TX4000 Series
ESD Cleanroom Garment System

ESD-Safe Integrated Cleanroom Wear
Designed for Mobile User in Controlled Environments.

Transforming Technologies TX4000 ESD Cleanroom Garment System protects the controlled environment from the number one source of contamination and static found in cleanrooms - people. Electrostatic charge is an invisible contaminant that has the potential to degrade or destroy both product and equipment, as well as attract unwanted particles. Controlling these charges on mobile operators with the TX4000 Garment System throughout the controlled environment is essential to a productive manufacturing process.

Features

- **Designed For Use in Cleanrooms and Controlled Environments When ESD Protection Is Paramount**
- **Electrical Continuity From Hood-to-Boot With Dissipative Fabric, Conductive Seams & Snaps**
- **ISO 6, Cleanroom Class 1000 Fabrics***
- **Complies with IEST-RP-CC052.1 & ANSI ESDS20.20**

ESD-Safe Integrated Cleanroom Wear Designed

Groundable from hood-to-boot, the TX4000 ESD Cleanroom Garment System is made with a reliable ISO 6 static dissipative fabric* with each component—hood, coverall, boots—connected with conductive threads and ground snaps. Conductive boot soles eliminate static on the personnel through the ESD Cleanroom floor or mat in the cleanrooms. The garments system's superior workmanship and reliable panel-to-panel continuity makes it compliant with IEST-RP-CC052 and ANSI ESDS.2020 standards. The TX4000 Garment System maintains consistent continuity readings for up to 100 wash cycles

Specifications

Color	White/Navy/Light Blue*
Sizes	XS-5XL
Country of Origin	Thailand
Type	Frock
Fabric Type	TX4000 5MM Grid
Fabric	99% Polyester/1% Carbon
Cuff	ESD Knit Cuff
Closure	Zipper
Construction	ESD-Safe
Collar	Military
Sleeve	Raglan
Grounding	Yes, Connects to Hood & Boots

Performance

ISO Cleanroom	ISO 6 (Class 1000)
ANSI/ESD S20.20	Yes
Static Control Property	Static Dissipative, <3.5x10e7

TX40CR Series - ESD Cleanroom Coverall

- TX4000 ESD Grid Fabric—99% Polyester / 1% Carbon
- Raglan sleeves with ESD knit cuffs for body contact
- Military collar
- Snaps at top of zipper and bottom of leg hem and zipper closure for easy gowning
- Grounding snaps for connection to component (hood, boot)
- Seams sewn with conductive threads and grounding tape for reliable panel-to-panel electrical continuity
- Sizes: XS—2XL
- Product Circularity: Reusable / Launderable
- Color: White / Navy / Light Blue*
- ISO Cleanroom: ISO 6 (Class 1000)
- Meets standards required for ANSI/ESD S20.20 and STM9.1 - Footwear – Resistive Characterization

Part Number	Size
TX40CRWH01	XS
TX40CRWH02	S
TX40CRWH03	M
TX40CRWH04	L
TX40CRWH05	XL
TX40CRWH06	2XL
TX40CRWH07	3XL
TX40CRWH08	4XL
TX40CRWH09	5XL

Product Color: White or Navy Blue. Change WH (White) for NB (Navy Blue)

*

Light Blue Color Available By Request

TX4000 System Standards

The TX4000 Systems complies with **ANSI ESDS20.20 & IEST-RP-CC052.1 standards** and qualifies as a Category 3 cleanroom ESD garment capable of grounding mobile operators with both soft and hard sole boots.

- Cleanroom Garments meet the requirement for Groundable Static Control Garment System per ANSI/ESD S20.20 required limit of $< 3.5 \times 10^7$ ohm Rtg tested per ANSI/ESD STM2.1 and ESD TR53 (23° ± 1° C, 12% ± 3% RH, and 50% ± 5% RH).
- Cleanroom Boots meet the requirement for footwear per ANSI/ESD S20.20 Required limits of $<1.0 \times 10^9$ Rtgp per ANSI/ESD 9.1- and ESD TR53 (23° ± 1° C, 12% ± 3% RH, and 50% ± 5% RH).

TX4000 Fabric Typical Performance Specification

Test	Units	75 Washes	100 Washes
Filtration Efficiency	% captured, >0.5µm	14.10%	13.90%
Filtration Efficiency	% captured, >5µm	65.60%	65.90%
Particle Generation (ASTM F51 Particle Spec)	#>5µm/sq.ft.	250.1	288.1
Fibre Generation (ASTM F51 Fibre Spec)	Particle Spec >100µm<10 µm/sq.ft.	6.8	6.4
Particles Helmke Drum Method	0.5µm/min : <1200	54.5	51.2
Surface Resistivity	ohms/square	10^7	10^7
Abrasion Resistance, 1000 cy.	% weight loss	1.90%	1.90%
Abrasion Resistance, 1000 cy.	# of tears	0	0
Air Permeability	cu.ft./minute/sq.ft.	>2.0	>2.0
Water Vapor Transmission	grams/sq.m/hour	80.12	78.91

Critical Connectivity Points for Grounding & Continuity

1. Hood to Coverall
2. Sleeve to Body
3. Cuff to Sleeve
4. Coverall to Boot
5. Boot Sole

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