

Micro-Coaxial / Twinax connectors

(Board pitch 0.5 mm) ZenShield® Full EMI Shield
- Horizontal mating type / 0.5 and 0.25 mm pitch LK Mechanical Lock
Click on each product information to jump to the web. 105°C Operating temperature

Product name		CABLIN® -VS II	CABLIN® -VS	CABLIN® -CX II without cover	CABLIN® -CX II with cover
<div>Feature</div>		<div><div>ZenShield®LK105°C</div><div>High-speed (32 GTs / lane) Operation Temp. 105°C</div></div>	<div><div>LK</div><div>VESA standard for 16:9 panel High-speed (32 Gbps / lane)</div></div>	<div><div>LK</div><div>Small and low height 0.78mm max.</div></div>	<div><div>LK</div><div>With EMI shield cover</div></div>
Plug Assembly P/N		20846	20453	20978	20977
Receptacle P/N		20849	20455	20976	20976
Wire Pitch (mm)		0.5	0.5	0.25	0.25
Board Pitch (mm)		0.5	0.5	0.5	0.5
Pin Count	Range	Up to 60	Up to 60	Up to 40	Up to 40
	Available	20, 30, 40	20, 30, 40, 50	40	40
		Please inquire for pin counts not listed or outside of the pin count range.			
Mated Size (mm) (*)	Height	1.2 max.	1.1 max.	0.78 max.	1.0 max.
	Width Formula	6.85 + (0.5*?p)	7.55 + (0.5*?p)	6.45 + (0.25*?p)	6.45 + (0.25*?p)
	Depth	6.7	5.8	5.21	5.6
Wiping Length (mm)		0.54	0.61	0.62	0.62
Reference applicable cable size (AWG#) (**) Micro-coaxial for signal	#36, #38, #40, #42, #44		#36, #38, #40, #42, #44	#39(****), #44, #46	#39(****), #44, #46
	#40		#40	-	-
	#32, #34, #36		#32, #34, #36	#39	#39
Contact Point		Top	Top	Top & Bottom	Top & Bottom
Operating temperature		-40°C to 105°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Performance [Unit: /Lane] (Reference Only)		PCIe Gen5 (32 GT/s /Lane) USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	32 Gbps / lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	USB3.2 Gen1 (5 Gbps/ Lane) VBO HS 1.4 (4 Gbps/ Lane) HDMI 1.3 (3.4 Gbps/ Lane)	USB3.2 Gen1 (5 Gbps/ Lane) VBO HS 1.4 (4 Gbps/ Lane) HDMI 1.3 (3.4 Gbps/ Lane)
Automotive Standards		LV214 (***)	LV214 (****)		

Note (*) : Height, Width formula and Depth dimensions are including Lock Cover / Bar. (**) : Cable outer diameters need to be smaller than connector pitch. (***) : 40P tested. PG17 Dynamic loading evaluation passed. (****) : 50P tested. PG17 Dynamic loading evaluation passed. (*****): Characteristic impedance un-matching.

Micro-Coaxial / Twinax connectors - Horizontal mating type / 0.4 mm pitch

ZenShield® Full EMI Shield

LK Mechanical Lock

105°C Operating temperature

Click on each product information to jump to the web.

Product name		CABLINE®-CA II	CABLINE®-CA II PLUS	CABLINE®-CA IIP PLUS	CABLINE®-CA	CABLINE®-CAP	CABLINE®-CAL
Feature		 ZenShield® LK 105°C	 ZenShield® LK 105°C	 ZenShield® LK	 LK	 LK	 LK
		High-speed (32 Gbps / lane) Operation Temp. 105°C	High-speed (32 Gbps / lane) Operation Temp. 105°C	High-speed (64 Gbps PAM4/lane)	High-speed (32 Gbps/lane)	High-speed (64 Gbps PAM4/lane)	Height 0.8 mm max. High-speed (40 Gbps/ Lane PAM3)
Plug Assembly P/N		20679	20788	82065	20633	81863	20728
Receptacle P/N		20682	20790	20790	20525	20525	20729
Wire Pitch (mm)		0.4	0.4	0.4 Signal contacts 1.2 differential pair	0.4	0.4	0.4
Board Pitch (mm)		0.4	0.4	0.4	0.4	0.4	0.4
Pin Count	Range	Up to 60	Up to 60	Up to 60	Up to 60	Up to 60	Up to 60
	Available	20, 30, 40, 50	60	60 (19 differential pair Max.)	10, 12, 20, 30, 40, 50, 60	50 (16 differential pair Max.)	30, 40
		Please inquire for pin counts not listed or outside of the pin count range.					
Mated Size (mm) (*)	Height	1.1 max.	1.2 max.	1.3 max.	1.1 max.	1.35 max.	0.8 max.
	Width Formula	$6.95 + (0.4 * ?p)$	$6.95 + (0.4 * ?p)$	$6.95 + (0.4 * ?p)$	$6.95 + (0.4 * ?p)$	$5.75 + (0.4 \times ? p)$	10 – 20p : $6.85 + (0.4 * ?p)$ 22p – 40p : $8.05 + (0.4 * ?p)$
	Depth	6.20	6.70	8.20	5.73	6.86	5.50
Wiping Length (mm)		0.54	0.54	0.55	0.54	0.525	0.40
Reference applicable cable size (AWG#) (**)	Micro-coaxial for signal	#36(****), #38, #40, #42, #44	#36(****), #38, #40, #42, #44	#36, #38	#36(****), #38, #40, #42, #44	#38	#38, #40, #42, #44
	Twinax	#40, #42	#40, #42	#34	#40, #42	-	-
	Discrete	#34, #36	#34, #36	-	#34, #36	-	#34, #36
Contact Point		Top	Top	Top	Top	Top	Top
Operating temperature		-40°C to 105°C	-40°C to 105°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Performance [Unit: /Lane] (Reference Only)		32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	64 Gbps PAM4 56 Gbps PAM4 32 Gbps NRZ	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	64 Gbps PAM4 56 Gbps PAM4 32 Gbps NRZ	USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane) V-by-One® US (16 Gbps/Lane)
Automotive Standards		LV214 (***)			LV214 (****)		

Note (*) : Height, Width formula and Depth dimensions are including Lock Cover / Bar. (**) : Cable outer diameters need to be smaller than connector pitch. (***) : 50P tested. PG17 Dynamic loading evaluation passed. (****) : 60P tested. PG17 Dynamic loading evaluation passed. (*****) : Characteristic impedance un-matching.

