



a). DATA SHEET VENTILATORI E CURVE CARATTERISTICHE VENTILATORI

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ <i>Document</i>	Rev.
			10125ASMS203	00
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SPECIFICA TECNICA
VENTILATORE ARIA PRIMARIA
TIPO TSAN 145
LINEA 2
ITEM : L2S25-CO019X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer	Commessa/Job	CID Codice class. doc.	Impianto Plant	Sistema System	Un. Funz. Func. Un.	Tipo doc. Doc. type
EALL - Gruppo Acea	10125		SF	S20	L2	PDS

00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 03	Rev.	00
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VENTILATORE ARIA PRIMARIA - LINEA 2 - ITEM L2S25-CO019X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1				
Fan Type / Tipo Ventilatore:	TSAN 145				
Arrangement / Esecuzione:	8				
Discharge Position / Orientamento:	RD 270				
Suction Type / Tipo Aspirazione:	☒	Semplice Aspirazione	☐	Doppia Aspirazione	
Electric Motor / Motore Elettrico:	☒	Di Fornitura	☐	Fornito da cliente	☐ Non Previsto
Installed Power / Potenza Installata:	200 kW				
Housing Material / Materiale Cassa:	Fe 460 B				
Wheel Material / Materiale Girante:	CORTEN				

PLANT : San Vittore del Lazio



AEROMECCANICA STRANICH S.p.A.
20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300

A.S. Ref. no.:

PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY. REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED

DATA SHEET CENTRIFUGAL FAN

A.S. Job No.:	SIZE	PAGE
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0	ML	09/06/09	DESCRIPTION	2764 / 03	A4	2	OF 5
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PURCHASER / OWNER :				TM.E. S.p.A.				ITEM No. :				L2 S25 CO0019X			
SERVICE :				Aria Primaria				LOCATION :				San Vittore del Lazio			
1 Fan Manufacturer:				A. Stranich SpA				Model / Size :				TSAN 145			
2 Service:								No. Required:				1			
3 Drive System:				Motor + Inverter				Fans Rotation From Drive End:				CW ☒ CCW ☐			
4 Gas Handled:				Aria				Molecular Weight:				29,97			
5 Site Elevation:				m ASL				Fan Location:				Outdoor ☐ Indoor ☒			
OPERATING CONDITIONS															
7 OPERATING CONDITIONS / CASE :				DESIGN				Normal				Cond.2			
8 Mass Flow :				Nm3/h				65.000							
9 Volume Flow:				Am3/h				71.506							
10 Density:				kg/m3				1,175							
11 Temperature:				°C				25							
12 Relative Humidity:				%											
13 Static Pressure @ Inlet:				mmwg				710							
14 Static Pressure @ Outlet:				mmwg											
15 PERFORMANCE :															
16 Power Required @ Cond's (all losses incl.):				kW				166							
17 Fan Speed:				rpm				1.490							
18 Static Pressure Rise Across Fan:				mmwg											
19 Inlet Damper / Vane Position:				%											
20 Discharge Damper Position:				%											
21 Fan Static Efficiency:				%				83							
22 Steam Rate (TURBINE ONLY) :				kg/kWh				—				—			
23 FAN CONTROL :				DRIVER :				Motor + Inverter							
24 Air Supply				Instrument Air				Make:				FELM			
25 Fan Control Furnished by:				A.Stranich				Rated Power, kW:				200			
26 Method:				Inlet Damper ☐				Electrical Area Classification:							
27				Outlet Damper ☐				Class:				Group:			
28				Inlet Guide Vane ☐				Volts:				400			
29				Variable Speed ☐				Starting Method:				Con inverter			
30								ATEX:				N.A.			
CONSTRUCTION FEATURES															
31 HOUSING :				BEARINGS :											
32 Material:				Thickness, mm :				Hydrodynamic ☐ RTL				Anti-friction ☒			
33 Split for wheel removal:				yes ☐ no ☒				Lubrication:				grease			
34 Drains, No./Size :				yes /				Coolant Required:				yes ☐ no ☒			
35 Access Door, No./Size :				yes /				Thermostatically Controlled Heaters:				☐			
36 BLADES :								Temperature Detectors:				☐			
37 Type:				Airfoil				Vibration Detectors:				☐			
38 No.:				8											
39 Material:				CORTEN											
40 HUB :								SPEED DETECTORS:							
41 Shrink Fit:				☐ Keyed ☒				Non-contact probe ☐							
42 Material:				Fe 430 B				Speed Switch ☐							
43 SHAFT :								Other ☐							
44 Material:				C 45				V-BELTS & PULLEYS:				COUPLINGS:			
45 Diam. @ brgs, mm								Type:				Elastico			
46 SHAFT SLEEVES :								Fan Pulley, mm				Make / Model:			
47 Material:				NA				Driver Pulley, mm				Service Factor:			
48 SHAFT SEALS :												Mount Coupling Halves :			
49 Type:				Semplice in Al								FAN: ☐			
50												DRIVER: ☐			
51 PD² [kgm²] :												Spacer Lenght, mm :			
52 NOTES :															
53															
54															
55															
56															
57															
58															
PLANT :				San Vittore del Lazio								AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:				0											
								PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENDEO OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED				DATA SHEET CENTRIFUGAL FAN			
0 ML 0 0 09/06/09 0				0				A.S. Job No.:				Size PAGE			
REV BY CHK'D APP'D DATE Description								2764 / 03				A4 30F OF 5			

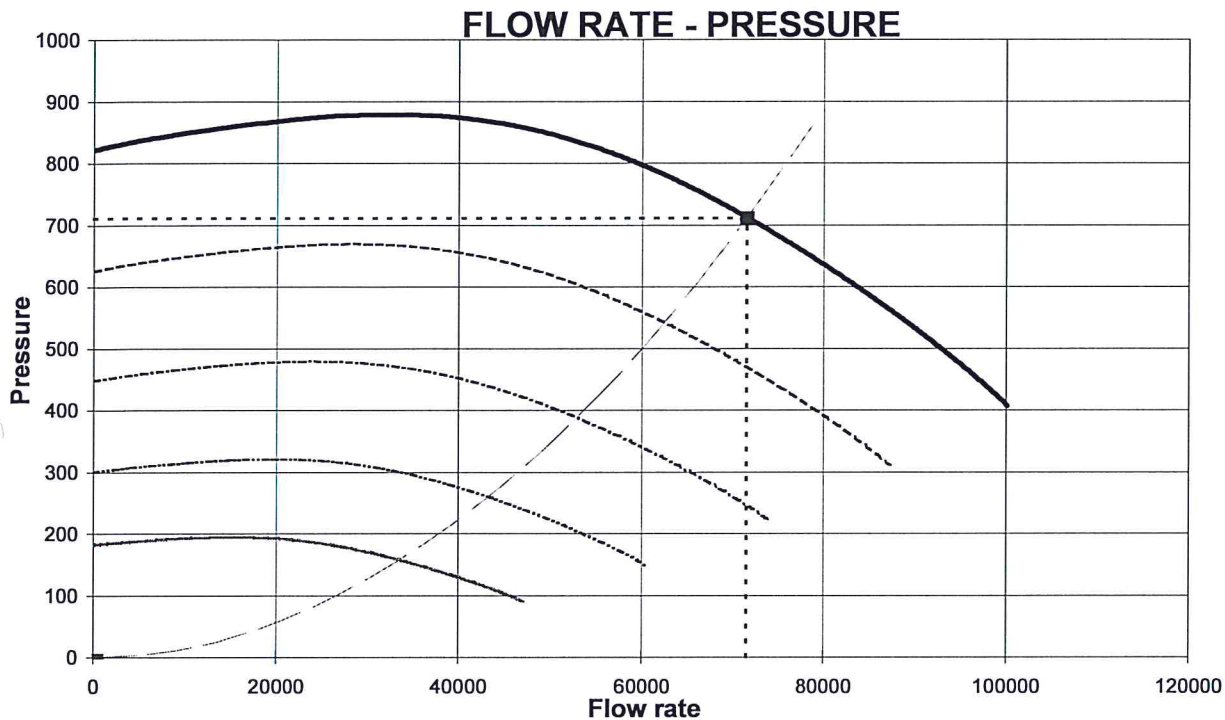
CONSTRUCTION FEATURES (continued)									
1									
2	MISCELLANEOUS :								
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☐	Counterflanges	☒	REV
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☐	
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒	
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☒	
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐	
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐	
9	NOISE ATTENUATION :				WEIGHTS, kg :				
10	Predicted SPL :	80	dB(A) @ 1 m		Driver:	Fan :			
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):	Base :			
12					Outlet Silencer:	Evase:			
13	Furnished by:				Total Shipping Weight:	0			
14	PAINTING :				CONNECTIONS :				
15	According to Spec. No. :	☐			Inlet:	Size	Rating	Orientation	
16					Outlet:				
17	Manufacturer Std.	☒			Drains:				
18	SHIPMENT :				TESTS:				
19	Domestic	☐			☒	Mechanical Running (No Load)	no	☐	yes ☒
20	Export	☒			☐	Performance	no	☐	yes ☐
21	ERECTION :				☒	Rotor Balance	no	☒	yes ☐
22	Assembled	☒			☒	Shop Inspection	no	☒	yes ☐
23	Partly Assembled	☐			☐	Assembly and Fit-up Check	no	☐	yes ☐
24					☐	Lateral Critical Speed	no	☐	yes ☐
25	APPLICABLE SPECIFICATIONS :				☐	Torsional Critical Speed	no	☐	yes ☐
26					☐		no	☐	yes ☐
27					☐		no	☐	yes ☐
28					☐		no	☐	yes ☐
29					☐		no	☐	yes ☐
30	NOTES : CABINA PER MOTORE								
31									
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PLANT :		San Vittore del Lazio			AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300	
A.S. Ref. no.:		0			PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED	
				DATA SHEET CENTRIFUGAL FAN		
0	ML	0	0	09/06/09	0	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	
				A.S. Job No.: 2764 / 03		
				SIZE: A4		
				PAGE: 4 OF 5		

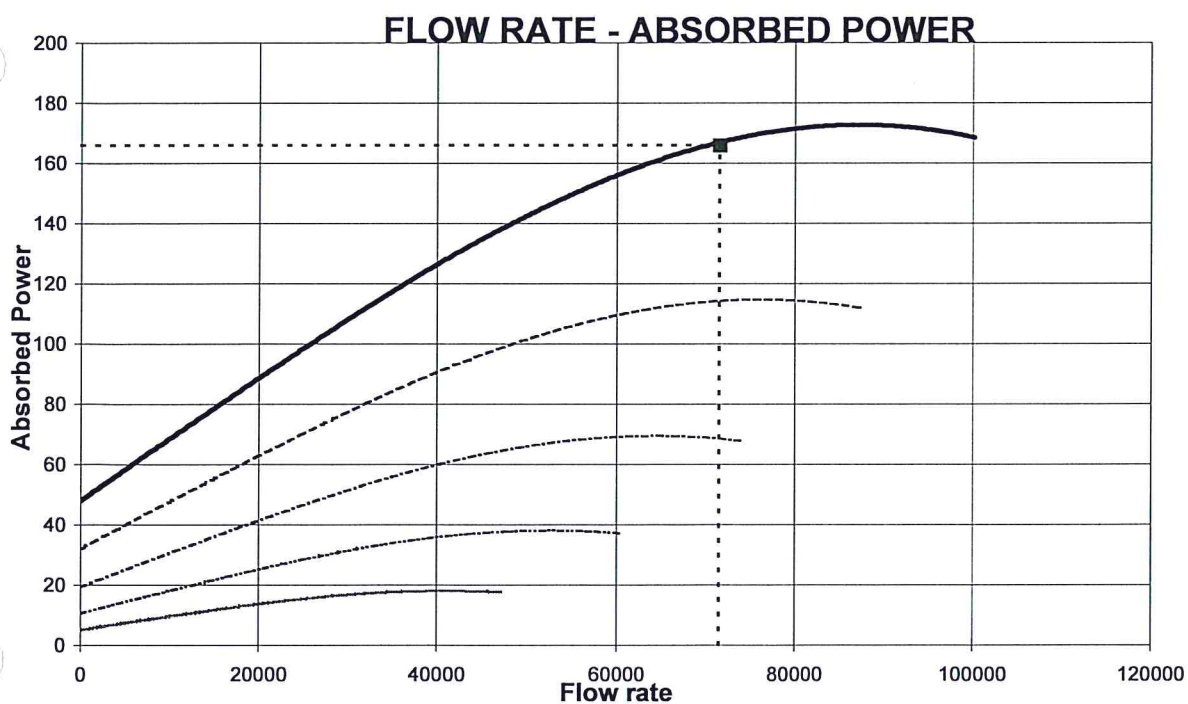


CENTRIFUGAL FAN TYPE: **TSAN 145**
ITEM: **L2 S25-CO 019X**
Ventilatori Aria Primaria

SPEED= **1490 RPM**
T= **25 °C**
 γ = **1,175 Kg/m³**



CASE	DESIGN					
Flow rate	71.506					m3/h
Static pressure	710					mmH2O
Speed	1.490	1.300	1.100	900	700	RPM
Absorbed Power	166,0					kW



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SPECIFICA TECNICA
VENTILATORE ARIA SECONDARIA
TIPO TSAN 145
LINEA 2
ITEM : L2S25-CO010X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer EALL - Gruppo Acea	Commessa/Job 10125	CID Codice class. doc.	Impianto Plant SF	Sistema System S20	Un. Funz. Func. Un. L2	Tipo doc. Doc. type PDS
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00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 04	Rev.	00
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VENTILATORE ARIA SECONDARIA - LINEA 2 - ITEM L2S25-CO010X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1
Fan Type / Tipo Ventilatore:	TSAN 145
Arrangement / Esecuzione:	8
Discharge Position / Orientamento:	RD 270
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione ☐ Doppia Aspirazione
Electric Motor / Motore Elettrico:	☒ Di Fornitura ☐ Fornito da cliente ☐ Non Previsto
Installed Power / Potenza Installata:	200 kW
Housing Material / Materiale Cassa:	Fe 460 B
Wheel Material / Materiale Girante:	CORTEN

PLANT :	San Vittore del Lazio		AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300	
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		DATA SHEET CENTRIFUGAL FAN		
0	ML	09/06/09	A.S. Job No.:	SIZE
REV	BY	CHK'D	APP'D	DATE
		DESCRIPTION	2764 / 04	A4
			2	OF 5

PURCHASER / OWNER :		T.M.E. S.p.A.		ITEM No. :		L2S25-CO010X																															
SERVICE :		Aria		LOCATION :		San Vittore del Lazio																															
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	TSAN 145		Arrangement: 8 Disch. Pos.: RD 270 REV																														
2	Service:			No. Required:	1																																
3	Drive System:	Motor + Inverter		Fans Rotation From Drive End:	CW ☒	CCW ☐																															
4	Gas Handled:	Aria		Molecular Weight:	29,97																																
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐	Indoor ☒																															
OPERATING CONDITIONS																																					
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4																														
8	Mass Flow :	Nm3/h	50.000																																		
9	Volume Flow:	Am3/h	54.978																																		
10	Density:	kg/m3	1,175																																		
11	Temperature:	°C	25																																		
12	Relative Humidity:	%																																			
13	Static Pressure @ Inlet:	mmwg	855																																		
14	Static Pressure @ Outlet:	mmwg																																			
15	PERFORMANCE :																																				
16	Power Required @ Cond's (all losses incl.):	kW	157																																		
17	Fan Speed:	rpm	1.490																																		
18	Static Pressure Rise Across Fan:	mmwg																																			
19	Inlet Damper / Vane Position:	%																																			
20	Discharge Damper Position:	%																																			
21	Fan Static Efficiency:	%	81,5																																		
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—	—																																	
23	FAN CONTROL :		DRIVER : Motor + Inverter																																		
24	Air Supply	Instrument Air	Make:	FELM	Type:																																
25	Fan Control Furnished by:	A.Stranich	Rated Power, kW:	200	rpm :	1490																															
26	Method:	Inlet Damper ☐	Electrical Area Classification:																																		
27		Outlet Damper ☐	Class:		Group:	Div:																															
28		Inlet Guide Vane ☐	Volts:	400	Ph :	3	Hz : 50																														
29		Variable Speed ☐	Starting Method:	Con inverter	ATEX:	N.A.																															
CONSTRUCTION FEATURES																																					
31	HOUSING :		BEARINGS :																																		
32	Material:	Thickness, mm :	Hydrodynamic ☐	RTL	Anti-friction ☒																																
33	Split for wheel removal:	yes ☐ no ☒	Lubrication:	grease																																	
34	Drains, No./Size :	yes / no	Coolant Required:	yes ☐ no ☒	Q.ty	I / min	@ °C																														
35	Access Door, No./Size :	yes / no	Thermostatically Controlled Heaters:	☐																																	
36	BLADES :		Temperature Detectors:	☐																																	
37	Type:	Airfoil	Vibration Detectors:	☐																																	
38	No.:	8																																			
39	Material:	CORTEN																																			
40	HUB :		SPEED DETECTORS:																																		
41	Shrink Fit:	☐ Keyed ☒	Non-contact probe	☐																																	
42	Material:	Fe 430 B	Speed Switch	☐																																	
43	SHAFT :		Other	☐																																	
44	Material:	C 45	V-BELTS & PULLEYS:		COUPLINGS:																																
45	Diam. @ brgs, mm		Type:		Type:	Elastico																															
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:																																
47	Material:	NA	Driver Pulley, mm		Service Factor:																																
48	SHAFT SEALS :		Mount Coupling Halves :																																		
49	Type:	semplice in Al			FAN:	☐																															
50					DRIVER:	☐																															
51	PD² [kgm²] :				Spacer Length, mm :																																
52	NOTES :																																				
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57																																					
58																																					
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300																																	
A.S. Ref. no.:		0																																			
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0	ML	0	0	09/06/09	0	A.S. Job No.:	Size	PAGE																													
REV	BY	CHK'D	APP'D	DATE	Description	2764 / 04	A4	3 OF 5																													

