

Sadržaj grafičke dokumentacije:

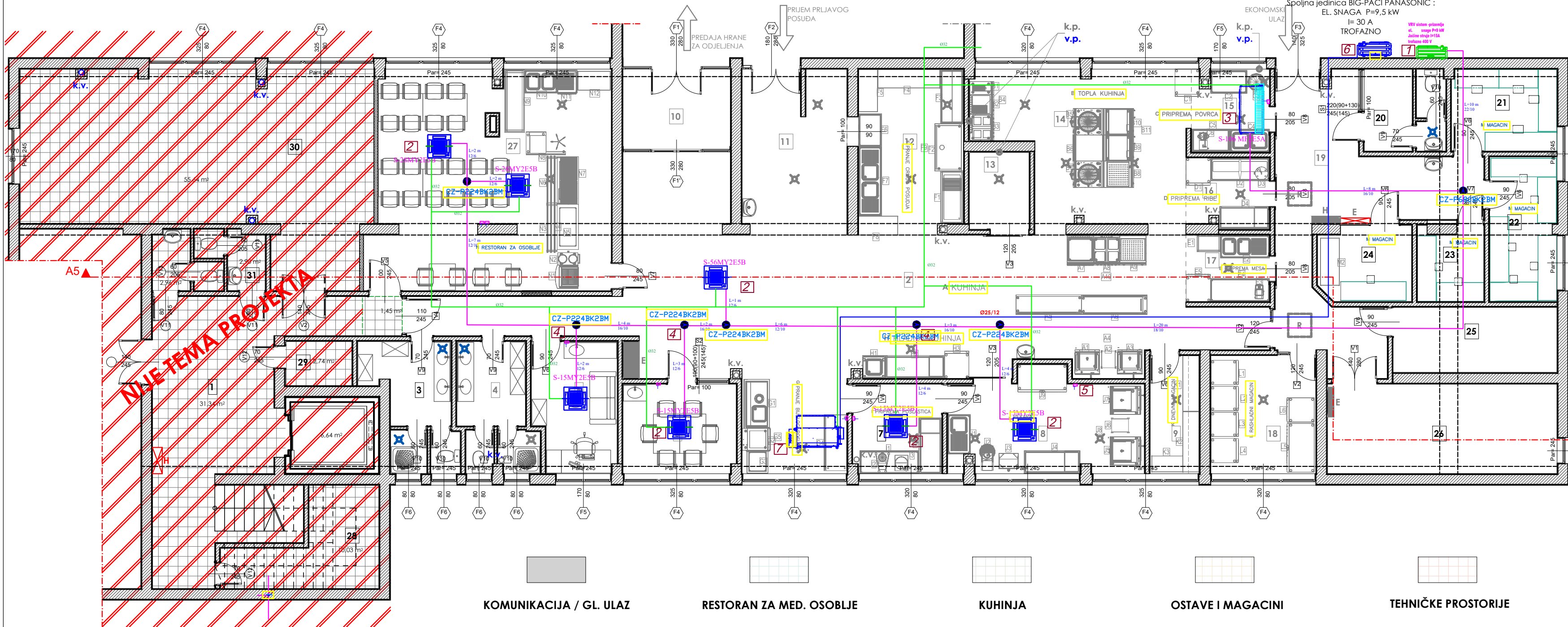
broj crteža:

