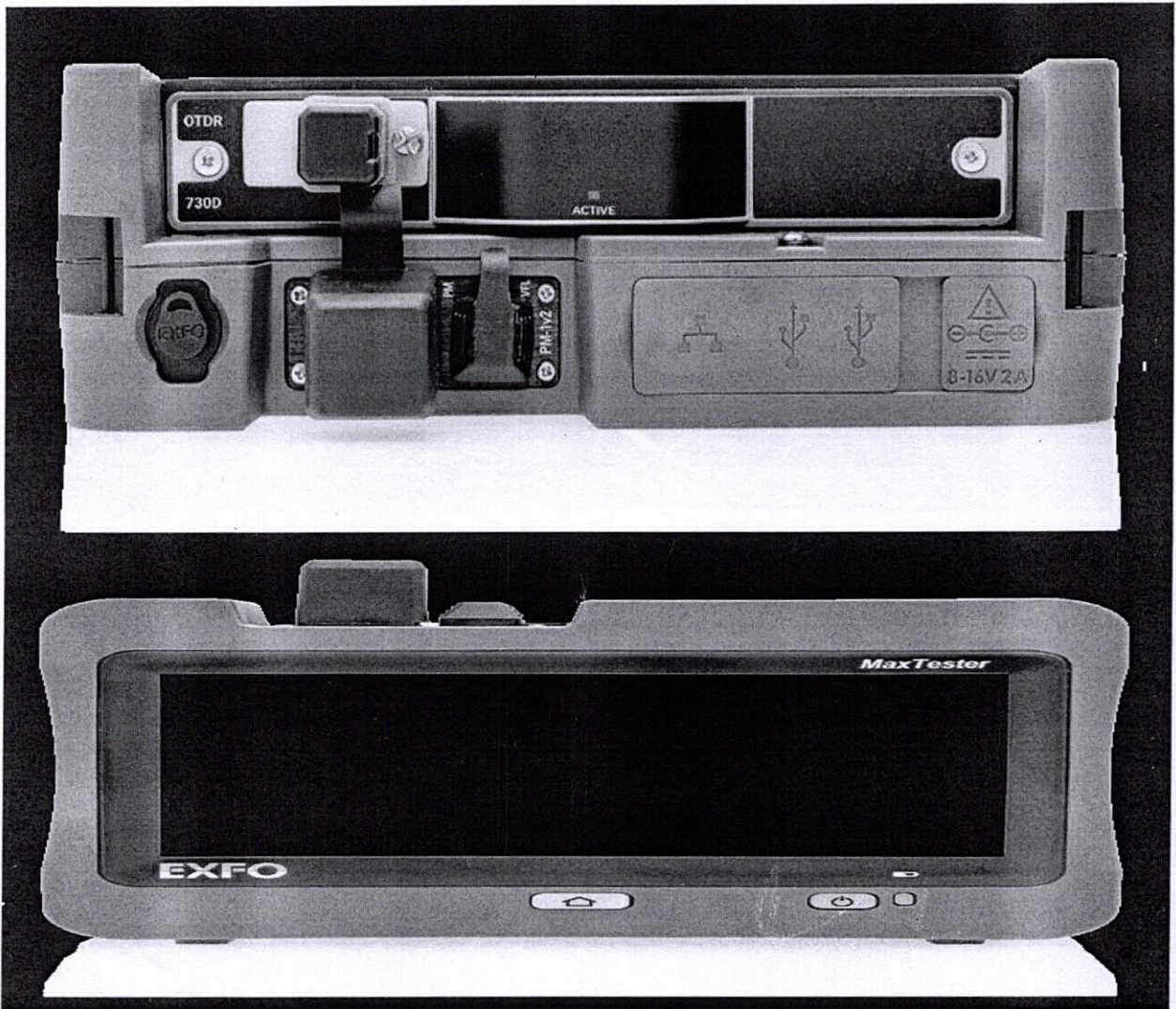


## 2. OTDR

### MaxTester 730D PON/metro OTDR

#### PACKAGED FOR EFFICIENCY

- 1 Singlemode OTDR port 6 Visual fault locator 11 Power on/off/stand by
- 2 Swap out connector screw 7 10/100 Mbit/s Ethernet port 12 Battery LED status
- 3 Testing LED indicator 8 Two USB 2.0 ports 13 Built-in WiFi/Bluetooth
- 4 Stylus 9 AC adapter 14 Stand support
- 5 Power meter 10 Home/switch application and screen capture (hold)



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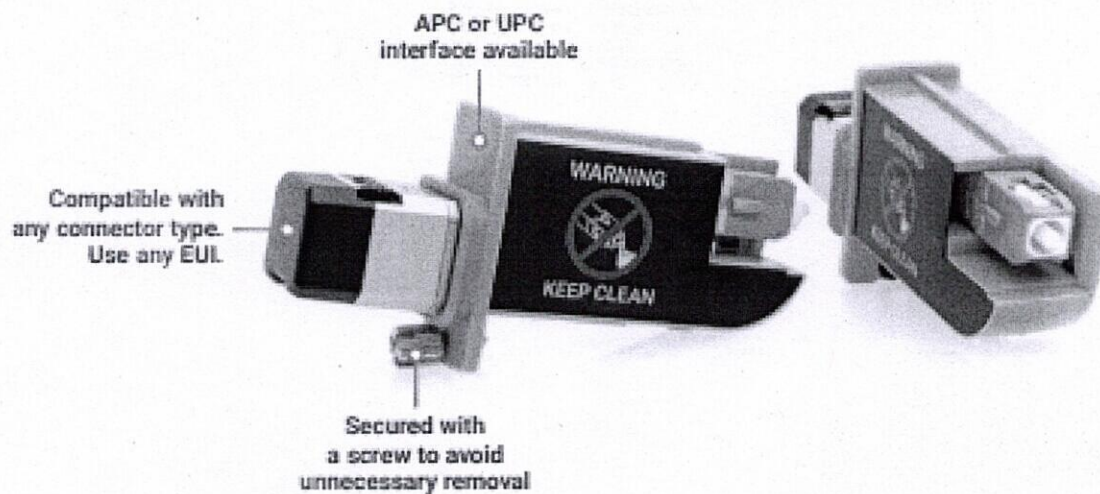
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3. SWAP-OUT CONNECTOR SC/UPC