Micro-Coaxial / Twinax connectors - Vertical mating type

ZenShield® Full EMI Shield

LK Mechanical Lock

105°C Operating temperature

Click on each product information to jump to the web.

Product name		FPL™ II	CABLINE®-UM	CABLINE®-SS	CABLINE®-UY	CABLINE®-UA II	CABLINE®-UX II
Feature			 ZenShield® LK 105°C				
		High retention force high-speed (12 Gbps/ Lane)	High-speed (40 Gbps/ Lane PAM3) Operation Temp. 105°C	High retention force High-speed (16 Gbps/ Lane)	High-speed (32 Gbps/ Lane) and Small size	Slim plug and small connector	Slim plug and small connector
Plug Assembly P/N		20437	20877	20380	20857	20496	20531
Receptacle P/N		20439	20879	20374	20854	20498	20533
Wire Pitch (mm)		0.5	0.4	0.4	0.35	0.3	0.25
Board Pitch (mm)		0.5	0.4	0.4	0.35	0.6	0.5
Pin Count	Range	Up to 50	Up to 60	Up to 50	Up to 25	Up to 50	Up to 50
	Available	30, 40, 50	30, 40, 50, 60	10, 14, 20, 30, 32, 35, 40, 50	5, 10	26, 32, 40, 50	30, 34, 40, 50
		Please inquire for pin counts not listed or outside of the pin count range.					
Mated	Height	2.4 max.	2.35 max.	1.85 max.	0.82 max.	1.37 max.	1.1 max.
Size	Width Formula	5.8 + (0.5 * ?p)	5.0 + (0.4 * ?p)	5.8 + (0.4 * ?p)	2.15 + (0.35 * ?p)	5.0 + (0.3 * ?p)	4.1 + (0.25 * ?p)
(mm) (*)	Depth	6.10	5.00	3.00	3.10	2.90	2.40
Wiping Length (mm)		0.51	0.70	0.30	0.10	0.20	0.20
Reference cable size (AWG#) (**)	Micro-coaxial for signal	#32(**), #34(**), #36, #38, #40	#36(**), #38, #40, #42, #44	#36(**), #40, #42	#42	#42, #44, #46	#44, #46
	Twinax	#40	#40, #42	-	-	-	-
	Discrete	#32, #34, #36	#34, #36	#34, #36	#36	#39	#39
Operating temperature		-40°C to 85°C	-40°C to 105°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Performance [Unit: /Lane] (Reference Only)		HDMI 2.1 (12 Gbps/ Lane) USB3.2 Gen2 (10 Gbps/ Lane) DP UHBR3 (8.1 Gbps/ Lane)	USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane) V-by-One® US (16 Gbps/Lane)	V-by-One® US (16 Gbps/Lane) HDMI 2.1 (12 Gbps/Lane) USB3.2 Gen2 (10 Gbps/ Lane)	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	USB3.2 Gen1 (5 Gbps/ Lane) VBO HS 1.4 (4 Gbps/ Lane) HDMI 1.3 (3.4 Gbps/ Lane)	USB3.2 Gen1 (5 Gbps/ Lane) VBO HS 1.4 (4 Gbps/ Lane) HDMI 1.3 (3.4 Gbps/ Lane)

Note :(*) : CABLINE-UM : Height, Width formula and Depth dimensions are including Lock Cover. (**) : Cable outer diameters need to be smaller than connector pitch. (***) : Characteristic impedance un-matching.

Micro-Coaxial / Twinax connectors

ZenShield® Full EMI Shield

LK Mechanical Lock

- Horizontal mating type 0.5 & 0.4 mm pitch FPC connection 105°C Operating temperature

(Related series FPC connectors)

Click on each product information to jump to the web.

Product name		CABLINE® -VS IIF	CABLINE® -VSF	CABLINE® -CA IIF	CABLINE® -CA IIF PLUS	CABLINE® -CAF
Feature		 ZenShield® LK	 LK	 ZenShield® LK	 LK	 ZenShield® LK
		High-speed (32 Gbps) mates to VS II receptacle	High-speed (32 Gbps) mates to VS receptacle	High-speed (32 Gbps) mates to CA II receptacle	High-speed (32 Gbps) mates to CA II PLUS receptacle	High-speed (32 Gbps) mates to CA receptacle
Plug Assembly P/N		20862	20645	20856	20901	20858
Receptacle P/N		20849	20455	20682	20790	20525
Wire Pitch (mm)		0.5	0.5	0.4	0.4	0.4
Board Pitch (mm)		0.5	0.5	0.4	0.4	0.4
Pin Count	Range	Up to 60	Up to 60	Up to 60	Up to 60	Up to 60
	Available	30, 40	30, 40	30, 40, 50	60	40, 60
		Please inquire for pin counts not listed or outside of the pin count range.				
Mated	Height	1.2 max.	1.1 max.	1.1 max.	1.2 max.	1.1 max.
Size (mm) (*)	Width Formula	6.85 + (0.5*?p)	6.15 + (0.5*?p)	6.95 + (0.4*?p)	6.95 + (0.4*?p)	5.75 + (0.4 x ? p)
	Depth	7.27	5.97	6.74	7.24	6.055
Wiping Length (mm)		0.48	0.62	0.48	0.48	0.48
FPC Type		Shielded FPC	Shielded/Non-shielded FPC	Shielded FPC	Shielded FPC	Shielded/Non-shielded FPC
FPC Thickness (mm)	Contact Area	0.25 +0.02 / -0.03	0.28 +0.02 / -0.03	0.25 +0.02 / -0.03	0.25 +0.02 / -0.03	0.26 +0.02 / -0.02
	Grand Area	0.37 +0.04 / -0.06	0.34 +0.05 / -0.05	0.37 +0.04 / -0.06	0.37 +0.04 / -0.06	0.40 +0.05 / -0.05
Contact Point		Top	Top	Top	Top	Top
Operating temperature		-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Performance [Unit: /Lane] (Reference Only)		32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)	32 Gbps/ Lane USB4 Gen4 (40 Gbps/ Lane PAM3) DP UHBR20 (20 Gbps/ Lane)

