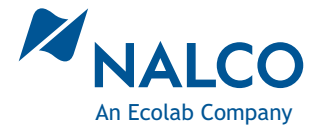


# 3D TRASAR™ Solid Cooling Water Analyzer Panel

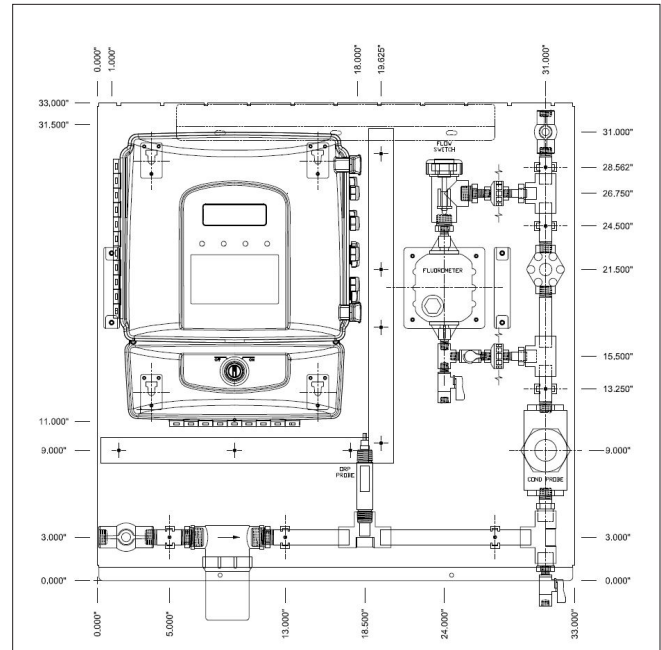


Specification SPEC-629

## Description

The Nalco 3D TRASAR Solid Cooling Water Analyzer Panel is the main component of the 3D TRASAR Solid Cooling Water System.

- Analyzes and controls feed of 3D TRASAR Solid 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
- Controls and monitors the 3D TRASAR Solid inhibitor dispenser
- Logs and sends monitored and calculated data to the Nalco server, website and the Nalco 360 remote 24/7 team of experts

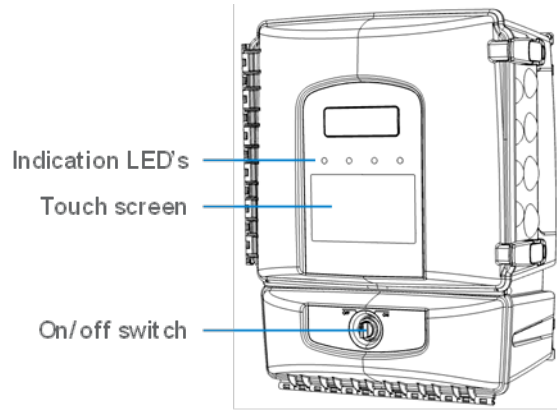


## 3D TRASAR Analyzer Panel Specifications

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 Solid Cooling Water Controller

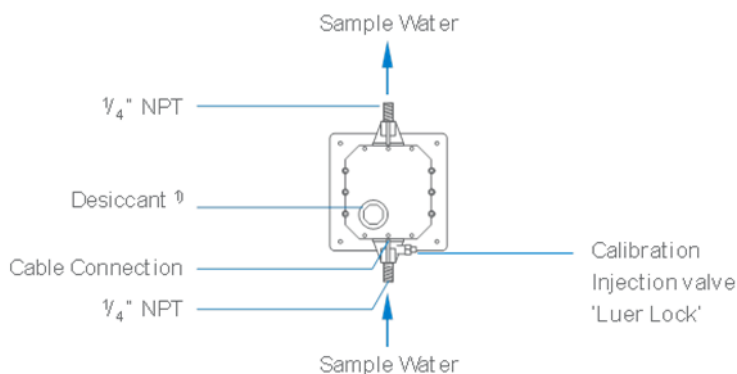
- Displays measured and calculated parameters
- Controls external chemical dosing pumps and blow down valve.
- Logs readings and alarms.
- Sends data via a built in wireless gateway to the Nalco server
- Configuration is downloaded from my.nalco.com, USB stick, or created via touch screen