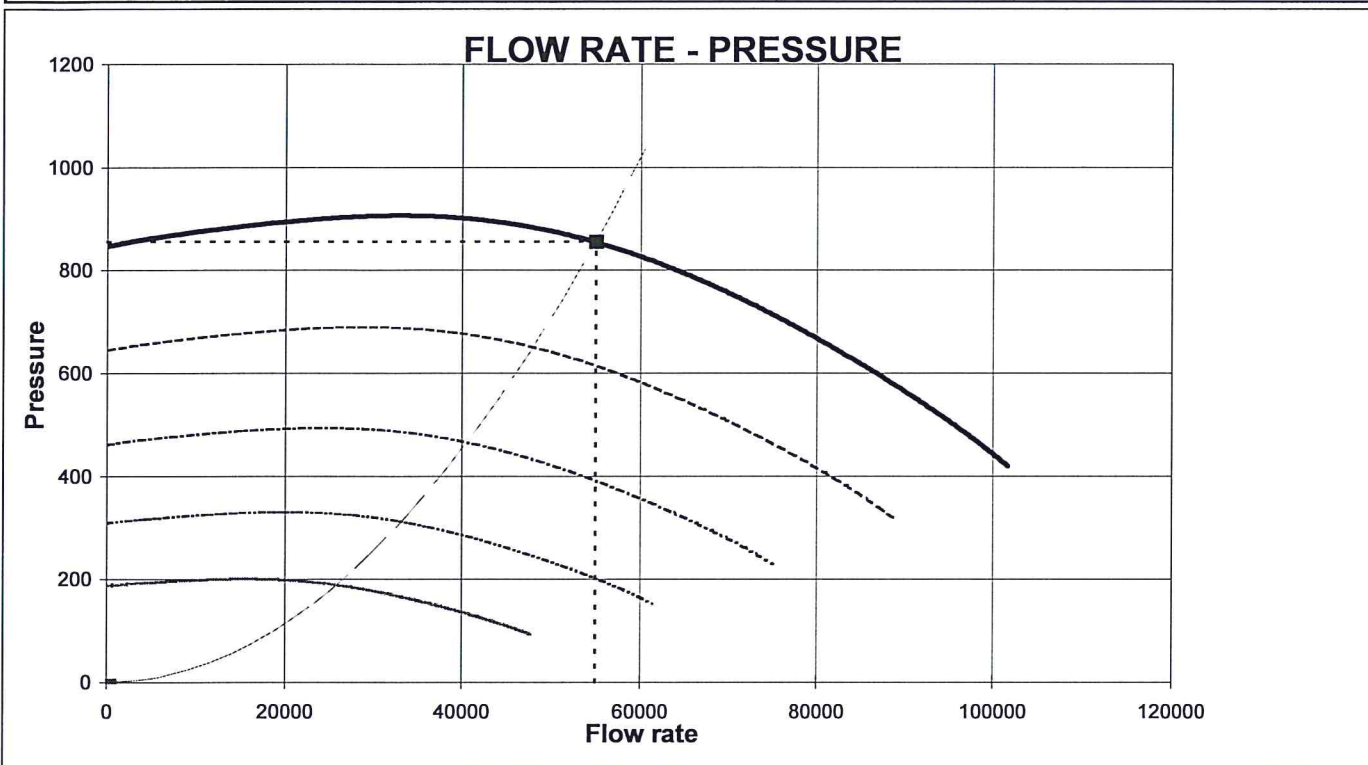
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☐			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☒			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☒	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	75	dB(A) @ 1 m		Driver:		Fan :				
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):		Base :				
12					Outlet Silencer:		Ebase:				
13	Furnished by:				Total Shipping Weight:		0				
14	PAINTING :					CONNECTIONS :					
15	According to Spec. No. :	☐			Inlet:	Size	Rating	Orientation			
16					Outlet:						
17	Manufacturer Std.	☒			Drains:						
18	SHIPMENT :					TESTS:					
19	Domestic	☐			☒	Mechanical Running (No Load)	no	☐	yes	☒	
20	Export	☒			☐	Performance	no	☐	yes	☐	
21	ERECTION :					☒	Rotor Balance	no	☒	yes	☐
22	Assembled	☒			☒	Shop Inspection	no	☒	yes	☐	
23	Partly Assembled	☐			☐	Assembly and Fit-up Check	no	☐	yes	☐	
24					☐	Lateral Critical Speed	no	☐	yes	☐	
25	APPLICABLE SPECIFICATIONS :					☐	Torsional Critical Speed	no	☐	yes	☐
26					☐		no	☐	yes	☐	
27					☐		no	☐	yes	☐	
28					☐		no	☐	yes	☐	
29					☐		no	☐	yes	☐	
30	NOTES : CABINA PER MOTORE + SILENZIATORE CON RETE DI PROTEZIONE										
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PLANT :		San Vittore del Lazio					AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:		0					PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENDED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED			
						DATA SHEET CENTRIFUGAL FAN				
0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 04		A4	3 OF 3	

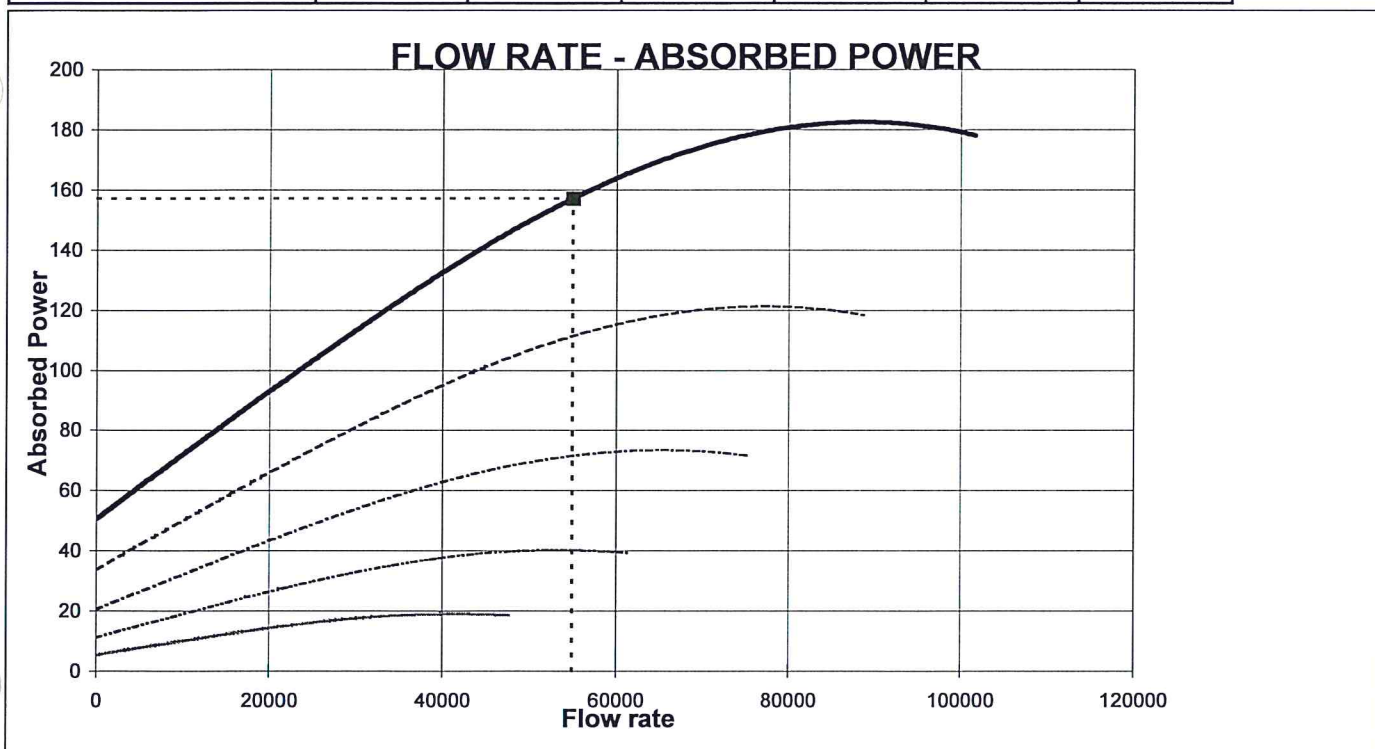


CENTRIFUGAL FAN TYPE: **TSAN 145**
ITEM: **L2 S25-CO 010X**
Ventilatore Aria Secondaria

SPEED= **1490** RPM
T= **25** °C
 γ = **1,175** Kg/m³



CASE	DESIGN					
Flow rate	54978					m3/h
Static pressure	855					mmH2O
Speed	1.490	1.300	1.100	900	700	RPM
Absorbed Power	157,0					kW



TM.E. S.p.A. Termomeccanica Ecologia 	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ Document 10125ASMS201 Pag. 1 di 5 Page 1 of 5	Rev. 00
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SPECIFICA TECNICA
VENTILATORE RICIRCOLO FUMI
TIPO TSAN 92
LINEA 2
ITEM : L2S20-CO001X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer	Commessa/Job	CID Codice class. doc.	Impianto Plant	Sistema System	Un. Funz. Func. Un.	Tipo doc. Doc. type
EALL - Gruppo Acea	10125		SF	S20	L2	PDS

00	09/07/2009	EMISSIONE	MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:**2764****/ 01****Rev.****00****VENTILATORE RICIRCOLO FUMI - LINEA 2 - ITEM L2S20-CO001X**

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1		
Fan Type / Tipo Ventilatore:	TSAN 92		
Arrangement / Esecuzione:	8		
Discharge Position / Orientamento:	RD 315		
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione	☐ Doppia Aspirazione	
Electric Motor / Motore Elettrico:	☒ Di Fornitura	☐ Fornito da cliente	☐ Non Previsto
Installed Power / Potenza Installata:	110 kW		
Housing Material / Materiale Cassa:	CORTEN + Protezione con STARPLAST		
Wheel Material / Materiale Girante:	CORTEN		
Inlet Damper / Serranda Aspirazione:	Dapò con attuatore pneumatico		

PLANT :		San Vittore del Lazio			AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:					PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED			
					DATA SHEET CENTRIFUGAL FAN			
0	ML		09/06/09	A.S. Job No.:		SIZE	PAGE	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 01	A4	2 OF 5

PURCHASER / OWNER :		T.M.E. S.p.A.		ITEM No. :		L2 S20 CO 001X																									
SERVICE :		Ricircolo Fumi		LOCATION :		San Vittore Del Lazio																									
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	TSAN 92		Arrangement: 8 Disch. Pos.: RD 315 REV																								
2	Service:			No. Required:	1																										
3	Drive System:	Motor + Inverter		Fans Rotation From Drive End:	CW ☒	CCW ☐																									
4	Gas Handled:	Fumi		Molecular Weight:	29,97																										
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐	Indoor ☒																									
OPERATING CONDITIONS																															
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4																								
8	Mass Flow :	Nm3/h	21.000																												
9	Volume Flow:	Am3/h	36.250																												
10	Density:	kg/m3	0,749																												
11	Temperature:	°C	180																												
12	Relative Humidity:	%																													
13	Static Pressure @ Inlet:	mmwg	775																												
14	Static Pressure @ Outlet:	mmwg																													
15	PERFORMANCE :																														
16	Power Required @ Cond's (all losses incl.):	kW	91																												
17	Fan Speed:	rpm	2.975																												
18	Static Pressure Rise Across Fan:	mmwg																													
19	Inlet Damper / Vane Position:	%																													
20	Discharge Damper Position:	%																													
21	Fan Static Efficiency:	%	84																												
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—	—																											
23	FAN CONTROL :		DRIVER :		Motor + Inverter																										
24	Air Supply	Instrument Air	Make:	FELM	Type:																										
25	Fan Control Furnished by:	A.Stranich	Rated Power, kW:	110	rpm :	2975																									
26	Method:	Inlet Damper ☐	Electrical Area Classification:																												
27		Outlet Damper ☐	Class:		Group:		Div:																								
28		Inlet Guide Vane ☒	Volts:	400	Ph :	3	Hz : 50																								
29		Variable Speed ☐	Starting Method:	Con inverter	ATEX:	N.A.																									
CONSTRUCTION FEATURES																															
31	HOUSING :		BEARINGS :																												
32	Material:	Thickness, mm :	Hydrodynamic ☐	RTL ☐	Anti-friction ☒																										
33	Split for wheel removal:	yes ☐ no ☒	Lubrication: grease																												
34	Drains, No./Size :	yes /	Coolant Required:	yes ☐ no ☒	Q.ty	l / min	@ °C																								
35	Access Door, No./Size :	yes /	Thermostatically Controlled Heaters: ☐																												
36	BLADES :		Temperature Detectors: ☐																												
37	Type:	Airfoil	Vibration Detectors: ☐																												
38	No.:	8																													
39	Material:	CORTEN																													
40	HUB :		SPEED DETECTORS:																												
41	Shrink Fit:	☐ Keyed ☒	Non-contact probe ☐																												
42	Material:	Fe 430 B	Speed Switch ☐																												
43	SHAFT :		Other ☐																												
44	Material:	C 45 + Camicia albero in AISI 316 L	V-BELTS & PULLEYS:		COUPLINGS:																										
45	Diam. @ brgs, mm		Type:		Type:	Elastico																									
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:																										
47	Material:	NA	Driver Pulley, mm		Service Factor:																										
48	SHAFT SEALS :		Mount Coupling Halves :																												
49	Type:	Semplice a 3 labirinti	FAN: ☐																												
50			DRIVER: ☐																												
51	PD² [kgm²] :		Spacer Length, mm :																												
52	NOTES : Il regolatore di portata dovrà essere completo di servocomando pneumatico HART-SMART Protocol a semplice effetto con posizionatore																														
53	3÷15 PSI + I/P converter																														
54																															
55																															
56																															
57																															
58																															
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300																											
A.S. Ref. no.:		0																													
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DATA SHEET																															
CENTRIFUGAL FAN																															
0	ML	0	0	09/06/09	0	A.S. Job No.:	Size	PAGE																							
REV	BY	CHK'D	APP'D	DATE	Description	2764 / 01	A4	3 OF 5																							