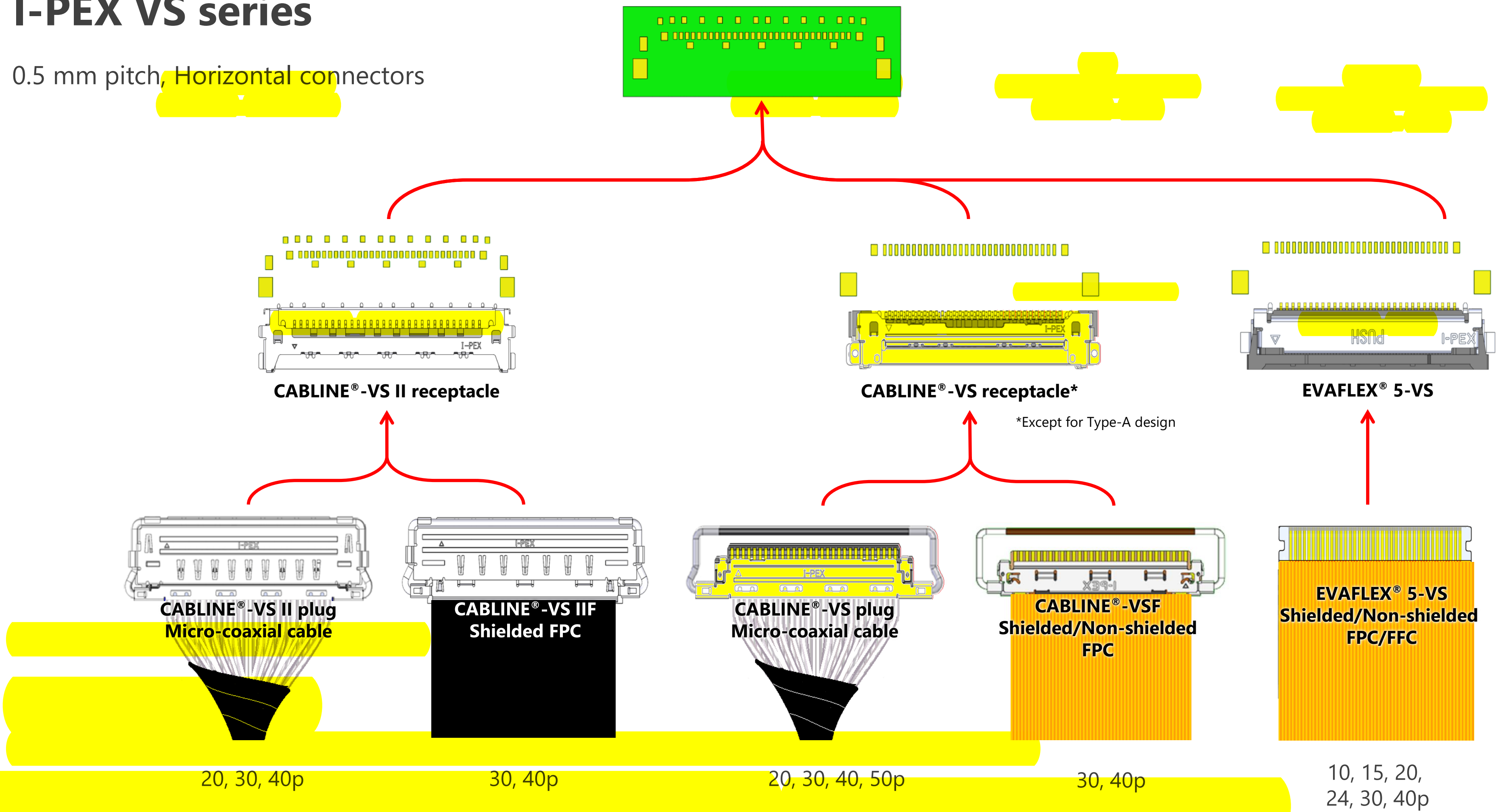
Note (*) : Height, Width formula and Depth dimensions are including Lock Cover / Bar.

I-PEX VS series connector map (0.5 mm pitch, Horizontal)

CABLINE-VS, VS II receptacles and EVAFLEX 5-VS can be mounted to the same PCB layout.