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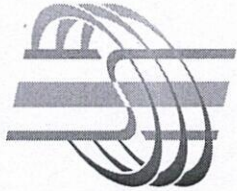
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High Definition Core Aligning  
fusion splicer

# TYPE-82C+

Powered by



**NanoTune™**  
Enhanced splice experience

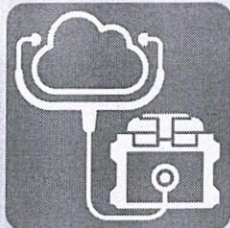


**SumiCloud™**

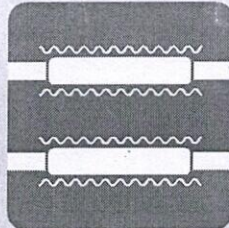


## Dependable

Splicing 5s/Heating 8s/Splice loss 0.01dB



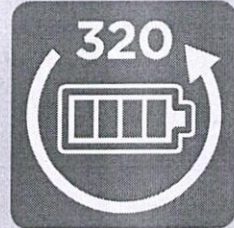
Preventive  
Maintenance



Dual speed  
high heating



Proven field  
toughness



Long life  
battery

## Specifications

Items		TYPE-82C+
Optical fiber requirements	Material Fiber count / Profile types Fiber diameter Cleavage length	Silica glass Single / SMF(G.652), MMF(G.651), DSF(G.653), NZDSF(G.655), BIF(G.657), CSF(G.654), EDF Cladding diameter : 80 - 150µm, Coating diameter : 100 - 1,000µm 5 - 16mm with coating clamp
Standard performance	Splice loss (typical)*1 Return loss (typical) Splice time (typical) Heating time (typical) Splice & Heat cycles per battery full charge** Fiber view & magnification	SMF : 0.01dB, MMF : 0.01dB, DSF : 0.03dB, NZDSF : 0.03dB 60dB or greater 5sec(SM G652 Quick Mode), 7sec(SM G652 Std. Mode), 7sec(Auto Mode) 8sec (FPS-61-2.6 sleeve, S60mm 0.25 Quick Mode ) Approx. 320 (BU-16) 2 CMOS cameras observation, 380X (zoom : 760X) for X or Y single axis view, 270X for both X & Y dual axis view
Programs	Proof test Applicable protection sleeve Splice programs Heating programs	1.96 - 2.09N 60mm, 40mm & Sumitomo Nano sleeves Max. 300, 74 are pre-optimised, 226 editable by user Max. 100, 27 are pre-optimised, 73 editable by user
Functions	Splice image capture / Splice data storage Attenuation splicing Universal clamps Reversible coating clamps Dual automatic independent ovens User-selectable oven clamp operation Onboard user training video Automatic fiber identification Automatic arc calibration Display of remaining Splice & Heat cycles Wireless LAN connectivity (Option)**3	200 images / 10,000 splice data (internal memory only) 50,200/20,000 (with 8GB SD card) 0.1dB to 15dB in 0.1dB increments Provided, 200µm, 900µm tight & loose buffer fiber Provided Provided Provided Provided SMF / MMF / DSF / NZDSF / BIF / Other Automatically compensates for environmental condition changes Provided (Battery mode) Provided
Size / Weight	Size Weight Monitor	128(W) x 154(D) x 130(H) mm (without anti-shock rubber) 1.9kg (without Battery) / 2.2kg (with Battery BU-16) 5.0" touch screen color LCD display
Terminals	DC output USB port Storage media	DC 12V (for JR-6+) USB 2.0 (mini-B type) SD / SDHC memory card MAX32GB
Power supply	AC input DC input Battery pack	AC 100 - 240V, 50/60Hz (ADC-16) DC 10 - 15V Li-ion 10.8V, 6,400mAh (BU-16)
Operating condition		Altitude : 0 - 6,000m, Temperature : -10 - +50°C, Humidity : 0 - 95% (non-condensing), Wind velocity : up to 15m/sec
Storage condition		Temperature : -40 - +80°C, Humidity : 0 - 95% (non-condensing), Battery : -20 - +30°C (long term)
Electrode life **4		6,000 arc discharges
Software updates		Internet
Data management		Can be stored, edited and analyzed by dedicated PC software

\*1 : Average value of the final inspection in room temperature with Sumitomo identical fiber. Measured by cut-back method relevant to ITU-T and IEC standards.

\*2 : Splice & Heat cycles may vary depending on the battery status and the operating environment.

\*3 : Wireless LAN connectivity is not available in all countries. For more details, please refer to our Web site. <https://global-sei.com/sumitomo-electric-splicers/asia/products/sumicloud/>

\*4 : Achieved in lab condition. Electrode life may vary depending on the operating environment.

