HEXATRONIC
Cables & Interconnect Systems

Color Codes and Counting Directions for Fiber Optic Cables

TIA-598 Fibers	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Turquoise
	13	14	15	16	17	18	19	20	21	22	23	24
	Blue —	Orange —	Green —	Brown —	Grey —	White —	Red —	Clear —	Yellow —	Violet —	Pink —	Turquoise —

TIA-598 Tubes	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Turquoise

S12 Fibers	1	2	3	4	5	6	7	8	9	10	11	12
	Red	Blue	White	Green	Yellow	Grey	Brown	Black	Violet	Orange	Turquoise	Pink
	13	14	15	16	17	18	19	20	21	22	23	24
	Red —	Blue —	White —	Green —	Yellow —	Grey —	Brown —	Clear —	Violet —	Orange —	Turquoise —	Pink —

S12 -Alt. 1 Tubes	1	2	3-16
	Red	Blue	White

S12 - Alt. 2 Tubes	1	2	3	4	5	6	7	8	9	10	11	12
	Red	Blue	White	Green	Yellow	Grey	Brown	Black	Violet	Orange	Turquoise	Pink

Standard Type E Fibers	1	2	3	4	5	6	7	8	9	10	11	12
	Red	Blue	White	Green	Yellow	Grey	Brown	Black	Orange	Violet	Pink	Turquoise
	13	14	15	16	17	18	19	20	21	22	23	24
	Red —	Blue —	White —	Green —	Yellow —	Grey —	Brown —	Clear —	Orange —	Violet —	Pink —	Turquoise —

Standard Type E Tubes	1	2	3-6	7	8-16
	Red	Blue	White	Blue	White

FIN 2012 Fibers	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	White	Yellow	Green	Grey	Orange	Brown	Turquoise	Black	Violet	Pink	Red
	13	14	15	16	17	18	19	20	21	22	23	24
	Blue —	White —	Yellow —	Green —	Grey —	Orange —	Brown —	Turquoise —	Clear —	Violet —	Pink —	Red —

Contents

info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

1. About Color Code Systems

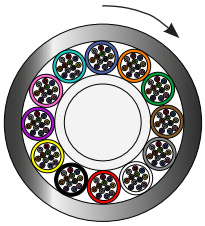
Fibers, tubes and ribbons in fiber optic cables are marked with different colors and bar codes to facilitate identification. Hexatronic offers cables with color code systems according to all international and national standards and for all types of fiber optic cables. Custom specific color code systems are available on request. This document describes the most common color code standards for cable designs, namely:

- TIA/EIA-598 (Bellcore)
- S12
- Standard Type E
- FIN2012

All systems are characeterized by using 12 different colors to identify fibers that are grouped together in a common bundle such as a tube, ribbon, yarn wrapped bundle or other types of bundle. In all charts in this document, all types of bundles are referred to as "tubes". If more than 12 fibers or tubes are to be separated, the color sequence is normally repeated, but with ring marks or lines on the colored fibers and tubes. Some systems such as the S12 and Standard Type E use only a few tube colors and the tube is instead identified by its position in the cable.

To make the charts in this document easy to read, all unnecessary information is removed.

Counting direction



2. TIA/EIA-598 (Bellcore)

This color code, formerly referred as the "Bellcore"-standard, is the most recognized system worldwide.

Fiber color coding:

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Turquoise

13	14	15	16	17	18	19	20	21	22	23	24
Blue —	Orange —	Green —	Brown —	Grey —	White —	Red —	Clear —	Yellow —	Violet —	Pink —	Turquoise —

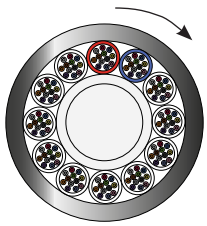
If fiber 13-24 are used in a loose tube design, the color sequence is repeated for fiber 13-24, but fibers are ring marked. Fiber 20 is clear (uncolored) since ring marking will not be visible on black colored fibers.

Tube color coding:

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Turquoise

info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

Counting direction



3. S12

The S12 color code was introduced in 2012 by Skanova (Sweden) to be used for micro cables and nano cables. The standard is now widely used in Sweden and other countires.

