



Ref: MDR/J4417a

28th August 2020

Caterquip Ventilation Ltd
Unit 1 Triumph House
Rigby Close
Heathcote Industrial Estate
Warwick
CV34 6TL

Dear Sirs

Re: Lion At Wendlebury, Wendlebury, OX25 2PW - Proposed Kitchen Supply & Extract Ventilation Systems - External Noise Assessment

Further to the receipt of your ventilation system design information, we are pleased to forward our noise assessment for the proposed kitchen supply & extract ventilation systems as follows:-

We visited the site on 24/8/20 to inspect the proposed location for the new kitchen ventilation system and measure the background noise level. The proposed ventilation systems will be located primarily within the existing single storey kitchen building, with the nearest residential window at approximately 30m distance from the fresh air intake and the extract discharge, the residential location being a house just beyond the northern site boundary. The kitchen operation is until 22.30hrs. At 22.30hrs the background noise at the northern site boundary close to the nearest house was 44.0dB LA90 1hr; the background level was created primarily by constant distant road traffic on the a A41 dual carriageway at approximately 250m and the M40 motorway at approximately 1000m. The background noise measurement was taken in satisfactory weather conditions, with no signification wind, no precipitation and no site plant noise.



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The instrumentation used for the measurements was a Rion NL-52 precision grade real time analysing sound level meter, serial number 00976220. The RTA was calibration checked before and after the measurements and seen to be correct. Please see attached current certification for the instrument.

The design criterion we advise to be applied to the proposed ventilation systems external noise measured outside the nearest residential windows is 10dB below the prevailing background LA90 1hr value of 44dB, equating to no more than 34dBA.

For the proposed kitchen extract ventilation system, the fan discharge silencer advised would be a circular silencer without pod, typically 500mm i/d x 650mm o/d x 1000mm long. The silencer should reduce the radiated discharge noise to approximately 24dBA @ 30m distance.

For the proposed kitchen supply air ventilation system, the fan intake silencer advised would be a circular silencer without pod, typically 400mm i/d x 550mm o/d x 400mm long. The silencer should reduce the radiated intake noise to approximately 21dBA @30m distance.

The combine extract discharge noise and supply intake noise at the nearest residential window equates to only 26dBA which is 18dBA below the measured background noise level at the site boundary, indicating that the proposed ventilation system externally radiated noise will be inaudible at the nearest residential property at 30m distance.

In addition, the fan and ductwork system should be supported off the building structure using anti-vibration mounts/hangers to avoid vibration transmission into the building structure.

We have attached our noise level design calculation sheets and supporting information for your reference.



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We trust the noise assessment meets with your approval and we remain.

Yours faithfully



M D Randall BSc(Eng) CEng MCIBSE MIOA





CERTIFICATE OF CALIBRATION



0653

Date of Issue: 04 September 2019

Certificate Number: UCRT19/1983

Issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages
Approved Signatory
K. Mistry

Customer ANV Measurement Systems
 Beaufort Court
 17 Roebuck Way
 Milton Keynes
 MK5 8HL

Order No. ANV MS HIRE
Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator
Identification

Manufacturer	Instrument	Type	Serial No. / Version
Rion	Sound Level Meter	NL-52	00976220
Rion	Firmware		2.0
Rion	Pre Amplifier	NH-25	76337
Rion	Microphone	UC-59	15747
Rion	Calibrator	NC-74	34536109
	Calibrator adaptor type if applicable		NC-74-002

Performance Class 1
Test Procedure TP 2.SLM 61672-3 TPS-49
Procedures from IEC 61672-3:2006 were used to perform the periodic tests.
Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02
If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003
Date Received 27 August 2019 ANV Job No. UKAS19/08564
Date Calibrated 04 September 2019

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	Dated	Certificate No.	Laboratory
	09 October 2018	UCRT18/2027	0653

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.



CERTIFICATE OF CALIBRATION	Certificate Number
	UCRT19/1983
UKAS Accredited Calibration Laboratory No. 0653	Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52
SLM instruction manual ref / issue		11-03
SLM instruction manual source	Manufacturer	
Internet download date if applicable		N/A
Case corrections available		Yes
Uncertainties of case corrections		Yes
Source of case data	Manufacturer	
Wind screen corrections available		Yes
Uncertainties of wind screen corrections		Yes
Source of wind screen data	Manufacturer	
Mic pressure to free field corrections		Yes
Uncertainties of Mic to F.F. corrections		Yes
Source of Mic to F.F. corrections	Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002	Yes	
Specified or equivalent Calibrator	Specified	
Customer or Lab Calibrator	Lab Calibrator	
Calibrator adaptor type if applicable	NC-74-002	
Calibrator cal. date	04 September 2019	
Calibrator cert. number	UCRT19/1974	
Calibrator cal cert issued by	0653	
Calibrator SPL @ STP	93.97	dB Calibration reference sound pressure level
Calibrator frequency	1001.86	Hz Calibration check frequency
Reference level range	25 - 130	dB