I-PEX VS series

0.5 mm pitch, Horizontal connectors



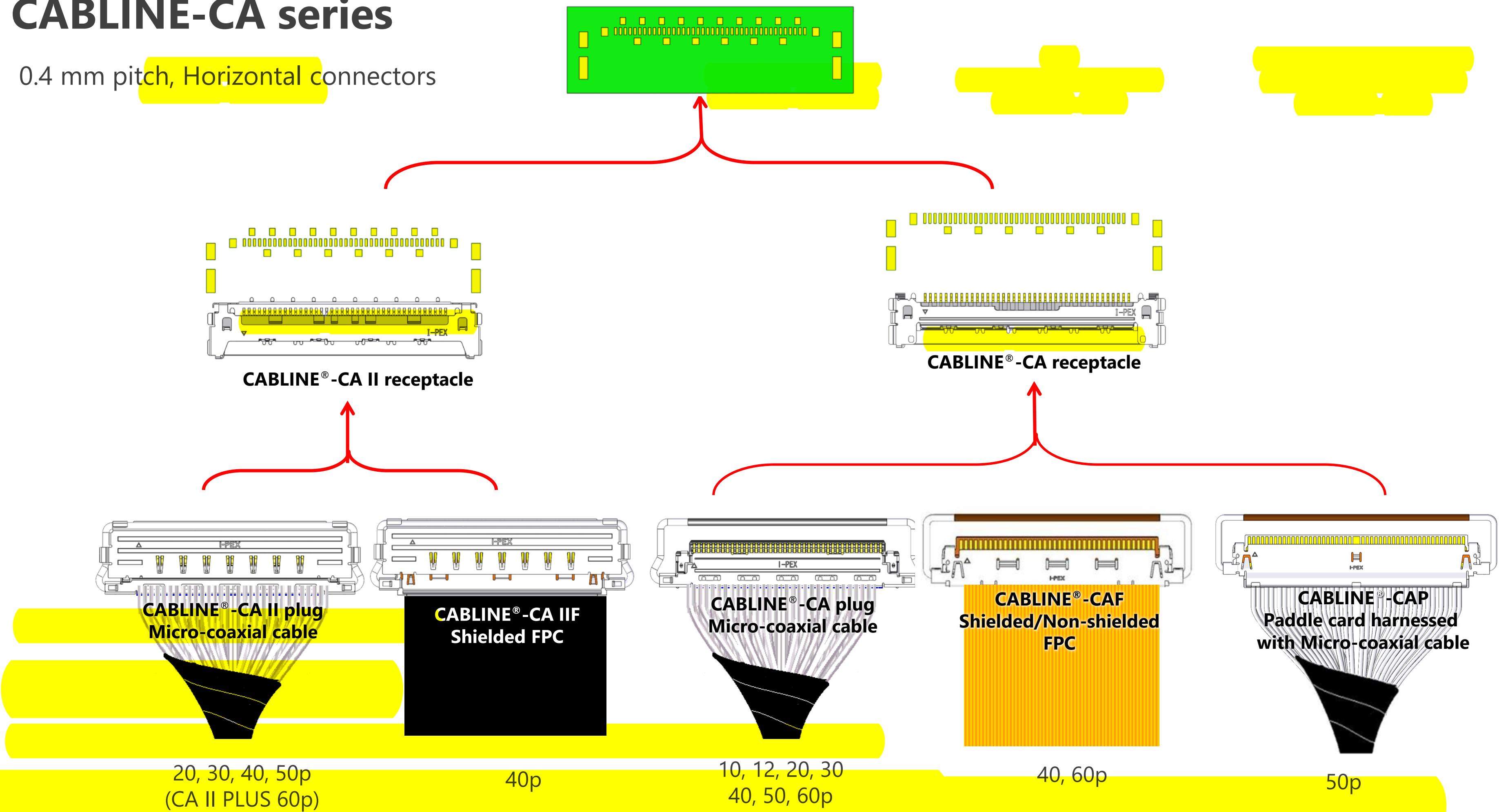
*Please inquire for pin counts not listed above.

CABLINE- CA series connector map (0.4 mm pitch, Horizontal)

CABLINE-CA and CA II receptacles can be mounted to the same PCB layout.