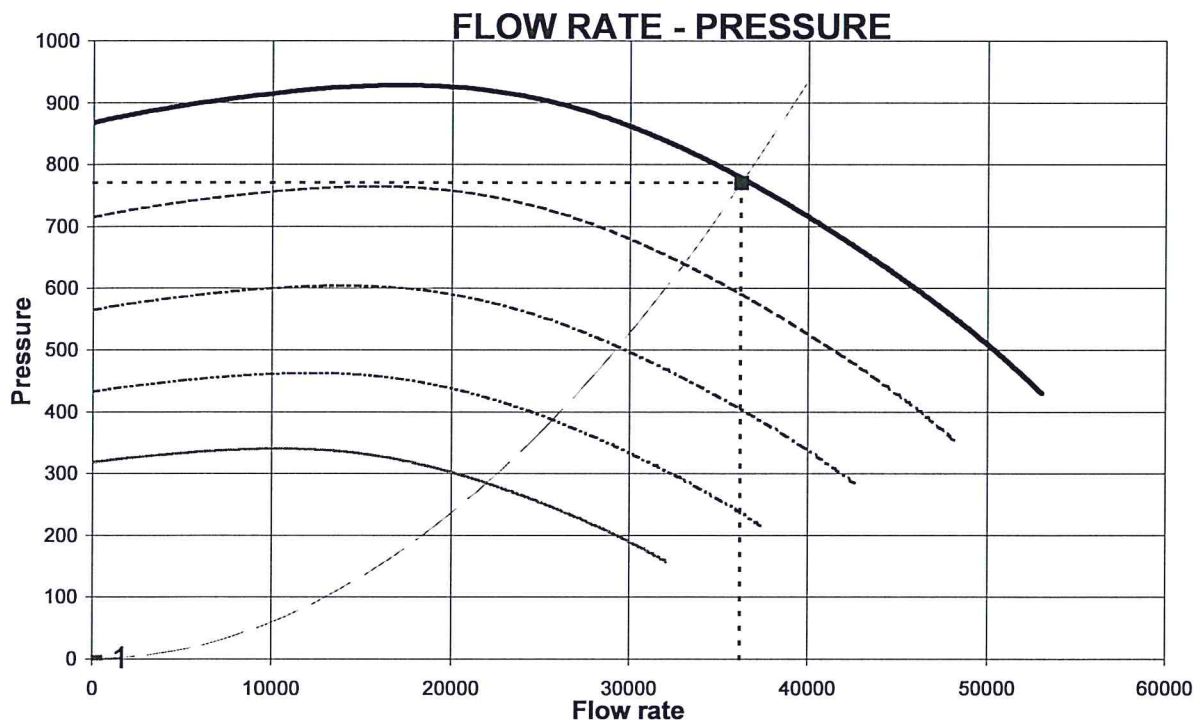
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☒			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☐	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☐			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	75		dB(A) @ 1 m		Driver:		Fan :			
11	Attenuation Method:					Air Intake (incl. Inlet Silencer):		Base :			
12						Outlet Silencer:		Evase:			
13	Furnished by:					Total Shipping Weight:	0				
14	PAINTING :					CONNECTIONS :					
15	According to Spec. No. :	☐				Inlet:		Size	Rating	Orientation	
16						Outlet:					
17	Manufacturer Std.	☒				Drains:					
18	SHIPMENT :					TESTS:					
19	Domestic	☐				☒ Mechanical Running (No Load)	no	☐	yes	☒	
20	Export	☒				☐ Performance	no	☐	yes	☐	
21	ERECTION :					☒ Rotor Balance	no	☒	yes	☐	
22	Assembled	☒				☒ Shop Inspection	no	☒	yes	☐	
23	Partly Assembled	☐				☐ Assembly and Fit-up Check	no	☐	yes	☐	
24						☐ Lateral Critical Speed	no	☐	yes	☐	
25	APPLICABLE SPECIFICATIONS :					☐ Torsional Critical Speed	no	☐	yes	☐	
26						☐	no	☐	yes	☐	
27						☐	no	☐	yes	☐	
28						☐	no	☐	yes	☐	
29						☐	no	☐	yes	☐	
30	NOTES : CABINA FONOASSORBENTE										
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PLANT :	San Vittore del Lazio		AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300		
A.S. Ref. no.:	0		PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENDED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED		
		DATA SHEET CENTRIFUGAL FAN			
0	ML	0	0	09/06/09	0
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION
			A.S. Job No.:		
			2764 / 01		
			SIZE		
			A4		
			PAGE		
			4 OF 5		

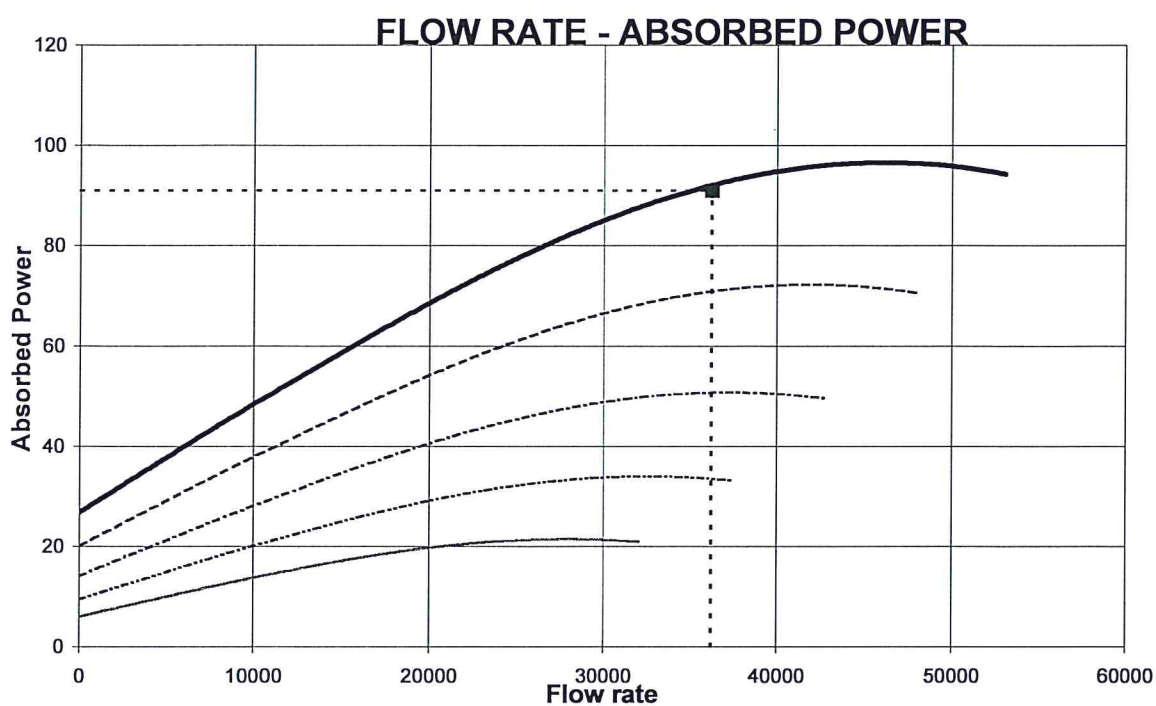


CENTRIFUGAL FAN TYPE: **TSAN 92**
ITEM: **L2 S20-CO 001X**
Ventilatore Ricircolo Fumi

SPEED= **2975** RPM
T= **180** °C
 γ = **0,749** Kg/m³



CASE	DESIGN					
Flow rate	36.250					m3/h
Static pressure	770					mmH2O
Speed	2.975	2.700	2.400	2.100	1.800	RPM
Absorbed Power	91,0					kW



TM.E. S.p.A. Termomeccanica Ecologia	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ Document 10125ASMS202	Rev. 00
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SPECIFICA TECNICA
VENTILATORE RICIRCOLO FUMI
TIPO TSAN 192
LINEA 2
ITEM : L2S20-CO043X
L2S20-CO044X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer	Commessa/Job	CID Codice class. doc.	Impianto Plant	Sistema System	Un. Funz. Func. Un.	Tipo doc. Doc. type
EALL - Gruppo Acea	10125		SF	S20	L2	PDS

00	09/07/2009	EMISSIONE	MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 02	Rev.	00
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VENTILATORE TIRAGGIO FUMI LINEA 2

ITEM L2S20-CO043X - L2S20-CO044X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	2
Fan Type / Tipo Ventilatore:	TSAN 192
Arrangement / Esecuzione:	3 CA
Discharge Position / Orientamento:	LG 0
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione ☐ Doppia Aspirazione
Electric Motor / Motore Elettrico:	☒ Di Fornitura ☐ Fornito da cliente ☐ Non Previsto
Installed Power / Potenza Installata:	560 kW
Housing Material / Materiale Cassa:	CORTEN + Protezione con STARPLAST
Wheel Material / Materiale Girante:	AVESTA SAF 2205
Inlet Damper / Serranda Aspirazione:	Serranda su cappa aspirante in AISI 316L
Outlet Damper / Serranda Mandata:	Serranda su bocca premente a comando manuale in AISI 316L

PLANT :	San Vittore del Lazio		AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300		
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		DATA SHEET CENTRIFUGAL FAN			
		A.S. Job No.:	SIZE	PAGE	
		2764 / 02	A4	2 OF 5	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION
0	ML			09/06/09	

PURCHASER / OWNER :		T.M.E. S.p.A.		ITEM No. :		ITEM L2S20-CO043X - L2S20-CO044X																									
SERVICE :		Ricircolo Fumi		LOCATION :		San Vittore Del Lazio																									
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	TSAN 192		Arrangement: 3 CA Disch. Pos.: LG 0 REV																								
2	Service:			No. Required:	2																										
3	Drive System:	Motor + Inverter		Fans Rotation From Drive End:	CW ☐	CCW ☒																									
4	Gas Handled:	Fumi		Molecular Weight:	29,97																										
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐	Indoor ☒																									
OPERATING CONDITIONS																															
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4																								
8	Mass Flow :	Nm3/h	75.000																												
9	Volume Flow:	Am3/h	122.578																												
10	Density:	kg/m3	0,791																												
11	Temperature:	°C	180																												
12	Relative Humidity:	%																													
13	Static Pressure @ Inlet:	mmwg	1095																												
14	Static Pressure @ Outlet:	mmwg																													
15	PERFORMANCE :																														
16	Power Required @ Cond's (all losses incl.):	kW	455																												
17	Fan Speed:	rpm	1.490																												
18	Static Pressure Rise Across Fan:	mmwg																													
19	Inlet Damper / Vane Position:	%																													
20	Discharge Damper Position:	%																													
21	Fan Static Efficiency:	%	80																												
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—																												
23	FAN CONTROL :		DRIVER :		Motor + Inverter																										
24	Air Supply	Instrument Air	Make:	FELM	Type:																										
25	Fan Control Furnished by:	A.Stranich	Rated Power, kW:	560	rpm :	1490																									
26	Method:	Inlet Damper ☒	Electrical Area Classification:																												
27		Outlet Damper ☒	Class:		Group:		Div:																								
28		Inlet Guide Vane ☐	Volts:	400	Ph :	3	Hz : 50																								
29		Variable Speed ☐	Starting Method:	Con inverter	ATEX:	N.A.																									
30	CONSTRUCTION FEATURES																														
31	HOUSING :		BEARINGS :																												
32	Material:	Thickness, mm :	Hydrodynamic ☐	RTL	Anti-friction ☒																										
33	Split for wheel removal:	yes ☒ no ☐	Lubrication: grease																												
34	Drains, No./Size :	yes /	Coolant Required:	yes ☐ no ☒	Q.ty	l / min	@ °C																								
35	Access Door, No./Size :	yes /	Thermostatically Controlled Heaters: ☐																												
36	BLADES :		Temperature Detectors:		☒	N° 2 PT 100																									
37	Type:	Airfoil	Vibration Detectors:		☒																										
38	No.:	8	JB per raccolta segnali																												
39	Material:	SAF 2205																													
40	HUB :		SPEED DETECTORS:																												
41	Shrink Fit:	☐ Keyed ☒	Non-contact probe		☐																										
42	Material:	Fe 430 B	Speed Switch		☐																										
43	SHAFT :		Other ☐																												
44	Material:	C 45 + Camicia albero in AISI 316 L	V-BELTS & PULLEYS:		COUPLINGS:																										
45	Diam. @ brgs, mm		Type:		Type: Elastico																										
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:																										
47	Material:	NA	Driver Pulley, mm		Service Factor:																										
48	SHAFT SEALS :		Mount Coupling Halves :																												
49	Type:	N° 2 Tenute flottanti PTFE/AISI	FAN:		☐																										
50			DRIVER:		☐																										
51	PD² [kgm²] :		Spacer Lenght, mm :																												
52	NOTES : La serranda di regolazione dovrà essere completa di servocomando elettro-pneumatico HART-SMART Protocol - segnale 3÷15 PSI + Finecorsa Go-Switch																														
53	GO-Switch																														
54																															
55																															
56																															
57																															
58																															
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300																											
A.S. Ref. no.:		0																													
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<table border="1"> <tr> <td>0</td> <td>ML</td> <td>0</td> <td>0</td> <td>09/06/09</td> <td>0</td> </tr> <tr> <td>REV</td> <td>BY</td> <td>CHK'D</td> <td>APP'D</td> <td>DATE</td> <td>Description</td> </tr> </table>				0	ML	0	0	09/06/09	0	REV	BY	CHK'D	APP'D	DATE	Description	A.S. Job No.: 2764 / 02		Size A4	PAGE 3 OF 5												
0	ML	0	0	09/06/09	0																										
REV	BY	CHK'D	APP'D	DATE	Description																										

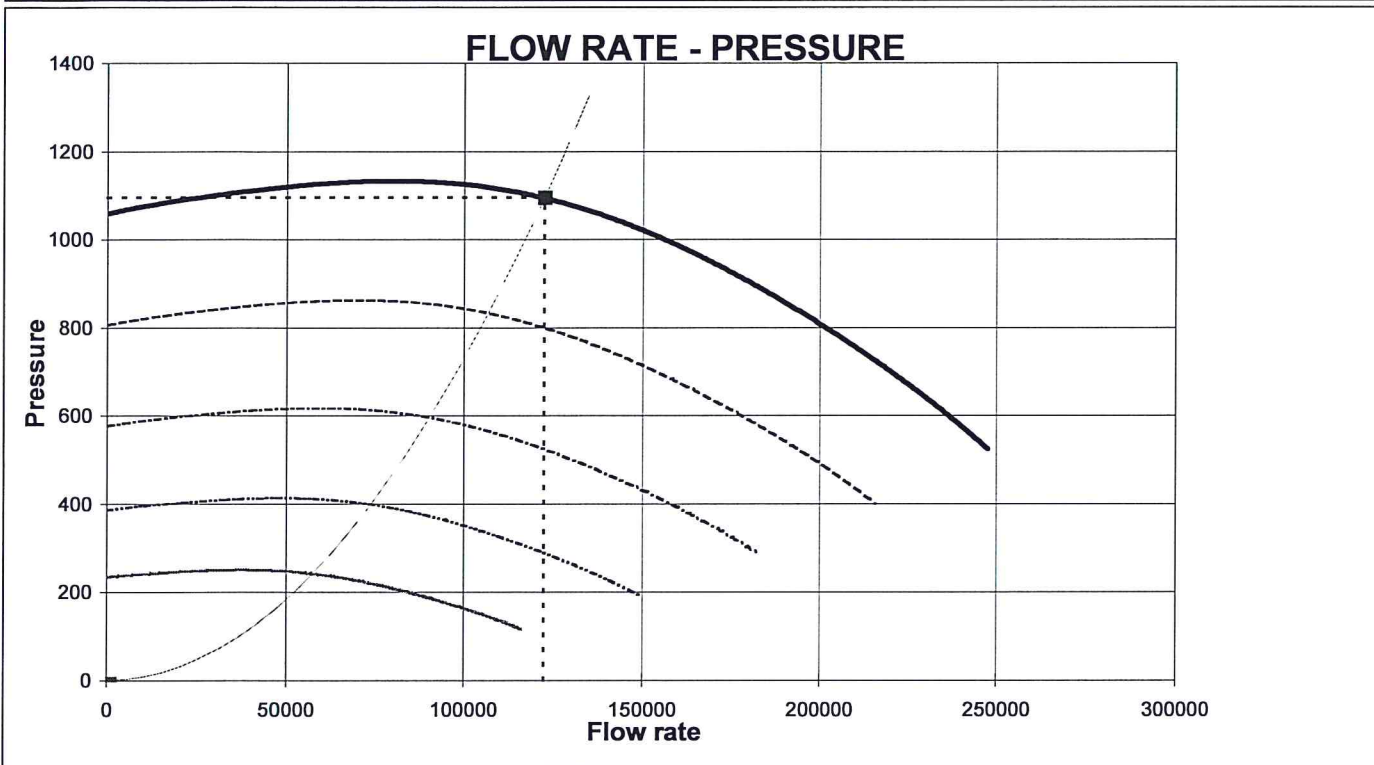
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☒	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☒			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☐			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :		70	dB(A) @ 1 m	Driver:		Fan :				
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):		Base :				
12					Outlet Silencer:		Ebase:				
13	Furnished by:				Total Shipping Weight:		0				
14	PAINTING :					CONNECTIONS :					
15	According to Spec. No. :	☐			Inlet:		Size	Rating	Orientation		
16					Outlet:						
17	Manufacturer Std.	☒			Drains:						
18	SHIPMENT :					TESTS:					WITNESSED:
19	Domestic	☐			☒	Mechanical Running (No Load)	no	☐	yes	☒	
20	Export	☒			☐	Performance	no	☐	yes	☐	
21	ERECTION :					☒	Rotor Balance	no	☒	yes	☐
22	Assembled	☒			☒	Shop Inspection	no	☒	yes	☐	
23	Partly Assembled	☐			☐	Assembly and Fit-up Check	no	☐	yes	☐	
24					☐	Lateral Critical Speed	no	☐	yes	☐	
25	APPLICABLE SPECIFICATIONS :					☐	Torsional Critical Speed	no	☐	yes	☐
26					☐		no	☐	yes	☐	
27					☐		no	☐	yes	☐	
28					☐		no	☐	yes	☐	
29					☐		no	☐	yes	☐	
30	NOTES : CABINA FONOASSORBENTE										
31											
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PLANT :		San Vittore del Lazio				AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300		
A.S. Ref. no.:		0				PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS. OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED		
					DATA SHEET			
					CENTRIFUGAL FAN			
0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 02		A4
						PAGE		4 OF 5

