

Ref: JW1597/18426

Date: 26 October 2018



Mark Hiles
W Hiles Partnership Ltd
Clarence House
Clarence Street
Leamington Spa
CV31 2AD

Dear Mark

THE CORN STORES, READING

Thank you for your recent correspondence regarding the proposed chiller installation at the above site.

You advised me that the Environmental Health Officer at Reading Borough Council has requested that either a Noise Assessment is carried out, or that a Noise Statement is submitted to say that a Noise Assessment is not necessary. I have reviewed the plant proposals alongside the already permitted plant, and I can confirm that the proposed Cold Room chiller unit is more than 10 dBA below the already permitted plant, and therefore the noise impact of this unit is negligible overall.

Please find attached my technical note which includes the noise data for the proposed chiller and the already permitted condensers, and a brief acoustic overview to demonstrate that a full Noise Assessment is not required.

If you have any questions or require anything further please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "James Ward".

James Ward
Senior Consultant

Enclosed: JW1598/18426 – Noise Statement – The Cornstores, Reading

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Description	The Cornstores, Reading
Date	26 October 2018
Issued by	James Ward, Senior Consultant
Issued to	W Hiles Partnership Ltd
Ref No	JW1598/18426

1. INTRODUCTION

W Hiles Partnership Ltd, on behalf of Rarebreed Dining Ltd, have obtained Planning Permission for the refurbishment of the Cornstores, Reading, which included the installation of new mechanical plant. Permission is now sought to install an additional chiller unit for which Reading Borough Council require the noise impact to be assessed.

This Technical Note sets out the plant proposals and includes the necessary information to confirm that the noise impact of the proposed new chiller is acceptable to Reading Borough Council.

2. BACKGROUND

Planning permission and Listed Building Consent has been previously granted which included the installation of new extraction, heating/cooling, and building services plant, located on the main roof of the property and the flat roof extension to the rear. The Permission was granted without the requirement for a Noise Impact Assessment.

An additional chiller unit is now proposed to serve the Cold Room and the Local Authority, Reading Borough Council, have requested that the noise impact of this item is assessed.

3. SITE DESCRIPTION AND PROPOSALS

The Cornstores is a four storey building located at 10 Forbury Road, Reading, with five storey office/commercial buildings either side and to the rear. The plant proposals are shown on the plan and elevation drawings in Attachment 1 which includes the already permitted scheme.

The proposed Cold Room chiller unit is located on a flat roof of a single storey extension at the rear of the building and is highlighted on the drawings. There are also three heat pump condensing units on this roof which are part of the already approved scheme.

Manufacturer's data sheets for the three permitted condensing units and the proposed Cold Room chiller unit are included as Attachment 2. The noise emission levels are as follows:

Type	Manufacturer	Model	Sound Pressure Level, dBA	Sound Power Level, L_{wA} dB
<u>Previously approved items</u>				
Heat pump condensing unit	Mitsubishi	PUHZ-RP250YKA	59 @ 1m	73
Heat pump condensing unit	Mitsubishi	PUHZ-P140VHA	56 @ 1m	70
Heat pump condensing unit	Mitsubishi	PUHZ-P140VHA	56 @ 1m	70
<u>Proposed Item</u>				
Cold Room chiller condensing unit	Danfoss	Optyma OP-MSYM014MPW05G	29 @ 10m	60

Table 1: Plant noise levels

4. ASSESSMENT

The combined sound power level of the already permitted plant items, on the rear extension roof only, is L_{WA} 76 dB. This results in a combined sound pressure level of 48 dBA at a noise-sensitive receptor 10m away, assuming hemispherical radiation and a clear line of sight.

The sound pressure level from the Cold Room chiller alone, at the same 10m distance assuming hemispherical radiation, will be 32 dBA, which is 16 dBA below the noise level from the permitted condensing units. The impact of this is insignificant on the overall noise level. The absolute noise level of 32 dBA from the proposed chiller is also considered acceptably low.

Accordingly, the noise impact of the proposed new Cold Room chiller is negligible when considered against the baseline of the plant which was previously approved.