### Environmental Durability\*

Shock resistance	Test details
Shock resistance	Drop from 76cm on 5 faces (excluding top face)
Impact resistance	Equivalent to IK07 on LCD monitor (Protected against 2J impact, it is equivalent to a 500g force from 40cm)
Water resistance	Equivalent to IPX2 (Operates normally after being exposed to water dripping at 3mm/min, for at least 25 min on each of 4 surfaces tilted at 15°)
Dust resistance	Equivalent to IP5X (Operates normally after 8 hours in a test chamber with circulating dust particles smaller than 75 µm)

\*Splicer operation after shock, impact, water or dust tests, was confirmed under battery power, by Sumitomo.  
Does not guarantee the product will not be damaged by these conditions.

### Basic Accessories

Part name	Part No.	Qty.
AC adapter	ADC-16 series	1 pc
AC power cord	PC-AC<X>*	1 pc
Cooling tray	-	1 pc
Spare electrode	ER-10	1 pair
Quick reference guide	-	1 pc
Carrying case with worktable	CC-82	1 pc
Hand strap	-	1 pc
USB cable	-	1 pc

\*X=2(USA), 3(EU), 4(JP), 5(UK/HK), 8(CHINA), 9(INDIA), 10(BRAZIL)  
Items listed in Basic Accessories are always included with the splicer body. Overall kit content may vary regionally. Please check with your local authorised reseller to confirm kit content in your region.

### Accessories

Part name	Part No.	Remarks
SumiCloud Card	WLS0 series	For SumiCloud™ connection
Fiber holder	FHS-025	For φ0.25mm single fiber
	FHS-09	For φ0.9mm single fiber
	FHS-025/LB5	For 0.9mm loose buffered single fiber
	FHD-1	For drop/indoor cable(Cable size : typical 2.0 x 3.1 or 2.6mm)
Battery pack	15M-ST	For indoor cable (Cable size : typical 16 x 2.0mm)
	FHC-3	For 3mm cable
	BU-16	Li-ion 6,400mAh
Battery charger	BC-16	-
Car battery cable	PCV-16	For car battery operation (cigarette socket type)
V-groove cleaning brush	VG1-2	Brush for cleaning V-groove
Electrode	ER-10	-
Handheld fiber cleaver	FC-8R-FC	Automatic blade rotation cleaver with cleave counter
	FC-8R-F	Automatic blade rotation cleaver
Fiber cleaver	FC-6S-C	Table-top high precision cleaver
	FC-6RS-C	Automatic blade rotation cleaver
Jacket remover	JR-M03	Jacket remover for single fiber
Loose tube cutter	LTC-01	-
Alcohol dispenser	HR-3	-
Fiber protection sleeve	FPS-1	60mm, diameter after shrink approx. φ3.2mm
	FPS-40	40mm, diameter after shrink approx. φ3.2mm
	FPS-61-2.6	61mm, diameter after shrink approx. φ2.6mm



Carrying case with worktable  
CC-82



Handy cleaver  
FC-8R series

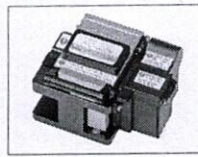
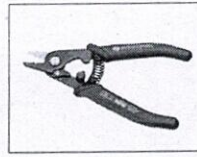
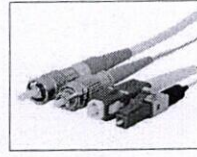


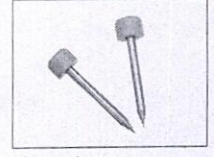
Table-top cleaver  
FC-6 / FC-6R series



Jacket remover  
JR-M03



Compatible with  
Lynx-CustomFit™  
Splice-on Connector



Electrode  
ER-10

 Sumitomo Electric Industries, Ltd.

Please contact us Mail to : [fs-inquiry-sml@list.sei.jp](mailto:fs-inquiry-sml@list.sei.jp)

■ Specifications are subject to change without prior notice.  
■ The fusion splicer and related accessories are not IT network equipments.

Designed in Japan  
082C+01-ASIA-ENO02 (2022.11)

*huy*

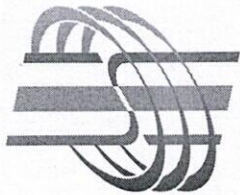
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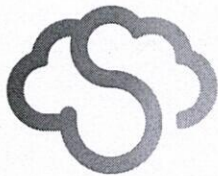
Active Clad Alignment fusion splicer

# T-402S

Powered by



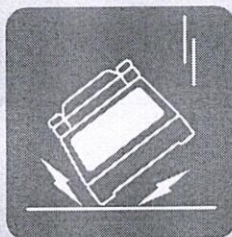
**NanoTune™**  
Enhanced splice experience