12/23– M

01 – OSNOVA PRIZEMLJA- Dispozicija cijevi i opreme VRV i PACI sistema

02 – OSNOVA PRIZEMLJA- Dispozicija kanala i opreme

03– ŠEMA VRV SISTEMA



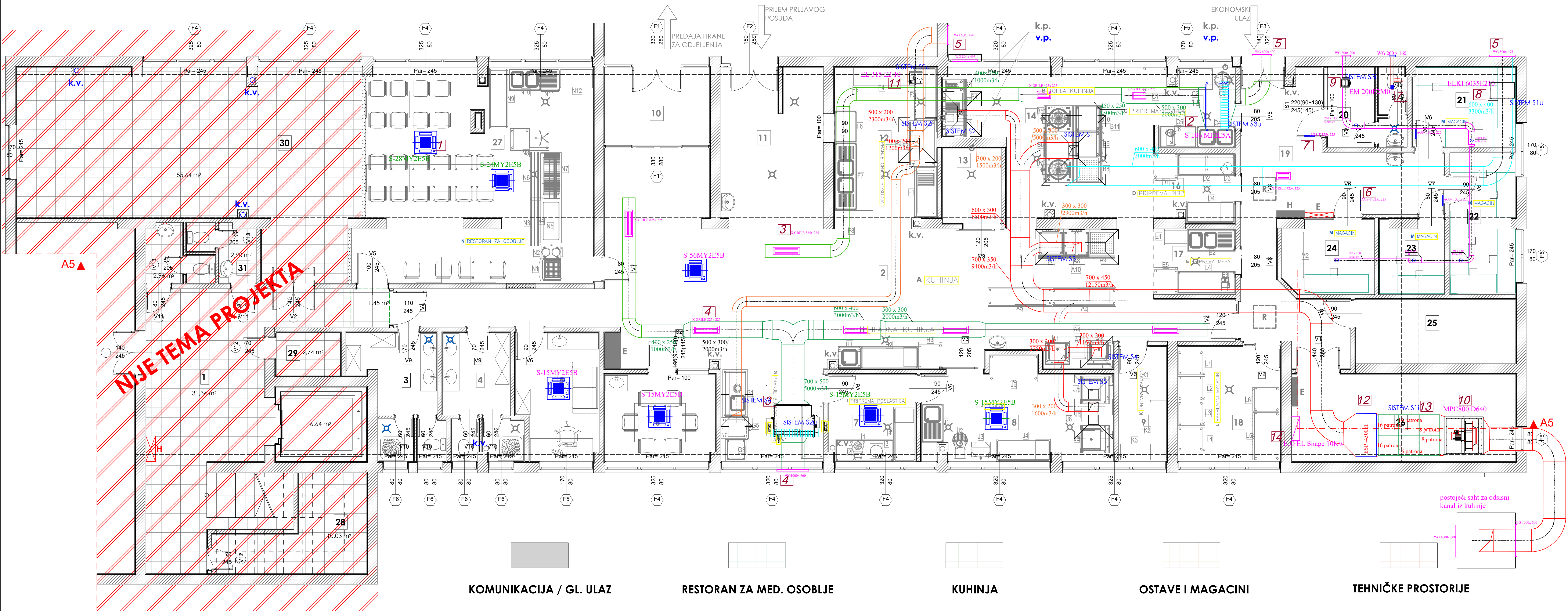
BILANS POVRŠINA - PLANIRANO STANJE					
BILANS POVRŠINA (hodnici, holovi i stepeništa)					
Br.	Naziv prostorije	Finalna obrada podova	Finalna obrada zidova	Finalna obrada plafona	P (neto)
1	Ulazni hol sa stepeništem	Keramika	Poludisp. boja	Metalni linearni	36,57m²
Ukupna neto površina (hodnici, holovi i stepeništa)					36,57m²
BILANS POVRŠINA (kuhinja sa radnim prostorijama)					
Br.	Naziv prostorije	Finalna obrada podova	Finalna obrada zidova	Finalna obrada plafona	P (neto)
2	Kuhinja - glavni prostor	Keramika	Keramika	Metalni linearni	101,18m²
3	Garderoba sa mokrim čvorom	Keramika	Keramika	Metalni linearni	8,86m²
3	Garderoba sa mokrim čvorom	Keramika	Keramika	Metalni linearni	8,33m²
5	Kancelarija	Keramika	Keramika	Metalni linearni	9,85m²
6	Trpezarija za zaposlene	Vinil pod	Poludisperz. boja	Metalni linearni	9,39m²
7	Poslastičarnica	Keramika	Keramika	Metalni linearni	7,37m²
8	Pekara	Keramika	Keramika	Metalni linearni	16,97m²
9	Dnevni magacin	Keramika	Keramika	Metalni linearni	5,40m²
10	Predaja hrane za odjeljenje	Keramika	Keramika	Metalni linearni	7,71m²
11	Prijem priljavo posuda	Keramika	Keramika	Metalni linearni	15,83m²
12	Pranje crnog posuda	Keramika	Keramika	Metalni linearni	15,88m²
13	Ostava za crno posude	Keramika	Keramika	Metalni linearni	4,30m²
14	Topla kuhinja / kuvanje / pečenje	Keramika	Keramika	Metalni linearni	26,79m²
15	Boks za pripremu povrća	Keramika	Keramika	Metalni linearni	5,80m²
16	Boks za pripremu ribe	Keramika	Keramika	Metalni linearni	5,30m²
17	Boks za pripremu mesa	Keramika	Keramika	Metalni linearni	5,18m²
Ukupna neto površina (kuhinja sa radnim prostorijama)					254,14m²
BILANS POVRŠINA (magacini za zalihe)					
Br.	Naziv prostorije	Finalna obrada podova	Finalna obrada zidova	Finalna obrada plafona	P (neto)
18	Rashladni magacin	Keramika	Keramika	Metalni linearni	11,52m²
19	Hodnik	Keramika	Keramika	Metalni linearni	27,93m²
20	Magacin br. 1	Keramika	Keramika	Metalni linearni	5,89m²
21	Magacin br. 2	Keramika	Keramika	Metalni linearni	8,02m²
22	Magacin br. 3	Keramika	Keramika	Metalni linearni	9,03m²
23	Magacin br. 4	Keramika	Keramika	Metalni linearni	4,46m²
24	Magacin br. 5	Keramika	Keramika	Metalni linearni	6,35m²
Ukupna neto površina (magacini za zalihe)					73,20m²
BILANS POVRŠINA (tehničke i pomoćne prostorije)					
Br.	Naziv prostorije	Finalna obrada podova	Finalna obrada zidova	Finalna obrada plafona	P (neto)
25	Ostava / održavanje	Keramika	Keramika	Metalni linearni	9,95m²
26	Mašinska prostorija / ventilacija	A8 ploča	Poludisp. boja	Poludisp. boja	19,11m²
Ukupna neto površina (tehničke i pomoćne prostorije)					29,06m²
BILANS POVRŠINA (restoran za medicinsko osoblje)					
Br.	Naziv prostorije	Finalna obrada podova	Finalna obrada zidova	Finalna obrada plafona	P (neto)
27	Restoran sa izdavanjem hrane	Keramika	Keramika / Pd. boja	Modularni g.k. sp. pl.	47,48m²
Ukupna neto površina (restoran za medicinsko osoblje)					47,48m²
BILANS POVRŠINA (ostalo - nije tema projekta)					
28	Ostava / hemikalije	Keramika	Keramika	Metalni linearni	10,03m²
29	Tehnička prostorija lifta	A8 ploča	Malter	Malter	2,74m²
30	Učionica	Keramika	Keramika	Metalni linearni	55,64m²
31	Todeti za med. osoblje	Keramika	Keramika	Metalni linearni	5,86m²
Ukupna neto površina (restoran za medicinsko osoblje)					74,27m²
UKUPNA NETO POVRŠINA SUTERENA					513,27m²