Report Code: E/C/FD

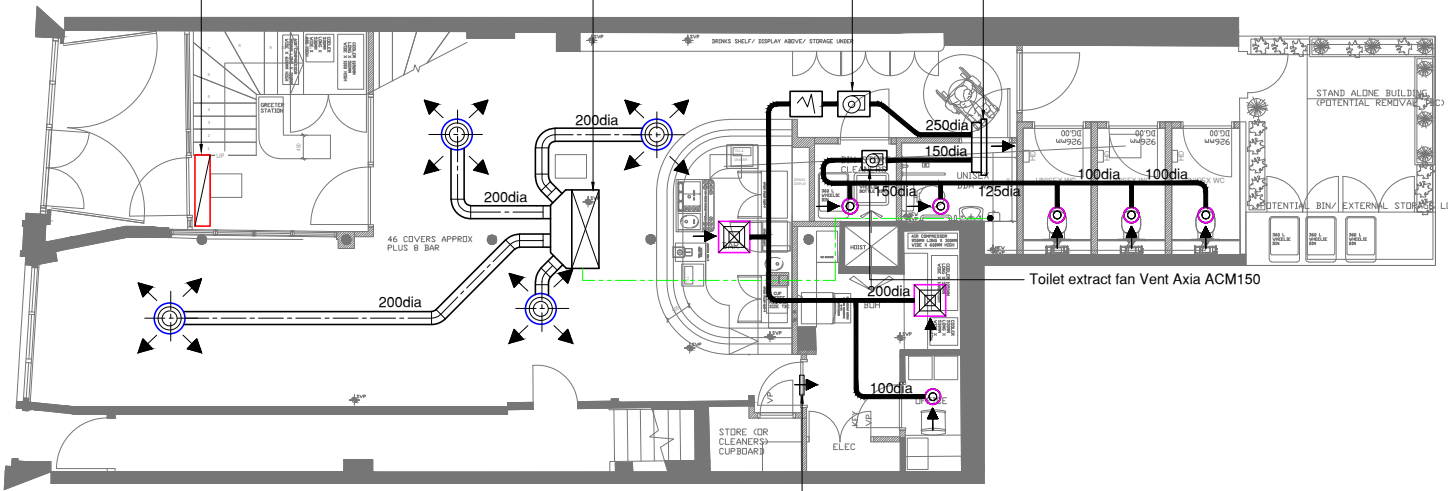
Attachment 1

Electric over door heater Thermoscreens C1000ER

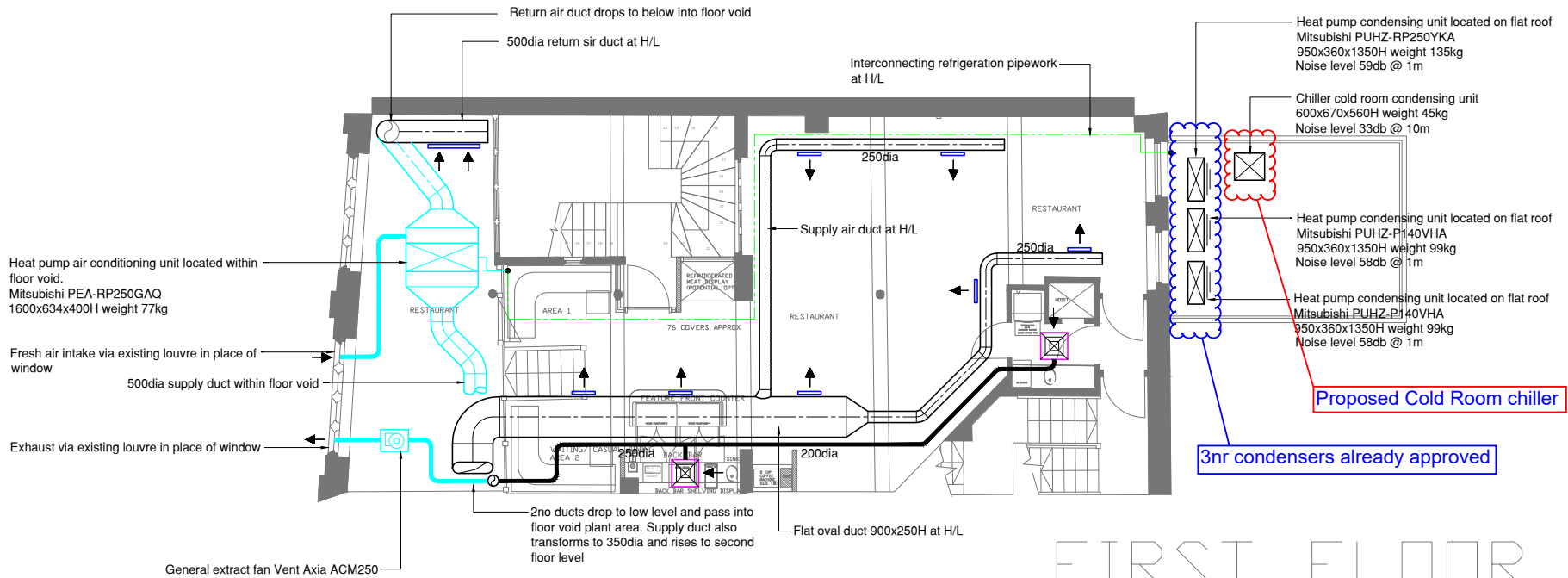
Heat pump fan coil unit at H/L
Mitsubishi PEAD-RP140
1600x732x250H weight 47kg

