Elitech LMG-10

Elitech LMG-10 Digital Manifold Gauge System User Manual

Model: LMG-10, LMC-100A+, ILD-200
Brand: Elitech

1. Introduction

This user manual provides comprehensive instructions for the Elitech LMG-10 Digital Manifold Gauge, LMC-100A+ Refrigerant Scale, and ILD-200 Infrared Leak Detector. This integrated system is designed for HVAC professionals to accurately measure pressure, temperature, refrigerant weight, and detect refrigerant leaks in HVAC/R systems. Please read this manual thoroughly before operation to ensure proper use and safety.

Figure 1: Complete Elitech LMG-10 Digital Manifold Gauge System including the manifold, refrigerant scale, leak detector, and hoses.

2. Safety Information

Always observe the following safety precautions to prevent injury or damage to the equipment:

- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when handling refrigerants.
- Ensure proper ventilation when working with refrigerants.
- Do not expose the devices to extreme temperatures, humidity, or corrosive environments.
- Do not attempt to disassemble or modify the equipment. Refer all servicing to qualified personnel.
- Verify that all connections are secure before applying pressure or vacuum.
- Use only the specified power sources and accessories.
- Keep the equipment away from children and unauthorized personnel.

3. Package Contents

Verify that all items are present in the package:

- Elitech LMG-10 Digital Manifold Gauge
- Elitech LMC-100A+ Refrigerant Scale
- Elitech ILD-200 Infrared Leak Detector
- Charging Hoses (Red, Yellow, Blue)
- Temperature Clamps (2)
- User Manual (this document)
- Carrying Case (for LMG-10 and accessories)

Figure 2: Elitech LMG-10 Digital Manifold Gauge, temperature clamps, and protective carrying case.

4. Product Overview

4.1 Elitech LMG-10 Digital Manifold Gauge

The LMG-10 is a robust digital manifold gauge designed for precise pressure and temperature measurements in HVAC/R systems. It supports 88 types of refrigerants and automatically calculates superheat and subcooling.

- **Display:** Large LCD for clear readings.
- **Refrigerant Support:** Pre-programmed with 88 common refrigerants.
- **Units:** Supports psi, kg/cm², kPa, MPa, bar for pressure; °F/°C for temperature.
- **Features:** Temperature compensation, auto-off function.

Figure 3: Key features of the Elitech LMG-10 Digital Manifold Gauge, highlighting its capabilities.

4.2 Elitech LMC-100A+ Refrigerant Scale

The LMC-100A+ is a high-capacity refrigerant charging scale, essential for accurate refrigerant charging and recovery. It offers high precision and multiple unit options.

- **Capacity:** Up to 220 lbs (100 kg).
- **Accuracy:** ±0.05% readings +10g.
- **Units:** Kg, Lb, Oz.
- **Features:** Long battery life (up to 40 hours), auto shut-off after 10 minutes of inactivity.

Figure 4: The Elitech LMC-100A+ Refrigerant Scale, emphasizing its extended battery life and automatic power-saving function.

Figure 5: The Elitech LMC-100A+ Refrigerant Scale actively measuring refrigerant weight, showing a clear digital display.

4.3 Elitech ILD-200 Infrared Leak Detector

The ILD-200 is an advanced infrared refrigerant leak detector offering superior sensitivity and faster response times compared to traditional heated diode detectors.

- **Detection Method:** Infrared sensor technology.
- **Sensitivity:** Max 0.1 oz/yr.
- **Response Time:** Immediate.
- **Standards:** Meets EN14624, SAE-162, SAE-2791, and SAE-2913 standards.
- **Display:** 2.8" large screen with peak display.

Figure 6: Elitech ILD-200 Infrared Leak Detector, detailing its physical dimensions and key technical specifications.