Specification	Details
Electrical power	85...250 Vac, 50/ 60 Hz, Max.1560 VA (14.2 A @110 Vac, 6.8 A@230 Vac) (Controller is supplied with a prewired power cord)
Analog inputs	8, non-isolated, 4...20mA or 0...10V. For voltage inputs, the input impedance is 240 Ω for mA and 110K Ω for V.
Digital inputs	16, contact or open collector NPN transistor /FET (5mA sink, 24Vdc, signal to ground): 8: e.g. flow switch, remote start/stop (interlock) 4: 0...100 Hz, e.g. water meter pulse 4: 0...1000 Hz, e.g. flow meter
ORP Inputs	2, smart sensor, shield
Conductivity inputs	2, Each input can be temperature compensated (user selectable). 1: Inductive, toroidal, 2 coils, smart sensor, PT1000, range 500...2,000,000 μS/cm. 1: Contacting, smart sensor, range 0...5,000 μS/cm.
Temperature inputs	6, non-isolated, 4-wire, 1000Ω, platinum RTD (PT1000). Range: -18...427°C, 0...800°F.
Control relay outputs	8, SPDT (NO/NC), mechanical, max. 250Vac, 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	8, non-isolated, self-powered, 4-20 mA. (<600 Ω). For PID control or monitoring of measurements in DCS.
24Vdc power supply	Regulated, max. 2.5A.
Enclosure	NEMA 4, IP65, 4...49°C, 40...120°F, Relative Humidity 0-95% non-condensing, password protected.
Communications	3x Ethernet ports 1x USB for memory stick. 1x built-in wireless gateway, GSM/GPRS, CDMA, 3G, security via VPN firewall.

### 3D TRASAR 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



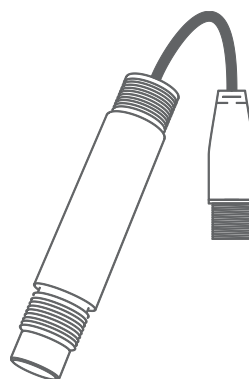
Specification	Details
TRASAR #2 and Tagged Polymer measurements	Range: 13 ppb...15 ppm as TRASAR #2 or Tagged Polymer (e.g. 1.3 ppm...1500 ppm inhibitor if Product Factor is 100) Accuracy: +/- 5% of reading
Bio-reporter and Bio-product measurements	Range: 0...30 0ppb Accuracy: +/- 5% of reading
Turbidity 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, Bio-reporter and Bio-product
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 Probe

**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)

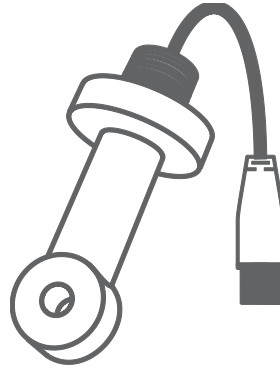


Specification	Details
Range	pH: pH 0...14, ORP: 0...1000 mV temperature: 0...100°C, 32...212°F
Calibration	pH: 2-point with pH 7 and 10 or pH 4 and 7 + 1 point inline ORP: 2-point with 200 mV and 600 mV + 1 point inline
Accuracy	pH 0.05, ORP: +/- 5% of reading
Sample Pressure	0...10.3 bar, 0...1500 psi @ 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), sensor: glass
Max. cable length	TBD

## Conductivity Probe

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:  $\mu\text{S}/\text{cm}$  (micro Siemens per cm) contains an internal PT1000 temperature sensor for temperature compensation.

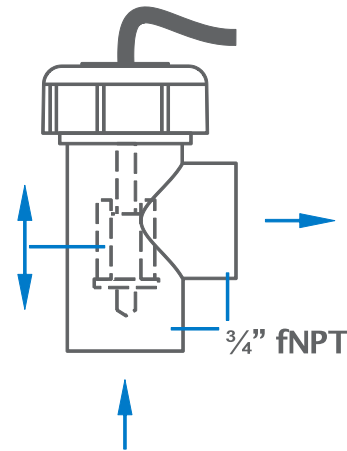


Specification	Details
Range	500...2,000,000 $\mu\text{S}/\text{cm}$ , 0...100°C, 32...212°F
Calibration	2-point and 1-point calibration
Accuracy	+/- 5% or reading
Sample Pressure	Max. 6.9 bar @35°C, 100 psi @95°F
Sample Temperature	0...100°C, 32...212°F @ pressure
Wetted materials	Body: PPO-PS blend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

## Flow Switch

Type: Reed contact switch

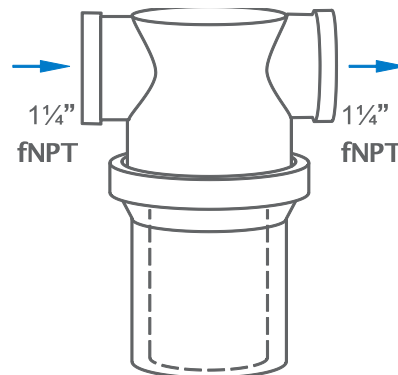
Magnetic float is pushed upwards by sample water flow. Above a certain flow (fixed), the reed contact output remains closed. Used for determining if sample water is representative of system water.