General extract fan Vent Axia ACM250
C/W system side attenuator

Exhaust via existing weather louvre (in rear elevation
above flat roof)



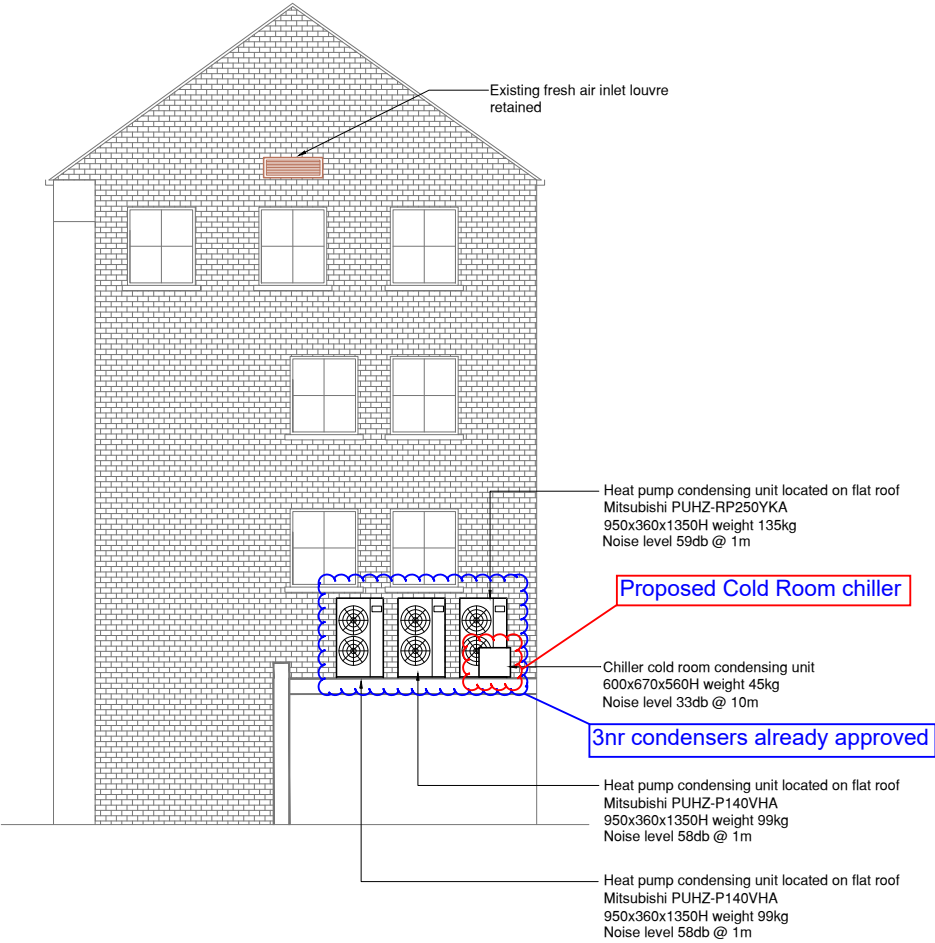
GROUND FLOOR



FIRST FLOOR

NOTES:
All dimensions must be checked on site and not scaled from this drawing.

Rev.	Date	Revisions
AFR Air Conditioning 74 Kingsdown Road Swindon Wilts. SN25 6PB Tel: 01793 292090		
Client Rarebreed Dining		
Project The Corn Stores Reading		
Drawing Title Proposed HVAC Layout Ground & First Floor		
Drawn NJE	Checked AF	
Date Mar 18	Scale 1:50 @ A1	
Org. No. 6088/M/01	Rev. C	



PROPOSED REAR
FACADE
ELEVATION

NOTES:
All dimensions must be checked on site and not scaled from this drawing.

