DATA SHEET

AL30S Laser

Access Laser AL30S WCCL is a compact invar-stabilized, fully sealed 30-Watt CO_2 waveguide laser. Its easy-to-integrate compact design making it the OEM laser of choice for high quality laser processing of many materials, including paper, plastics, wood, rubber, leather, cloth and more. Our unique invar-stabilized design ensures reliable laser processing with high power and wavelength stability.

FEATURES

Excellent Beam Quality
> 30 W, $M^2 \leq 1.1$

INVAR Stabilized Design
± 2 % Power Stability
± 1 % With Line Tracker (-T)

Low maintenance fan- or water-cooled design

SPECIFICATIONS

Laser Power

Wavelength	9.3, 10.2 or 10.6 µm
CW Power	30 W
CW Power Stability[*1]	± 2 %
	± 1 % with Line Tracker[*2]
Duty Cycle	0 – 100 %
Pulse Mod. Frequency	0 – 100 kHz[*3]
Rise and Fall Time	200 µs
Peak Power	30 W

Beam Characteristics

Beam Waist Diameter[*4]	2.4 mm
Waist Location	Output Coupler
Mode Quality	$M^2 \leq 1.2$
Full Divergence Angle	5.5 mrad
Polarization	≥ 50:1 Linear Vertical

Heat & Cooling

Heat Dissipation	≤ 600 W
Cooling Requirement	Fan-Cooled (-FC) or Water-Cooled (-WC)
Working Temperature	5 – 40 ˚C

Water-Cooling

Storage Temp. Range	5 – 50 ˚C[*5]
Recommended Flow Rate	4.5 LPM
Max Pressure	10 bar
Required Chiller Stability	± 0.1 ˚C

Requirements & Maintenance

Supply Voltage	36 ± 0.5 V DC
Supply Current	16 ± 0.5 A DC

All specifications are subject to change without notice.
Average or pulsed power may exceed listed value.
[*1]Measured after 45 mins warm-up by: $(P_{max}-P_{min})/(P_{max}+P_{min})$.
[*2]Line Tracker can not be used in PWM mode.
[*3]Maximum electronic modulation frequency.
[*4]Beam diameter defined by D4σ.
[*5]Non-condensing condition.

ACCESS LASER
Member of the TRUMPF Group

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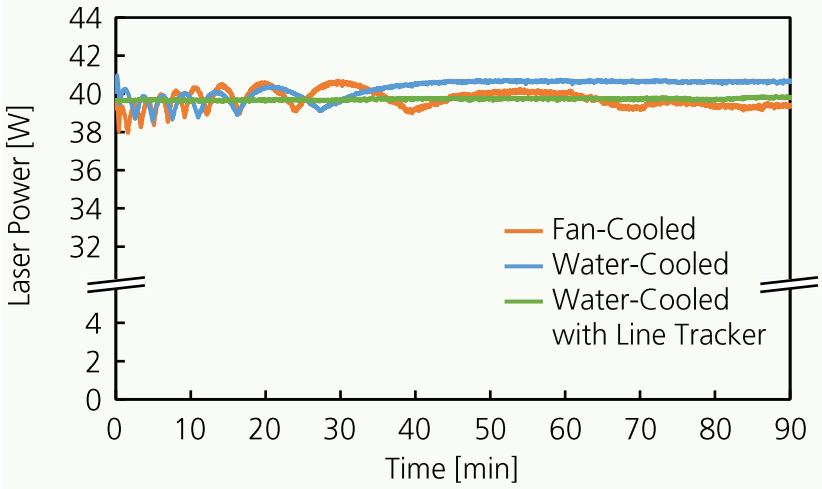
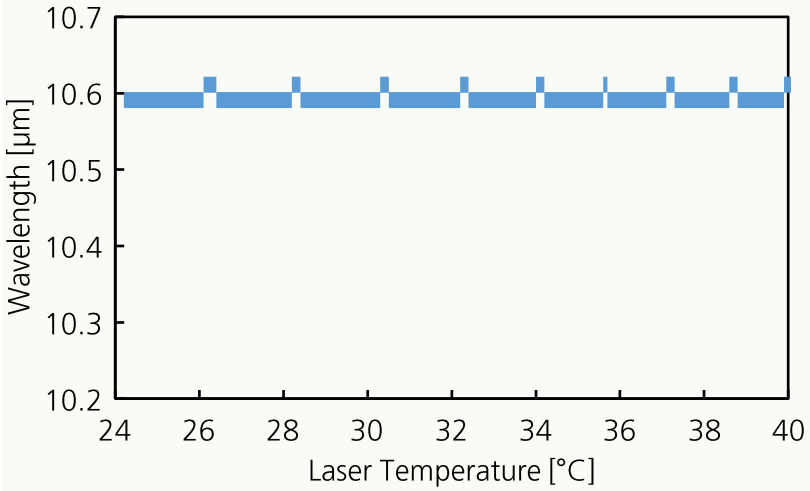
TYPICAL PERFORMANCE