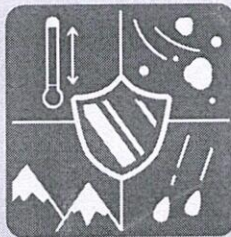
**SumiCloud™**



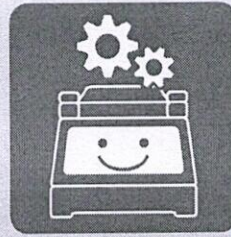
## Small, yet smart and strong



Proven field toughness



High environmental resistance



Smart and easy



Compact and light  
1.2kg

Specifications		
Items	T-4025	
Optical fiber requirements	Material	Silica glass
	Fiber count / Profile types	Single / SMF(G.652), MMF(G.651), DSF(G.653), NZDSF(G.655), BIF(G.657)
	Fiber diameter	Cladding diameter : 125μm, Coating diameter : 250 - 1,000μm
	Cleave length	5 to 16mm for single fiber
Standard performance	Splice loss (typical)*1	SMF : 0.03dB, MMF : 0.01dB, DSF : 0.05dB, NZDSF : 0.05dB
	Return loss (typical)	60dB or greater
	Splice time (typical)	6sec (SM G652 Quick Mode)
	Heating time (typical)	12sec (FPS-61-2.6 sleeve, S60mm 0.25 Quick Mode)
	Splice & Heat cycles per battery full charge*2	Approx. 250 (BU-17)
	Fiber view & magnification	2 CMOS cameras observation, 140X (zoom 370X) for X and Y axis view.
Programs	Proof test	1.96 - 2.09N
	Applicable protection sleeve	60mm, 40mm & Sumitomo Nano sleeves
	Splice programs	Max. 300, 16 are pre-optimised, 284 editable by user
Functions	Heating programs	Max. 100, 27 are pre-optimised, 73 editable by user
	Splice image capture / Splice data storage	200 images / 10,000 splice data (internal memory only), 50,200 / 20,000 (With 16GB SD card)
	Auto-start	Splice/Heating
	Multi clamp	Provided, 250μm, 900μm tight & loose buffer fiber, 2 & 3mm jacket cord and rectangular drop cable, 3.5mm round drop cable
	Heater clamp for splice on connector	Provided
	Automatic arc calibration	Automatically compensates for environmental condition changes
Size / Weight	Wireless LAN connectivity (Option)*3	Provided
	Onboard user training video	Provided
Terminals	Size	126(W) x 154(D) x 83(H) mm (without protrusion)
	Weight	0.9kg (without Battery), 1.2kg (with Battery BU-17)
	Monitor	4.3" color LCD display
Power supply	USB port	USB 2.0 (mini-B type)
	Storage media	SD / SDHC memory card Max 32GB
Operating condition	AC input	AC 100 - 240V, 50/60Hz (ADC-15)
	DC input	DC 10 - 15V
Storage condition	Battery pack	Li-ion 10.8V, 4,560mAh (BU-17)
	Altitude	0 - 5,000m, Temperature : -10 - +50°C, Humidity : 0 - 95%RH (non-condensing), Wind velocity : up to 15m/sec
Electrode life**	Temperature : -40 - +80°C, Humidity : 0 - 95%RH (non-condensing), Battery : -20 - +30°C (long term)	6,000 arc discharges
Software updates	Internet	Internet
Data management	Can be stored, edited and analyzed by dedicated PC software	

\*1 : Average value of the final inspection in room temperature with Sumitomo identical fiber. Measured by cut-back method relevant to ITU-T and IEC standards.  
 \*2 : Splice & Heat cycles may vary depending on the battery status and the operating environment.  
 \*3 : SumiCloud availability / wireless LAN connectivity depends on region. More details: <https://global-sei.com/sumitomo-electric-splicers/products/sumicloud/>  
 \*4 : Achieved in lab condition. Electrode life may vary depending on the operating environment.

### Environmental Durability\*

	Test details
Shock resistance	Drop from 76cm on 5 faces(excluding top face), 4 edges and corners (bottom face only)
Water resistance	Equivalent to IPx2
Dust resistance	Equivalent to IP5x

\*Splicer operation after shock, water or dust tests, was confirmed under battery power, by Sumitomo.  
 Does not guarantee the product will not be damaged by these conditions.

### Basic Accessories

Part name	Part No.	Qty.
AC adapter	ADC-15	1 pc
AC power cord	PC-AC<X>*2P	1 pc
Battery pack	BU-17	1 pc
Quick reference guide	—	1 pc
Carrying case	CC-18	1 pc
Working tray	WT-18 with WSK-18 & TA-18	1 pc

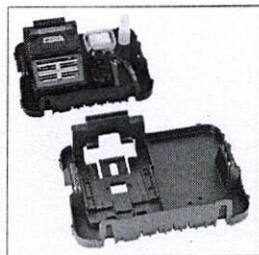
\*X=2(USA), 3(EU), 5(UK/HK), 6(AUS), 8(CHINA), 9(INDIA), 10(BRAZIL)  
 Items listed in the table are typical contents included with the splicer body. Overall kit content may vary regionally. Please check with your local authorized reseller to confirm kit content in your region.

### Accessories

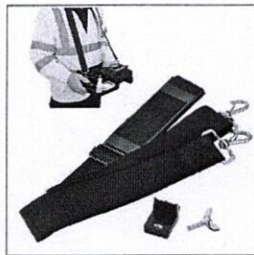
	Part name	Part No.	Remarks
Accessories for Splicer	SumiCloud card	WLS series	For SumiCloud™ connection
	Battery pack	BU-17	Li-ion 10.8V, 4,560mAh
	Battery charger	BC-17	For BU-17
	Car battery cable	PC-V25	For car battery operation (cigarette socket type)
	V-groove cleaning brush	VGT-2	Brush for cleaning V-groove
	Electrode	ER-17	—
	Working tray strap kit	WSK-18	Kit for hanging tray around neck
	Tripod adapter	TA-18	For tripod use
	USB cable	—	—
	Shoulder belt	—	—
Accessories	Fiber cleaver	FC-6S+ FC-7LS	Table-top type Handheld type
	Jacket remover	JR-M03	Jacket remover for single fiber
	Loose tube cutter	LTC-01	—
	Alcohol dispenser	ASB-17	—
	Fiber protection sleeve	FPS-1	60mm, diameter after shrink approx. 3.2mm
		FPS-40	40mm, diameter after shrink approx. 3.2mm
FPS-61-2.6 FPS-D60		61 mm, diameter after shrink approx. 2.6mm 60mm, For drop and indoor cables	



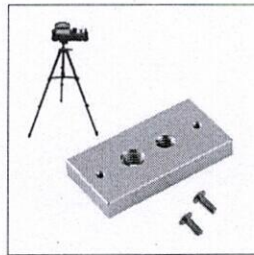
Carrying case  
CC-18



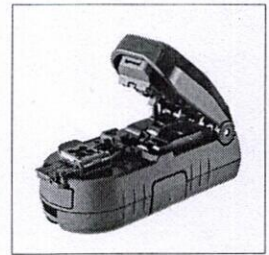
Working tray  
WT-18



Working tray strap kit  
WSK-18



Tripod adapter  
TA-18



Handheld fiber cleaver  
FC-7LS

 Sumitomo Electric Industries, Ltd.

