3D TRASAR™ Light Cooling Water System

NALCO
An Ecolab Company

Specification SPEC-701

Description

3D TRASAR Light Cooling Water System.

- Analyzes and controls feed of 3D TRASAR liquid inhibitor product based on configured ppm (part per million) set point
- Analyzes and controls cooling water conductivity based on configured set point
- Analyzes and controls oxidizing biocide feed based on configured ORP set point or timer
- Controls feed of non-oxidizing biocide based on configured timer
- Logs and sends monitored and calculated data to the Nalco server, website and the System Assurance 24/7 team of experts

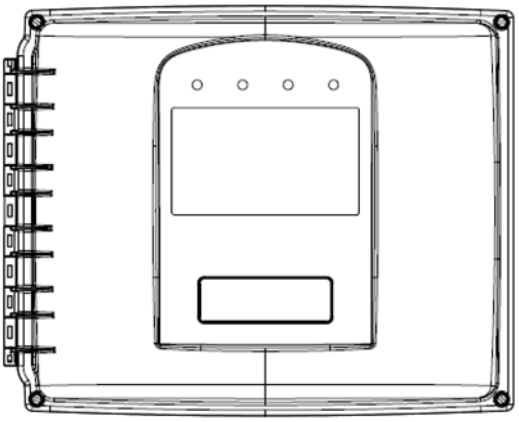
Figure 1 — *3D TRASAR Light Cooling Water System*

3D TRASAR Light Cooling Water System Specifications

Specifications	Details
Dimensions (H x W x D)	33″ x 33″ x 16″
Weight	65 lbs
Electrical Requirements	85…250 VAC, 50/60 Hz, Max.1560 VA (14.2A @110 VAC, 6.8A @230 VAC) (Controller is supplied with a prewired power cord)
Supply water requirements	Cooling system sample water
Discharge water requirements	Outlet water to be plumbed to low pressure side of cooling system
Minimum flow requirement	3 gpm (gallons per minute)
Pressure requirements	Minimum 10 psig, Maximum 90 psig
Temperature limits	Minimum 40°F, Maximum 120°F
Sample water inlet connection	¾″ FNPT (female national pipe thread)
Sample water outlet connection	½″ FNPT (female national pipe thread)
Piping material	Schedule 80 PVC
Back panel material	Powder coated carbon steel
Mounting	Z-Bracket provided to wall mount

3D TRASAR Light Cooling Water Controller

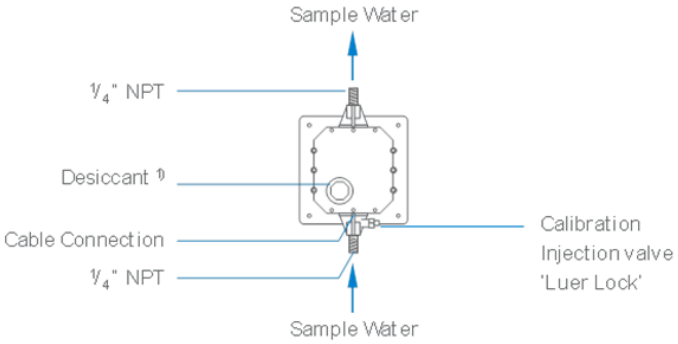
- Displays measured and calculated parameters
- Controls external chemical dosing pumps and blow down valve.
- Logs readings and alarms.
- Sends data via a built in wireless gateway to the Nalco server
- Configuration is downloaded from my.nalco.com, USB stick, or created via touch screen



