AOSense, Inc.
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Model #AOS-LRACK-XXXX series: Rack laser system

Rack-based laser systems for quantum research/applications

Built-to-order options:

- Laser optical systems customized to your specific atomic species and application requirements
    - Full optical table functionality in a 19″ rack including ECDLs, DBRs, lock modules, AOMs, and EOMs
    - Basic example: cooling/detection laser, repump laser, and ionization laser on fiber output. User provides modulation/stabilization – laser feedback ports and electronics provided.
    - Advanced example: multi-wavelength system with separate fiber outputs by function, including built-in AOMs and EOMs and laser frequency stabilization for an atomic clock or a quantum computer

- Control systems for AMO applications
    - Power, analog, and digital control signals in; amplified, agile RF out
    - Timing system operable as master or slave
    - Windows GUI device programming; Python interface over Ethernet

For more information contact us at sales@aosense.com

RF/timing controller frame 'standard' parameters	
Dimensions	2U rack-mount frame
Agile DDS frequency synthesis	Up to 8 channels
Fixed frequency synthesis	Customized, hyperfine transitions
Digital I/O (LVDS or LVTTL)	≈32 lines (differential) ≈64 lines (single-ended)
Arbitrary device SPI communication/control	Min. 8 ports, MUX
Analog Input	20 kHz, 8 channel differential inputs
Analog output (±10V)	4 channels
User interface / control GUI	Windows 7, 8, 10

Laser optical frame 'standard' parameters	
Dimensions	3U rack-mount frame
Laser output wavelengths	See ECDL datasheet for available wavelengths
Laser control and functionality	See ECDL and SILC datasheets
Inputs	Laser modulation (PZT/current/RF)
Outputs	Light in PM fiber Electronic monitor signals/status LEDs
Monitors	PZT monitor Error/ramp/current/modulation w/ servo Option Laser output LED
Typical atomic species	Rb, Cs, Ca, Sr, Yb$^+$, Ba$^+$,…ask!

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