Please contact us Mail to : [fs-inquiry-sml@list.sei.jp](mailto:fs-inquiry-sml@list.sei.jp)

■ Specifications are subject to change without prior notice.

Designed in Japan  
402501-GLOB-EN001(2023.04.10)

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## SPTK-3213 SERIES

### PON Optical Power Meter



#### Overview

3213 Series PON Optical Power Meter target at the FTTx application and maintenance. This power meter is able to simultaneously test and estimate the signals of the voice, data and video. It is an essential and ideal tool for the construction and maintenance of the PON projects.

#### Features

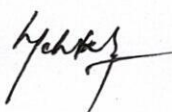

It can experiment at Voice, data and video signal synchronous measurement and display on BPON/EPON/GPON.

- Providing simultaneous measurement for all three wavelengths on the fiber (1490nm, 1550nm, 1310nm).
- Used in Burst mode measurement of 1310nm upstream.
- Use the software connect with PC, setting the threshold, data transfer, and calibration the wavelength.
- USB communication port enables data transfer to a PC. 1000 measurement items can be saved in 3213 PON power meter or computer for data review.

- With optical power meter modual, include 850、1300、1310、1490、1550、1625sixs( 3213AP, 3213A without 850nm wavelength) ; With visual fault locator modual (3213and3213AV)
- Optical power meter and VFL with one port. (only 3213A)
- Optional Chinese/English display.
- Offers up to 10 different threshold sets in total,Three status LEDs represent different optical signal conditions of Pass, Warn and Fail respectively.
- 10 minutes Auto-off function can be activated or deactivated
- Good key design,high sensitivity, greatly reducing the volume and weight of the tester.
- Different models corresponding to different function, according to own use to choose

**Specification**

PON module:	3213	<del>3213A</del>	3213AV	3213AP
1310 upstream measurement				
Pass Zone(nm)	1260nm~1360nm			
Measurement Range(dBm)	-40dBm~+10dBm			
Output power(max)	15dBm			
Isolation@1490/1550(dB)	>40dB			
Burst mode measurement error	<±0.5dB			
1490 downstream measurement				
Pass Zone(nm)	1470nm~1505nm			
Measurement Range(dBm)	-40dBm~+10dBm			
Output power(max)	15dBm			
Isolation@1310/1550(dB)	>40dB			
1550 downstream measurement				
Pass Zone(nm)	1535nm~1570nm			
Measurement Range(dBm)	-40dBm~+10dBm			
Output power(max)	25dBm			
Isolation@ (1310/1490nm)	>40dB			
Measurement Accuracy				
Connatural uncertainty(dB)	±0.5dB			
Linearity(dB)	±0.1dB			
Passing through insertion Loss(dB)	<1.5dB			
General Information				
Detector Type	InGaAs			
Optical Connector	FC/SC/ST Interchangeable/2.5 universal adapter			



Fiber Type	SM 9/125um			
Measurement Unit	dB/dBm/xW			
Resolution (dB)	0.01dB			
Operation Voltage(V)	DC 3.3V~5.5V			
Power Supply	3pc1.5V battery			
Continuously Operation time (h)	PON: 90h	PON: 90h OPM: 100h VFL: 50h	PON: 90h VFL: 50h	PON: 90h OPM: 100h
Operation Temperature(°C)	-10°C~60°C			
Storage temperature(°C)	-25°C~70°C			
Weight(kg)	423g	425g	424g	424g

Note: The operation time of the battery are all for the instrument that do not turn on back light, if the back light turn on the operation time will be shorted.

### Normal Optical Power Meter Module

Normal Optical Power Meter	3213 <sup>②</sup>	3213A	3213AP
Measurement Accuracy			
Connatural uncertainty(dB)	None	±0.5dB	
Linearity(dB)		±0.1dB	
Measurement Range(dBm)		-70dBm~+6dBm	
General Information			
Measurement Unit	None	dB/dBm	
Resolution (dB)		0.01dB	
Calibration Wavelength(nm)		1310/ 1490/1550/1625	1310/ 1490/1550/1625
Detector Type		InGaAs	
Optical Connector		FC/SC/ST Interchangeable/2.5 universal adapter	

②: 3213do not have the OPM module

### VFL Module

VFL	3213 <sup>③</sup>	3213A	3213AV
Output power	None	>0.5mW	
Wavelength		650nm	
Optical Connector		FC/SC/ST Interchangeable/2.5 universal adapter	
Fiber Type		SM/MM	

③: 3213 without VFL module.

### Standard Packages



Shenzhen Sopto Technology Co. Limited

Model	3213 Series PON Optical Power Meter	
Items	Title	Quantity
1	3213 tester	1unit
2	User Manual	1pc
3	USB	1pc
4	Soft CD	1pc
5	1.5VAA Battery	3pc

### Ordering information

Part Number	Product Description
SPTK-3213	PON Optical Power Meter Standard type test 1490nm,1550nm,1310nm
SPTK-3213A	PON Optical Power meter + Normal Optical Power Meter Module + VFL
SPTK-3213AV	PON Optical Power Meter +VFL
SPTK-3213AP	PON Optical Power meter+Normal Optical Power Meter Module

Note: If you need more customized services, please contact us.

