

# LanMarin® Cat 6A ARM Solid-SHF1

**S/FTP**  
**AWG 23/1 Solid**  
**SHF1, UV**  
**Armoured**  
**DNV / ABS**

## Application

Reinforced cable for ship- and offshore LAN installations. The product is approved and available in alternative designs. Galvanized steel wire braid or tinned Cu-wire braid armour. This product is suitable for use in EMC-installations for ship and offshore. Cable for transmission characteristics up to 500 MHz - horizontal floor wiring. Ethernet IEEE 802.3at-2009 Type 2 (PoE+). This cable can be used in rough environments.



## Construction

Conductor	Solid Bare Cu 0.56 [mm] AWG 23/1
Insulation	Foam PE $\varnothing = 1.34 \pm 0.05$ [mm]
No. of pairs	4
Colour code	pair 1: white/blue - blue pair 2: white/orange - orange pair 3: white/green - green pair 4: white/brown - brown
Individual Screen pairs	Al/Mylar tape
Drain wire	0.4mm solid Annealed Tinned Copper
Overall Screen	Tinned Cu-braid $\geq 60$ [% coverage]
Inner jacket	SHF1 $\varnothing = 8.0 \pm 0.40$ [mm]
Armour	$\geq 60$ [% optical cover]
Armour alt.1	Galvanised steel wire braid $\geq 60$ % optical cover
Armour alt.2	Tinned Cu-braid
Jacket	Grey SHF1
O.D.	$11.2 \pm 0.60$ [mm]
Weight	172 [kg/km]
Jacket marking	NEK Kabel – LanMarin® CAT6A ARMOURED 4 x 2 x AWG23/1 – SHF1 – **** m – YY/MM/DD



## Specifications

Operating temperature normal	-40 – +80 [°C]
Temperature @ installation	-20 – +60 [°C]
Dielectric strength	DC 1kV for 1min.
Characteristic impedance	100 [ $\Omega$ @ 100 MHz]
Conductor resistance	(IEC 60189-1)
Conductor DC resistance	$\leq 93,8$ [ $\Omega$ /km]
Resistance DC unbalance	$\leq 2$ [%]
Insulation resistance	$\geq 5000$ [ $M\Omega \times km$ ] (IEC 60189-1)
Power over Ethernet	IEEE 802.3at-2009 Type 2 (PoE+)
Rated voltage	$\geq 80$ [V]
Capacitance unbalance	$\leq 160$ [pF/100m at 1kHz] (IEC 61156-5)
Velocity factor	70 [%]
Mutual capacitance	48 [nF/km]
Min. bending radius	5 [x outer diam]
Min. bending radius installed	10 [x outer diam]

## Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1 & IEC 60754-2
Material properties, insulation and sheath	IEC 60092-360
Transmission performance	IEC 61156-5
Flame resistance	2996 IEC 60332-3-22
Flame retardant	IEC 60332-1
Smoke emission	IEC 61034-2 $\geq 60\%$
Oil and fuel resistant	IRM 902 4h @ 70°C
UV-resistant	UL 1581 (300H)
Certification	DNV / ABS



Prod.no.	DNV: Alt.1, GSWB: 2020005 Alt.2, TCWB: 2020006
	ABS: TCWB: 2020021

## Attenuation

Frequency (MHz)	Attenuation Max. (dB/100m)	Return Loss (dB/100m)	NEXT (dB/100m)	PS-NEXT (dB/100m)	ELFEXT (dB(100m))	PS-ELFEXT (dB/100m)
4	3.8	23.0	66.3	63.3	56.0	53.0
8	5.31	24.5	61.8	58.8	49.9	46.9
10	5.93	25.0	60.3	57.3	48.0	45.0
16	7.49	25.0	57.2	54.2	43.9	40.9
20	8.38	25.0	55.8	52.8	42.0	39.0
25	9.38	24.3	54.3	51.3	40.0	37.0
31.25	10.50	23.6	52.9	49.9	38.1	35.1
62.5	14.99	21.5	48.4	45.4	32.1	29.1
100	19.14	20.1	45.3	42.3	28.0	25.0
200	27.58	18.0	40.8	37.8	22.0	19.0
250	31.07	17.3	39.3	36.3	20.0	17.0
300	34.27	17.3	38.1	35.1	18.5	15.5
400	40.05	17.3	36.3	33.3	16.0	13.0
500	45.26	17.3	34.8	31.8	14.0	11.0

## Updated

Date	Rev.	Description
16.02.2022	1	Weight and bending radius
15.05.2023	2	Added drainwire
17.10.2023	3	Rated voltage