Rev.	Date	Revisions
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AFR Air Conditioning
74 Kingsdown Road
Swindon
Wilts. SN25 6PB
Tel: 01793 292090

Client
Rarebreed Dining

Project
*The Corn Stores
Reading*

Drawing Title
*Proposed HVAC Layout
Rear Elevation*

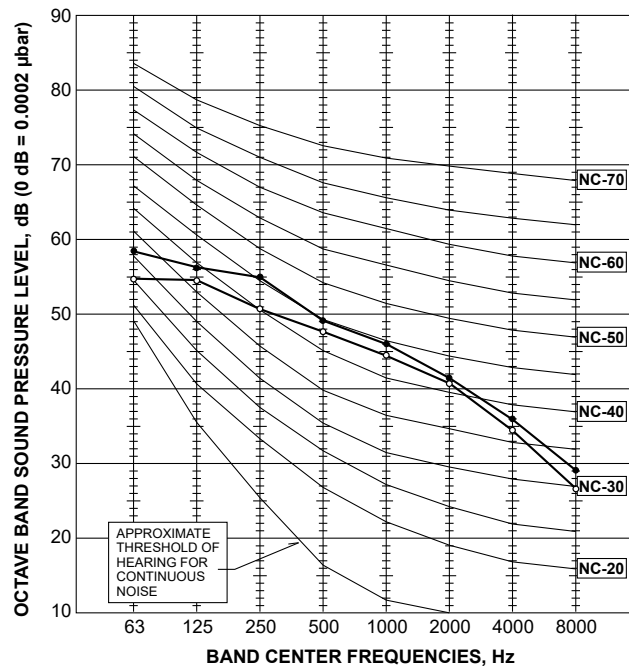
Drawn <i>NJE</i>	Checked <i>AF</i>
Date <i>Mar 18</i>	Scale <i>1:50 @ A1</i>

Org. No. <i>6088/M/03</i>	Rev. <i>A</i>
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Attachment 2