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
 Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	22.58	22.54	± 0.30 °C
Humidity	42.8	45.8	± 3.00 %RH
Ambient Pressure	100.38	100.35	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.			
Initial indicated level	94.0	dB	Adjusted indicated level
			94.0 dB
The uncertainty of the associated calibrator supplied with the sound level meter ±			0.10 dB

Self Generated Noise	This test is currently not performed by this Lab.		
Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device -				UR = Under Range indicated			
Weighting	A	C	Z				
	11.7	15.3	21.6	dB	dB	dB	dB
				UR	UR	UR	UR
Uncertainty of the electrical self generated noise ±				0.12	dB		

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

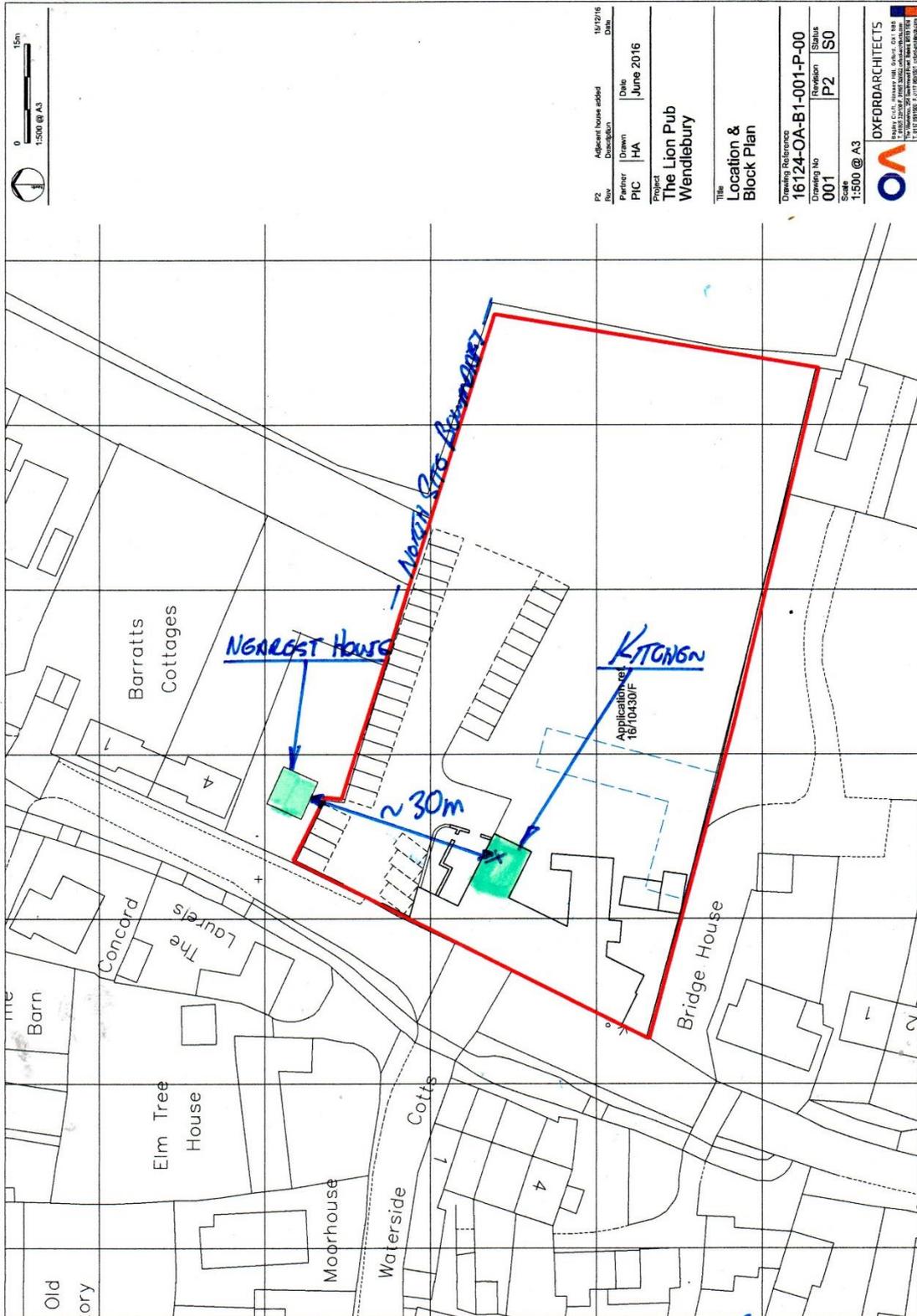
The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END

Calibrated by: B. Bogdan R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None