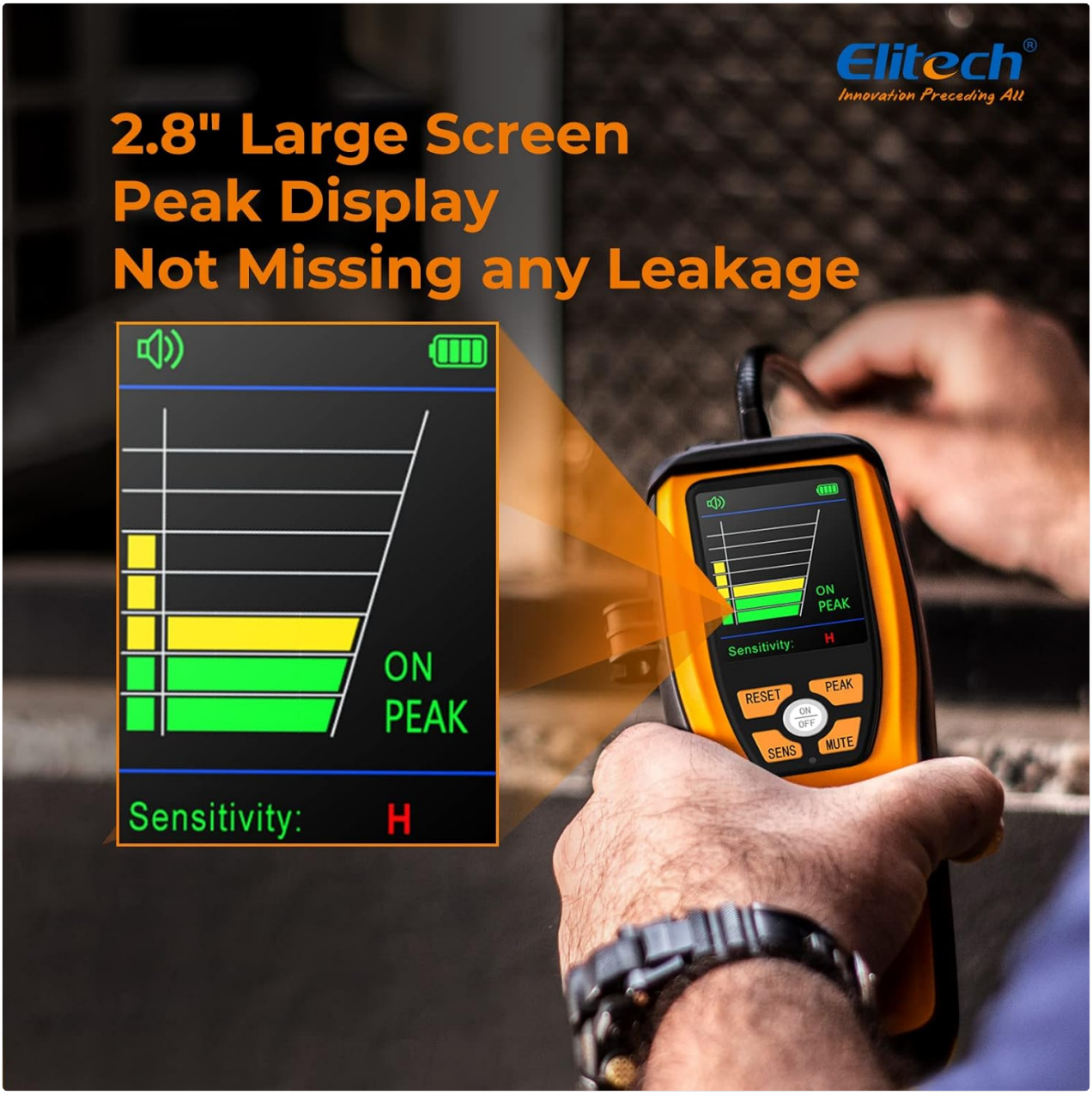


Figure 7: Close-up of the Elitech ILD-200's large display, showing its sensitivity indicator and peak leak detection feature.

4.4 Charging Hoses

The included charging hoses are designed for high-pressure refrigerant applications, ensuring safe and efficient transfer.

- **Working Pressure:** 800 PSI.
- **Burst Pressure:** 4000 PSI.
- **Colors:** Red, Yellow, Blue for easy identification of high-side, low-side, and service ports.