CABLINE-CA series

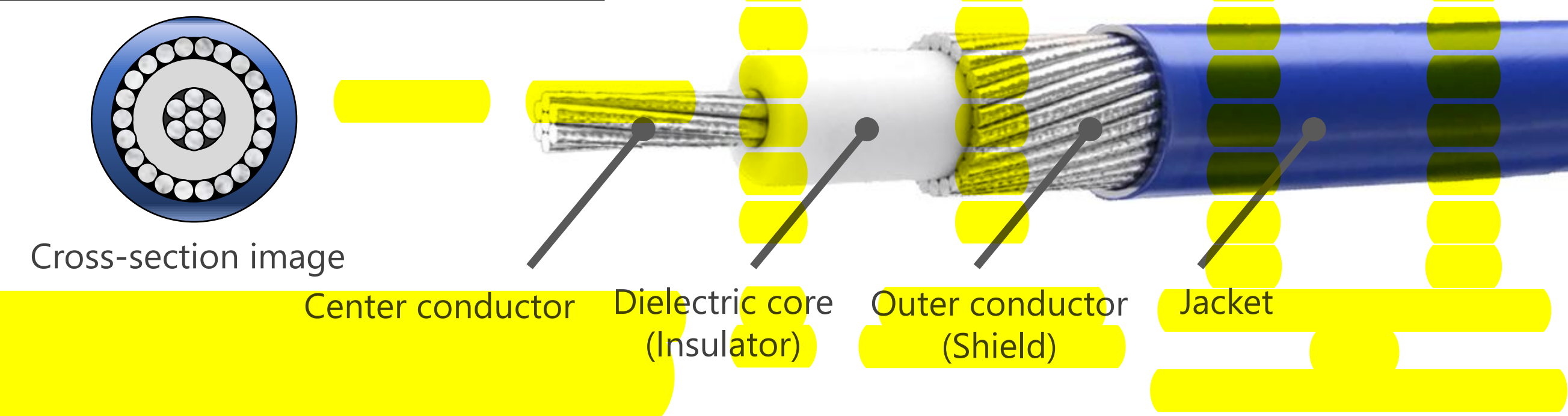
0.4 mm pitch, Horizontal connectors



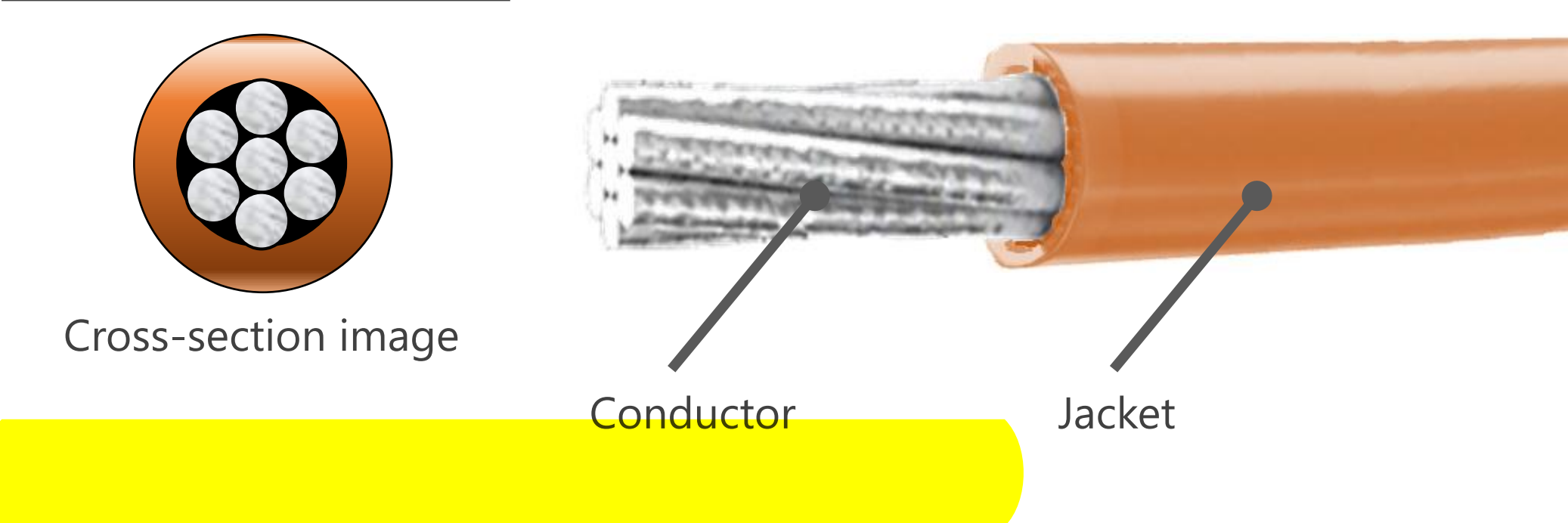
*Please inquire for pin counts not listed above.

Cable structure

Micro-Coaxial Cable

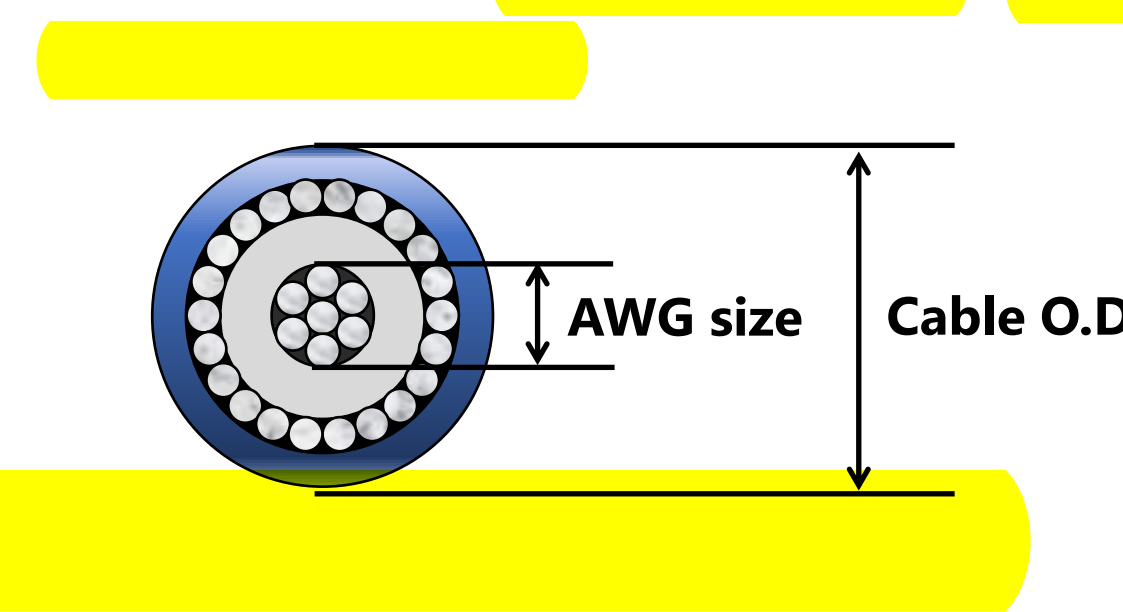


Discrete Wire



Cable size (Reference)