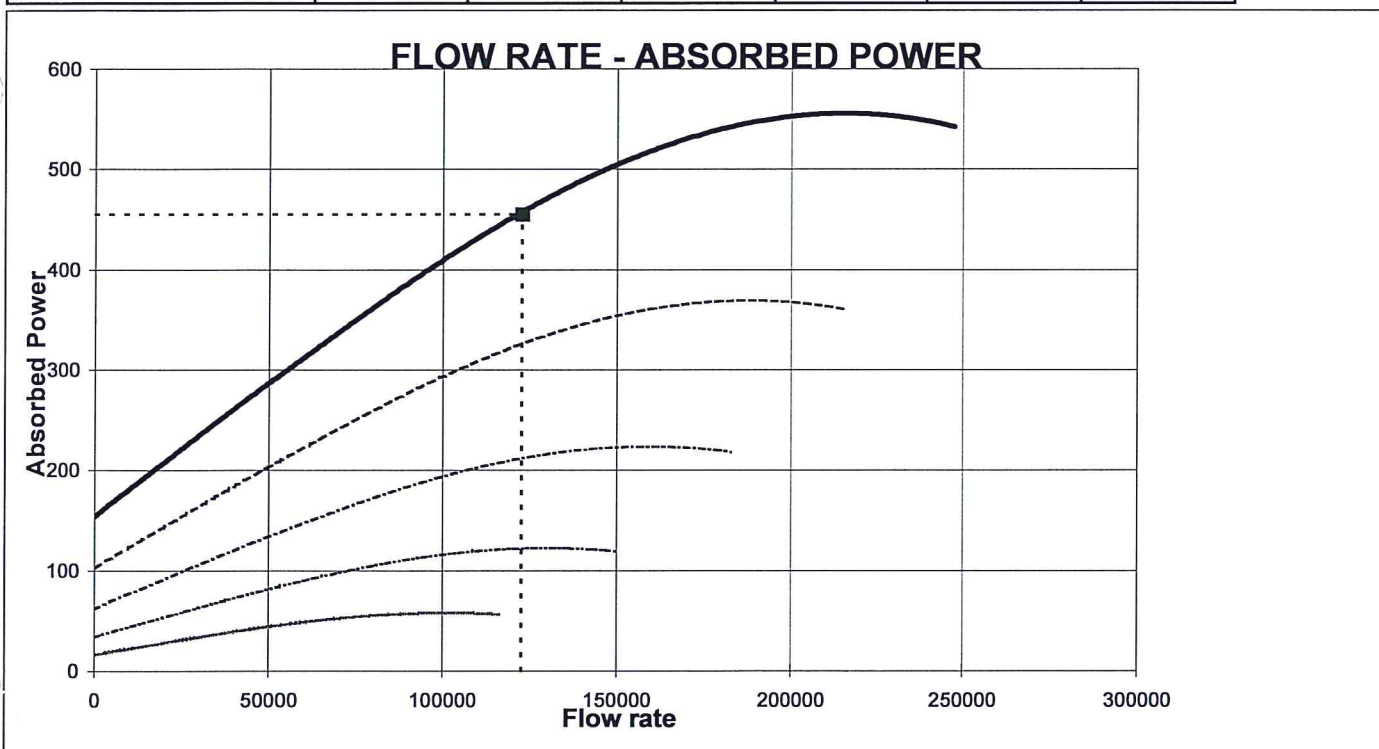


CENTRIFUGAL FAN TYPE: **TSAN 192**
ITEM: **L2 S20-CO 043X L2 S20-CO 044X**

SPEED= **1490** RPM
T= **130** °C
 γ = **0,791** Kg/m³



CASE	DESIGN					
Flow rate	122578					m3/h
Static pressure	1095					mmH2O
Speed	1.490	1.300	1.100	900	700	RPM
Absorbed Power	455,0					kW



TM.E. S.p.A. Termomeccanica Ecologia 	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ Document 10125ASMS205	Rev. 00
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SPECIFICA TECNICA
VENTILATORE DEODORIZZAZIONE
TIPO BCFN 365
LINEA 2
ITEM : L2S50-CO003X



Cliente/Customer EALL - Gruppo Acea	Commessa/Job 10125	CID Codice class. doc.	Impianto Plant SF	Sistema System S20	Un. Funz. Func. Un. L2	Tipo doc. Doc. type PDS
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00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No: 2764 / 05 **Rev.** 00

VENTILATORE DEODORIZZAZIONE - LINEA 2 - ITEM L2S50-CO003X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1		
Fan Type / Tipo Ventilatore:	BCFN 365		
Arrangement / Esecuzione:	4		
Discharge Position / Orientamento:	LG 0		
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione	☐ Doppia Aspirazione	
Electric Motor / Motore Elettrico:	☒ Di Fornitura	☐ Fornito da cliente	☐ Non Previsto
Installed Power / Potenza Installata:	75 kW		
Housing Material / Materiale Cassa:	Fe 460 B		
Wheel Material / Materiale Girante:	CORTEN		

PLANT : San Vittore del Lazio



AEROMECCANICA STRANICH S.p.A.
20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300

A.S. Ref. no.:

PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED

DATA SHEET CENTRIFUGAL FAN

0	ML			09/06/09		A.S. Job No.:	SIZE	PAGE
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 05	A4	2 OF 5

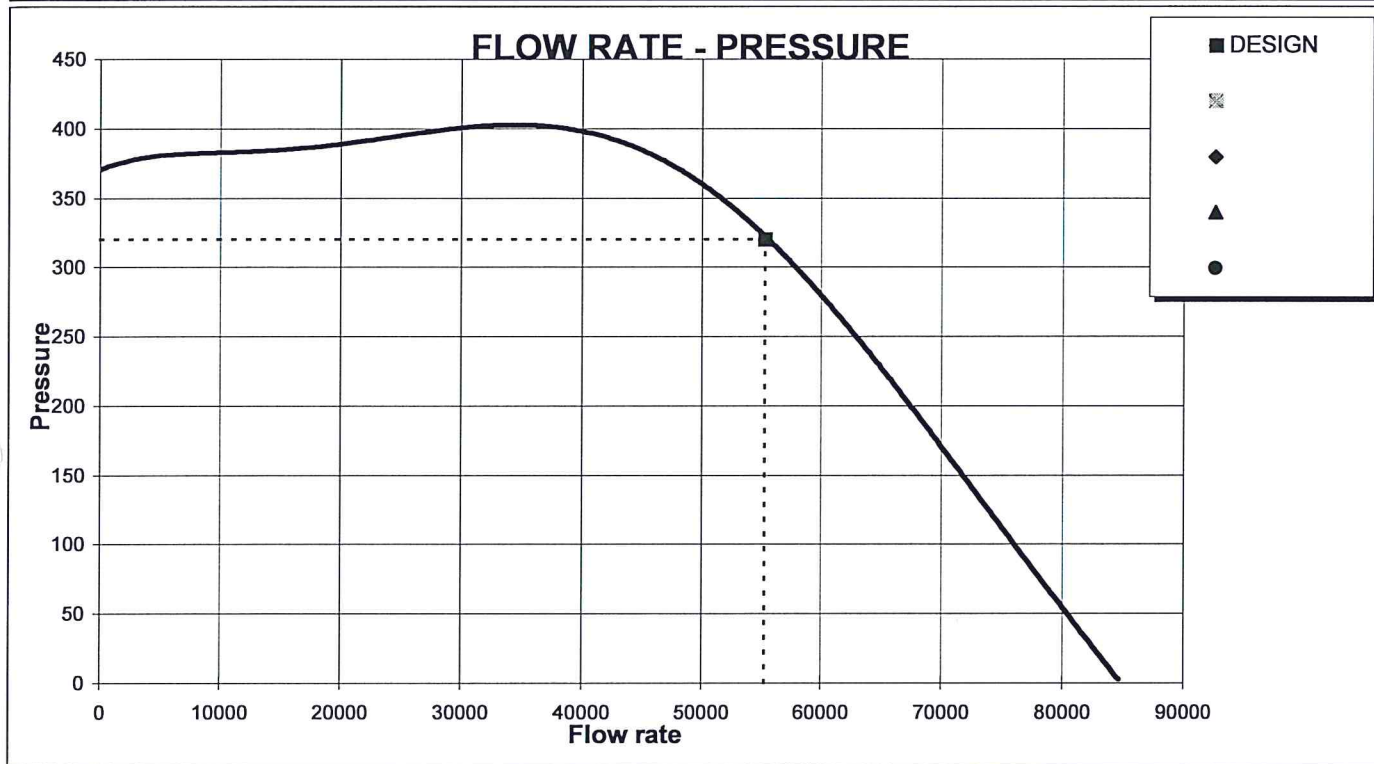
PURCHASER / OWNER :		T.M.E. S.p.A.		ITEM No. :		L2S50-CO003X									
SERVICE :		Deodorizzazione		LOCATION :		San Vittore del Lazio									
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	BCFN 365		Arrangement:	4	Disch. Pos.:	LG 0	REV				
2	Service:			No. Required:			1								
3	Drive System:	Motor		Fans Rotation From Drive End:	CW		☐	CCW	☒						
4	Gas Handled:	Aria		Molecular Weight:			29,97								
5	Site Elevation:	m ASL		Fan Location:	Outdoor		☐	Indoor	☒						
OPERATING CONDITIONS															
7	OPERATING CONDITIONS / CASE :			DESIGN	Normal	Cond.2	Cond.3	Cond.4							
8	Mass Flow :	Nm3/h	50.000												
9	Volume Flow:	Am3/h	55.268												
10	Density:	kg/m3	1,169												
11	Temperature:	°C	20												
12	Relative Humidity:	%													
13	Static Pressure @ Inlet:	mmwg	320												
14	Static Pressure @ Outlet:	mmwg													
15	PERFORMANCE :														
16	Power Required @ Cond's (all losses incl.):	kW	62												
17	Fan Speed:	rpm	1.480												
18	Static Pressure Rise Across Fan:	mmwg													
19	Inlet Damper / Vane Position:	%													
20	Discharge Damper Position:	%													
21	Fan Static Efficiency:	%	77,0												
22	Steam Rate (TURBINE ONLY) :	kg/kWh	---												
23	FAN CONTROL :			DRIVER :		Motor									
24	Air Supply	Instrument Air		Make:	FELM	Type:									
25	Fan Control Furnished by:	A.Stranich		Rated Power, kW:	75	rpm :	1490								
26	Method:	Inlet Damper	☐	Electrical Area Classification:											
27		Outlet Damper	☐	Class:		Group:		Div:							
28		Inlet Guide Vane	☐	Volts:	400	Ph :	3	Hz :	50						
29		Variable Speed	☐	Starting Method:	Con inverter		ATEX:	N.A.							
CONSTRUCTION FEATURES															
31	HOUSING :			BEARINGS :											
32	Material:	Thickness, mm :		Hydrodynamic	☐	RTL	Anti-friction	☐							
33	Split for wheel removal:	yes	☐	no	☒	Lubrication:	grease								
34	Drains, No./Size :	yes	/			Coolant Required:	yes	☐	no	☐	Q.ty	/ min	@	°C	
35	Access Door, No./Size :	yes	/			Thermostatically Controlled Heaters:	☐								
36	BLADES :			Temperature Detectors:								☐			
37	Type:	Airfoil		Vibration Detectors:								☐			
38	No.:	8													
39	Material:	CORTEN													
40	HUB :			SPEED DETECTORS:											
41	Shrink Fit:	☐	Keyed	☒	Non-contact probe								☐		
42	Material:	Fe 430 B		Speed Switch								☐			
43	SHAFT :			Other								☐			
44	Material:	N.A.		V-BELTS & PULLEYS:				COUPLINGS:							
45	Diam. @ brgs, mm			Type:				Type:				Elastico			
46	SHAFT SLEEVES :			Fan Pulley, mm				Make / Model:							
47	Material:	NA		Driver Pulley, mm				Service Factor:							
48	SHAFT SEALS :			Mount Coupling Halves :											
49	Type:	semplice in Al		FAN:								☐			
50				DRIVER:								☐			
51	PD² [kgm2] :			Spacer Lenght, mm :											
52	NOTES :														
53															
54															
55															
56															
57															
58															
PLANT :				San Vittore del Lazio				AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300							
A.S. Ref. no.:				0											
						PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENDEO OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED									
DATA SHEET CENTRIFUGAL FAN															
0	ML	0	0	09/06/09	0	A.S. Job No.:				Size	PAGE				
REV	BY	CHK'D	APP'D	DATE	Description	2764 / 05				A4	3 OF 5				

1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☒	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☐			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☒			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	80	dB(A) @ 1 m		Driver:		Fan :				
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):		Base :				
12					Outlet Silencer:		Ebase:				
13	Furnished by:				Total Shipping Weight:		0				
14	PAINTING :					CONNECTIONS :		Size	Rating	Orientation	
15	According to Spec. No. :	☐			Inlet:						
16					Outlet:						
17	Manufacturer Std.	☒			Drains:						
18	SHIPMENT :					TESTS:		WITNESSED:			
19	Domestic	☐			☒ Mechanical Running (No Load)	no	☐	yes	☒		
20	Export	☒			☐ Performance	no	☐	yes	☐		
21	ERECTION :					☒ Rotor Balance	no	☒	yes	☐	
22	Assembled	☒			☒ Shop Inspection	no	☒	yes	☐		
23	Partly Assembled	☐			☐ Assembly and Fit-up Check	no	☐	yes	☐		
24					☐ Lateral Critical Speed	no	☐	yes	☐		
25	APPLICABLE SPECIFICATIONS :					☐ Torsional Critical Speed	no	☐	yes	☐	
26					☐	no	☐	yes	☐		
27					☐	no	☐	yes	☐		
28					☐	no	☐	yes	☐		
29					☐	no	☐	yes	☐		
30	NOTES : SILENZIATORE CILINDRICO SU MANDATA										
31											
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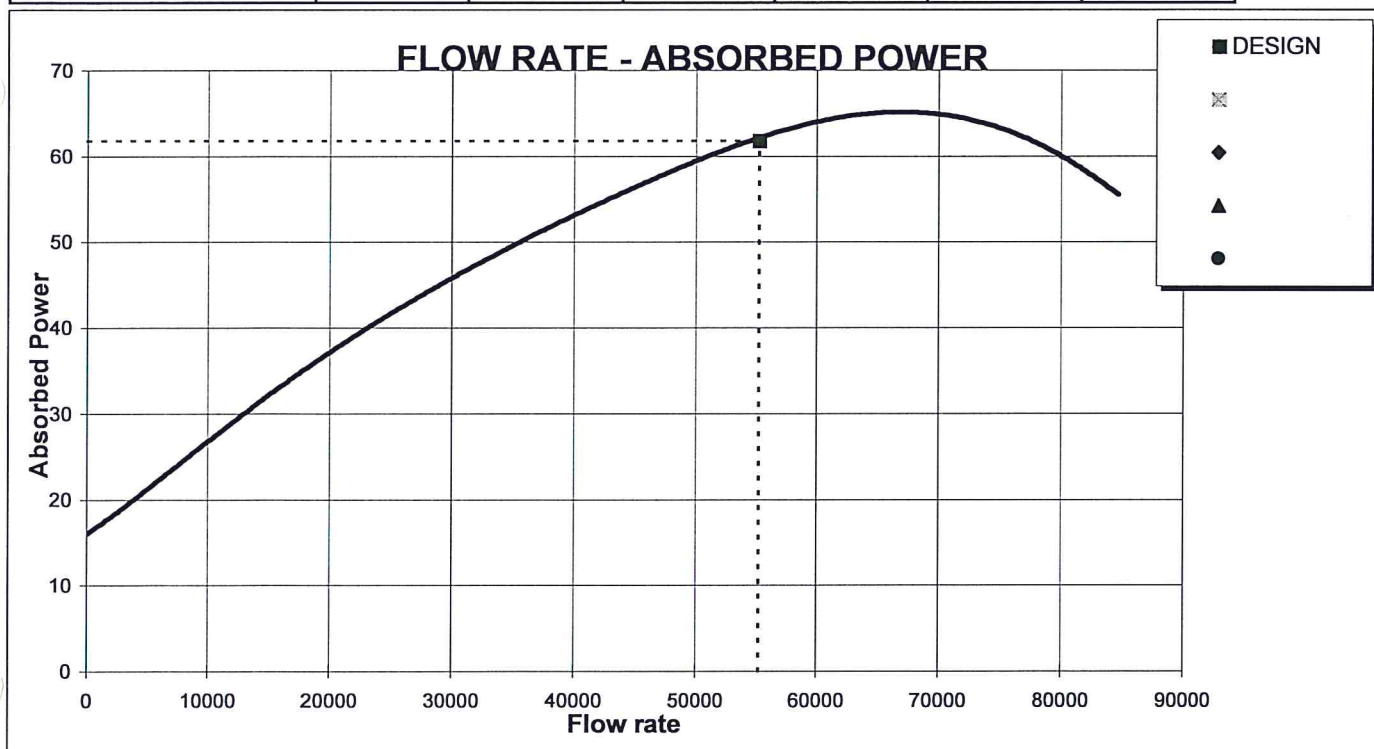
PLANT :		San Vittore del Lazio					AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:		0					PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED			
						DATA SHEET CENTRIFUGAL FAN				
0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 05		A4	4 OF 5	