Figure 8: The set of red, yellow, and blue charging hoses, indicating their working and burst pressure capabilities.

5. Setup

5.1 Initial Setup of LMG-10 Digital Manifold Gauge

1. **Battery Installation:** Open the battery compartment on the back of the LMG-10 and insert the required batteries (refer to specifications for type).
2. **Power On:** Press the power button to turn on the device.
3. **Unit Selection:** Use the "MODE" button to cycle through pressure and temperature units. Use the arrow buttons to select desired units (e.g., psi, °F).
4. **Refrigerant Selection:** Press the refrigerant selection button (if available, or cycle through modes) to choose the appropriate refrigerant type for your system.
5. **Zeroing Pressure:** With all hoses disconnected and valves closed, press the "ZERO" button to zero the pressure readings.

5.2 Initial Setup of LMC-100A+ Refrigerant Scale

1. **Battery Installation:** Install batteries into the scale's remote display unit.
2. **Placement:** Place the scale on a flat, stable surface.
3. **Power On:** Press the "POWER" button on the remote display.
4. **Unit Selection:** Press the "UNIT" button to select the desired weight unit (Kg, Lb, or Oz).
5. **Zeroing Scale:** Ensure nothing is on the scale platform, then press the "Z/T" (Zero/Tare) button to zero the reading.

5.3 Initial Setup of ILD-200 Infrared Leak Detector

1. **Battery Installation:** Open the battery compartment and insert the specified battery (e.g., 3.7V 3000mAh).
2. **Power On:** Press and hold the power button until the device turns on. Allow a brief warm-up period.
3. **Sensitivity Adjustment:** Use the "SENS" button to cycle through sensitivity levels (e.g., H for High, M for Medium, L for Low) based on the expected leak size.

6. Operating Instructions

6.1 Using the LMG-10 Digital Manifold Gauge

1. **Connect Hoses:**
    - Connect the blue hose to the low-side service port of the HVAC system and the blue port on the LMG-10.
    - Connect the red hose to the high-side service port of the HVAC system and the red port on the LMG-10.
    - Connect the yellow (service) hose to the center port of the LMG-10. This hose will be used for vacuum pump or refrigerant tank connections.
2. **Attach Temperature Clamps:** Securely attach the temperature clamps to the suction line (low-side) and liquid line (high-side) of the system to measure pipe temperatures for superheat/subcooling calculations.
3. **Readings:** Once connected, the LMG-10 will display real-time pressure and temperature readings. Superheat and subcooling values will be calculated automatically based on the selected refrigerant.
4. **Vacuuming:**
    - Connect the yellow hose to a vacuum pump.
    - Open both high and low-side valves on the LMG-10.
    - Start the vacuum pump and monitor the vacuum reading on the LMG-10.
    - Once the desired vacuum level is reached, close both valves on the LMG-10 and turn off the vacuum pump.
5. **Charging/Recovery:**
    - Connect the yellow hose to the refrigerant tank (for charging) or recovery machine (for recovery).
    - Use the LMC-100A+ scale to monitor the refrigerant weight.
    - Open the appropriate valve(s) on the LMG-10 to allow refrigerant flow.
    - Monitor pressure and temperature readings during the process.

6.2 Using the LMC-100A+ Refrigerant Scale

1. **Place Tank:** Place the refrigerant tank securely on the center of the scale platform.
2. **Tare Weight:** Press the "Z/T" button to tare the weight of the tank, setting the display to zero. This allows you to measure only the amount of refrigerant added or removed.
3. **Monitor Weight:** As refrigerant is charged or recovered, the display will show the net change in weight.
4. **Hold Function:** Some models may have a "HOLD" button to freeze the current reading.