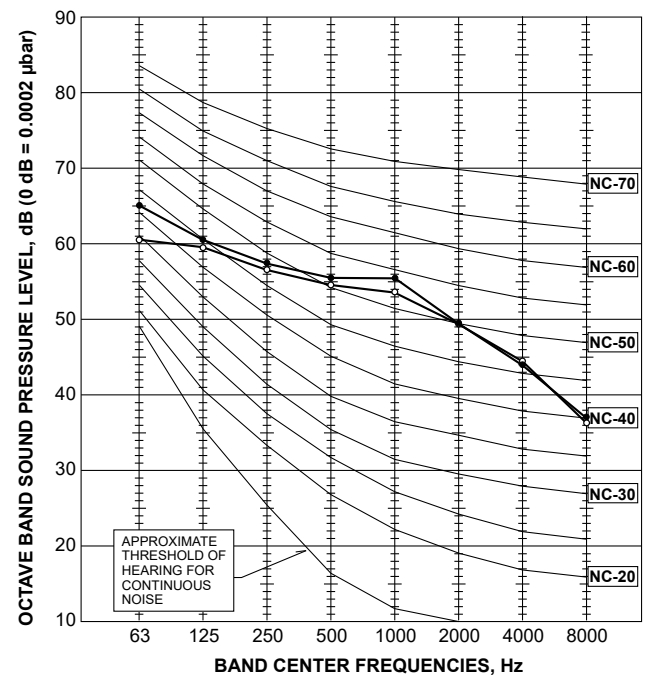
PUHZ-RP140VKA PUHZ-RP140YKA

MODE	SPL(dB)	LINE
COOLING	50	○—○
HEATING	52	●—●



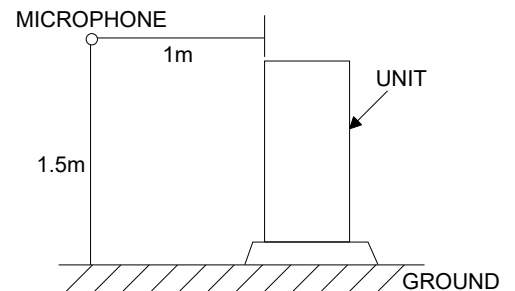
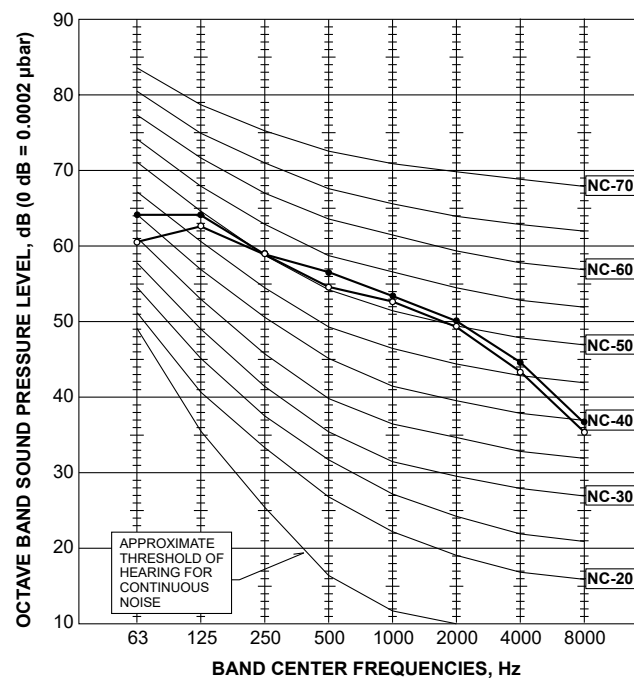
PUHZ-RP200YKA