Fiber color coding:

1	2	3	4	5	6	7	8	9	10	11	12
Red	Blue	White	Green	Yellow	Grey	Brown	Black	Violet	Orange	Turquoise	Pink

13	14	15	16	17	18	19	20	21	22	23	24
Red —	Blue —	White —	Green —	Yellow —	Grey —	Brown —	Clear —	Violet —	Orange —	Turquoise —	Pink —

If fiber 13-24 are used in a loose tube design, the color sequence is repeated for fiber 13-24, but fibers are ring marked. Fiber 20 is clear (uncolored) since ring marking will not be visible on black colored fibers.

Tube color coding:

Two options of tube color codings exist in the S12 system:

Alternative 1:

1	2	3-16
Red	Blue	White

Alternative 2:

1	2	3	4	5	6	7	8	9	10	11	12
Red	Blue	White	Green	Yellow	Grey	Brown	Black	Violet	Orange	Turquoise	Pink

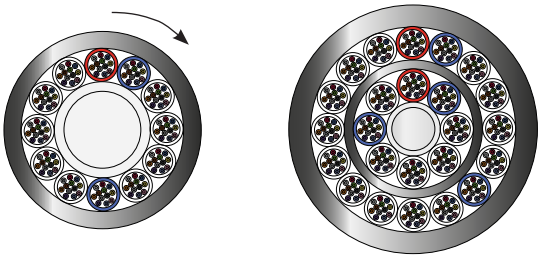
Note about fiber ribbon cables and the S12 system:
To identify ribbons in a fiber ribbon cable there are two allowed methods in the S12 system:

1. Marking with stripes on each ribbon in each slot
2. Making each ribbon unique in each slot by deviating from the color sequence in the table above. Each ribbon will have its own color sequence.

Method 1 is by far the most convenient since the ribbon is easily identified without the need to consult complicated color charts. Only 4 different colors are used for fibers in the ribbon and these are the same for every ribbon. It is also much easier to identify the

info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

Counting direction



4. Standard Type E

Standard color code system originally jointly defined by Televerket (Telia) and Ericsson in Sweden. The system is used worldwide but is gradually replaced by the S12 and TIA/EIA-598 systems in many regions.

Fiber color coding:

1	2	3	4	5	6	7	8	9	10	11	12
Red	Blue	White	Green	Yellow	Grey	Brown	Black	Orange	Violet	Pink	Turquoise

13	14	15	16	17	18	19	20	21	22	23	24
Red —	Blue —	White —	Green —	Yellow —	Grey —	Brown —	Clear —	Orange —	Violet —	Pink —	Turquoise —

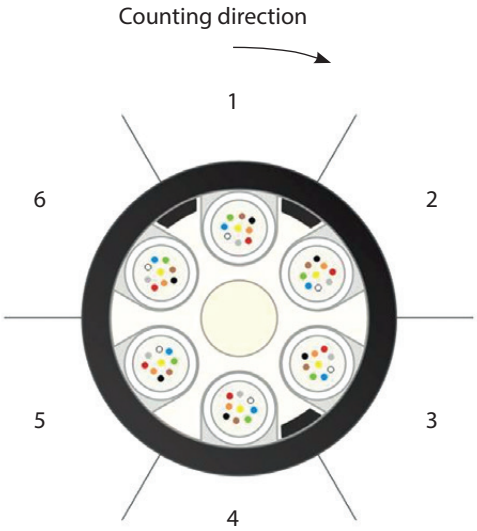
If fiber 13-24 are used in a loose tube design, the color sequence is repeated for fiber 13-24, but fibers are ring marked. Fiber 20 is clear (uncolored) since ring marking will not be visible on black colored fibers.

Tube color coding:

1	2	3-6	7	8-16
Red	Blue	White	Blue	White

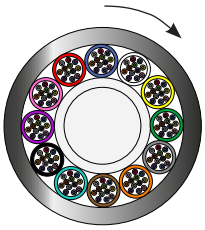
The color sequence is repeated on additional tube layers and starts with 1 (red) on each layer.

Exceptions:
Tube identification in slotted core loose tube cables can alternatively be done by identifying the three line markings on the slotted core profile as shown in the figure below. Note that there is always only three line markings regardless the number of slots.



info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

Counting direction



5. FIN2012

The FIN2012 is a color code standard used in Finland.