6.3 Using the ILD-200 Infrared Leak Detector

1. **Power On and Warm-up:** Turn on the ILD-200 and allow it to warm up as indicated by the device (usually a few seconds).
2. **Select Sensitivity:** Choose the appropriate sensitivity (H, M, L) based on the suspected leak size and environment. Start with high sensitivity for general scanning.
3. **Scan Area:** Slowly move the probe tip around suspected leak points (e.g., fittings, valves, coils) at a rate of approximately 1-2 inches per second.
4. **Detecting Leaks:** When a leak is detected, the device will emit an audible alarm and/or visual indication (e.g., LED bar graph, display reading). The alarm frequency or intensity typically increases with the concentration of refrigerant.
5. **Pinpointing Leaks:** Once a leak is indicated, move the probe away and then slowly approach the area again to pinpoint the exact source. Reduce sensitivity if the alarm is constant and overwhelming.
6. **Reset Function:** Use the "RESET" button to clear the current reading and re-zero the sensor in a clean air environment.
7. **Mute Function:** Use the "MUTE" button to silence the audible alarm if desired.

7. Maintenance

7.1 General Care

- Keep all components clean and free from dirt, dust, and moisture.
- Wipe surfaces with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- Store the equipment in its protective carrying case when not in use.

7.2 Battery Replacement

- **LMG-10:** Replace batteries when the low battery indicator appears on the display. Refer to the battery compartment for specific battery type (e.g., AA, AAA).
- **LMC-100A+:** Replace batteries in the remote display unit when the battery indicator is low.
- **ILD-200:** Replace the internal rechargeable battery or standard batteries as needed. Ensure proper polarity.

7.3 Sensor Maintenance (ILD-200)

The infrared sensor in the ILD-200 is generally maintenance-free. However, avoid exposing the sensor tip to excessive dirt or oil. If performance degrades, contact Elitech support.

8. Troubleshooting

Problem	Possible Cause	Solution
LMG-10 does not power on.	Dead or incorrectly installed batteries.	Check battery polarity; replace batteries.
Inaccurate pressure readings on LMG-10.	Gauge not zeroed; sensor contamination; faulty connection.	Zero the gauge before use; ensure clean connections; check for leaks in hoses.
LMC-100A+ scale shows "Err" or unstable readings.	Uneven surface; overloaded; battery low; interference.	Place on a flat, stable surface; ensure weight is within capacity; replace batteries; move away from strong electromagnetic fields.
ILD-200 constantly alarms or gives false positives.	High background refrigerant concentration; sensor contaminated; sensitivity too high.	Move to a clean air environment and reset; clean probe tip; reduce sensitivity.
ILD-200 does not detect leaks.	Low sensitivity; sensor failure; battery low.	Increase sensitivity; replace battery; contact support if sensor is suspected faulty.

9. Specifications

Component	Specification	Value
LMG-10 Digital Manifold Gauge	Supported Refrigerants	88 types
	Pressure Units	psi, kg/cm², kPa, MPa, bar
	Temperature Units	°F/°C
	Battery Life	Up to 200 hours
	Features	Superheat/Subcooling auto-calc, Temp Compensation, Auto-off
LMC-100A+ Refrigerant Scale	Capacity	220 lbs (100 kg)
	Accuracy	±0.05% readings +10g
	Weight Units	Kg, Lb, Oz
	Battery Life	Up to 40 hours
ILD-200 Infrared Leak	Max Sensitivity	0.1 oz/yr
	Response Time	Immediate
	Battery	3.7V 3000mAh

Detector Component	Specification	Value
	Standards Met	EN14624, SAE-162, SAE-2791, SAE-2913
	Display	2.8" Large Screen Peak Display
Charging Hoses	Working Pressure	800 PSI
	Burst Pressure	4000 PSI
General Product Dimensions	Product Dimensions	11 x 8 x 14 inches
	Item Weight	1.1 Pounds
	Material	Nylon, Polypropylene, Rubber

10. Warranty and Support

Elitech provides dedicated customer service and technical support for its products. For any inquiries, technical assistance, or warranty claims, please contact Elitech's local team.

- **Customer Service:** Available 24/7.
- **Technical Support:** Available for product operation and troubleshooting.
- **Warranty Information:** Refer to the product packaging or Elitech's official website for detailed warranty terms and conditions.
- **Contact Information:** Visit the official Elitech website or refer to the contact details provided with your product for the most up-to-date support channels.