MODE	SPL(dB)	LINE
COOLING	58	○—○
HEATING	59	●—●



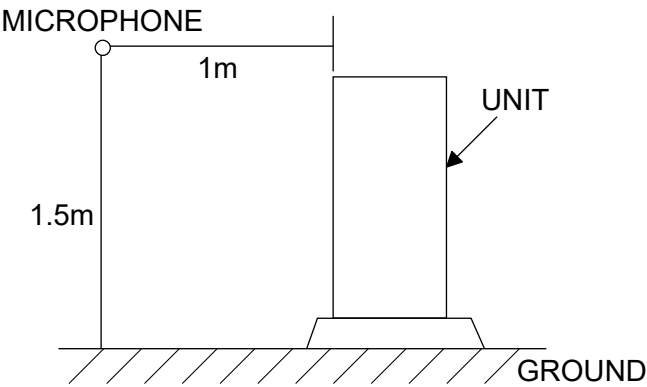
PUHZ-RP250YKA

MODE	SPL(dB)	LINE
COOLING	58	○—○
HEATING	59	●—●



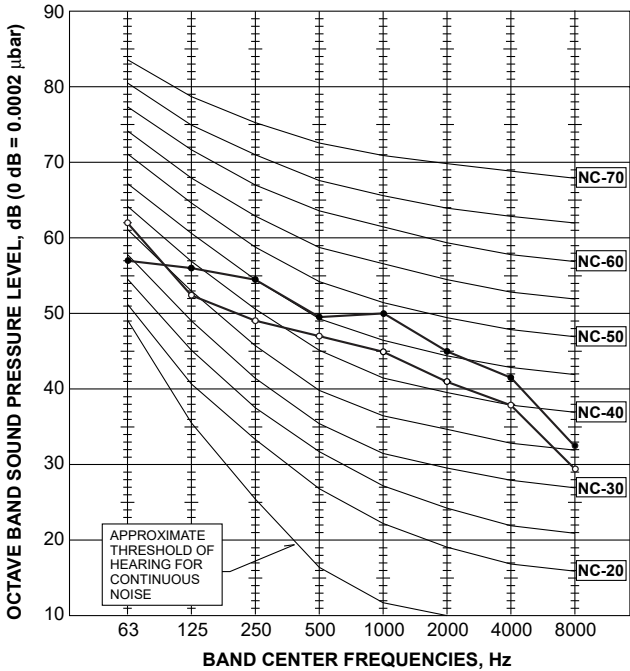
The Cornstores,
Reading

Attachment 2



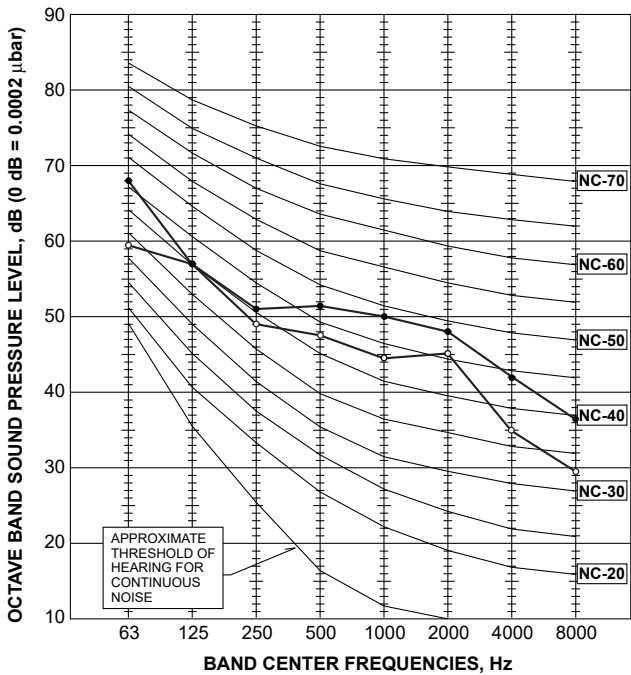
PUHZ-P100VHA

MODE	SPL(dB)	LINE
COOLING	50	○—○
HEATING	54	●—●



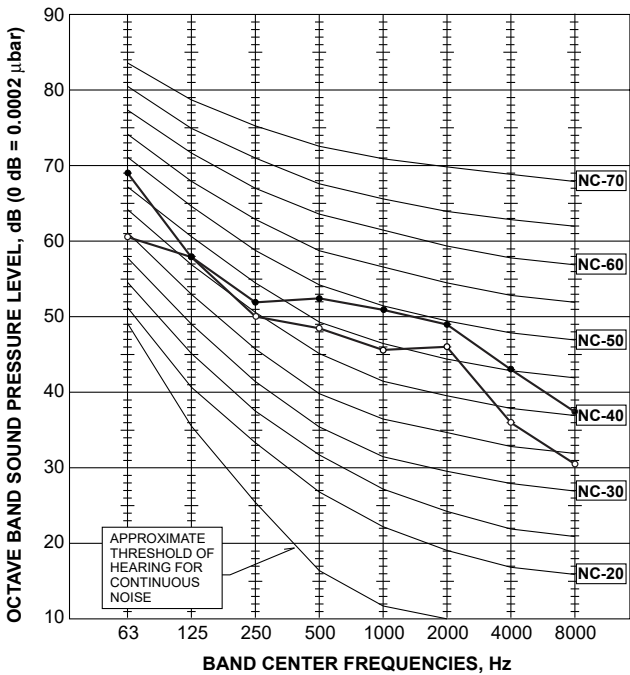
PUHZ-P125VHA

MODE	SPL(dB)	LINE
COOLING	51	○—○
HEATING	55	●—●



PUHZ-P140VHA

MODE	SPL(dB)	LINE
COOLING	52	○—○
HEATING	56	●—●



The Cornstores,
Reading

Catalogue

Optyma™ Slim Pack

Cost Effective & Quiet Solution

R452A, R134A, R448A, R449A, R407A, R407F, R404A/R507 - 50 Hz



Catalogue

Performance data R404A/R507 MBP

Performance with SH=10K & SC=0K

Code number	Model number	Electrical code	Tamb [°C]	Cooling capacity Q [kW]							P [kW]		EcoDesign (3)				Sound power level dB(A)	Sound pressure level 10 m dB(A)	
				Te [°C]								COP (2)	Q [kW]	P [kW]	COP _A	SEPR			
				-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	-10°C								
114X7108	OP-MSYM009MYW05G	G	27		0.81	1.01	1.22	1.44	1.68										
			32		0.74	0.91	1.11	1.32	1.55		0.48	1.9	0.960	0.48	1.99		63	32	
			38		0.64	0.80	0.98	1.17	1.38										
			43		0.57	0.71	0.87	1.05	1.24										
114X7077	OP-MSHM010SCW05G	G	27	0.66	0.83	1.03	1.26	1.53	1.83										
			32	0.60	0.76	0.94	1.15	1.40	1.67		0.54	1.73	0.984	0.54	1.81		62	31	
			38	0.53	0.67	0.83	1.02	1.24	1.49										
			43		0.59	0.74	0.91	1.11											
114X7078	OP-MSHM012SCW05G	G	27	0.80	1.00	1.23	1.50	1.80	2.14										
			32	0.73	0.91	1.12	1.37	1.65	1.97		0.64	1.75	1.173	0.64	1.83		62	31	
			38	0.64	0.80	0.99	1.21	1.46	1.75										
			43		0.71	0.88	1.08	1.31											
114X7109	OP-MSYM012MPW05G	G	27		1.12	1.37	1.63	1.91	2.21										
			32		1.01	1.24	1.49	1.75	2.03		0.65	1.92	1.300	0.65	2.01		65	34	
			38		0.88	1.09	1.31	1.56	1.82										
			43		0.75	0.97	1.17	1.43	1.69										
114X7110	OP-MSYM014MPW05G	G	27		1.13	1.40	1.69	2.00	2.34										
			32		1.03	1.28	1.55	1.84	2.16		0.79	1.61	1.340	0.80	1.69		60	29	
			38		0.91	1.13	1.38	1.65	1.95										
			43		0.81	1.01	1.24	1.49	1.78										
114X7079	OP-MSHM015SCW05G	G	27	0.97	1.21	1.47	1.76	2.14	2.53										
