



industrial data rf cable series

SABclean CATLine

ISO Class 1 Cleanroom High-Flex Industrial

ISO 14644-1 Class 1 low-outgassing continuous-flex Cat.5e / Cat.6 / Cat.6A
cleanroom LAN



ISO 14644-1 Class 1 Cleanroom

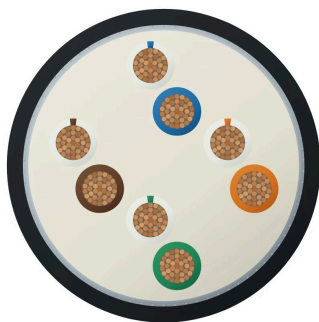
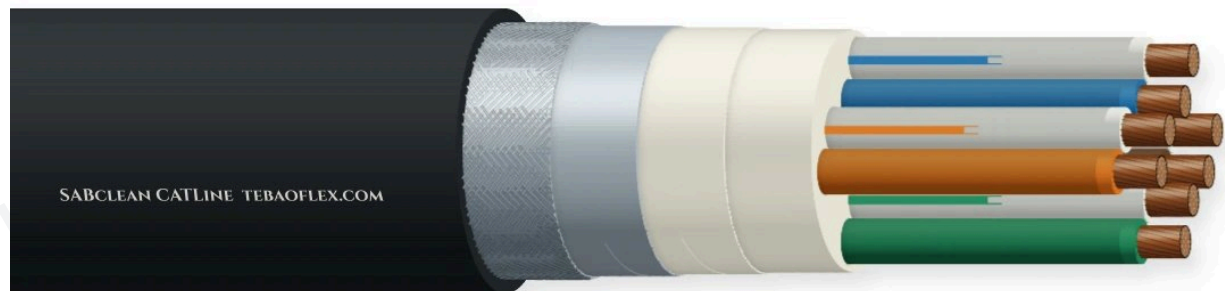
100 Ω · Cat.5e / Cat.6 / Cat.6ADrag-Chain & $\pm 180^\circ/\text{m}$ Robot Torsion

Application

ISO Class 1 cleanroom (VDI 2083 / ISO 14644-1) continuous-flex industrial Ethernet cable (Cat.5e, Cat.6, Cat.6A) with 19-wire tinned copper cores, 100 Ω pairs, overall Al/PET foil plus $\geq 85\%$ tinned braid, and low-outgassing cleanroom sheath.

Typical uses: Semiconductor Wafer Fab & Lithography, FPD / OLED & Micro-LED Cleanrooms, Aseptic Pharmaceutical & Biotech Filling, Battery Dry-Room & Gigafactory Robotics, Aerospace & Satellite Cleanroom Assembly

Construction



Cross-section, not to scale

- 1 19-wire extra-fine stranded tinned copper
- 2 Low-capacitance polyolefin / foam-skin PE cores
- 3 Low-friction PTFE/fleece wrap + 100 % Al/PET foil
- 4 Tinned copper wire braid screen
- 5 ISO Class 1 low-outgassing cleanroom TPE/PUR jacket

Technical data

Typical values

Characteristic impedance	100 Ω $\pm$ 15 Ω (1–100 MHz Cat.5e / 250M Cat.6 / 500M Cat.6A)	Conductor DC resistance @ 20 °C	$\leq$ 140 (AWG 26/19) · $\leq$ 86 (24/19) · $\leq$ 58 Ω /km (22/19)
Velocity of propagation	70 % – 76 % nominal (mutual capacitance $\approx$ 48 pF/m)	Dielectric test voltage	1,500 V AC rms · UL AWM 300 V / 600 V rating
Operating temp. (fixed)	-40 °C to +80 °C	Operating temp. (flexing)	-30 °C to +80 °C (UL +80 °C)
Cleanroom sterilization	Resists IPA alcohol wipe-down & H2O2 VHP vapor	Conductor stranding	19-wire extra-fine tinned Cu (AWG 26/19, 24/19, 22/19)
Min. bending radius	5 $\times$ OD (fixed) · 7.5–10 $\times$ OD (continuous drag-chain)	Torsion angle (CATLine R)	$\pm$ 180°/m for $\geq$ 5 million robotic cycles
Particulate emission	ISO 14644-1 Air Cleanliness Class 1 certified	Outgassing (TVOC / AMC)	ISO 14644-8 tested low outgassing · Zero silicone/LABS
Halogen-free & flame	IEC 60754-1/2 halogen-free · IEC 60332-1-2 / UL FT1	Standards	ISO 14644-1 Class 1, ISO 14644-8, VDI 2083