Specification	Details
Electrical power	100-240 Vac (+/-10%), 50/60 Hz, Max.1800 VA (15A @120 Vac, 7.5A @240 Vac)
Analog inputs	4, non-isolated, 4 – 20 mA or 0 – 10 V. For voltage inputs, the input impedance is 240Ω for mA and 110KΩ for V.
Digital inputs	2, contact or open collector NPN transistor/FET (5 mA sink, 24 Vdc, signal to ground): 2: e.g. flow switch, remote start/stop (interlock) 2: 0…100 Hz, e.g. water meter pulse
ORP Inputs	1, smart sensor, shield
Conductivity inputs	1, 1 torodial, 2 coils, smart sensor, PT1000, range 500…2,000,000µS/cm
Temperature inputs	2, non-isolated, 4-wire, 1000Ω, platinum RTD (PT1000). Range: -18…427°C, 0…800°F.
Control relay outputs	8, SPDT (NO/NC), mechanical, max. 250 Vac, max. 12A for all 8 relays combined. Each relay fused at 4A, powered or contact operation.
Alarm relay outputs	2, SPDT (NO/NC), mechanical, max. 250 Vac, fused at 1.0 A. contact operation.
Analog outputs	1, non-isolated, self-powered, 4-20mA. (<600Ω). For PID control or monitoring of measurements in DCS.
24Vdc power supply	Regulated, max. 2.5A.
Enclosure	NEMA 4X, IP65, Ambient temperature: 4 – 49°C, 40 – 120°F, Relative Humidity 5-98% non-condensing
Environmental	Indoor use only, altitude up to 2.0 km, 1.2 mi, over voltage category II, pollution degree 2
Regulatory	CE/UL/CSA (pending)
Communications	3x Ethernet ports 1x USB for memory stick. 1x built-in wireless gateway, GSM/GPRS, CDMA, 3G, security via VPN firewall.

Fluorometer

- Multi-channel fluorescence and light monitor
- Desiccant canister and color-coded humidity indicator turn dark pink when optics and electrical components are exposed to condensation



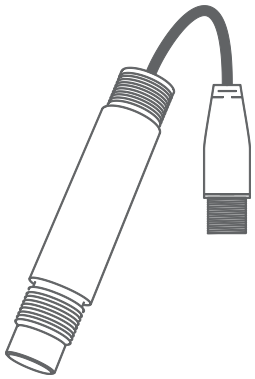
Specification	Details
TRASAR #2 and Tagged Polymer measurements	Range: 13 ppb…15 ppm as TRASAR #2 or Tagged Polymer (e.g. 1.3 ppm…1500 ppm inhibitor if Product Factor is 100) Accuracy: +/- 5% of reading
Turbidity measurement	Range: Turbidity in Nalco turbidity units are consistent with Nephelometric Turbidity Units up to 40 NTU; deviates from standard NTU above 40 NTU) Accuracy: +/- 5% of reading
Cell fouling	Range: 0…100% Accuracy: +/- 5% of reading
Calibration	Single 2-point calibration for TRASAR, Tagged Polymer
Sample temperature	4…60°C @ 1.5 bar, 40…140°F @ 22 psi
Sample pressure	0…6.9 bar @ 35°C, 0…100 psi @ 95°F
Power and communication	Via 3D TRASAR controller (6V and Modbus)
Wetted materials	PVC, Quartz, SS

ORP Sensor

ORP: Oxidation Reduction Potential (also known as redox potential)

Voltage measurement between a noble metal and a reference electrode Indication of the free chlorine concentration that is removed by dosing bi-sulfite.

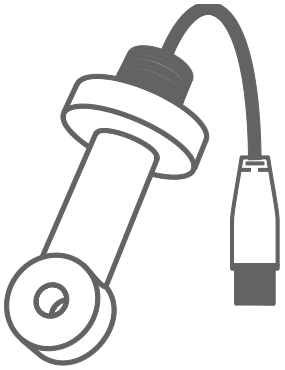
Unit of measure: mV (millivolt)



Specification	Details
Range	ORP: 0…1000 mV temperature: 0…100°C, 32…212°F
Calibration	ORP: 1 point inline
Accuracy	pH 0.05, ORP: +/-5% of reading
Sample Pressure	0…10.3 bar, 0…1500 psi @ temperature
Sample Temperature	5…110°C, 40…230°F @ pressure
Required conductivity	100-10,000 uS/cm
Wetted materials	Body: PPS (Ryton), seal: FKM (Viton® synthetic rubber), sensor: glass

Conductivity Sensor

Type: Inductive, toroidal



Smart sensor: automatic recognition of sensor type, serial number, first calibration

Coil 1 induces an electrical current in the water. Coil 2 detects induced current. The current is proportional to the conductivity of the water.