Rev	Adjunct house added	Date	15/10/16
P2	Description		
Partner	Drawn	Date	June 2016
PIC	HA		
Project			
The Lion Pub			
Wendlebury			
Title			
Location & Block Plan			
Drawing Reference			
16124-OA-B1-001-P-00			
Drawing No	Revision	Status	
001	P2	S0	
Scale			
1:500 @ A3			
OXFORDARCHITECTS			
FINDLEY COURT, WINDY HILL, OXFORD, OX1 1BS			
TEL: 01865 200000 FAX: 01865 200001			
WWW.OXFORDARCHITECTS.CO.UK			

Ref: MDR/16117



500 mm ø GigaBox centrifugal fan

EXTRACT AIR FAN

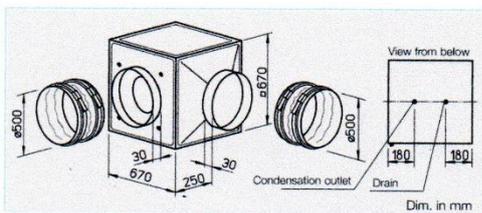
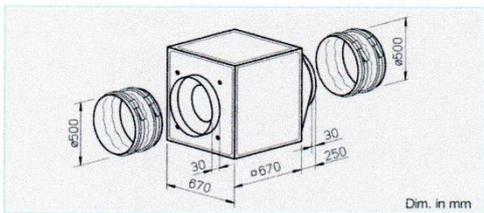
Helios

GB
Arbitrary installation position and flexible assembly by five possible discharge directions.

- ⊙ Axial disch.
- ⊙ Centrif. disch.
- Centrifugal on both sides, free discharge

GB T120
Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.

- ⊙ Centrif. disch.
- Centrifugal on both sides, free discharge



- **Special features of types GB T120**
 - Designed for moving dirty, humid and hot air volumes up to max. 120° C.
 - Motor located outside of air flow.
 - Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
 - Easily accessible motor and impeller unit, removable without disassembling the system components.
 - Inspection cover with handle, simply remove for cleaning and maintenance.
 - Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

- **Assembly GB T120**
Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).
- **Feature**
- **Assembly of types GB**
Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

- hood and external weather louvers (accessories).
- **Specification of both types**
- **Casing**
Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

- **Impeller**
Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.
- **Motor**
Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.
- **Electrical connection**
Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	full load	Current speed controlled	Wiring diagram	Maximum air flow temperature	Weight (net)	5 step transformer controller with mot. protect. unit	Full motor protection unit using the thermal contacts
		V m³/h	min⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	kg	Type Ref. no.	Type Ref. no.
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 500/4	5517	8321	1401	47	1.50	6.70	9.60	865	65	55	61 MWS 10 1946 TSW 10 1498 MW ¹⁾ 1579	
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 500/4/4	5518	8000/9200	1075/1340	45	0.97/1.45	1.60/2.80	2.90	867	50	50	57 RDS 7 1578 TSD 5,5 1503 MD 5849	
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 500/4 T120	5776	8345	1340	45	1.40	6.1	7.0	301	120	100	75 MWS 10 1946	
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 500/4/4 T120	5777	7320/8350	1120/1370	45	0.95/1.30	1.60/2.50	2.5	947	120	110	75 RDS 4 1316 TSD 3,0 1502 MD 5849	

¹⁾ incl. operation switch

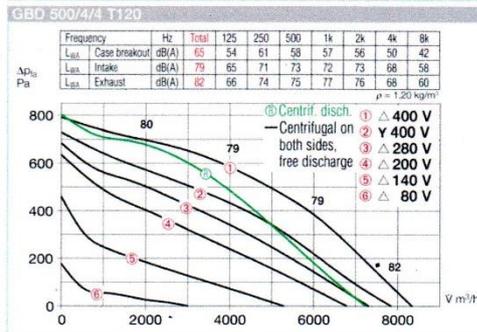
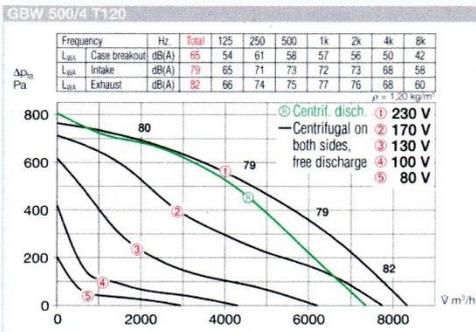
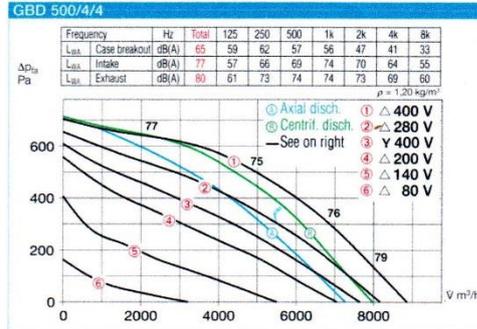
Ref: MW/JL417



