



APPLICATIONS

- > Fast steering mirror
- > Point ahead mechanism
- > Line of sight stabilisation
- > Microscanning
- > Tracking
- > Fine pointing

KEY FEATURES

- > Compact size
- > High control bandwidth
- > Low power consumption
- > Large optical deflection angle > 8°
- > Eddy Current Positioning Sensor
- > Operating temperature range -55°C..+70°C

RELATED PRODUCTS

- > MCSA480
- > ECS45

AVAILABLE OPTIONS

- > Specific control loop calibration
- > Embedded position sensor

ANNOTATIONS

Performances measured in labs environment with +/- 10 % tolerance. A misused can lead to temporary or definitive alterations of properties. Contact CEDRAT TECHNOLOGIES prior using actuators under non standard technical conditions

(1) Low frequency < 10 Hz

(2) Peak to peak value, 140 mrad without position sensor, reduced to 70 mrad with position sensor option

(3) Resolution is only limited by the SNR of the amplifier and the measuring equipment resolution. In closed loop with Eddy Current Sensor (ECS)

(4) Gain value measured in quasistatic condition @ 0.05 Hz

(5) Loaded with 31 mm diameter SiC mirror and controlled with MCSA480

(6) @-3 dB and loaded with a 31 mm diameter SiC mirror

(7) Loaded with 31 mm diameter SiC mirror, excluding wires

(8) See mirror ICD

(9) Closed-loop system including ECS45 conditioner and MCSA480 controller (power electronic + control algorithm)

PARAMETER	TYPICAL VALUE	UNIT
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> Quasistatic performances ⁽¹⁾

Max Angular stroke ⁽²⁾	140	mrad
Angular position to current ratio ⁽⁴⁾	11.8	mrad/A
Resolution ⁽³⁾	< 20	µrad
Linearity ⁽³⁾	<0.1	%

> Dynamic performances

Loaded resonance frequency ⁽⁵⁾	100	Hz
Control Bandwidth ⁽⁶⁾⁽⁹⁾	320	Hz
0.5 mrad Settling time @ +/-5% ⁽⁷⁾⁽⁹⁾	< 15	ms
0.5 mrad rising time 10%-90% ⁽⁷⁾⁽⁹⁾	< 2	ms

> Mirror substrates and coatings options

Substrates options	SiC and SiO2
Coating options	Silver and Dielectric coating on SiC substrate Custom substrate & Coating on demand

Substrate size / clear aperture

SiO2 substrate	15mm diameter / CA > 13mm
SiC substrate	31mm diameter / CA > 28mm
Coating options	Silver and Dielectric coating on SiC substrate UV Enhanced Aluminum on SiO2 substrate
Reflectivity on SiO2 substrate	> 85% from 300nm to 700nm
Reflectivity on SiC substrate	with silver coating > 95% fom 450nm to 2300nm with high power laser dielectric coating > 99.5% at 1 064 nm

Wavefront quality

SiO2 substrate	λ/10 at 633 nm
SiC substrate	λ/20 at 1 600 nm

> Driving

Max driving voltage range	+/- 48	V
Max driving current range	+/- 10	A
Resistance @ 20 °C per axis	0.4	Ohm
Inductance @ 20 °C per axis	0.6	mH