E-mail: [info@sopto.com.cn](mailto:info@sopto.com.cn)

Web : <http://www.sopto.com.cn>

# MaxTester 730D PON/metro OTDR

OPTIMIZED FOR FTTx/MDU FIBER DEPLOYMENTS AND TROUBLESHOOTING, SUITABLE FOR METRO



Fully featured, entry-level, dedicated OTDR with tablet-inspired design, suitable for metro and optimized to test through optical splitters, for seamless end-to-end FTTH characterization and troubleshooting.



COMPATIBLE WITH  
**EXchange**

**iOLM**  
READY

**3**  
3-year warranty

**Swap-Out**  
connector

**ISE**  
3.5

## KEY FEATURES

Rugged, handy, lightweight, tablet-inspired design built for outside plant

7-inch, outdoor-enhanced touchscreen—the biggest in the handheld industry

12-hour autonomy

Dynamic range up to 39 dB for up to 132 km point-to-point (P2P)

Short dead zones: event dead zone (EDZ) 0.5 m, attenuation dead zone (ADZ) 2.2 m, PON dead zone 30 m

FTTx in-service testing at 1650 nm with optional in-line GPON/XGS-PON power meter

Swap-Out connector, replaceable whenever necessary for optimal performance over time without undue service cost and downtime

iOLM-ready: one-touch multiple acquisitions, with clear go/no-go results presented in a straightforward visual format

Industry-leading onboard PDF reporting and post-processing, included for all users

3-year warranty

## APPLICATIONS

FTTx/PON testing through splitters (up to 1×128)

FTTx service activation: GPON, EPON, XGS-PON, 10GE EPON

Access network testing (P2P)

Metro links testing (P2P)

Live fiber troubleshooting

Passive optical LAN (POL)

## RELATED PRODUCTS AND ACCESSORIES



Fiber inspection scope  
FIP-400B (WiFi or USB)



Soft pulse suppressor bag  
SPSB

**FastReporter**

Advanced data  
post-processing software



Swap-Out  
connector

**EXFO**

*Henry*

*7*

## THE HANDHELD OTDR... WITH PROVEN PERFORMANCE

The MaxTester 700D Series builds on the proven tablet-inspired, lightweight and rugged OTDR MaxTester platform. The familiar 7-inch, outdoor-enhanced touchscreen continues to deliver an unprecedented user experience with its intuitive Windows-like GUI ensures a fast learning curve. The OTDR environment offers icon-based functions, instant boot-up, automatic macrobend finders as well as improved auto and real-time modes.

The MaxTester 700D Series is a line of genuine high-performance OTDRs from the world's leading manufacturer. It delivers EXFO's tried and true OTDR quality and accuracy along with the best optical performance for right-first-time results, every time.

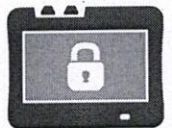
The amazing 12-hour battery life will never let a technician down, and the plug-and-play hardware options, like the VFL, power meter and USB tools, make every technician's job easier.

Most importantly, the MaxTester 700D Series comes with the intelligent Optical Link Mapper (iOLM), an intelligent OTDR-based application. This advanced software turns even the most complex trace analysis into a simple, one-touch task.

Ultimately, the MaxTester 700D Series is small enough to fit in your hand and big enough to fit all your needs!

## SECURE YOUR INVESTMENT AGAINST THEFT

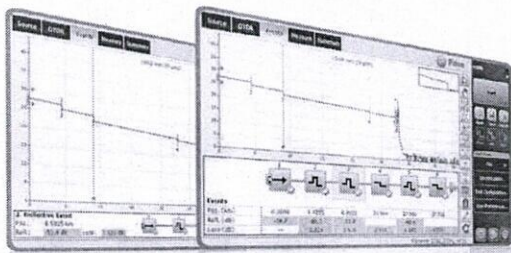
Protected instruments have no value on the black market making them completely unappealing to thieves. With our security management option, administrators can define and load a tamper-proof security profile on the MaxTester, displaying a property message on the home screen and securing it with a user password (permanent or renewable).



## LOOKING FOR ICON-BASED MAPPING?

### Linear view (included with all EXFO OTDRs)

Available on our OTDRs since 2006, the linear view simplifies interpretation of an OTDR trace by displaying icons in a linear way for each wavelength. This view converts the graph data points obtained from a traditional single pulse trace into reflective or non-reflective icons. With applied pass/fail thresholds, it becomes easier to pinpoint faults on your link.



This improved linear view offers you the flexibility to display both the OTDR graph and its linear view without having to perform a toggle to analyze your fiber link.

Although this linear view simplifies OTDR interpretation of a single pulse-width trace, the user must still set the OTDR parameters. In addition, multiple traces must often be performed in order to fully characterize the fiber links. See the section below to learn about how the iOLM can perform this automatically and with more accurate results.

## SWAP-OUT CONNECTOR

The MaxTester 700D OTDR Series comes with a Swap-Out connector which can easily be changed, as and when needed, without having to send the test unit to a service center. This ensures optimal performance over time without undue maintenance costs and downtime. The OTDR's optical connector health can be checked with an onboard diagnostic tool to replace the connector only when necessary.

