



## Custom Underwater Cables Configured For Your Specific Application

- As used by the world's top water shows
- Precision electrical and physical properties
- Cables can be designed for the installation's specific water chemistry
- Composite, data, video, fiber, power – including extended length GFCI runs
- Can be UL Listed in accordance to UL Subject 83 and NEC Article 680
- Environmentally Safe – Nontoxic – Recyclable
- Temperature rated to 90°C



**RoHS**  
Compliant

[sales@tmb.com](mailto:sales@tmb.com)

Los Angeles  
+1 818.899.8818

London  
+44 (0)20.8574.9700

**tmb**  
[www.tmb.com](http://www.tmb.com)

New York  
+1 201.896.8600

Beijing  
+86 10.8492.1587

Toronto  
+1 519.538.0888

Examples						
Part Number	PCAQ103**	PCAQ122S**	PCAQ128**	PCAQ163**	PCAQ224UL **	
Application	Power cable designed for long GFCI runs	Power cable designed for long GFCI runs	Low voltage power cable	Fixture cable	DMX cable	
Description	1 Pair + 1 conductor 10 AWG (6 mm <sup>2</sup> ) stranded bare copper, TPR insulated, pair foil and braid shielded, overall TPR jacketed underwater lighting cable.	2 conductor 12 AWG (4 mm <sup>2</sup> ) stranded bare copper, TPR insulated, overall foil and braid shielded, TPR jacketed underwater lighting cable.	8 conductor 12 AWG (4 mm <sup>2</sup> ) stranded bare copper, TPR insulated, unshielded, overall TPR jacketed under water lighting cable	3 conductor 16 AWG (1.5 mm <sup>2</sup> ) stranded bare copper, TPR insulated, unshielded, overall TPR jacketed under water lighting cable	2 pair 22 AWG (0.34 mm <sup>2</sup> ) stranded tinned copper, foam HDPE insulated, cabled with Kevlar strength member, overall shielded and TPR jacket, 110 Ohm impedance.	
Chemical Resistance	Designed to withstand constant submersion in water with various chemical compositions per customer specifications.					
Jacket	Material	Custom Thermoplastic elastomer (TPR)				
	Wall Thickness	0.095" (2.41 mm) nom.	0.095" (2.41 mm) nom.	0.095" (2.41 mm) nom.	0.060" (1.52 mm) nom.	0.040" (1 mm) nom.
	Diameter	0.865" (21.97 mm) +/- 0.015" (0.38 mm)	0.580" (14.73 mm) +/- 0.015" (0.38 mm)	0.805" (20.45 mm)	0.395" (10.03 mm)	0.320" (8.13 mm) nom.
	Color	Black				
Insulation	Material	Custom Thermoplastic elastomer (TPR)	Custom Thermoplastic elastomer (TPR)	Custom Thermoplastic elastomer (TPR)	Custom Thermoplastic elastomer (TPR)	Custom foam high density polyethylene
	Wall Thickness	0.045" (1.14 mm) nom.	0.045" (1.14 mm) nom.	0.045" (1.14 mm) nom.	0.030" (0.76 mm) nom.	0.016" (0.41 mm) nom.
	Diameter	0.214" (5.44 mm) Nom.	0.181" (4.6 mm) nom.	0.183" (4.65 mm) nom.	0.123" (3.12 mm) nom.	0.064" (1.63 mm) nom.
Color Code	Black and White pair, green single conductor	Black and White	Black, White, Red, Green, Orange, Blue (ICEA method 1 K-1)	Black, White, Green	Black/White, Red/Green	
Conductors	Size / Stranding	10 AWG (6 mm <sup>2</sup> ), 105 strand 30 AWG	12 AWG (4 mm <sup>2</sup> ) 65 strands 30 AWG	12 AWG (4 mm <sup>2</sup> ) 65 strands 30 AWG	16 AWG (1.5 mm <sup>2</sup> ) 26 strands 30 AWG	22 AWG (0.34 mm <sup>2</sup> ) 19 strands 34 AWG
	Material	Bare annealed copper	Bare annealed copper	Bare annealed copper	Bare annealed copper	Tin plated annealed copper
Pair Assembly	Lay Length	4" (101 mm) nominal left hand				1.5" (38 mm) nominal left hand
	Fillers	Non-hygroscopic polypropylene				
Shield	Type	Individual pair shields	Overall			Overall
	Inner Layer	Aluminum/polyester tape applied with aluminum side out and 25% overlap, 100% coverage	Aluminum/polyester tape applied with aluminum side out and 25% overlap, 100% coverage			Aluminum/polyester tape applied with aluminum side out and 20% overlap, 100% coverage
	Drain	12 AWG (4 mm <sup>2</sup> ) 65/30 tinned copper	14 AWG (2.5 mm <sup>2</sup> ) 41/30 tinned copper			22 AWG (0.34 mm <sup>2</sup> ) 19 strands 34 AWG tinned copper
	Outer Layer	36 AWG tinned copper braid, 90% coverage	36 AWG tinned copper braid, 90% coverage			36 AWG tin plated annealed copper braid, 75% coverage
Cable Assembly	Lay Length	10" (254 mm) nominal left hand	4" (101 mm) nominal left hand	9" (229 mm) nominal left hand	2.5" (64 mm) nominal left hand	3" (76 mm) nominal left hand
	Fillers	Non-Hygroscopic polypropylene				Fibrilated polypropylene in interstices, plus 1500D Kevlar strength member in 1 interstice.
	Binder	0.001" (0.03 mm) clear polyester tape applied with 25% overlap		0.001" (0.03 mm) clear polyester tape applied with 25% overlap	0.001" (0.03 mm) clear polyester tape applied with 25% overlap	
Markings	Type	Indent print – Examples Only				
	Legend	Per customer requirements	TMB PCAQ122S** 2/C 12 AWG SEW (UL) 105C (-40C) SHIELDED 600V E179657	8/C 12 AWG SEW 105C (-40C) 600V E179657 and any customer specified markings	TMB PCAQ163** 3/C 16 AWG SEW 105C (-40C) 600V E179657	Per customer requirements
Standards (Example)	UL (Underwriters Laboratories) Listed NEC type SEW shielded flexible cord					
Electrical Specifications	Capacitance at 1 kHz between conductors					13 pF/ft. nom.
	Conductor to Shield					27 pF/ft. nom.
	Characteristic Impedance					110 Ohms @ 1 MHz
	Inductance					0.16 uH/ft. nom.
	DCR at 20°C					15.5 Ohms max.
	Velocity of Propagation					76% nom.

Note: ProAqua submersible cables are designed for your specific applications. Part numbers and specs above are examples only, designed for specific projects. To ensure reliability, jacket materials must be precisely matched to intended water chemistry.

Benign chemicals – natural or otherwise – can erode conventional cables. ProAqua cables are fabricated specifically for wet or fully submersed environments and are resistant to moisture ingress as well as deterioration due to specific water chemistry. TMB offers cables for a wide range of submersible applications, from fresh water to high durability marine environment cabling.