Sizes

8 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Impedance / size	Conductor & dielectric	Wall $\approx$ mm	Outer $\varnothing \approx$ mm	Metal kg/km	Weight $\approx$ kg/km	Min. bend R fixed mm
Standard SABclean CATLine configurations 8 sizes							
☐ SABclean CATLine Cat.5e S	2 $\times$ 2 $\times$ AWG26/19 · 100 Ω	19-Wire Sn-Cu Drag-Chain	0.75	5.20	21.0	36.0	26
☐ SABclean CATLine PN Cat.5e	1 $\times$ 4 $\times$ AWG22/19 · 100 Ω	19-Wire PROFINET Type C	0.90	6.50	33.0	56.0	33
☐ SABclean CATLine Cat.5e 4P	4 $\times$ 2 $\times$ AWG26/19 · 100 Ω	19-Wire 4-Pair GigE S	0.80	6.10	28.0	48.0	31
☐ SABclean CATLine Cat.5e R	4 $\times$ 2 $\times$ AWG26/19 · Robot	$\pm$ 180°/m Torsion Cleanroom	0.85	6.30	29.0	50.0	32
☐ SABclean CATLine Cat.6 S	4 $\times$ 2 $\times$ AWG26/19 · 250 MHz	19-Wire 250 MHz GigE Vision	0.85	6.60	31.0	54.0	33
☐ SABclean CATLine Cat.6A S	4 $\times$ 2 $\times$ AWG26/19 · 500 MHz	10GBASE-T S/FTP Drag-Chain	0.90	6.90	35.0	61.0	35
☐ SABclean CATLine Cat.6A 24	4 $\times$ 2 $\times$ AWG24/19 · 500 MHz	Long-Reach 10G S/FTP Chain	0.95	7.80	42.0	75.0	39
☐ SABclean CATLine Cat.6A R	4 $\times$ 2 $\times$ AWG26/19 · Robot 10G	$\pm$ 180°/m Torsion 10GBASE-T	0.95	7.10	36.0	64.0	36

– Outer diameters and weights are nominal engineering values for SABclean CATLine subject to standard manufacturing tolerances per ISO 14644-1 Class 1 / VDI 2083 & ISO/IEC 11801 (Cleanroom High-Flex Ethernet).

RF & electrical data

8 sizes

Configuration	Max. DC R @ 20 °C Ω /km	Char. Z0 Ω	Velocity VoP / L (% or nH/m)	Dielectric test V/AC rms
SABclean CATLine Cat.5e S (2 $\times$ 2 $\times$ AWG26/19 · 100 Ω)	140.00	100.0	70.0	1,500
SABclean CATLine PN Cat.5e (1 $\times$ 4 $\times$ AWG22/19 · 100 Ω)	58.00	100.0	70.0	1,500
SABclean CATLine Cat.5e 4P (4 $\times$ 2 $\times$ AWG26/19 · 100 Ω)	140.00	100.0	70.0	1,500
SABclean CATLine Cat.5e R (4 $\times$ 2 $\times$ AWG26/19 · Robot)	140.00	100.0	70.0	1,500
SABclean CATLine Cat.6 S (4 $\times$ 2 $\times$ AWG26/19 · 250 MHz)	140.00	100.0	72.0	1,500
SABclean CATLine Cat.6A S (4 $\times$ 2 $\times$ AWG26/19 · 500 MHz)	140.00	100.0	75.0	1,500
SABclean CATLine Cat.6A 24 (4 $\times$ 2 $\times$ AWG24/19 · 500 MHz)	86.00	100.0	76.0	1,500
SABclean CATLine Cat.6A R (4 $\times$ 2 $\times$ AWG26/19 · Robot 10G)	140.00	100.0	75.0	1,500

– Characteristic impedance, propagation velocity, DC resistance at +20 °C, and dielectric withstand voltages verified per ISO 14644-1 Class 1 / VDI 2083 & ISO/IEC 11801 (Cleanroom High-Flex Ethernet).

Standards and approvals

- ✓ ISO 14644-1 Class 1 / VDI 2083 & ISO/IEC 11801 (Cleanroom High-Flex Ethernet)
- ✓ CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- ✓ REACH SVHC Compliance Verified

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/sabclean-catline-iso-class-1-cleanroom-high-flex-industrial-ethernet-cable



Typical values for this cable type, based on ISO 14644-1 Class 1 / VDI 2083 & ISO/IEC 11801 (Cleanroom High-Flex Ethernet). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.