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)



## To Order

Contact your local Nalco Sales Engineer.

## 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.

## Spare Parts and Accessories

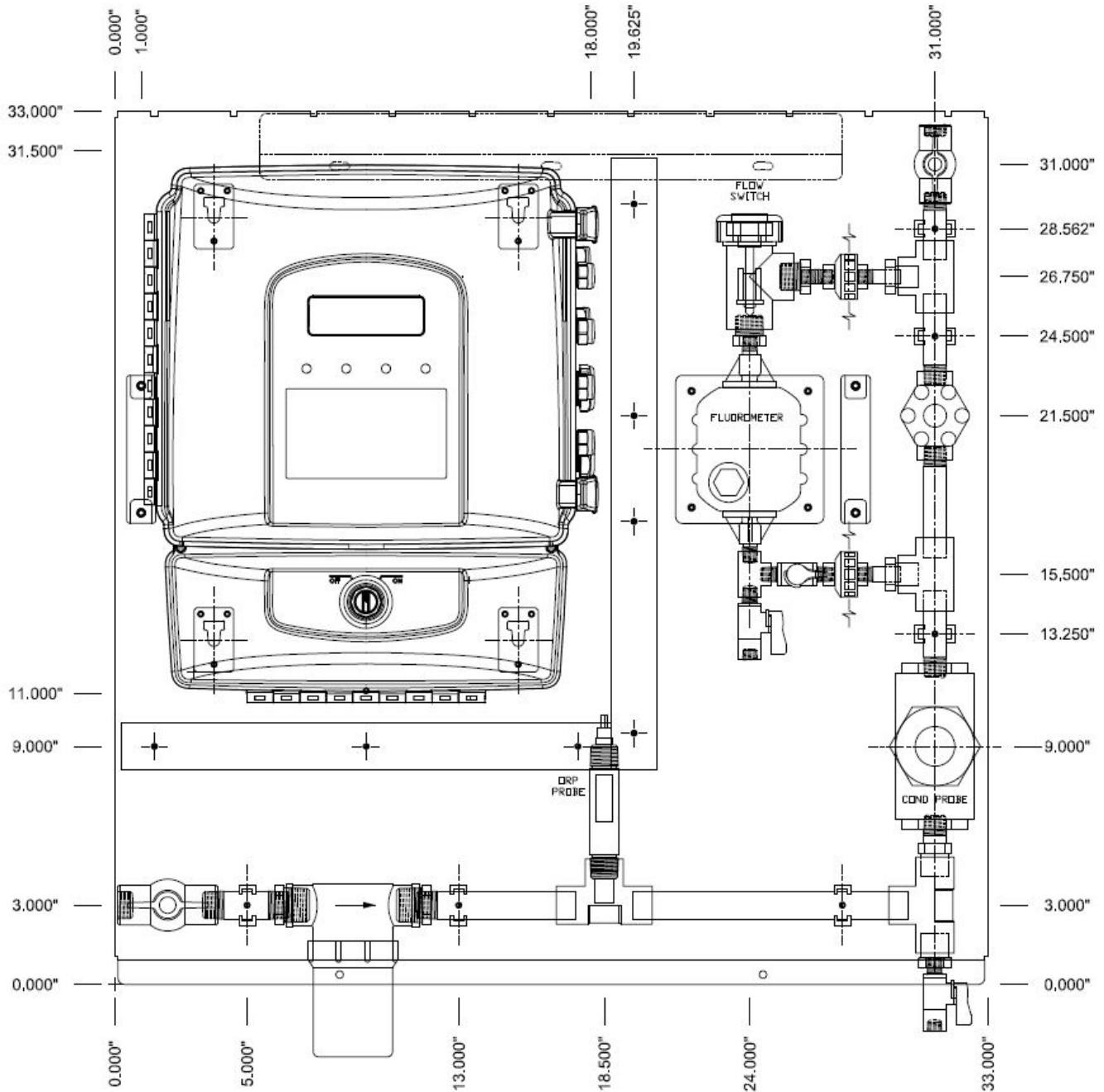
### 3D TRASAR Fluorometer and Sensors

Material	Description
060-TR5220.88	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 Solids 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

# General Arrangement Drawing



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