			32		0.86	1.06	1.30	1.58											
			38		0.75	0.94	1.14	1.38	1.63										
			43		0.66	0.83	1.01	1.21	1.43										
114X7080	OP-MSHM018SCW05G	G	27	1.12	1.38	1.69	2.04	2.43	2.88										
			32	1.02	1.26	1.54	1.87	2.24	2.65		0.90	1.72	1.623	0.90	1.81		63	32	
			38	0.89	1.11	1.37	1.66	2.00	2.37										
			43		0.98	1.22	1.48	1.79											
114X7111	OP-MSYM018AJW05G	G	27	1.18	1.48	1.82	2.21	2.65	3.15	3.69									
			32	1.08	1.35	1.67	2.02	2.43	2.88	3.38	0.90	1.85	1.746	0.90	1.93		64	39	
			38			1.48	1.80	2.16	2.56	3.00									
			43			1.32	1.61	1.93	2.29	2.69									
114X7097	OP-MSYM024AJW05G	G	27		1.82	2.29	2.82	3.42	4.08										
			32		1.64	2.07	2.56	3.11	3.72		1.04	1.98	2.168	1.05	2.07		64	33	
			38		1.42	1.80	2.24	2.74	3.29										
			43		1.23	1.59	1.98	2.43	2.93										
114X7093	OP-MSYM026AJW05E	E	27	1.60	2.03	2.52	3.08	3.70	4.39	5.14									
			32	1.42	1.82	2.28	2.80	3.38	4.02	4.72	1.23	1.86	2.398	1.23	1.95		67	36	
			38	1.20	1.58	2.00	2.47	2.99	3.56	4.20									
			43		1.37	1.75	2.18	2.66	3.18	3.76									
114X7083	OP-MSYM026AJW05G	G	27	1.63	2.04	2.52	3.06	3.67	4.36	5.10									
			32	1.46	1.84	2.29	2.79	3.35	3.98	4.68	1.17	1.95	2.399	1.17	2.05		67	36	
			38	1.26	1.61	2.01	2.46	2.97	3.53	4.16									
			43		1.41	1.78	2.18	2.64	3.16	3.73									
114X7094	OP-MSYM034AJW05E	E	27	2.02	2.53	3.10	3.75	4.46	5.24	6.09									
			32	1.81	2.29	2.82	3.42	4.08	4.80	5.58	1.57	1.80	2.970	1.57	1.89		68	37	
			38	1.56	2.00	2.48	3.02	3.62	4.26	4.97									
			43		1.75	2.20	2.69	3.23	3.82	4.46									

Model proposed for The Cornstores, Reading

MBP

(1) G - Compressor 230V/1~/50Hz, fan 230V/1~/50Hz

E - Compressor 400V/3~/50Hz, fan 230V/1~/50Hz

(2) Nominal conditions, Saturated suction temperature -10°C, Ambient air temperature +32°C, Superheat 10K.

(3) Rated conditions, Saturated suction temperature -10°C, Ambient air temperature +32°C, Return Gas Temperature 20°C

SEPR, Seasonal Energy Performance Ratio

Q [kW], Cooling Capacity

P [kW], Power Input

This table continues in the next page



For more information related to EcoDesign compliance, please refer to Coolselector®
coolselector.danfoss.com or contact Danfoss