CENTRIFUGAL FAN TYPE:	<u>BCSN 365</u>	SPEED=	1480	RPM
Job n° :	<u>2764/5</u>	T=	20	°C
ITEM	L2S50-CO003X	γ =	1,169	Kg/m ³



CASE	DESIGN				
Flow rate	55268				m3/h
Static pressure	320				mmH2O
Speed	1.480				RPM
Absorbed Power	61,8				kW



TM.E. S.p.A. Termomeccanica Ecologia 	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ Document 10125ASMS503 Pag. 1 di 5 Page 1 of 5	Rev. 00
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SPECIFICA TECNICA
VENTILATORE ARIA PRIMARIA
TIPO TSAN 145
LINEA 3
ITEM : L3S25-CO019X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer	Commessa/Job	CID Codice class. doc.	Impianto Plant	Sistema System	Un. Funz. Func. Un.	Tipo doc. Doc. type
EALL - Gruppo Acea	10125		SF	S20	L3	PDS

00	09/07/2009	EMISSIONE	MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 08	Rev.	00
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VENTILATORE ARIA PRIMARIA - LINEA 3 - ITEM L3S25-CO019X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1
Fan Type / Tipo Ventilatore:	TSAN 145
Arrangement / Esecuzione:	8
Discharge Position / Orientamento:	LG 270
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione ☐ Doppia Aspirazione
Electric Motor / Motore Elettrico:	☒ Di Fornitura ☐ Fornito da cliente ☐ Non Previsto
Installed Power / Potenza Installata:	200 kW
Housing Material / Materiale Cassa:	Fe 460 B
Wheel Material / Materiale Girante:	CORTEN

PLANT :	San Vittore del Lazio		AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300	
A.S. Ref. no.:		PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED		
		DATA SHEET CENTRIFUGAL FAN		
		A.S. Job No.:	SIZE	PAGE
		2764 / 08	A4	2 OF 5
REV	BY	CHKD	APP'D	DATE
				DESCRIPTION

PURCHASER / OWNER : T.M.E. S.p.A.				ITEM No. :		L3 S25 CO0019X						
SERVICE : Aria Primaria				LOCATION :		San Vittore del Lazio						
1	Fan Manufacturer:		A. Stranich SpA		Model / Size :	TSAN 145		Arrangement:	8	Disch. Pos.:	LG 270	REV
2	Service:				No. Required:			1				
3	Drive System:		Motor + Inverter		Fans Rotation From Drive End:		CW	☐	CCW	☒		
4	Gas Handled:		Aria		Molecular Weight:		29,97					
5	Site Elevation:				m ASL	Fan Location:		Outdoor	☐	Indoor	☒	
6	OPERATING CONDITIONS											
7	OPERATING CONDITIONS / CASE :				DESIGN	Normal	Cond.2	Cond.3	Cond.4			
8	Mass Flow :		Nm3/h		65.000							
9	Volume Flow:		Am3/h		71.506							
10	Density:		kg/m3		1,175							
11	Temperature:		°C		25							
12	Relative Humidity:		%									
13	Static Pressure @ Inlet:		mmwg		710							
14	Static Pressure @ Outlet:		mmwg									
15	PERFORMANCE :											
16	Power Required @ Cond's (all losses incl.):		kW		166							
17	Fan Speed:		rpm		1.490							
18	Static Pressure Rise Across Fan:		mmwg									
19	Inlet Damper / Vane Position:		%									
20	Discharge Damper Position:		%									
21	Fan Static Efficiency:		%		83							
22	Steam Rate (TURBINE ONLY) :		kg/kWh		—	—						
23	FAN CONTROL :				DRIVER :		Motor + Inverter					
24	Air Supply		Instrument Air		Make:	FELM		Type:				
25	Fan Control Furnished by:		A.Stranich		Rated Power, kW:	200		rpm :	1490			
26	Method:		Inlet Damper ☐		Electrical Area Classification:							
27			Outlet Damper ☐		Class:			Group:			Div:	
28			Inlet Guide Vane ☐		Volts:	400		Ph :	3		Hz :	50
29			Variable Speed ☐		Starting Method:	Con inverter		ATEX:	N.A.			
30	CONSTRUCTION FEATURES											
31	HOUSING :				BEARINGS :							
32	Material:		Thickness, mm :		Hydrodynamic	☐	RTL	Anti-friction	☒			
33	Split for wheel removal:		yes ☐	no ☒	Lubrication: grease							
34	Drains, No./Size :		yes /		Coolant Required:	yes ☐	no ☒	Q.ty		I / min	@	°C
35	Access Door, No./Size :		yes /		Thermostatically Controlled Heaters: ☐							
36	BLADES :				Temperature Detectors: ☐							
37	Type:		Airfoil		Vibration Detectors: ☐							
38	No.:		8									
39	Material:		CORTEN									
40	HUB :				SPEED DETECTORS:							
41	Shrink Fit:		☐	Keyed ☒	Non-contact probe ☐							
42	Material:		Fe 430 B		Speed Switch ☐							
43	SHAFT :				Other ☐							
44	Material:		C 45		V-BELTS & PULLEYS:				COUPLINGS:			
45	Diam. @ brgs, mm				Type:				Type: Elastico			
46	SHAFT SLEEVES :				Fan Pulley, mm				Make / Model:			
47	Material:		NA		Driver Pulley, mm				Service Factor:			
48	SHAFT SEALS :				Mount Coupling Halves :							
49	Type:		Semplice in Al		FAN: ☐				DRIVER: ☐			
50									Spacer Lenght, mm :			
51	PD² [kgm²] :											
52	NOTES :											
53												
54												
55												
56												
57												
58												
PLANT :				San Vittore del Lazio				 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300				
A.S. Ref. no.:				0								
								PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED				
								DATA SHEET				
								CENTRIFUGAL FAN				
0	ML	0	0	09/06/09	0	A.S. Job No.:				Size	PAGE	
REV	BY	CHK'D	APP'D	DATE	Description	2764 / 08				A4	3 OF 5	

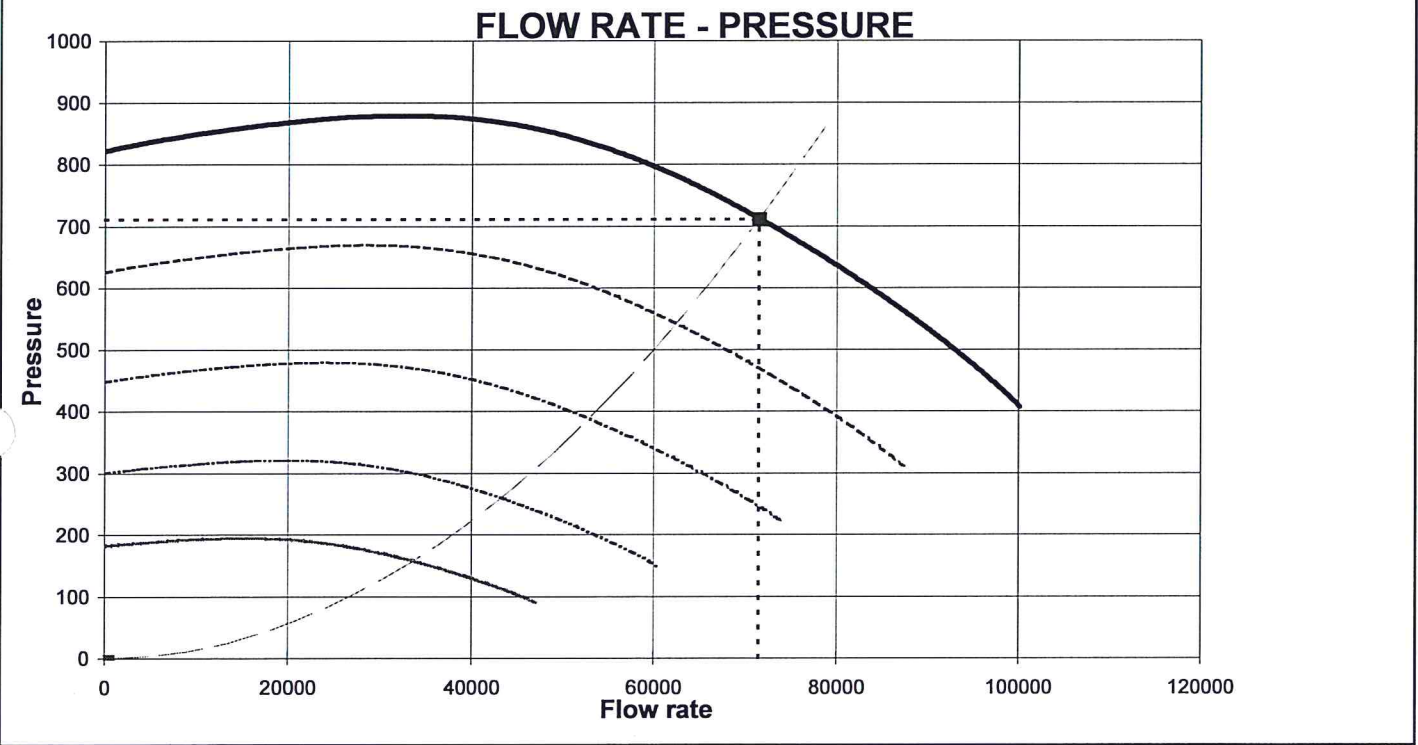
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☐			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☒			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	80	dB(A) @ 1 m		Driver:		Fan :				
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):		Base :				
12						Outlet Silencer:		Evase:			
13	Furnished by:				Total Shipping Weight:		0				
14	PAINTING :					CONNECTIONS :		Size	Rating	Orientation	
15	According to Spec. No. :	☐			Inlet:						
16						Outlet:					
17	Manufacturer Std.	☒			Drains:						
18	SHIPMENT :					TESTS:			WITNESSED:		
19	Domestic	☐			☒ Mechanical Running (No Load)	no	☐	yes	☒		
20	Export	☒			☐ Performance	no	☐	yes	☐		
21	ERECTION :					☒ Rotor Balance	no	☒	yes	☐	
22	Assembled	☒			☒ Shop Inspection	no	☒	yes	☐		
23	Partly Assembled	☐			☐ Assembly and Fit-up Check	no	☐	yes	☐		
24						☐ Lateral Critical Speed	no	☐	yes	☐	
25	APPLICABLE SPECIFICATIONS :					☐ Torsional Critical Speed	no	☐	yes	☐	
26						☐	no	☐	yes	☐	
27						☐	no	☐	yes	☐	
28						☐	no	☐	yes	☐	
29						☐	no	☐	yes	☐	
30	NOTES : CABINA PER MOTORE										
31											
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PLANT :		San Vittore del Lazio					AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:		0					PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED			
						DATA SHEET CENTRIFUGAL FAN				
0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 08		A4	4 OF 5	

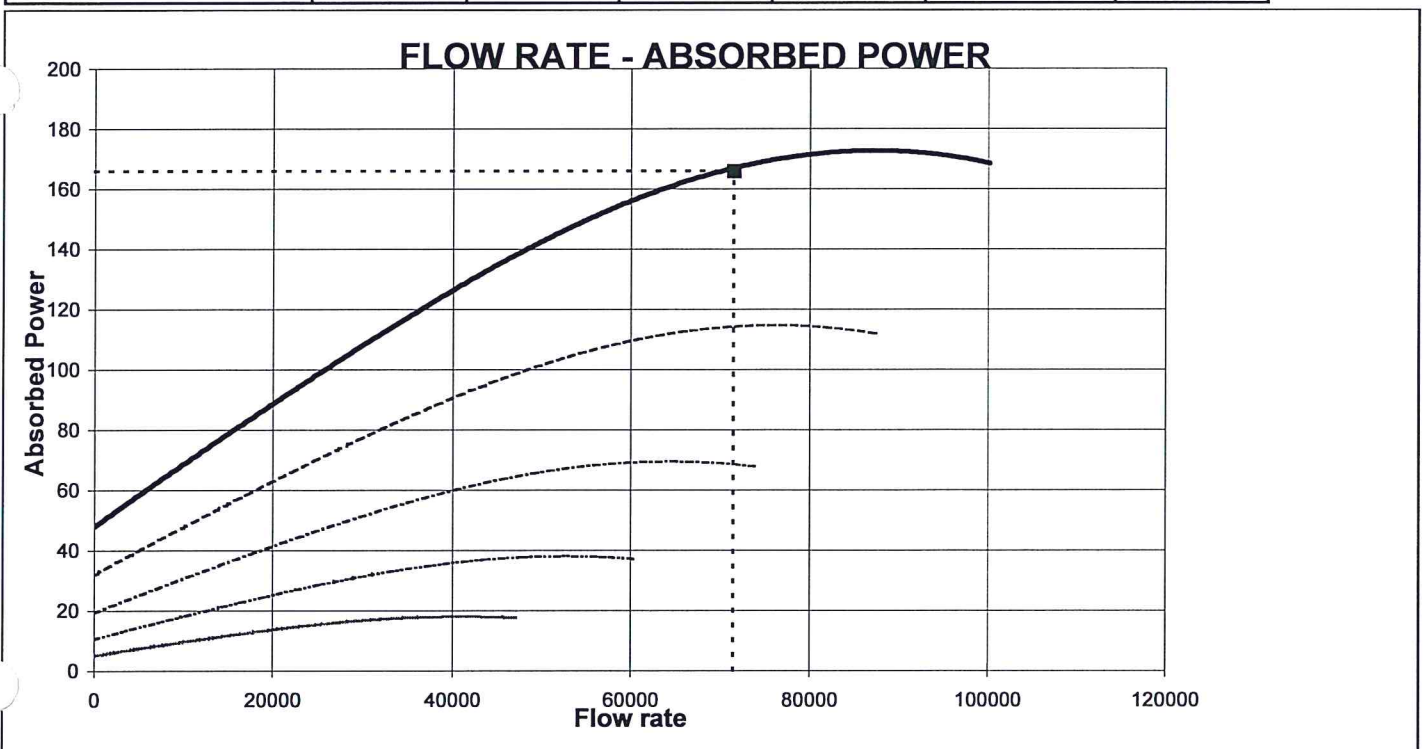


CENTRIFUGAL FAN TYPE: TSAN 145
ITEM: L3 S25-CO 019X
Ventilatori Aria Primaria

SPEED= 1490 **RPM**
T= 25 **°C**
γ= 1,175 **Kg/m³**



CASE	DESIGN					
Flow rate	71.506					m3/h
Static pressure	710					mmH2O
Speed	1.490	1.300	1.100	900	700	RPM
Absorbed Power	166,0					kW



TM.E. S.p.A. Termomeccanica Ecologia 	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ Document 10125ASMS504 Pag. 1 di 5 Page 1 of 5	Rev. 00
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SPECIFICA TECNICA
VENTILATORE ARIA SECONDARIA
TIPO TSAN 145
LINEA 3
ITEM : L3S25-CO010X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer EALL - Gruppo Acea	Commessa/Job 10125	CID Codice class. doc.	Impianto Plant SF	Sistema System S20	Un. Funz. Func. Un. L3	Tipo doc. Doc. type PDS
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00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 09	Rev.	00
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VENTILATORE ARIA SECONDARIA - LINEA 3 - ITEM L3S25-CO010X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1
Fan Type / Tipo Ventilatore:	TSAN 145
Arrangement / Esecuzione:	8
Discharge Position / Orientamento:	LG 270
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione ☐ Doppia Aspirazione
Electric Motor / Motore Elettrico:	☒ Di Fornitura ☐ Fornito da cliente ☐ Non Previsto
Installed Power / Potenza Installata:	200 kW
Housing Material / Materiale Cassa:	Fe 460 B
Wheel Material / Materiale Girante:	CORTEN

PLANT :	San Vittore del Lazio		AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300	
A.S. Ref. no.:			PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED	
		DATA SHEET CENTRIFUGAL FAN		
		A.S. Job No.:	SIZE	PAGE
		2764 / 09	A4	2 OF 5
REV	BY	CHK'D	APP'D	DATE
				DESCRIPTION