### Maintain top optical performance, no downtime.

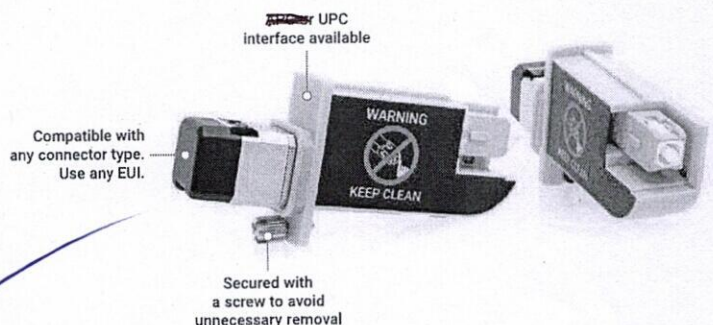
Worn connectors impact optical performance and may be the source of inaccuracies. Replace connectors directly from the field, no need to return the unit to the manufacturer or spend money on repairs.

### Keep your calibration plan on track.

Your calibration date remains valid, even after swapping the connector. No need to calibrate your unit sooner than planned.

### Replace only when needed.

A diagnosis of the optical port is provided by the built-in connector health checker, which allows to replace worn connectors in the field, only when necessary.



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# FastReporter

Data post-processing software

## GET ALL ADVANCED CAPABILITIES FOR FREE

FastReporter is a consolidated data management and post-processing solution designed to improve results quality as well as auditing and reporting productivity.

Download the latest version of FastReporter, launch the application and create your EXFO Exchange account to get the full range of capabilities, at no cost. EXFO Exchange automates and optimizes workflows, troubleshooting, field testing and reporting within a secured collaborative software platform for each step of network deployment.

FEATURES	FastReporter (version 3)	
	Basic	Full (now free with EXFO Exchange account)
Number of files	Up to 24 results	Unlimited
Measurement type	OTDR, iOLM, FIP, OLTS, OPM, CD, PMD	
Results viewer	•	•
Reporting – Basic (PDF)	•	•
Reporting – Advanced (Excel, PDF, custom)		•
Basic analysis – Bidir (OTDR and iOLM)	•	•
Advanced editing		•
Automated validation and results correction		•
Job management and identification edition	One file	Batch processing
Hundreds of additional features		•

Comparison of basic and full versions of FastReporter (version 3).

## ✓ OPTICAL PLUG-AND-PLAY OPTIONS

The MaxTester features plug-and-play optical options that can be purchased whenever you need them: at the time of your order or later on. In either case, installation is a snap, and can be performed by the user without the need for any software update.

### ✓ Optical power meter

EXFO's high-level power meter (GeX) can measure up to 27 dBm, the highest in the industry. This is essential for hybrid fiber-coaxial (HFC) networks or high-power signals. If used with an auto-lambda/auto-switching compatible light source, the power meter automatically synchronizes on the same wavelength, thus avoiding any risk of mismatched measurement.

### ✓ Visual fault locator (VFL)

The plug-and-play VFL easily identifies breaks, bends, faulty connectors and splices, in addition to other causes of signal loss. This basic, yet essential troubleshooting tool should be part of every field technician's toolbox. The VFL visually locates and detects faults over distances of up to 5 km by creating a bright-red glow at the exact location of the fault (available with the optical power meter only).



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SPECIFICATIONS<sup>a</sup>

TECHNICAL SPECIFICATIONS	
Display	7-in (178-mm) outdoor-enhanced touchscreen, 800 × 480 TFT
Interfaces	Two USB 2.0 ports RJ45 LAN 10/100 Mbit/s
Storage	2 GB internal memory (20 000 OTDR traces, typical)
Batteries	Rechargeable lithium-polymer battery 12 hours of operation as per Telcordia (Bellcore) TR-NWT-001138
Power supply	Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz
Wavelength (nm) <sup>b</sup>	1310 ± 20/1550 ± 20/1625 ± 10/1650 ± 15
Live wavelength (nm)	1650 Isolation: 50 dB from 1265 nm to 1617 nm
Dynamic range (dB) <sup>c</sup>	39/39/39/39
Event dead zone (m) <sup>d</sup>	0.5
Attenuation dead zone (m) <sup>d</sup>	2.2
PON dead zone (m) <sup>e</sup>	30
Distance range (km)	0.1 to 400
Pulse width (ns)	3 to 20 000
Linearity (dB/dB)	±0.03
Loss threshold (dB)	0.01
Loss resolution (dB)	0.001
Sampling resolution (m)	0.04 to 10
Sampling points	Up to 256 000
Distance uncertainty (m) <sup>f</sup>	±(0.75 + 0.0025 % × distance + sampling resolution)
Measurement time	User-defined
Reflectance accuracy (dB) <sup>h</sup>	±2
Typical real-time refresh (Hz)	4

IN-LINE POWER CHECKER <sup>b, g, h</sup>	
Power range (dBm)	-60 to 23
Power uncertainty (dB) <sup>i, j</sup>	±0.5
Calibrated wavelengths (nm)	1310, 1490, 1550, 1625, 1650
Selectable wavelengths (nm)	1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1577, 1590, 1610, 1625, 1650
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz

TECHNICAL SPECIFICATIONS (in-line PON power meter with OPM2 in option) <sup>b, h</sup>	
Power range (dBm)	-60 to 23
PON power meter (nm)	Two channels: 1490/1550 and 1490/1577
Power uncertainty (dB) <sup>i, j</sup>	±0.5
Calibrated wavelengths (nm)	1310, 1490, 1550, 1625, 1650
Selectable wavelengths (nm)	1310, 1490, 1550, 1577, 1625, 1650, 1490/1550, 1490/1577

a. All specifications valid at 23 °C ± 2 °C with an FC/APC connector, unless otherwise specified.

b. Typical.

c. Typical dynamic range with longest pulse and three-minute averaging at SNR = 1.

d. Typical, for reflectance at -55 dB, using a 3-ns pulse.

e. Non-reflective FUT, non-reflective splitter, 13-dB loss, 50-ns pulse, typical value at 1550 nm.

f. Does not include uncertainty due to fiber index.

g. Not available when OPM2 is selected.

h. Specifications valid when OTDR not in operation or in idle mode.

i. At calibrated wavelengths.

j. Requires a good entry connector's health.