Fiber color coding:

1	2	3	4	5	6	7	8	9	10	11	12
Blue	White	Yellow	Green	Grey	Orange	Brown	Turquoise	Black	Violet	Pink	Red

If fiber 13-24 are used in a loose tube design, the color sequence is repeated for fiber 13-24, but fibers are ring marked. Fiber 20 is clear (uncolored) since ring marking will not be visible on black colored fibers.

13	14	15	16	17	18	19	20	21	22	23	24
Blue —	White —	Yellow —	Green —	Grey —	Orange —	Brown —	Turquoise —	Clear —	Violet —	Pink —	Red —

Tube color coding (layer 1):

1	2	3	4	5	6	7	8	9	10	11	12
Blue	White	Yellow	Green	Grey	Orange	Brown	Turquoise	Black	Violet	Pink	Red

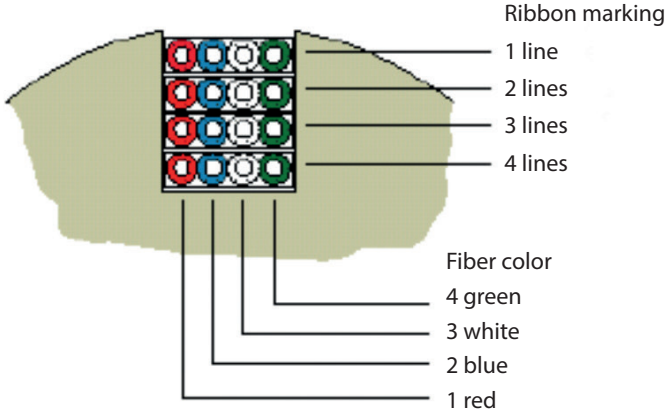
Tube colors for cables with more than one layer according to FIN2012 will differ depending on cable design.
Please contact Hexatronic for more information.

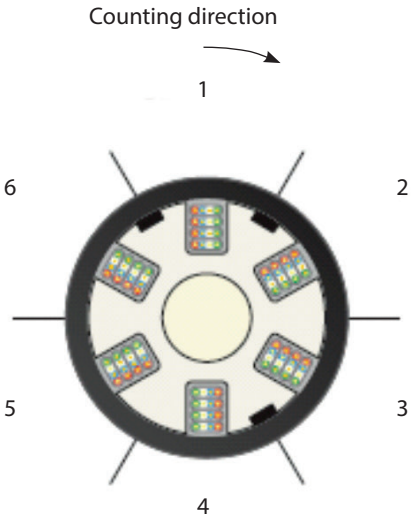
info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

6. Fiber Ribbon Cables

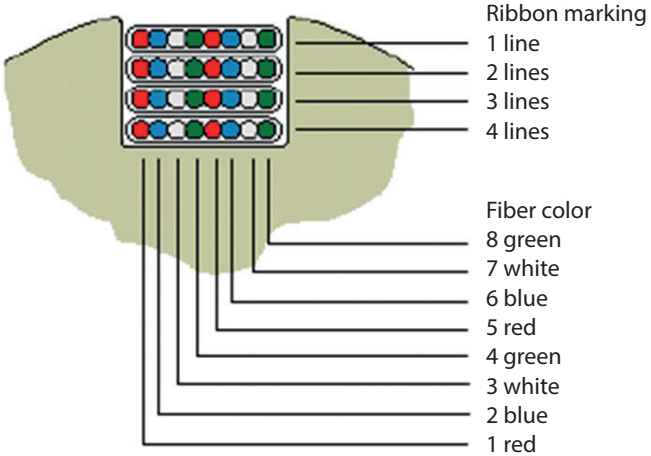
This section describes the color codes for fiber ribbon cables according to both the S12 system, (method 1 with stripe markings) and Standard Type E.