PURCHASER / OWNER :		T.M.E. S.p.A.		ITEM No. :		L3S25-CO010X																									
SERVICE :		Aria		LOCATION :		San Vittore del Lazio																									
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	TSAN 145		Arrangement:																								
	Service:			No. Required:	1		Disch. Pos.:																								
	Drive System:	Motor + Inverter		Fans Rotation From Drive End:	CW ☐ CCW ☒		LG 270																								
4	Gas Handled:	Aria		Molecular Weight:	29,97		REV																								
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐ Indoor ☒																										
6 OPERATING CONDITIONS																															
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4																								
8	Mass Flow :	Nm3/h	50.000																												
9	Volume Flow:	Am3/h	54.978																												
10	Density:	kg/m3	1,175																												
11	Temperature:	°C	25																												
12	Relative Humidity:	%																													
13	Static Pressure @ Inlet:	mmwg	855																												
14	Static Pressure @ Outlet:	mmwg																													
15	PERFORMANCE :																														
16	Power Required @ Cond's (all losses incl.):	kW	157																												
17	Fan Speed:	rpm	1.490																												
18	Static Pressure Rise Across Fan:	mmwg																													
19	Inlet Damper / Vane Position:	%																													
20	Discharge Damper Position:	%																													
21	Fan Static Efficiency:	%	81,5																												
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—	—																											
23	FAN CONTROL :		DRIVER :		Motor + Inverter																										
	Air Supply	Instrument Air		Make:	FELM		Type:																								
25	Fan Control Furnished by:	A.Stranich		Rated Power, kW:	200		rpm :																								
26	Method:	Inlet Damper ☐		Electrical Area Classification:																											
27		Outlet Damper ☐		Class:	Group:	Div:																									
28		Inlet Guide Vane ☐		Volts:	400	Ph :	3																								
29		Variable Speed ☐		Starting Method:	Con inverter	ATEX:	N.A.																								
30 CONSTRUCTION FEATURES																															
31	HOUSING :		BEARINGS :																												
32	Material:	Thickness, mm :		Hydrodynamic ☐ RTL	Anti-friction ☒																										
33	Split for wheel removal:	yes ☐ no ☒	Lubrication: grease																												
34	Drains, No./Size :	yes /	Coolant Required: yes ☐ no ☒ Q.ty / min @ °C																												
35	Access Door, No./Size :	yes /	Thermostatically Controlled Heaters: ☐																												
36	BLADES :		Temperature Detectors: ☐																												
37	Type:	Airfoil		Vibration Detectors: ☐																											
38	No.:	8																													
39	Material:	CORTEN																													
40	HUB :		SPEED DETECTORS:																												
41	Shrink Fit:	☐	Keyed ☒	Non-contact probe ☐																											
42	Material:	Fe 430 B		Speed Switch ☐																											
43	SHAFT :		Other ☐																												
44	Material:	C 45		V-BELTS & PULLEYS:		COUPLINGS:																									
	Diam. @ brgs, mm			Type:	Type: Elastico																										
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:																										
47	Material:	NA		Driver Pulley, mm		Service Factor:																									
48	SHAFT SEALS :		Mount Coupling Halves :																												
49	Type:	semplice in Al		FAN: ☐																											
50				DRIVER: ☐																											
51	PD² [kgm²] :			Spacer Lenght, mm :																											
52	NOTES :																														
53																															
54																															
55																															
56																															
57																															
58																															
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300																											
A.S. Ref. no.:		0																													
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				DATA SHEET CENTRIFUGAL FAN																											
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						A4	3 OF 5																								

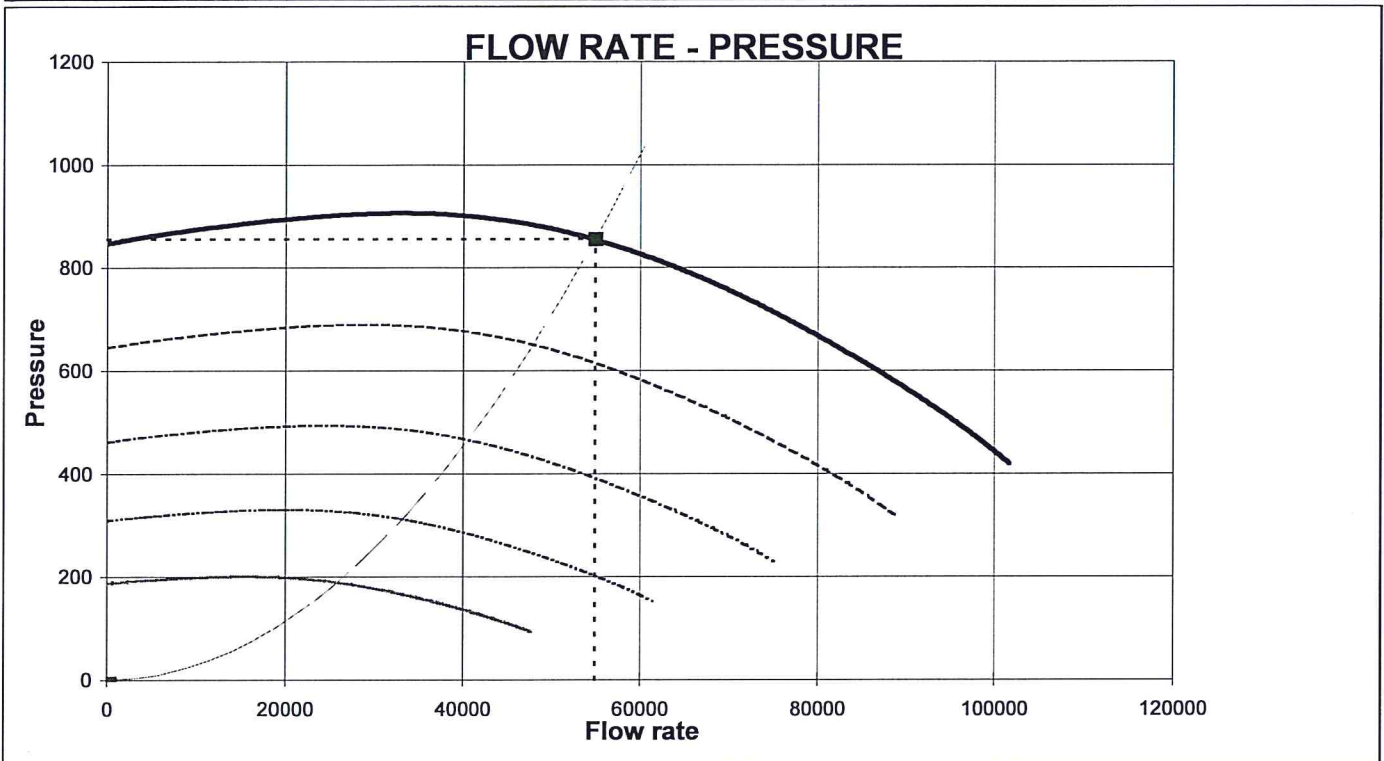
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☐			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☒			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☒	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	75	dB(A) @ 1 m		Driver:		Fan :				
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):		Base :				
12						Outlet Silencer:		Ebase:			
13	Furnished by:				Total Shipping Weight:		0				
14	PAINTING :					CONNECTIONS :					
15	According to Spec. No. :	☐			Inlet:	Size	Rating	Orientation			
16						Outlet:					
17	Manufacturer Std.	☒			Drains:						
18	SHIPMENT :					TESTS:					
19	Domestic	☐			☒	Mechanical Running (No Load)	no	☐	yes	☒	
20	Export	☒			☐	Performance	no	☐	yes	☐	
21	ERECTION :					☒	Rotor Balance	no	☒	yes	
22	Assembled	☒			☒	Shop Inspection	no	☒	yes	☐	
23	Partly Assembled	☐			☐	Assembly and Fit-up Check	no	☐	yes	☐	
24						☐	Lateral Critical Speed	no	☐	yes	
25	APPLICABLE SPECIFICATIONS :					☐	Torsional Critical Speed	no	☐	yes	
26						☐		no	☐	yes	
27						☐		no	☐	yes	
28						☐		no	☐	yes	
29						☐		no	☐	yes	
30	NOTES : PREVEDERE ABINA PER MOTORE + SILENZIATORE CON RETE DI PROTEZIONE										
31											
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PLANT :		San Vittore del Lazio					AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:		0					PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED DATA SHEET CENTRIFUGAL FAN			
0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 09		A4	4 OF 5	

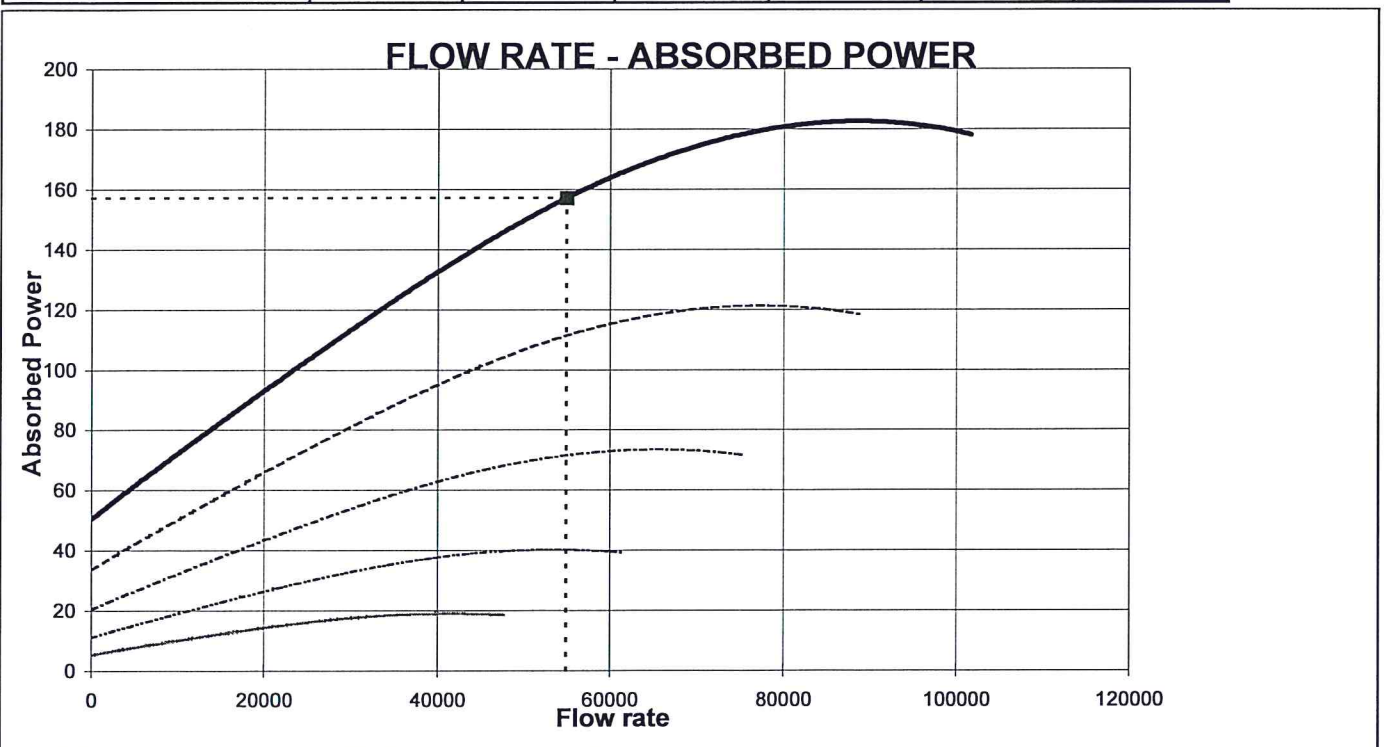


CENTRIFUGAL FAN TYPE: **TSAN 145**
ITEM: **L3 S25-CO 010X**
Ventilatore Aria Secondaria

SPEED= **1490** RPM
T= **25** °C
 γ = **1,175** Kg/m³



CASE	DESIGN					
Flow rate	54978					m3/h
Static pressure	855					mmH2O
Speed	1.490	1.300	1.100	900	700	RPM
Absorbed Power	157,0					kW



TM.E. S.p.A. Termomeccanica Ecologia 	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ <i>Document</i>	Rev.
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SPECIFICA TECNICA
VENTILATORE RICIRCOLO FUMI
TIPO TSAN 92
LINEA 3
ITEM : L3S20-CO001X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer	Commessa/Job	CID Codice class. doc.	Impianto Plant	Sistema System	Un. Funz. Func. Un.	Tipo doc. Doc. type
EALL - Gruppo Acea	10125		SF	S20	L3	PDS

00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 01	Rev.	00
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VENTILATORE RICIRCOLO FUMI - LINEA 3 - ITEM L3S20-CO001X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1		
Fan Type / Tipo Ventilatore:	TSAN 92		
Arrangement / Esecuzione:	8		
Discharge Position / Orientamento:	LG 315		
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione	☐ Doppia Aspirazione	
Electric Motor / Motore Elettrico:	☒ Di Fornitura	☐ Fornito da cliente	☐ Non Previsto
Installed Power / Potenza Installata:	110 kW		
Housing Material / Materiale Cassa:	CORTEN + Protezione con STARPLAST		
Wheel Material / Materiale Girante:	CORTEN		
Inlet Damper / Serranda Aspirazione:	Dapò con attuatore pneumatico		

PLANT :		San Vittore del Lazio				AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:				PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY, TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED					
				DATA SHEET CENTRIFUGAL FAN					
0	ML			09/06/09	A.S. Job No.:	SIZE	PAGE		
REV	BY	CHK'D	APP'D	DATE	2764 / 01	A4	2	OF 5	