Documents - Elitech – LMG-10

[pdf] User Manual

30610001468 LMG 10 V1 0 20210611 10 new manuals Elitech Technology Inc Digital Manifold User Manual drive google file d 1SqX6jelvPHODdbsMFfBcvWlwufT4QYPh view usp sharing |||

...

lang: score:19 filesize: 1.8 M page_count: 11 document date: 2021-07-01


Certificate – Сертификат – 證明書 – Certificat – 증명서 – شهادة

Form QAT_10-M05, version 00, effective since March 25th, 2020

Certificate of Compliance

No. 3J210811.JJET521

Test Report / Technical Construction File no. JIGT-210805396BE

Certificate's Holder: Jiangsu Jingchuang Electronics Co., Ltd. The third Industrial Park, 21 Zhujiang East Road, High-tech Industrial Development ZoneXuzhou, Jiangsu CHINA

Certification ECM Mark:

Product: Manifold Gauge

Model(s): LMG-10, MS-1000

Verification to: Standard: EN 61326-1:2013

related to CE Directive(s): 2014/30/EU (Electromagnetic Compatibility)

Remark: This document is been issued on a voluntary basis and upon request of the manufacturer. It is our opinion that the technical documentation received from the manufacturer is satisfactory for the requirements of the ECM regulation mark. The conformity mark should correctly affixed on the products according to the ECM regulation about its release and its use.

Additional information and clarification about the issuance:

The manufacturer is responsible for the CE-marking process; and if necessary, must refer to a Notified Entity. This document has been issued on the basis of the regulation on ECM. Voluntary Mark, for the certification of products, RG01_E.qm rev.3 available on www.entecerma.it

Issuance date: 11 August 2021

Expiry date: 10 August 2026

Reviewer: Technical expert Amanda Payne

Approver: ECM Service Director Luca Tedioni

Ente Certificazione Macchine Srl

Via Co' Bella, 243 – Loc. Castello di Serravalle – 40053 Valsamoggia (BO) - ITALY

☎ +39 051 6705141 🖷 +39 051 6705156 ✉ info@entecerma.it 🌐 www.entecerma.it

[pdf] Documentation Decleration of Conformity Test Report

UT10 rtific Ce фикат ерти te C a Certific Elitech asia LMG 10 MS 1000 Verification to Standard EN 61326 1 2013 related CE Directive s 2014 30 EU Electromagnetic Compatibility Remark This document has Manifold Gauge ECM Certification UK elitech 2024 |||

Certificate C Certificat Form QAT_10-M05, version 00, effective since March 25th, 2020 Cer ... t ZoneXuzhou, Jiangsu CHINA European Conformity Type Approved Product: Model s : Manifold Gauge **LMG-10**, MS-1000 Verification to: Standard: EN 61326-1:2013 related to CE Directive s : 2014/30/EU...

lang:en score:18 filesize: 249.61 K page_count: 1 document date: 2021-12-14


Certificate – Сертификат – 證明書 – Certificat – 증명서 – شهادة

Form QAT_10-M05, version 00, effective since March 25th, 2020

Certificate of Compliance

No. 3J210811.JJET521

Test Report / Technical Construction File no. JIGT-210805396BE

Certificate's Holder: Jiangsu Jingchuang Electronics Co., Ltd. The third Industrial Park, 21 Zhujiang East Road, High-tech Industrial Development ZoneXuzhou, Jiangsu CHINA

Certification ECM Mark:

Product: Manifold Gauge

Model(s): LMG-10, MS-1000

Verification to: Standard: EN 61326-1:2013

related to CE Directive(s): 2014/30/EU (Electromagnetic Compatibility)

Remark: This document is been issued on a voluntary basis and upon request of the manufacturer. It is our opinion that the technical documentation received from the manufacturer is satisfactory for the requirements of the ECM regulation mark. The conformity mark should correctly affixed on the products according to the ECM regulation about its release and its use.