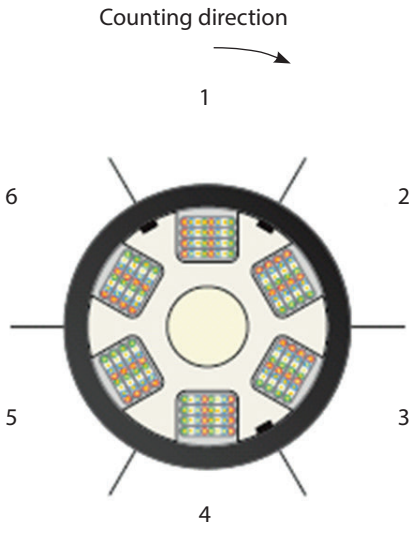
Slotted Core Profile, 4-fiber Ribbon





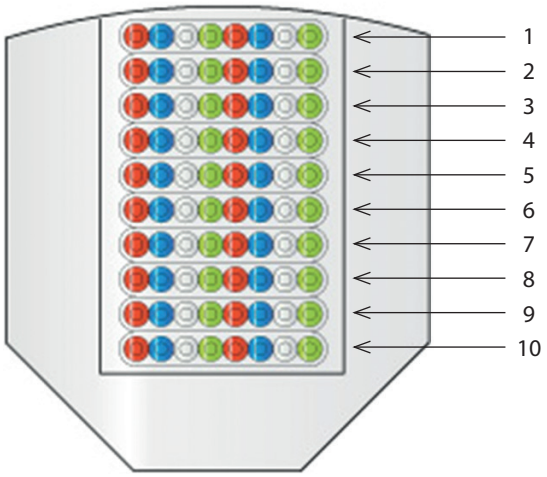
Slotted Core Profile, 8-fiber Ribbon, 8 to 192 Fibers

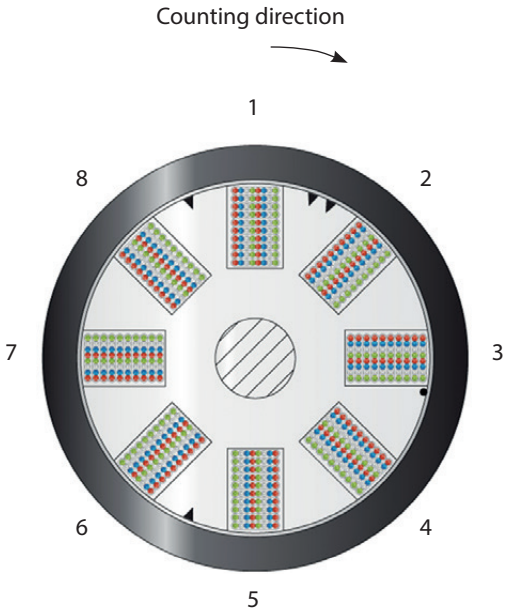




info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

Slotted Core Profile, 8-fiber Ribbon, 288 to 640 Fibers





Fiber color inside the ribbon:
Red, Blue, White, Green, Red, Blue, White, Green

info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00

7. Submarine Cables (Loose Tube)

The fibers are color coded according to Standard Type E.

The fibers are grouped in bundles of 12 fibers. The groups are held together with yarn of different colors to be able to separate the bundles.

Color coding of the fibers (bundle with yarn)

Fiber 1 Red

Fiber 2 Blue

Fiber 3 White

Fiber 4 Green

Fiber 5 Yellow

Fiber 6 Grey

Fiber 7 Brown

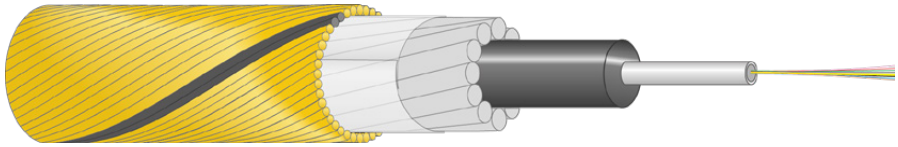
Fiber 8 Black

Fiber 9 Orange

Fiber 10 Violet

Fiber 11 Pink

Fiber 12 Turquoise



Yarn color

Yarn 1 - Red (fibers 1-12)

Yarn 2 - Blue (fibers 13-24)

Yarn 3 - White (fibers 25-36)

Yarn 4 - Green (fibers 37-48)

info@hexatronic.com
www.hexatronic.com
+46 10 453 02 00