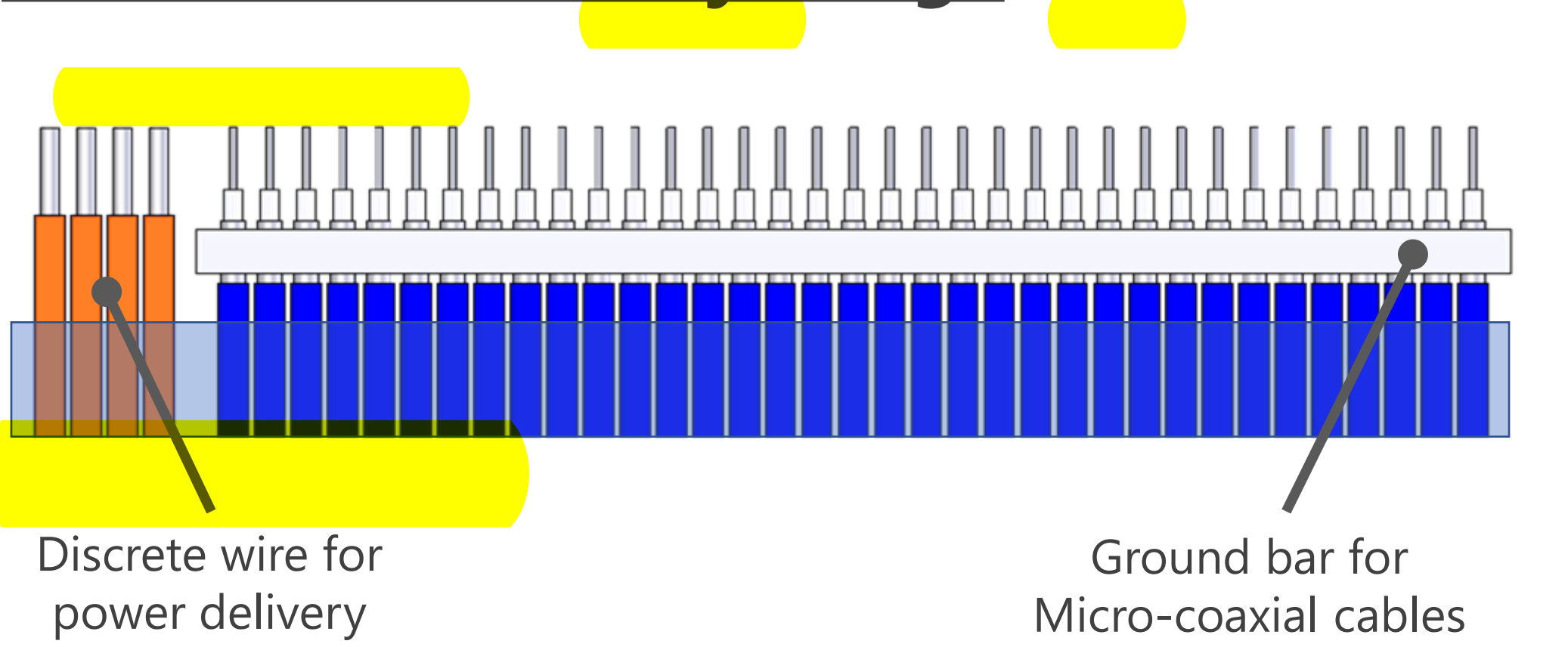
Center conductor : 7-wire stranded type



AWG size	Center Conductor Diameter (mm)	Cable Outer Diameter (O.D.) (mm)	
		45Ω	50Ω
#30	0.30	1.04	1.16
#32	0.24	0.82	0.90
#34	0.19	0.67	0.73
#36	0.15	0.49	0.55
#38	0.12	0.39	0.46
#40	0.09	0.33	0.37
#42	0.075	0.29	0.33
#44	0.060	0.24	0.26
#46	0.048	0.22	0.24

* Cable size varies depending on the types of cable.

