

# PermaLite™

## Fiberglass Counterflow

Field-Assembled Cooling Towers

We do things differently and it makes all the difference for you.™

# At CCS

we have designed an  
on the market — provi

## Superior Quality and Reliability

### Up to 200% greater rigidity in our raw material

We custom manufacture our FRP material using a special glass lay-up and higher glass content with no fillers in our resin for increased tensile strength and shear resistance.

### Greater UV protection and wider pH range for chemical resistance

Our resin coating is 2-4x thicker than our competitors' standard resin, making our towers better able to withstand the elements, including extreme temperatures and sun damage.

### More durable structure made with custom components

CCS does not rely on "off-the-shelf" shapes. Our components are designed, engineered and tested specifically for cooling tower use.

### Stronger connections and tighter joints

The PermaLite's advanced design combines the CCS PermaColumn--specially engineered for this tower--and our double-wall panels, all joined with CCS's innovative connection system that eliminates through-holes and associated leaks, providing the strongest connection with exceptional leak resistance.

### More flexibility in performance

Our Multi-Flo™ distribution system allows the number, location and capacity of spray nozzles to be optimized to match tower dimensions and performance requirements. With Multi-Flo, turndown capabilities can be as low as 50% of total capacity for efficient tower operation through a wider range of load conditions.

## Optimal Project Execution

### ThermaFit™ for optimal design

CCS' ThermaFit software is a powerful sizing and selection tool that helps engineers and CCS representatives design and select the optimal tower design for the application from a range of possibilities. This saves valuable design time up front, matching size and performance requirements without being restricted by other manufacturers' "standard product" limitations.

### Efficient field assembly

The CCS PermaLite is engineered to facilitate fast, safe two-day assembly at the site.



Manufacturer's published thermal performance is certified by the Cooling Technology Institute under the provisions of STD-201 (15)



exclusive tower structure that is unlike any other  
providing real and lasting advantages for you.

### Lower Lifecycle Costs

#### Reduced operating costs

Because our towers can be built to the exact footprint available, we are able to utilize the optimal motor size and lowest horsepower possible to increase efficiency and reduce utility bills.

#### Virtually no maintenance costs

CCS's commitment to simple, reliable design continues with the PermaLite. The CCS PermaLite direct-drive fan array has no drives, no sheaves, no gear boxes, and no belts, thus eliminating traditional high-maintenance components. PermaLite fans utilize sealed bearings so there's no oil or lubricating lines either. The PermaLite construction is seamless throughout, with a one-piece fiberglass basin and no wall seams to caulk and recaulk.

### Affirming Customer Experience

#### Confidence of working with the FRP experts

From our founding leaders who developed the first fiberglass tower in 1981 to the construction of North America's largest crossflow FRP tower in 2010, CCS has more FRP tower experience than any other provider.

#### Solutions to your unique challenges

When you work with CCS, you benefit from the extensive knowledge and ingenuity of our people across all functions — from our engineers and sales team to our project managers and local representatives. As a custom tower provider, we work with each customer individually to design the best solution to fit the requirements.

#### Effective and efficient service

CCS provides responsive service and follow-up on initial inquiries and submittals, during project execution and for any post-installation issues. We have a solid reputation in the industry for delivering on our promises and producing quality results.

#### Accountable partner you can trust

More than just a vendor, we are a partner who stands behind the quality of our products and forms lasting relationships with our customers. In fact, 80% of them come back to buy from CCS again.