PURCHASER / OWNER :		TM.E. S.p.A.		ITEM No. :		L3 S20 CO 001X																																	
SERVICE :		Riccircolo Fumi		LOCATION :		San Vittore Del Lazio																																	
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	TSAN 92		Arrangement: 8 Disch. Pos.: LG 315 REV																																
2	Service:			No. Required:	1																																		
3	Drive System:	Motor + Inverter		Fans Rotation From Drive End:	CW ☐	CCW ☒																																	
4	Gas Handled:	Fumi		Molecular Weight:	29,97																																		
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐	Indoor ☒																																	
OPERATING CONDITIONS																																							
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4																																
8	Mass Flow :	Nm3/h	21.000																																				
9	Volume Flow:	Am3/h	36.250																																				
10	Density:	kg/m3	0,749																																				
11	Temperature:	°C	180																																				
12	Relative Humidity:	%																																					
13	Static Pressure @ Inlet:	mmwg	775																																				
14	Static Pressure @ Outlet:	mmwg																																					
15	PERFORMANCE :																																						
16	Power Required @ Cond's (all losses incl.):	kW	91																																				
17	Fan Speed:	rpm	2.975																																				
18	Static Pressure Rise Across Fan:	mmwg																																					
19	Inlet Damper / Vane Position:	%																																					
20	Discharge Damper Position:	%																																					
21	Fan Static Efficiency:	%	84																																				
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—																																				
23	FAN CONTROL :		DRIVER : Motor + Inverter																																				
24	Air Supply	Instrument Air	Make:	FELM	Type:																																		
25	Fan Control Furnished by:	A.Stranich	Rated Power, kW:	110	rpm :	2975																																	
26	Method:	Inlet Damper ☐	Electrical Area Classification:																																				
27		Outlet Damper ☐	Class:		Group:	Div:																																	
28		Inlet Guide Vane ☒	Volts:	400	Ph :	3	Hz : 50																																
29		Variable Speed ☐	Starting Method:	Con inverter	ATEX:	N.A.																																	
CONSTRUCTION FEATURES																																							
31	HOUSING :		BEARINGS :																																				
32	Material:	Thickness, mm :	Hydrodynamic ☐	RTL	Anti-friction ☒																																		
33	Split for wheel removal:	yes ☐ no ☒	Lubrication: grease																																				
34	Drains, No./Size :	yes / no	Coolant Required:	yes ☐ no ☒	Q.ty	l / min	@ °C																																
35	Access Door, No./Size :	yes / no	Thermostatically Controlled Heaters: ☐																																				
36	BLADES :		Temperature Detectors: ☐																																				
37	Type:	Airfoil	Vibration Detectors: ☐																																				
38	No.:	8																																					
39	Material:	CORTEN																																					
40	HUB :		SPEED DETECTORS:																																				
41	Shrink Fit:	☐ Keyed ☒	Non-contact probe ☐																																				
42	Material:	Fe 430 B	Speed Switch ☐																																				
43	SHAFT :		Other ☐																																				
44	Material:	C 45 + Camicia albero in AISI 316 L	V-BELTS & PULLEYS:		COUPLINGS:																																		
45	Diam. @ brgs, mm		Type:		Type:	Elastico																																	
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:																																		
47	Material:	NA	Driver Pulley, mm		Service Factor:																																		
48	SHAFT SEALS :		Mount Coupling Halves :																																				
49	Type:	Semplice a 3 labirinti	FAN: ☐																																				
50			DRIVER: ☐																																				
51	PD² [kgm²] :		Spacer Lenght, mm :																																				
52	NOTES : Il regolatore di portata dovrà essere completo di servocomando pneumatico HART-SMART Protocol a semplice effetto con posizionatore																																						
53	3÷15 PSI + I/P converter																																						
54																																							
55																																							
56																																							
57																																							
58																																							
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300																																			
A.S. Ref. no.:		0																																					
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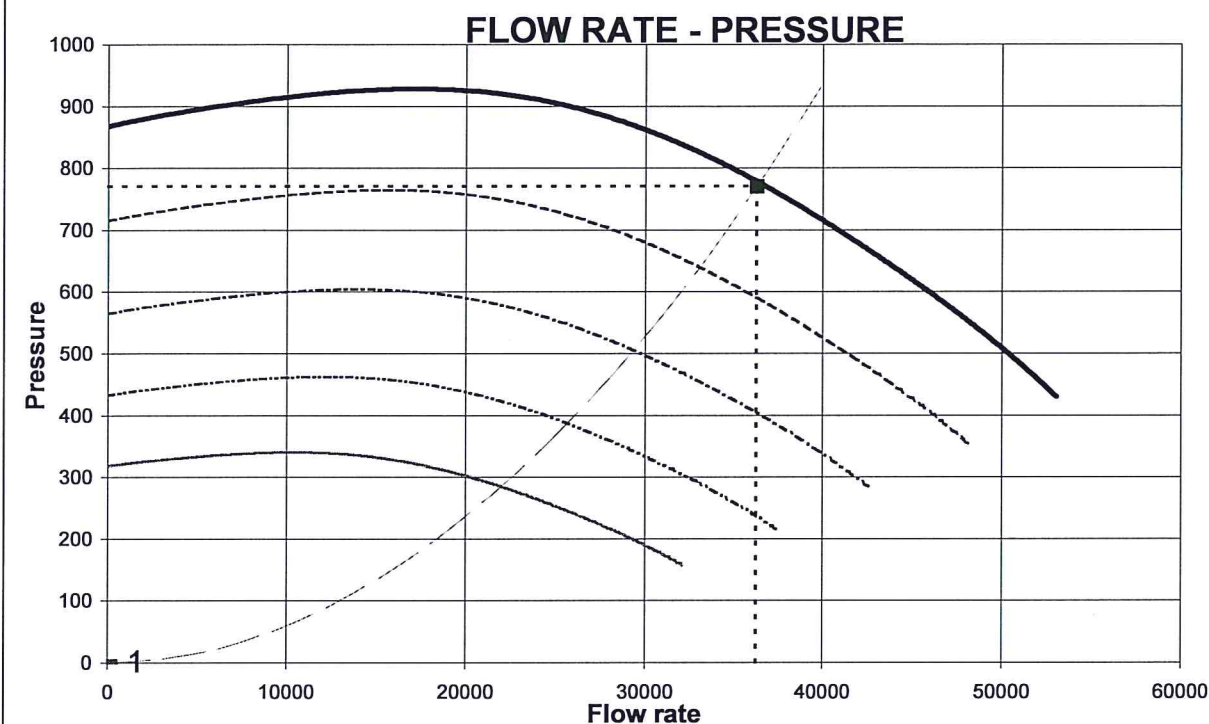
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☒			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☐	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☐			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	75	dB(A) @ 1 m		Driver:		Fan :				
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):		Base :				
12					Outlet Silencer:		Evase:				
13	Furnished by:				Total Shipping Weight:		0				
14	PAINTING :					CONNECTIONS :					
15	According to Spec. No. :	☐			Inlet:	Size	Rating	Orientation			
16					Outlet:						
17	Manufacturer Std.	☒			Drains:						
18	SHIPMENT :					TESTS:					
19	Domestic	☐			☒	Mechanical Running (No Load)	no	☐	yes	☒	
20	Export	☒			☐	Performance	no	☐	yes	☐	
21	ERECTION :					☒	Rotor Balance	no	☒	yes	
22	Assembled	☒			☒	Shop Inspection	no	☒	yes	☐	
23	Partly Assembled	☐			☐	Assembly and Fit-up Check	no	☐	yes	☐	
24					☐	Lateral Critical Speed	no	☐	yes	☐	
25	APPLICABLE SPECIFICATIONS :					☐	Torsional Critical Speed	no	☐	yes	
26					☐		no	☐	yes	☐	
27					☐		no	☐	yes	☐	
28					☐		no	☐	yes	☐	
29					☐		no	☐	yes	☐	
30	NOTES : CABINA FONOASSORBENTE										
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PLANT :		San Vittore del Lazio					AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:		0					PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED			
						DATA SHEET CENTRIFUGAL FAN				
0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 01		A4	4 OF 5	

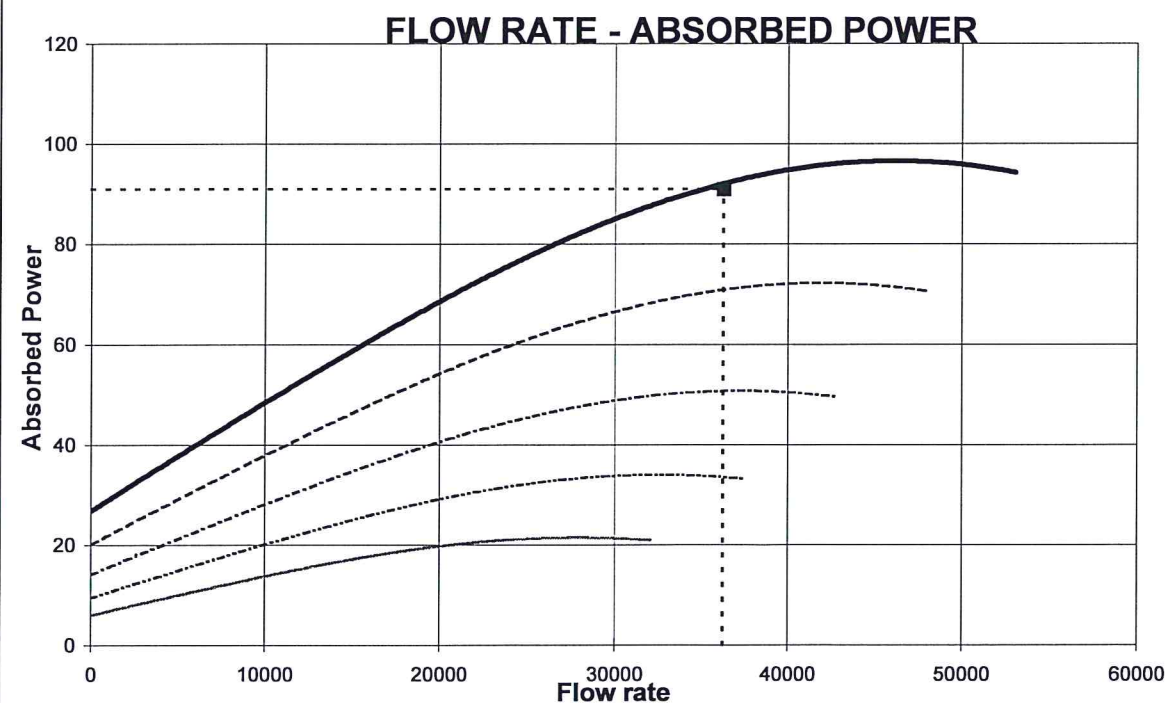


CENTRIFUGAL FAN TYPE: **TSAN 92**
ITEM: **L3 S20-CO 001X**
Ventilatore Ricircolo Fumi

SPEED= **2975** RPM
T= **180** °C
 γ = **0,749** Kg/m³



CASE	DESIGN					
Flow rate	36.250					m3/h
Static pressure	770					mmH2O
Speed	2.975	2.700	2.400	2.100	1.800	RPM
Absorbed Power	91,0					kW



TM.E. S.p.A. Termomeccanica Ecologia  Gruppo Termomeccanica	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ Document 10125ASMS502	Rev. 00
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SPECIFICA TECNICA
VENTILATORE RICIRCOLO FUMI
TIPO TSAN 192
LINEA 3
ITEM : L3S20-CO043X
L3S20-CO044X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer EALL - Gruppo Acea	Commessa/Job 10125	CID Codice class. doc.	Impianto Plant SF	Sistema System S20	Un. Funz. Func. Un. L3	Tipo doc. Doc. type PDS
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00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 07	Rev.	00
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VENTILATORE TIRAGGIO FUMI LINEA 3

ITEM L3S20-CO043X - L3S20-CO044X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	2		
Fan Type / Tipo Ventilatore:	TSAN 192		
Arrangement / Esecuzione:	3 CA		
Discharge Position / Orientamento:	RD 0		
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione	☐ Doppia Aspirazione	
Electric Motor / Motore Elettrico:	☒ Di Fornitura	☐ Fornito da cliente	☐ Non Previsto
Installed Power / Potenza Installata:	560 kW		
Housing Material / Materiale Cassa:	CORTEN + Protezione con STARPLAST		
Wheel Material / Materiale Girante:	AVESTA SAF 2205		
Inlet Damper / Serranda Aspirazione:	Serranda su cappa aspirante in AISI 316L		
Outlet Damper / Serranda Mandata:	Serranda su bocca premente a comando manuale in AISI 316L		

PLANT :

San Vittore del Lazio



AEROMECCANICA STRANICH S.p.A.
20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300

A.S. Ref. no.:

PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS. OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED

DATA SHEET CENTRIFUGAL FAN

0	ML			09/06/09		A.S. Job No.:	SIZE	PAGE
REV	BY	CHK'D	APP'D	DATE	DESCRIPTION	2764 / 02	A4	2 OF 5

PURCHASER / OWNER :		TM.E. S.p.A.		ITEM No. :		ITEM L3S20-C0043X - L3S20-C0044X	
SERVICE :		Ricircolo Fumi		LOCATION :		San Vittore Del Lazio	
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	TSAN 192		Arrangement: 3 CA Disch. Pos.: RD 0 REV
2	Service:			No. Required:	2		
3	Drive System:	Motor + Inverter		Fans Rotation From Drive End:	CW ☒ CCW ☐		
4	Gas Handled:	Fumi		Molecular Weight:	29,97		
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐ Indoor ☒		
OPERATING CONDITIONS							
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4
8	Mass Flow :	Nm3/h	75.000				
9	Volume Flow:	Am3/h	122.578				
10	Density:	kg/m3	0,791				
11	Temperature:	°C	180				
12	Relative Humidity:	%					
13	Static Pressure @ Inlet:	mmwg	1095				
14	Static Pressure @ Outlet:	mmwg					
15	PERFORMANCE :						
16	Power Required @ Cond's (all losses incl.):	kW	455				
17	Fan Speed:	rpm	1.490				
18	Static Pressure Rise Across Fan:	mmwg					
19	Inlet Damper / Vane Position:	%					
20	Discharge Damper Position:	%					
21	Fan Static Efficiency:	%	80				
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—	—			
23	FAN CONTROL :		DRIVER :		Motor + Inverter		
24	Air Supply	Instrument Air	Make:	FELM	Type:		
25	Fan Control Furnished by:	A.Stranich	Rated Power, kW:	560	rpm :	1490	
26	Method:	Inlet Damper ☒	Electrical Area Classification:				
27		Outlet Damper ☒	Class:		Group:		Div:
28		Inlet Guide Vane ☐	Volts:	400	Ph :	3	Hz : 50
29		Variable Speed ☐	Starting Method:	Con inverter	ATEX:	N.A.	
CONSTRUCTION FEATURES							
31	HOUSING :		BEARINGS :				
32	Material:	Thickness, mm :	Hydrodynamic ☐ RTL	Anti-friction ☒			
33	Split for wheel removal:	yes ☒ no ☐	Lubrication:	grease			
34	Drains, No./Size :	yes /	Coolant Required:	yes ☐ no ☒	Q.ty	l / min	@ °C
35	Access Door, No./Size :	yes /	Thermostatically Controlled Heaters:	☐			
36	BLADES :		Temperature Detectors:	☒ N° 2 PT 100			
37	Type:	Airfoil	Vibration Detectors:	☒			
38	No.:	8	JB per raccolta segnali				
39	Material:	SAF 2205					
40	HUB :		SPEED DETECTORS:				
41	Shrink Fit:	☐ Keyed ☒	Non-contact probe	☐			
42	Material:	Fe 430 B	Speed Switch	☐			
43	SHAFT :		Other	☐			
44	Material:	C 45 + Camicia albero in AISI 316 L	V-BELTS & PULLEYS:		COUPLINGS:		
45	Diam. @ brgs, mm		Type:		Type:	Elastico	
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:		
47	Material:	NA	Driver Pulley, mm		Service Factor:		
48	SHAFT SEALS :		Mount Coupling Halves :				
49	Type:	N° 2 Tenute flottanti PTFE/AISI	FAN: ☐				
50			DRIVER: ☐				
51	PD² [kgm²] :		Spacer Lenght, mm :				
52	NOTES : La serranda di regolazione dovrà essere completa di servocomando elettro-pneumatico HART-SMART Protocol - segnale 3÷15 PSI + Finecorsa Go-Switch						
53	GO-Switch						
54							
55							
56							
57							
58							
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
A.S. Ref. no.:		0					
PROPERTY OF AEROMECCANICA STRANICH SpA - ITALY. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO CONTRACT OR PROPOSALS OF THIS COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF PATENTED OR PATENTABLE FEATURES DISCLOSED HEREON IS PROHIBITED				DATA SHEET CENTRIFUGAL FAN			
0	ML	0	0				
REV	BY	CHK'D	APP'D	DATE	Description	A.S. Job No.: 2764 / 02	
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						A4	3 OF 5