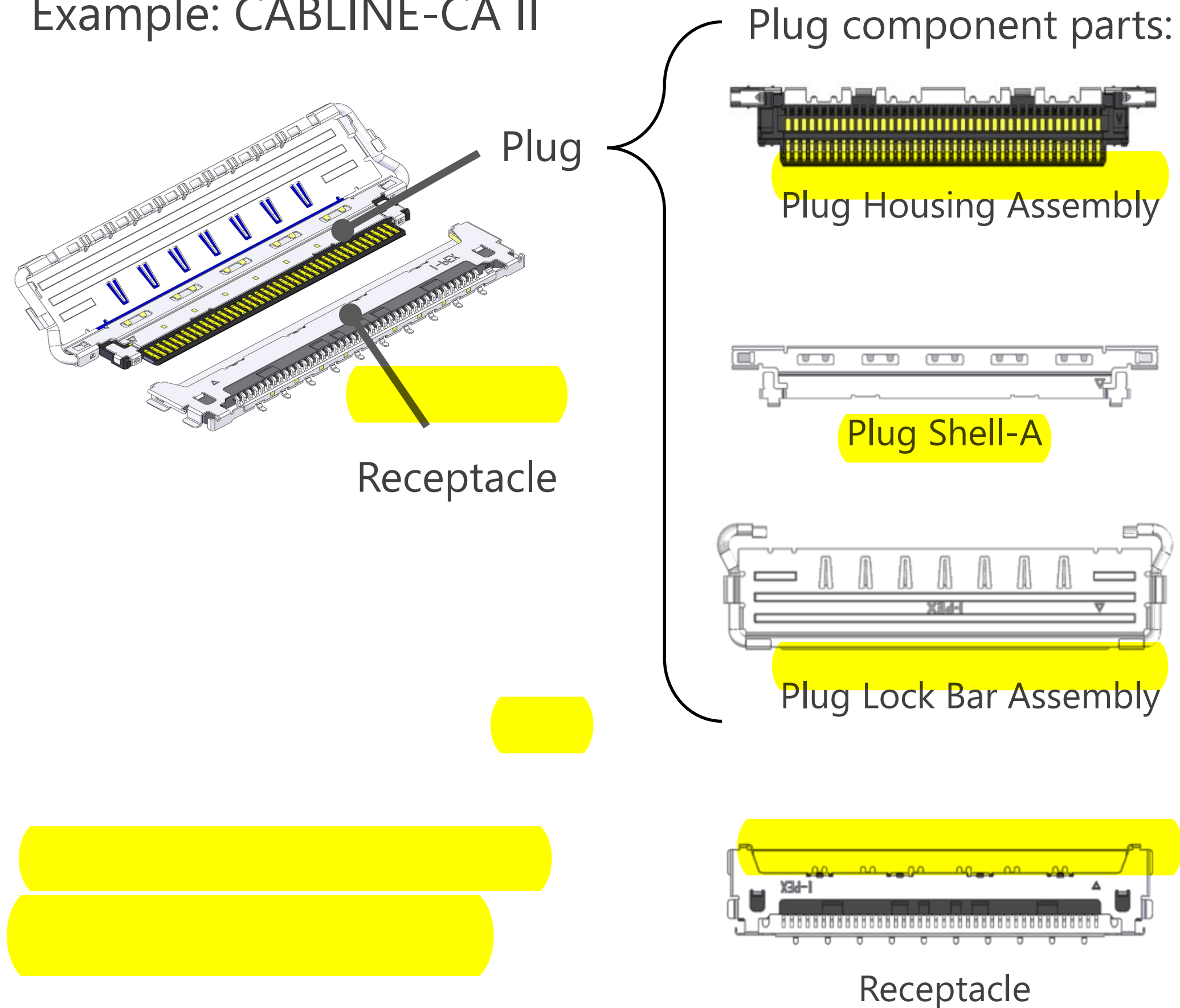
Cable sub-assembly image



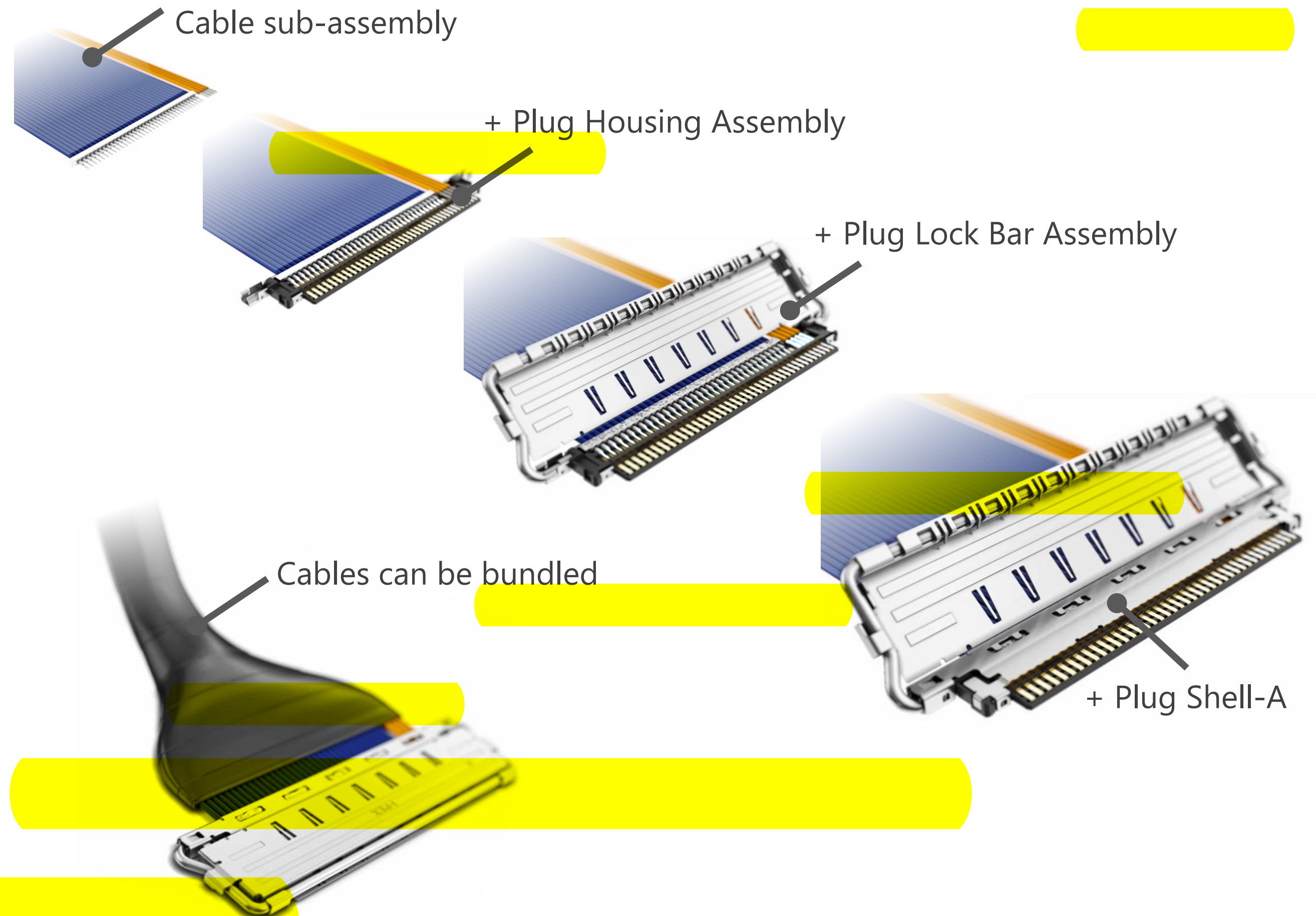
Micro-Coaxial Connector structure

Connector parts

Example: CABLINE-CA II

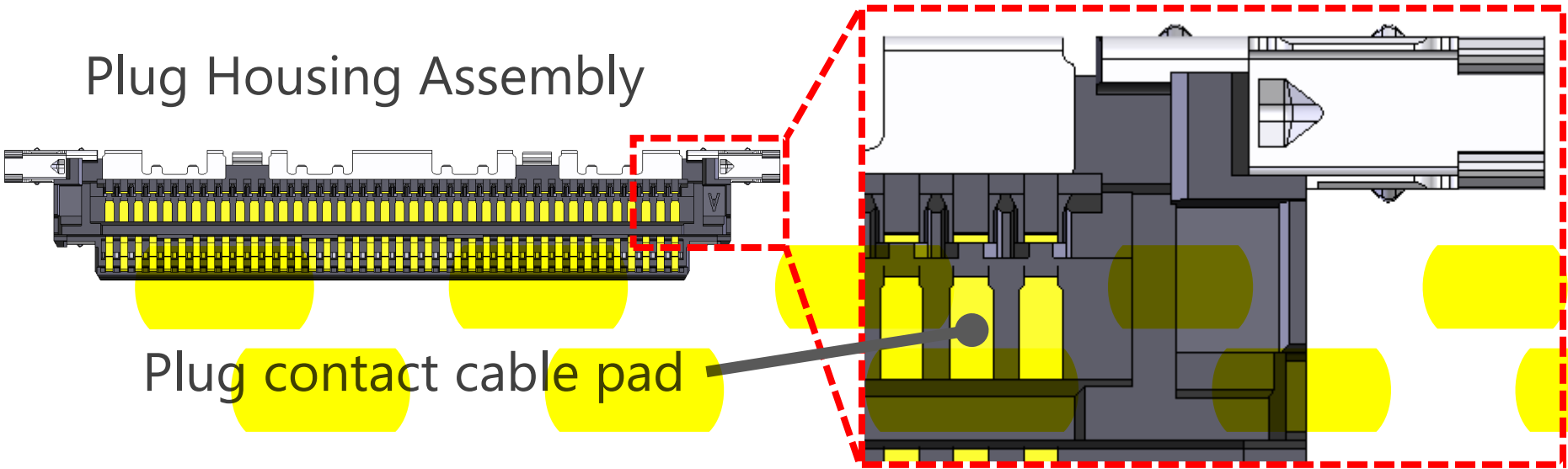
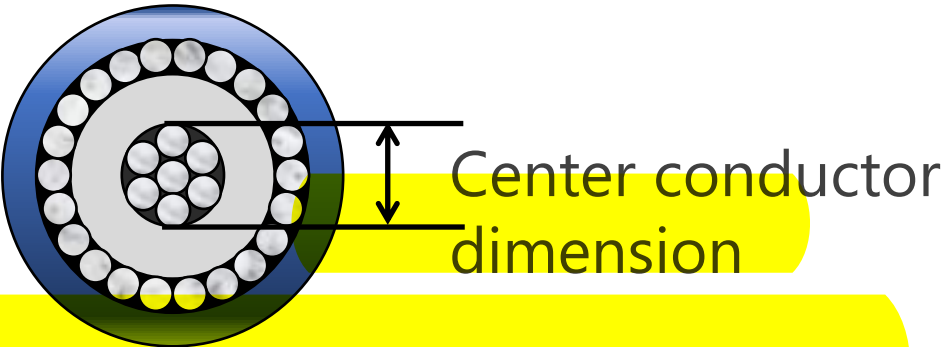