Unit of measure: µS/cm (micro Siemens per cm)

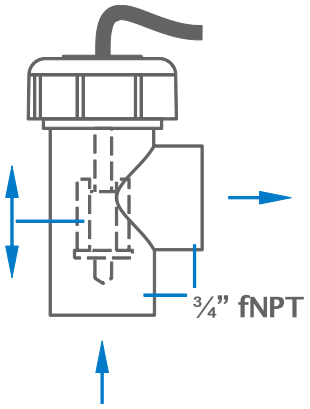
Contains an internal PT1000 temperature sensor for temperature compensation

Specification	Details
Range	500…2,000,000 µS/cm, 0…100°C, 32…212°F
Calibration	2-point and 1-point calibration
Accuracy	+/- 5% or reading
Sample Pressure	Max. 6.9 bar @35°C, 100 psi @95°F
Sample Temperature	0…100°C, 32…212°F @ pressure
Wetted materials	Body: PPO-PS blend (Noryl), seal: FKM (Viton synthetic rubber)

Flow Switch

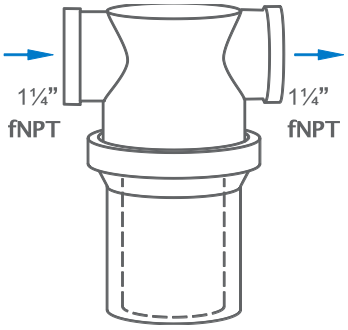
Type: Reed contact switch

Magnetic float is pushed upwards by sample water flow. Above a certain flow (fixed), the reed contact output remains closed. Used for determining if sample water is representative of system water.



Specification	Details
Switching point	0.5 gpm, 113 L/h
Signal output	Potential free contact

T-Strainer



Specification	Details
Mesh size	20 (0.9 mm)
Pressure	0…10.3 bar @ 21°C, 0…150 psi @ 70°F
	0…6.9 bar @ 52°C, 0…100 psi @ 125°F
Materials	Top: PP, bowl: Nylon, Mesh: SS304
Mesh size	20 (0.9 mm)

Spare Parts and Accessories

3D TRASAR Fluorometer and Sensors

Material	Description
3DT-CWS520.88	3D TRASAR Fluorometer
060-TR5221.88	3D TRASAR Fluorometer,Cable
3DT-ORPPRB1.88	NXG ORP Probe,1-Wire Red
3DT-ORPCBL1.88	NXG ORP Cable,1-Wire Red
3DT-CONDT1.88	NXG Cond Probe,Toroidal,1-Wire Yel
3DT-CNDTCAB1.88	NXG Cond Cable,Toroidal,1-Wire Yel
3DT-CONDTOR.88	NXG Cond O-Ring,Toroidal,Buna-N
3DT-CONDTTEE.88	NXG Cond Tee,Toroidal,CPVC W/Nut

Plumbing

991-05053773.88	T-Strainer, PP,1, FPT,20 MESH, CLEAR
6000668	Flow Switch, PVC, 3/4, FPT

Material	Description
3DT-CWSKIT1-88	3D TRASAR Start Up & Calibration Kit (includes items below)
460-S0940.75	S0940-3D TRASAR
460-S0297.75	Soln 1 L 3000 Micromho Standard
460-S0298.75	Soln 1 L 600 Micromho Standard
460-S0800.75	Soln 1L 10% Sulfuric Acid
500-P2817.88	Tube Brush, Nylon, 5/16" x 2-1/2" x 16"
500-P0116.88	Beaker Disp PLS 800 ML
500-P2147.88	Syringe, Plastic ,60 cc, Luer-Lok TIP