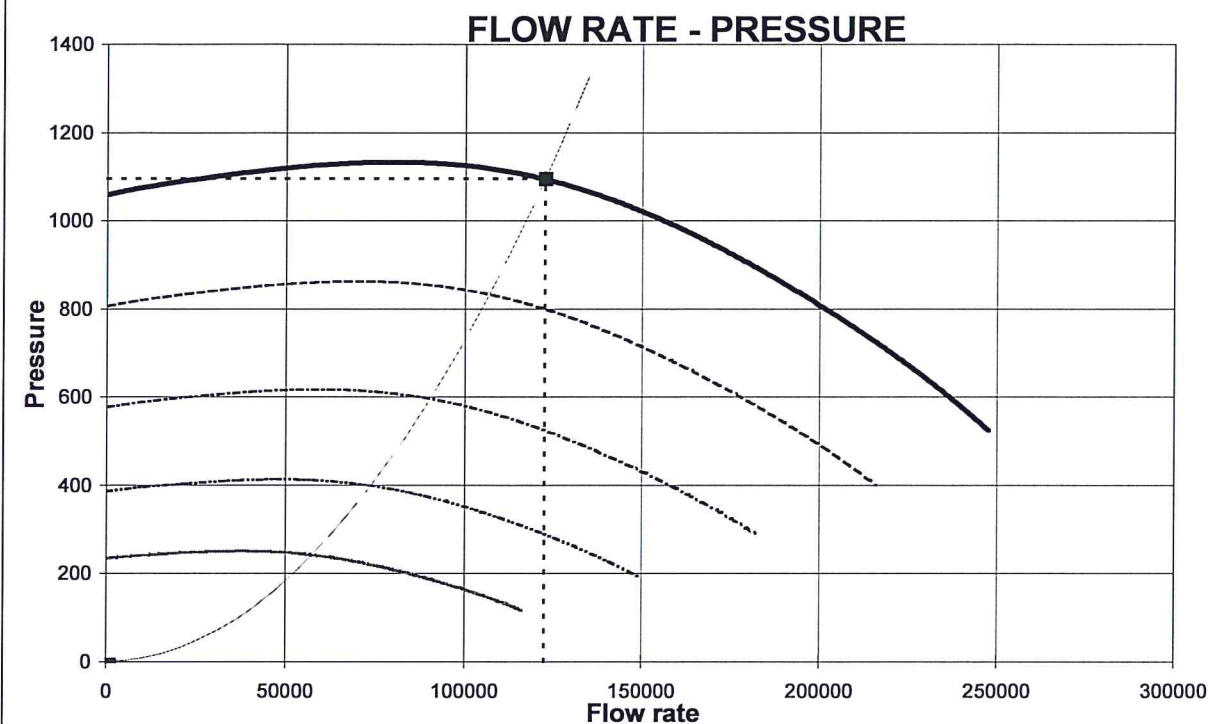
1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☒	Outlet Silencer	☐	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☒			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☐			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :		70		dB(A) @ 1 m	Driver:		Fan :			
11	Attenuation Method:					Air Intake (incl. Inlet Silencer):		Base :			
12						Outlet Silencer:		Ebase:			
13	Furnished by:					Total Shipping Weight:		0			
14	PAINTING :					CONNECTIONS :					
15	According to Spec. No. :	☐				Inlet:		Size		Rating	Orientation
16						Outlet:					
17	Manufacturer Std.	☒				Drains:					
18	SHIPMENT :					TESTS:					WITNESSED:
19	Domestic	☐				☒	Mechanical Running (No Load)		no	☐	yes ☒
20	Export	☒				☐	Performance		no	☐	yes ☐
21	ERECTION :					☒	Rotor Balance		no	☒	yes ☐
22	Assembled	☒				☒	Shop Inspection		no	☒	yes ☐
23	Partly Assembled	☐				☐	Assembly and Fit-up Check		no	☐	yes ☐
24						☐	Lateral Critical Speed		no	☐	yes ☐
25	APPLICABLE SPECIFICATIONS :					☐	Torsional Critical Speed		no	☐	yes ☐
26						☐			no	☐	yes ☐
27						☐			no	☐	yes ☐
28						☐			no	☐	yes ☐
29						☐			no	☐	yes ☐
30	NOTES : CABINA FONOASSORBENTE										
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PLANT :		San Vittore del Lazio					AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300			
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0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
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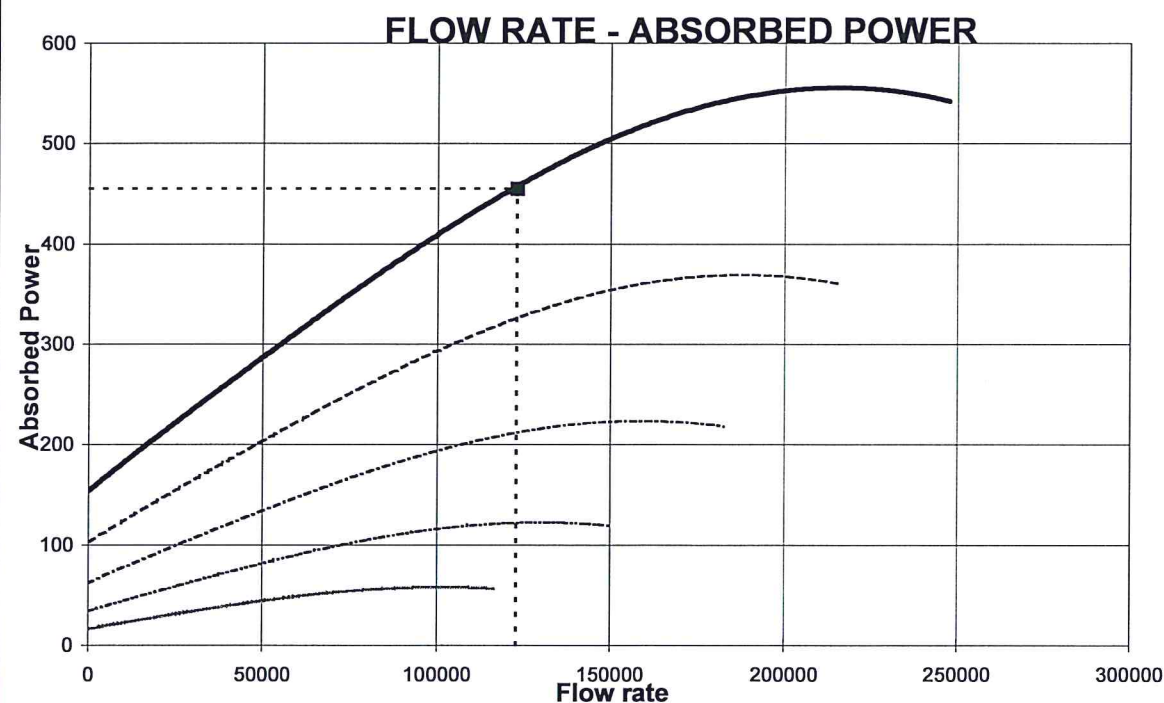


CENTRIFUGAL FAN TYPE: **TSAN 192**
ITEM: **L3 S20-CO 043X L3 S20-CO 044X**

SPEED= **1490** RPM
T= **130** °C
 γ = **0,791** Kg/m³



CASE	DESIGN					
Flow rate	122578					m3/h
Static pressure	1095					mmH2O
Speed	1.490	1.300	1.100	900	700	RPM
Absorbed Power	455,0					kW



TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	IMPIANTO DI TERMOVALORIZZAZIONE CDR DI SAN VITTORE DEL LAZIO (FR)	Documento/ <i>Document</i>	Rev.
			10125ASMS505	00
			Pag. 1 di 5 <i>Page 1 of 5</i>	

SPECIFICA TECNICA
VENTILATORE DEODORIZZAZIONE
TIPO BCFN 365
LINEA 3
ITEM : L3S50-CO003X

TM.E. S.p.A. Termomeccanica Ecologia	 Gruppo Termomeccanica	
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Cliente/Customer	Commessa/Job	CID Codice class. doc.	Impianto Plant	Sistema System	Un. Funz. Func. Un.	Tipo doc. Doc. type
EALL - Gruppo Acea	10125		SF	S20	L3	PDS

00	09/07/2009	EMISSIONE			
			MG	ML	
Rev.	Data	Descrizione	Preparato	Verificato	Approvato
Autorizzazione Emissione					

Fan Data Sheet / Data Sheet Ventilatore

Job No. / Commessa No:	2764	/ 10	Rev.	00
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VENTILATORE DEODORIZZAZIONE - LINEA 3 - ITEM L3S50-CO003X

Customer / Cliente:	TM.E. S.p.A.
P.O. N: / Ordine N.:	2450014020
Free: / Resa:	F.co San Vittore del Lazio

MAIN CHARACTERISTICS / CARATTERISTICHE PRINCIPALI

Q.ty / Quantità:	1		
Fan Type / Tipo Ventilatore:	BCFN 365		
Arrangement / Esecuzione:	4		
Discharge Position / Orientamento:	RD 0		
Suction Type / Tipo Aspirazione:	☒ Semplice Aspirazione	☐ Doppia Aspirazione	
Electric Motor / Motore Elettrico:	☒ Di Fornitura	☐ Fornito da cliente	☐ Non Previsto
Installed Power / Potenza Installata:	75 kW		
Housing Material / Materiale Cassa:	Fe 460 B		
Wheel Material / Materiale Girante:	CORTEN		

PLANT :	San Vittore del Lazio		AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300	
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		DATA SHEET CENTRIFUGAL FAN		
		A.S. Job No.:	SIZE	PAGE
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REV	BY	CHK'D	APP'D	DATE
				DESCRIPTION

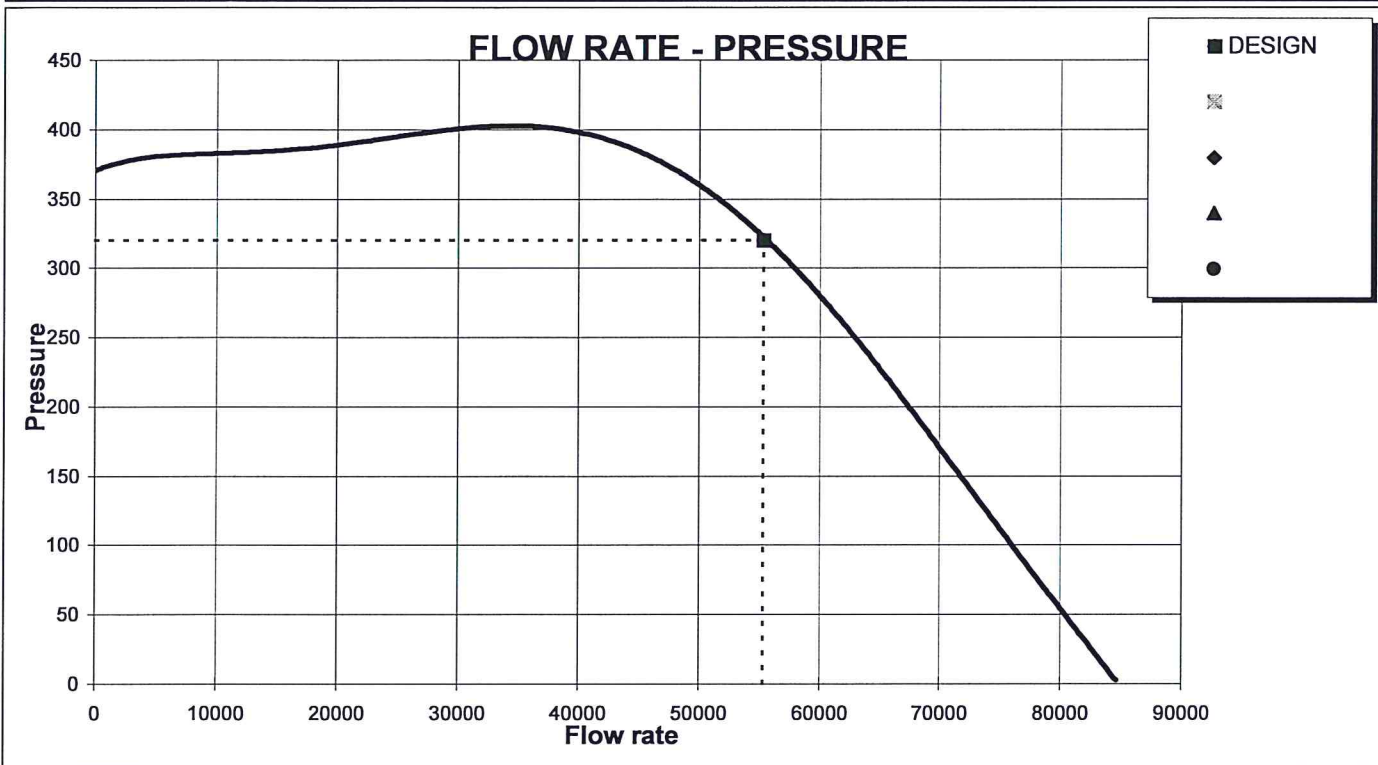
PURCHASER / OWNER :		TM.E. S.p.A.		ITEM No. :		L3S50-CO003X		
SERVICE :		Deodorizzazione		LOCATION :		San Vittore del Lazio		
1	Fan Manufacturer:	A. Stranich SpA		Model / Size :	BCFN 365	Arrangement:	4 Disch. Pos.: RD 0 REV	
2	Service:			No. Required:	1			
3	Drive System:	Motor		Fans Rotation From Drive End:	CW ☒ CCW ☐			
4	Gas Handled:	Aria		Molecular Weight:	29,97			
5	Site Elevation:	m ASL		Fan Location:	Outdoor ☐ Indoor ☒			
6	OPERATING CONDITIONS							
7	OPERATING CONDITIONS / CASE :		DESIGN	Normal	Cond.2	Cond.3	Cond.4	
8	Mass Flow :	Nm3/h	50.000					
9	Volume Flow:	Am3/h	55.268					
10	Density:	kg/m3	1,169					
11	Temperature:	°C	20					
12	Relative Humidity:	%						
13	Static Pressure @ Inlet:	mmwg	320					
14	Static Pressure @ Outlet:	mmwg						
15	PERFORMANCE :							
16	Power Required @ Cond's (all losses incl.):	kW	62					
17	Fan Speed:	rpm	1.480					
18	Static Pressure Rise Across Fan:	mmwg						
19	Inlet Damper / Vane Position:	%						
20	Discharge Damper Position:	%						
21	Fan Static Efficiency:	%	77,0					
22	Steam Rate (TURBINE ONLY) :	kg/kWh	—	—				
23	FAN CONTROL :		DRIVER :		Motor			
24	Air Supply	Instrument Air	Make:	FIMET	Type:			
25	Fan Control Furnished by:	A.Stranich	Rated Power, kW:	75	rpm :	1490		
26	Method:	Inlet Damper ☐	Electrical Area Classification:					
27		Outlet Damper ☐	Class:		Group:		Div:	
28		Inlet Guide Vane ☐	Volts:	400	Ph :	3	Hz : 50	
29		Variable Speed ☐	Starting Method:	Con inverter	ATEX:	N.A.		
30	CONSTRUCTION FEATURES							
31	HOUSING :		BEARINGS :					
32	Material:	Thickness, mm :	Hydrodynamic ☐ RTL	Anti-friction ☐				
33	Split for wheel removal:	yes ☐ no ☒	Lubrication: grease					
34	Drains, No./Size :	yes /	Coolant Required:	yes ☐ no ☐	Q.ty	I / min	@ °C	
35	Access Door, No./Size :	yes /	Thermostatically Controlled Heaters: ☐					
36	BLADES :		Temperature Detectors: ☐					
37	Type:	Airfoil	Vibration Detectors: ☐					
38	No.:	8						
39	Material:	CORTEN						
40	HUB :		SPEED DETECTORS:					
41	Shrink Fit:	☐ Keyed ☒	Non-contact probe ☐					
42	Material:	Fe 430 B	Speed Switch ☐					
43	SHAFT :		Other ☐					
44	Material:	N.A.	V-BELTS & PULLEYS:		COUPLINGS:			
45	Diam. @ brgs, mm		Type:		Type:	Elastico		
46	SHAFT SLEEVES :		Fan Pulley, mm		Make / Model:			
47	Material:	NA	Driver Pulley, mm		Service Factor:			
48	SHAFT SEALS :		Mount Coupling Halves :					
49	Type:	semplce in Al	FAN: ☐					
50			DRIVER: ☐					
51	PD² [kgm²] :		Spacer Lenght, mm :					
52	NOTES :							
53								
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58								
PLANT :		San Vittore del Lazio		 AEROMECCANICA STRANICH S.p.A. 20099 SESTO S. GIOVANNI – V. DI VITTORIO, 300				
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0	ML	0	0					09/06/09
REV	BY	CHK'D	APP'D	DATE	Description	2764 / 10	A4	3 OF 5

1	CONSTRUCTION FEATURES (continued)										
2	MISCELLANEOUS :										REV
3	Sparkproof "C"	☐	Inlet Boxes	☐	Outlet Silencer	☒	Counterflanges	☒			
4	Control Panel	☐	Rainhood	☐	Venturi Flowmeter	☐	Cooling Wheel	☐			
5	Special Coating	☐	Sandtrap	☐	Common Baseplate (Fan+Driver)	☒	Drains	☒			
6	Performance Curves	☒	Inlet Screen	☐	Bearing Pedestals / Soleplates	☐	Noise Insulation	☒			
7	Sectional Drawing	☒	Outlet Screen	☐	Inlet Flexible Joint	☒	Therm. Insulation	☐			
8	Outline Drawing	☒	Inlet Silencer	☐	Outlet Flexible Joint	☒	Insulation Clips	☐			
9	NOISE ATTENUATION :					WEIGHTS, kg :					
10	Predicted SPL :	80	dB(A) @ 1 m		Driver:			Fan :			
11	Attenuation Method:				Air Intake (incl. Inlet Silencer):			Base :			
12						Outlet Silencer:			Evase:		
13	Furnished by:				Total Shipping Weight:	0					
14	PAINTING :					CONNECTIONS :		Size	Rating	Orientation	
15	According to Spec. No. :	☐				Inlet:					
16						Outlet:					
17	Manufacturer Std.	☒				Drains:					
18	SHIPMENT :					TESTS:		WITNESSED:			
19	Domestic	☐				☒	Mechanical Running (No Load)	no	☐	yes ☒	
20	Export	☒				☐	Performance	no	☐	yes ☐	
21	ERECTION :					☒	Rotor Balance	no	☒	yes ☐	
22	Assembled	☒				☒	Shop Inspection	no	☒	yes ☐	
23	Partly Assembled	☐				☐	Assembly and Fit-up Check	no	☐	yes ☐	
24						☐	Lateral Critical Speed	no	☐	yes ☐	
25	APPLICABLE SPECIFICATIONS :					☐	Torsional Critical Speed	no	☐	yes ☐	
26						☐		no	☐	yes ☐	
27						☐		no	☐	yes ☐	
28						☐		no	☐	yes ☐	
29						☐		no	☐	yes ☐	
30	NOTES : SILENZIATORE CILINDRICO SU MANDATA										
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0	ML	0	0	09/06/09	0	A.S. Job No.:		SIZE	PAGE	
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CENTRIFUGAL FAN TYPE:	<u>BCSN 365</u>	SPEED=	1480	RPM
Job n° :	<u>2764/10</u>	T=	20	°C
ITEM	L3S50-CO003X	γ =	1,169	Kg/m ³



CASE	DESIGN				
Flow rate	55268				m ³ /h
Static pressure	320				mmH ₂ O
Speed	1.480				RPM
Absorbed Power	61,8				kW