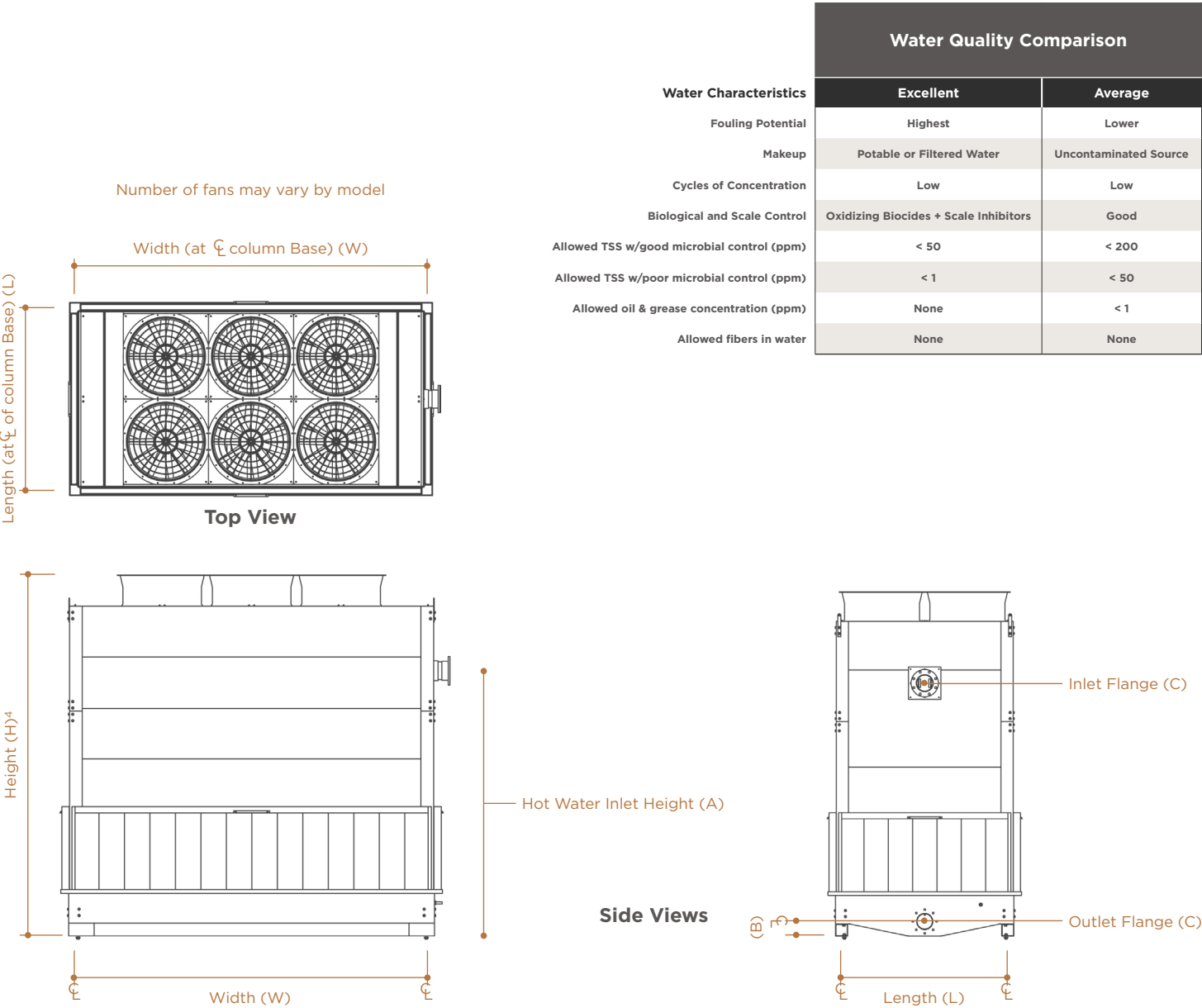
## CCS Cooling Tower Capacities

The CCS PermaLite pultruded fiberglass cooling tower is the ideal choice for projects where up to 1,000 tons per cell is required.

Tons Per Cell	300	1000	2000	3000	4000
Counterflow	PermaLite™	Phoenix®			
Crossflow		3000XLF™		Titan™	

# Pultruded Fiberglass All-Composite Tower

The CCS PermaLite has a leak-free design with no through-holes in tower body.



This information is intended for guidelines and preliminary information only. Do not use for construction.  
Adequate clearance for air supply must be maintained around the tower. Consult your CCS representative for assistance.



# Water Quality Flexibility

For a variety of water quality applications ranging from excellent to average.