**ORDERING INFORMATION**

MAX-730D-XX-XX-XX-XX-XX-XX-XX-XX-XX-XX-XX-XX

**Optical configuration**

SM1 = SM OTDR, 1310/1550 nm  
 SM3 = SM OTDR, 1310/1550/1625 nm  
 SM7 = SM OTDR, 1650 nm live  
 SM8 = SM OTDR, 1310/1550 nm and 1650 nm live on single port

**Base software**

OTDR = Enables OTDR application only  
 iOLM = Enables iOLM application only  
 Oi = Enables OTDR and iOLM applications

**Connector**

EA-EUI-28 = APC/DIN 47256  
 EA-EUI-89 = APC/FC narrow key  
 EA-EUI-91 = APC/SC  
 EA-EUI-95 = APC/E-2000  
 EA-EUI-98 = APC/LC  
 EI connectors = See section below

**OPM option**

00 = Without OPM2 option  
 OPM2 = In-line PON power meter mode (dual band)<sup>a</sup>

**iOLM software pack<sup>b</sup>**

00 = iOLM Standard  
 iADV = iOLM Advanced

**Software option**

00 = Without additional software option  
 iLOOP = iOLM loopback mode<sup>b</sup>  
 iCERT = iOLM tier-2 certification<sup>b</sup>  
 PSWRD = Security management option

**Power meter**

00 = Without power meter  
 VFL = Visual fault locator (650 nm)  
 PM2X = Power meter; GeX detector  
 VPM2X = VFL and power meter; GeX detector

Example: MAX-730D-SM8-Oi-EA-EUI-91-OPM2-iADV-VPM2X-FOA-54B

**WiFi and Bluetooth**

00 = Without RF components  
 RF = With RF capability (WiFi and Bluetooth)<sup>c,d</sup>

**Extra FIP-400B tips<sup>e</sup>**

**Bulkhead tips**  
 FIPT-400-LC-SQ = LC tip for bulkhead adapters<sup>f</sup>  
 FIPT-400-LC-APC = LC/APC tip for bulkhead adapter<sup>g</sup>  
 FIPT-400-SC-APC = SC APC tip for bulkhead adapter<sup>g</sup>

**Patchcord tips<sup>h</sup>**

FIPT-400-U12M = Universal patchcord tip for 1.25 mm ferrules<sup>f</sup>  
 FIPT-400-U12MA = Universal patchcord tip for 1.25 mm ferrules APC<sup>h</sup>  
 FIPT-400-U25M = Universal patchcord tip for 2.5 mm ferrules<sup>f</sup>  
 FIPT-400-U25MA = Universal patchcord tip for 2.5 mm ferrules APC<sup>h</sup>

**Base tips**

APC = Includes FIPT-400-U25MA and FIPT-400-SC-APC  
 UPC = Includes FIPT-400-U25M and FIPT-400-FC-SC

**Inspection scope model<sup>i</sup>**

00 = Without inspection probe  
 FP430B = Automated analysis digital video inspection probe  
 Automated focus  
 Automated pass/fail analysis  
 Triple magnification  
 Autocentering  
 FP435B = Wireless analysis digital video inspection probe<sup>d</sup>  
 Automated focus  
 Automated pass/fail analysis  
 Triple magnification  
 Autocentering

**Power meter connector adapter**

FOA-22 = FC/PC, FC/SPC, FC/UPC, FC/APC  
 FOA-32 = ST: ST/PC, ST/SPC, ST/UPC  
 FOA-54B = SC: SC/PC, SC/SPC, SC/UPC, SC/APC  
 FOA-96B = E-2000/APC  
 FOA-98 = LC  
 FOA-99 = MU

- a. Available with SM7 and SM8 models.
- b. Please refer to the [iOLM specification sheet](#) for the complete and most recent description of these value packs. Only available if iOLM or Oi base software option is selected.
- c. Not available in China.
- d. Included with FP435B scope options.
- e. This list represents a selection of fiber inspection tips that covers the most common connectors and applications but does not reflect all the tips available. EXFO offers a wide range of inspection tips, bulkhead adaptors and kits to cover many more connector types and different applications. Please contact your local EXFO sales representative or visit [www.EXFO.com/FIPTips](http://www.EXFO.com/FIPTips) for more information.
- f. Included when UPC base tips are selected.
- g. Included when APC base tips are selected.
- h. Includes a bulkhead adapter for patchcord inspection.
- i. Includes ConnectorMax2 software.

**EI CONNECTORS**



To maximize the performance of your OTDR, EXFO recommends using APC connectors on singlemode port. These connectors generate lower reflectance, which is a critical parameter that affects performance, particularly in dead zones. APC connectors provide better performance than UPC connectors, thereby improving testing efficiency.

Note: UPC connectors are also available. Simply replace EA-XX by EI-XX in the ordering part number. Additional connector available: EI-EUI-90 (UPC/ST).

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EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to [www.EXFO.com/contact](http://www.EXFO.com/contact).

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*Henry*

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