Helios

EXTRACT AIR FAN

GigaBox centrifugal fan 500 mm ø



Box fans

Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:
 - Sound level case breakout
 - Sound level intake
 - Sound level exhaust
 In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.
SDD-U Ref. no. 5627

Wall bracket for wall mounting.
GB-WK 500 Ref. no. 5626

External weather louvers to cover exhaust opening.
GB-WSG 500 Ref. no. 5639

Outdoor cover hood for outdoor installation.
GB-WSD 500 Ref. no. 5748

On/Off and 2-speed switch for 3-phase Y/Δ motors.
Type DS 2² Ref. no. 1351

² full motor protection unit recommended. MD Ref. No. 5849

Specific accessories

for types GB
Condensate collector with condensate spigot for pipe connection.
GB-KW 500 Ref. no. 5644
 (Condensate collector with condensate spigot included in delivery with GB T120).

for types GB T120
Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).
GB-RA Ref. no. 9418

Information	Page
Information for planning	10 on
General techn. information, speed control	15 on
Accessory-Details	Page
Speed controller and full motor protection unit	525 on

Ref: MW/TAH17



CBM 10/10 6P RE VR 515 W IP55

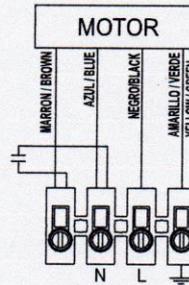
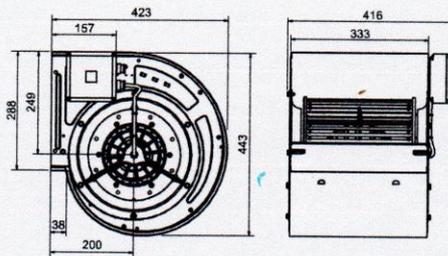
Supply Air Fan

Dimensiones y conexiones
Dimensions and wiring

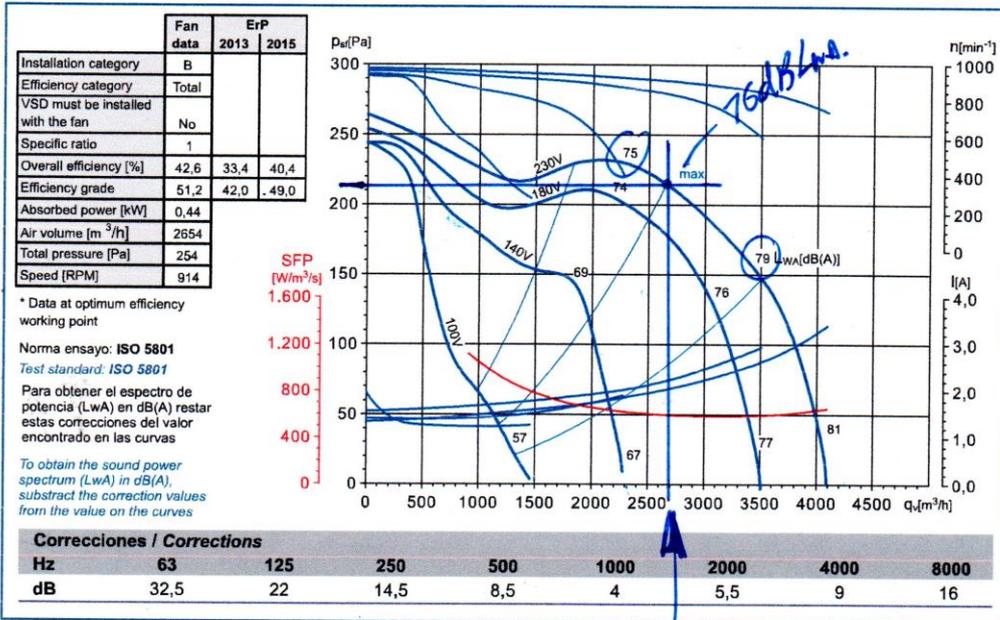


Características Characteristics

Tensión Voltage	1 230V 50Hz
Tipo motor Motor type	1V 1S IP55 cl.F
Velocidad Speed	6 polos 6 poles
Potencia motor Motor power	515 W
Intensidad absorbida máxima Maximum absorbed current	3,4 A
Condensador Capacitor	18 F/450V
Temperatura del aire Air temperature	-20°C < T < +40°C
Peso Weight	17,5 kg
Código ventilador Fan code number	5128982700 ----- (MP)
Código motor Motor code number	9096000418



Curvas características / Performance curves (02/04/2014)



Soler&Palau
Ventilation Group

0.737 m³/s @ 254 Pa → ~76 dB(A)

Ref: M0015417