Plug harness assembly process image



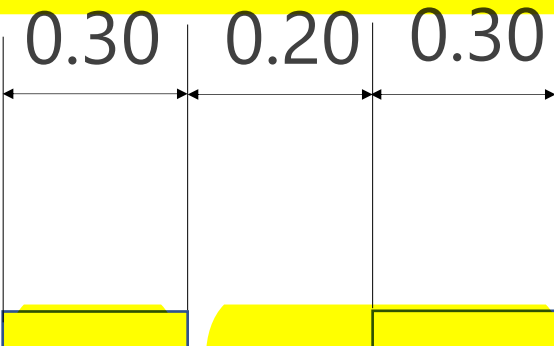
Center conductor and plug contact cable pad size image

Micro-Coaxial Cable cross-section image

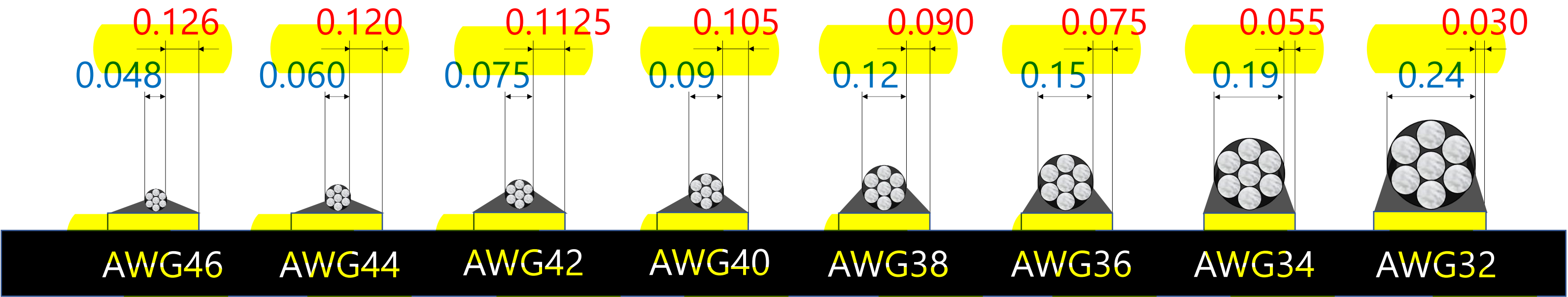


Red color number: Gap of conductor and pad (mm)
Blue color number: Center conductor dimension (mm)
(Reference)

0.5 mm pitch series



Plug contact cable pad layout image

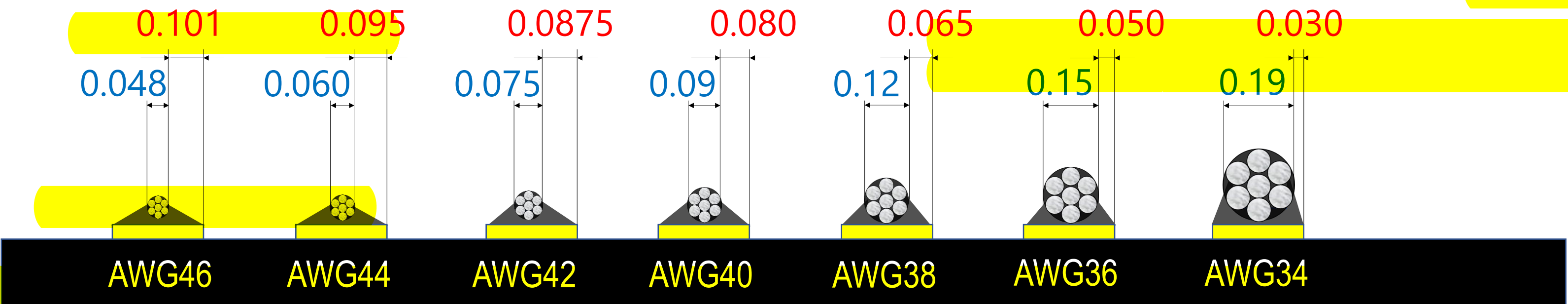


0.4 mm pitch series



Plug contact cable pad layout image

(AWG 34 type)



I-PEX Product Series



MHF[®]
Series
RF Connectors



EVAFLEX[®]
Series
MINIFLEX[®]
Series
FPC/FFC Connectors



AP
Series
Terminals



CABLIME[®]
Series
Micro-Coaxial/ Twinax
Connectors



ISH[®]
Series
IARPB[®]
Series
Wire-to-Board
Connectors



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