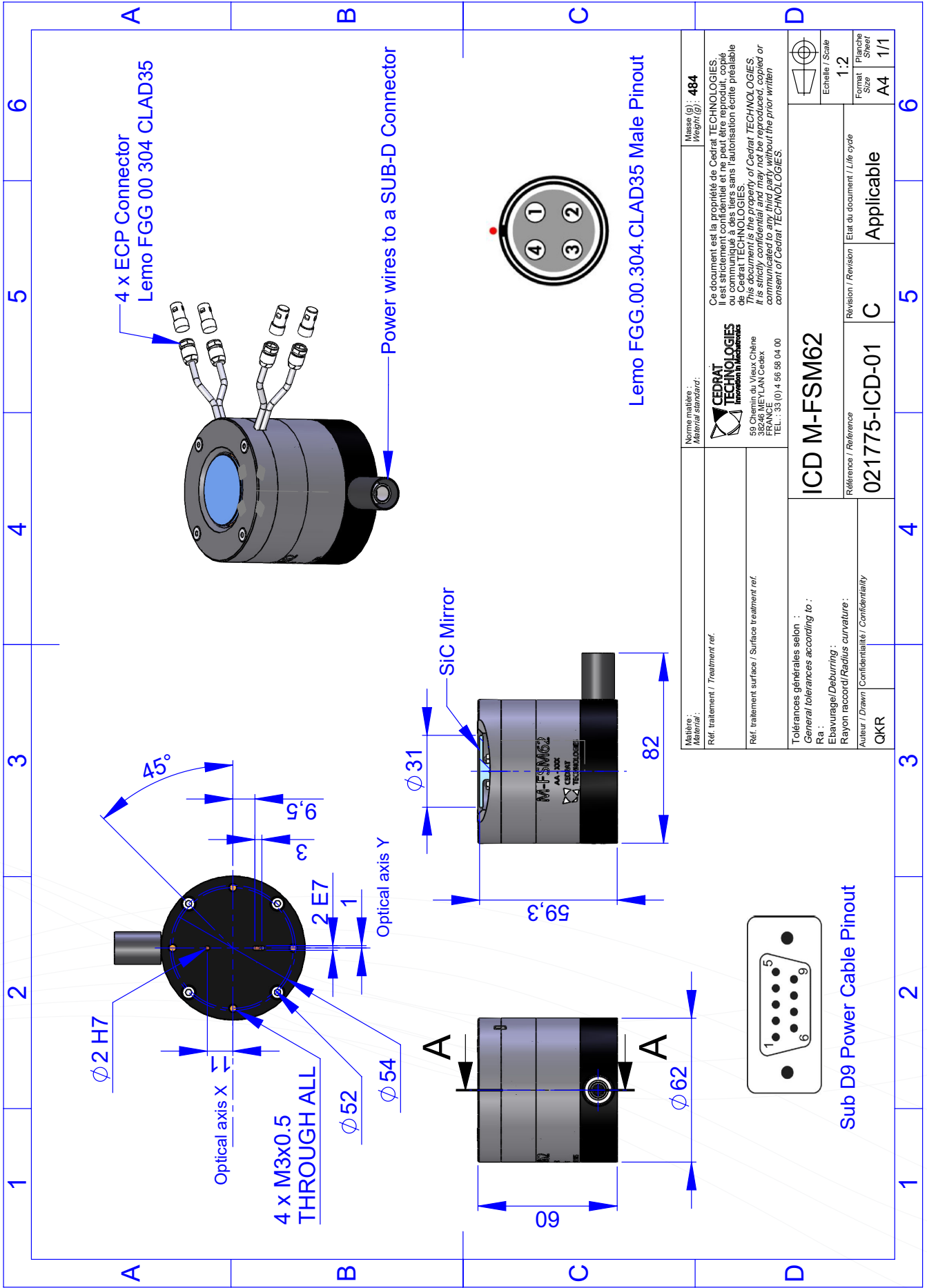
> Dimensions & interfaces ⁽⁸⁾

Height	60	mm
Diameter	62	mm
Mass	>500	g

> **Mechanical interfaces** see icd

> **Optical interface ⁽⁸⁾** see icd

> **Electrical interfaces** see icd



<p>Matière : Material : Norme matière : Material standard : Masse (g) : 484 Weight (g) :</p>		<p>Ce document est la propriété de CEDRAT TECHNOLOGIES. Il est strictement confidentiel et ne peut être reproduit, copié ou communiqué à des tiers sans l'autorisation écrite préalable de CEDRAT TECHNOLOGIES. This document is the property of CEDRAT TECHNOLOGIES. It is strictly confidential and may not be reproduced, copied or communicated to any third party without the prior written consent of CEDRAT TECHNOLOGIES.</p>	
<p>Réf. traitement surface / Surface treatment ref.</p>		<p>ICD M-FSM62</p>	
<p>Réf. traitement surface / Surface treatment ref.</p>		<p>021775-ICD-01</p>	
<p>Tolérances générales selon : General tolerances according to :</p>		<p>Etat du document / Life cycle Revision / Revision : C</p>	
<p>Ra :</p>		<p>Applicable</p>	
<p>Rayon raccord / Radius curvature :</p>		<p>Format / Sheet : A4 / 11</p>	
<p>Auteur / Drawn : Confidentialité / Confidentiality</p>		<p>Planche / Sheet : 1/1</p>	
<p>QKR</p>		<p>1:2</p>	