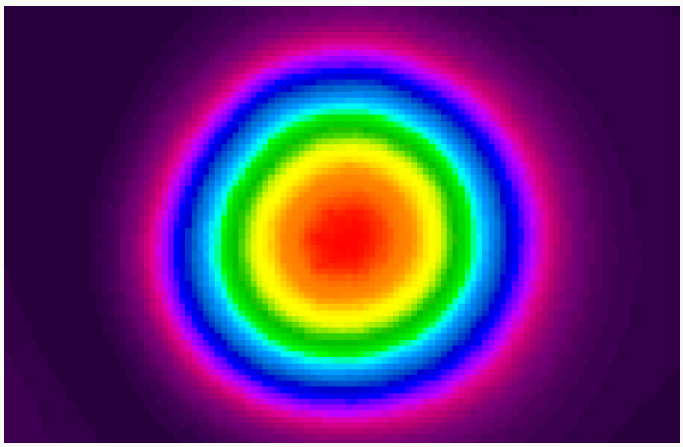
Power Stability

Output power over time from cold start of a fan- and water-cooled AL30S laser. Thermal expansion of the laser cavity causes power fluctuations during the first 30 to 45 min until the entire system reaches thermal equilibrium. Our Line Tracker compensates the thermal expansion and ensures power stability <1 % from cold start.



Wavelength Stability

Emission wavelength as a function of the laser temperature for a water-cooled AL30S laser after sufficient warm-up. Laser temperature control ensures emission on a single line (10P20) with a linewidth <100 kHz.



High Beam Quality

Intensity profile of the beam in a color depiction. The waveguide laser design ensures high beam quality with an $M^2 < 1.2$ and a beam waist diameter of 2.4 mm (D4σ) at the output coupler.

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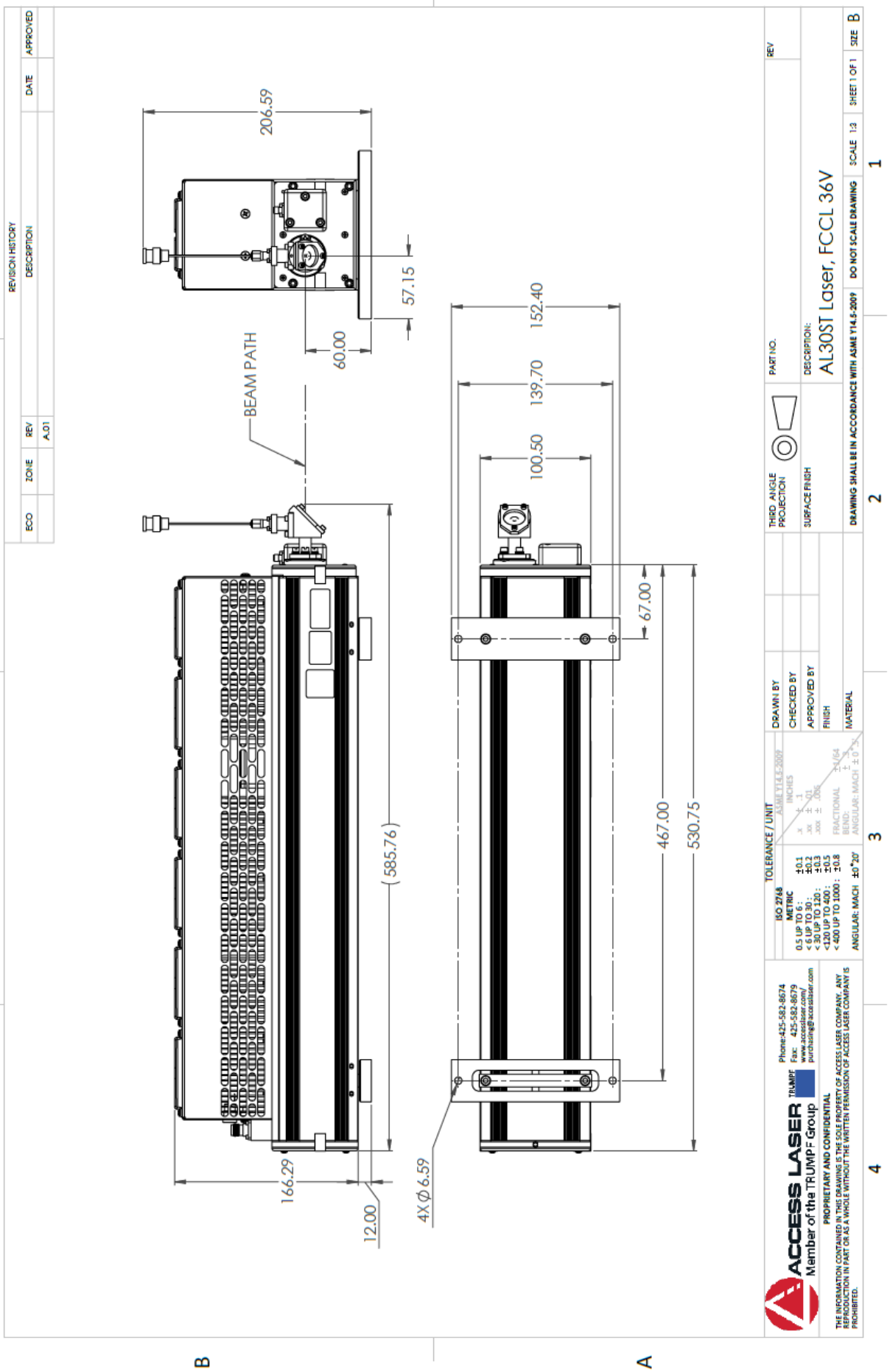
AL30ST-FC with Line Tracker



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AL30SG-WC with Grating