Additional information and clarification about the issuance:

The manufacturer is responsible for the CE-marking process; and if necessary, must refer to a Notified Entity. This document has been issued on the basis of the regulation on ECM. Voluntary Mark, for the certification of products, RG01_E.qm rev.3 available on www.entecerma.it

Issuance date: 11 August 2021

Expiry date: 10 August 2026

Reviewer: Technical expert Amanda Payne

Approver: ECM Service Director Luca Tedioni

Ente Certificazione Macchine Srl

Via Co' Bella, 243 – Loc. Castello di Serravalle – 40053 Valsamoggia (BO) - ITALY

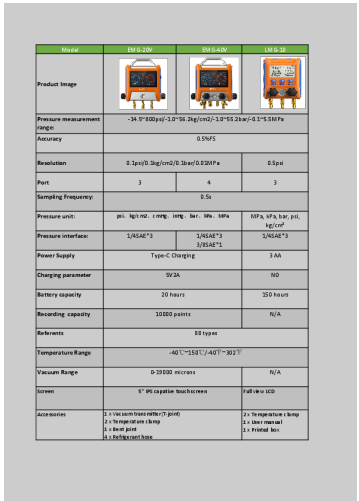
☎ +39 051 6705141 🖷 +39 051 6705156 ✉ info@entecerma.it 🌐 www.entecerma.it

[pdf] Documentation Decleration of Conformity Test Report

UT10 rtific Ce фикат ерти te C a Certific TKTechLMG 10 MS 1000 Verification to Standard EN 61326 1 2013 related CE Directive s 2014 30 EU Electromagnetic Compatibility Remark This document has Elitech LMG Manifold Gauge ECM Certification Elitech UKtktech vn UK srsltid AfmBOoprSzOtnbTgzYxzISbxgmtM9vgYGaTdjxDz1LVWTO t WZFUu2Q |||

Certificate C Certificat Form QAT_10-M05, version 00, effective since March 25th, 2020 Cer ... t ZoneXuzhou, Jiangsu CHINA European Conformity Type Approved Product: Model s : Manifold Gauge **LMG-10**, MS-1000 Verification to: Standard: EN 61326-1:2013 related to CE Directive s : 2014/30/EU...

lang:en score:12 filesize: 249.61 K page_count: 1 document date: 2021-12-14



Model	EMG-20V	EMG-40V	LMG-10
Product Image			
Pressure measurement range:	-14.5~800psi/-1.0~56.2kg/cm2/-1.0~55.2bar/-0.1~5.5MPa		
Accuracy	0.5%FS		
Resolution	0.1psi/0.1kg/cm2/0.1bar/0.01MPa		0.5psi
Port	3	4	3
Sampling Frequency:	0.5s		
Pressure unit:	psi、kg/cm2、cmHg、inHg、bar、kPa、MPa		kPa, kPa, bar, psi, kg/cm²
Pressure interface:	1/4SAE*3	1/4SAE*3 3/8SAE*1	1/4SAE*3
Power Supply	Type-C Charging		3 AA
Charging parameter	9V2A		N/A
Battery capacity	20 hours		150 hours
Recording capacity	30000 points		N/A
Referents	88 types		
Temperature Range	-40℃~150℃/-40℉~302℉		
Vacuum Range	0-19000 microns		N/A
Screen	5" IPS capsitive touchscreen		Full view LCD
Accessories	1 x Vacuum transmitter(T-joint) 2 x Temperature clamp 1 x Bent joint 6 x Refrigerant hose		2 x Temperature clamp 1 x User manual 1 x Printed box

[pdf] User Manual Accessories

Elitech Intelligent Manifold Product Comparison Chart Technology Inc Digital Products v 1621921705 cdn shopifycdn net s files 1 0015 6958 7264 |||

Model EMG-20V EMG-40V **LMG-10** Product Image Pressure measurement range: Accuracy -14.5-800psi/-1.0-56.2kg/cm2/-1.0-55.2bar/-0.1-5.5MPa 0.5 FS Resolution Port Sampling Frequency: Pressure unit: Pressure interface: Power Supply Charging parameter Battery capacity Recording capacity Referents Tem...

lang:nl score:12 filesize: 236.83 K page_count: 1 document date: 2021-05-25