Catalog Model No.	Water Quality		Nominal Tons <sup>1</sup>	Motor HP	Dimensions <sup>3</sup>					
	Excellent	Average			L	W	H <sup>4</sup>	A	B	C
1S-PLC-0711-1503-D4		●	181	15						
1S-PLC-0711-1504-A3	●		207	15						
1S-PLC-0711-2005-D4		●	225	20	7'-11 1/2"	11'-6 3/8"	13'-7 3/4"	9'-10 7/8"	7 1/4"	6"
1S-PLC-0711-2004-A3	●		226	20						
1S-PLC-0714-2006-D4		●	272	20						6"
1S-PLC-0714-2506-D4		●	292	25						8"
1S-PLC-0714-2506-A3	●		302	25	7'-11 1/2"	14'-11 3/4"	14'-1 3/4"	10'-4 1/2"	7 1/4"	8"
1S-PLC-0714-3006-D4		●	310	30						8"
1S-PLC-0714-3006-A3	●		319	30						8"
1S-PLC-0718-2508-D4		●	344	25						
1S-PLC-0718-2507-A3	●		350	25						
1S-PLC-0718-3008-D4		●	364	30						
1S-PLC-0718-3007-A3	●		370	30	7'-11 1/2"	18'-5 7/8"	14'-1 3/4"	10'-4 7/8"	7 1/4"	8"
1S-PLC-0718-4008-D4		●	400	40						
1S-PLC-0718-4008-A3	●		404	40						
1S-PLC-0721-3009-A3	●		424	30						
1S-PLC-0721-4010-D4		●	455	40						
1S-PLC-0721-4009-A3	●		463	40	7'-11 1/2"	22'-0"	14'-1 3/4"	10'-4 7/8"	7 1/4"	8"
1S-PLC-0721-5010-D4		●	481	50						
1S-PLC-0721-5010-A3	●		489	50						
1S-PLC-1118-4012-D4		●	524	40						
1S-PLC-1118-4011-A3	●		537	40						
1S-PLC-1118-5012-D4		●	563	50						
1S-PLC-1118-5011-A3	●		575	50	11'-5 5/8"	18'-5 7/8"	14'-7 3/4"	10'-10 7/8"	7 1/4"	10"
1S-PLC-1118-6012-D4		●	597	60						
1S-PLC-1118-6012-A3	●		604	60						
1S-PLC-1121-5014-D4		●	637	50						
1S-PLC-1121-5013-A3	●		652	50						
1S-PLC-1121-6014-D4		●	675	60						
1S-PLC-1121-6013-A3	●		690	60	11'-5 5/8"	22'-0"	15'-1 3/4"	11'-4 7/8"	7 1/4"	10"
1S-PLC-1121-7515-A3	●		724	75						
1S-PLC-1121-7515-D4		●	725	75						

1. Based on 3 GPM per ton at 95°F-85°F-78°F, ASL.

2. Weights and loads are in pounds.

3. All dimensions are nominal.

4. From bottom of basin support to top of fan stack.

# CCS PermaLite™ Fiberglass Counterflow Field-Assembled Cooling Towers

Composite Cooling Solutions (CCS) is a custom cooling tower solutions provider specializing in the design and build of field-erected fiberglass and concrete cooling towers. Our exclusive tower structure is unlike any other on the market — using custom-engineered components and a flexible, open-frame design to enable faster and safer project execution and lower costs over the life of the tower. From our founding leaders who pioneered the cooling tower industry to our experienced and responsive teams, you can rely on CCS to deliver a lasting solution for your cooling needs.

**We do things differently and it makes all the difference for you.™**



4150 International Plaza, Suite 500  
Fort Worth, Texas 76109-4826  
817.246.8700 phone  
817.246.8717 fax

[www.compositecooling.com](http://www.compositecooling.com)

**Front cover:** The CCS PermaLite counterflow cooling tower.

Composite Cooling Solutions' cooling towers (or parts thereof) are covered and protected by one or more of the following United States Patents (and other pending U.S. patent applications): U.S. Patent No. 7,257,734, U.S. Patent No. 7,607,646, U.S. Patent No. 7,997,562, U.S. Patent No. 8,376,323 and U.S. Patent No. 8,602,397



ISO 9001:2008