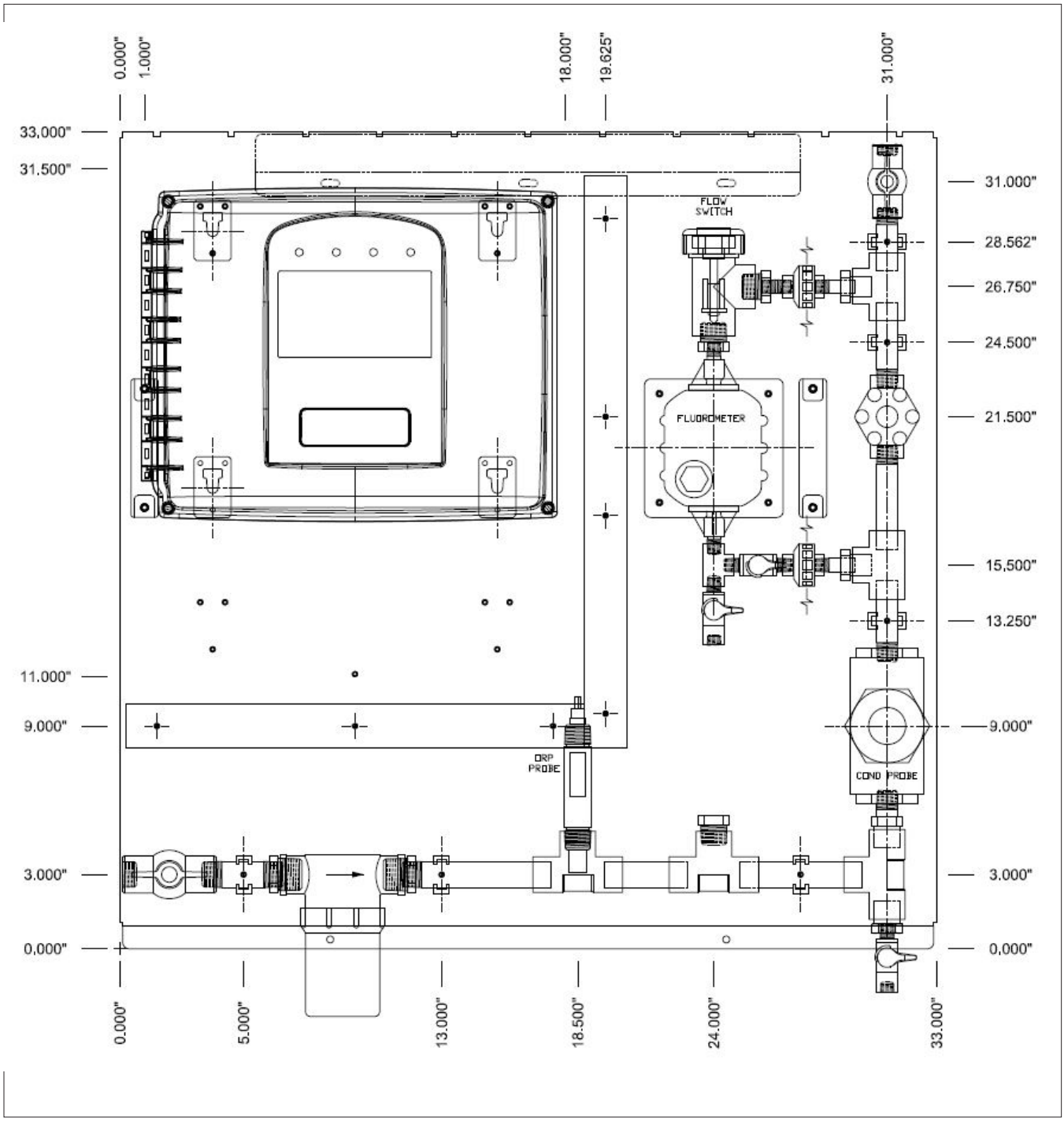
Support

If you have any questions, please contact your Nalco representative. In North America, you can contact the Nalco Global Equipment Solutions Help Desk at 1-800-323-8483.

To Order

Contact your local Nalco Sales Engineer.

General Arrangement Drawing



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