- LEGENDA:
- 1 Spoljna jedinica PANASONIC VRV SISTEMA, tip: U-10LE1E8
2 - Unutrasnje e kasetne jedinice vrv sistema, tip: S-MY, proizvod Panasonic
3 - Unutrasnja kanalna jedinica vrv sistema, proizvod Panasonic
4-Bakarne racve za razvod freona
5- Termostat RTC-5
6- Spoljna jedinica B IG-PACI sistema proizvod PANASONIC U-250PZH2E8
7 - Unutrasnja kanalna jedinica BIG- PACI sistema, proizvod PANASONIC S-250PE3E5B

- LEGENDA CIJEVI
- Bakarni cijevovod sa izolacijom za razvod freona
- kondenz mreza

ANATERM d.o.o ul: 4.jul, broj 56 A		INVESTITOR: JZU Opšta bolnica Nikšić	
Objekat: JZU Opšta bolnica Nikšić		Lokacija: K.P. 1907, K.O. NIKŠIĆ, OPŠTINA NIKŠIĆ Ul. Nika Miljanića	
Glavni inženjer: Nikola Bulajić, d. i. a.		Vrsta tehničke dokumentacije: GLAVNI PROJEKAT	
Odgovorni inženjer: Ljeka Vuljaj d.i.m		Dio tehničke dokumentacije: MAŠINSKI PROJEKAT TT INSTALACIJA	RAZMJERA: 1:100
Saradnici:		Prilog: OSNOVA SUTRENA Dispozicija opreme i cijevi VRV sistema	Br. priloga: 01 Br. Strane :

Decembar 2023.



LEGENDA:

- 1 - Unutrasnje kasetne jedinice vrv sistema,
tip: S-MY, proizvod Panasonic
2 - Unutrasnja kanalna jedinica vrv sistema,
3 - Unutrasnja kanalna jedinica BIG- PACI sistema, proizvod PANASONIC S-250PE3E5B
4 - Resetka sa regulatorom protoka proizvod TROX,
tip: X GRILE
5 - Spoljna žaluzina proizvod TROX,
tip: WG
6 - Resetka za ugradnju u vrata proizvod TROX,
tip: AGS-T
7- Ventilator proizvod S&P, tip: SILENT-100CZ
8- Ventilator za ubacivanje svežeg vazduha na haube proizvod RUCK
tip: ELKI 6035E2 10
9- Ventilator za izbacivanje vazduha iz magacina proizvod RUCK
tip: EM 200E2M01
10- Ventilator za izbacivanje vazduha iz masnih napa kuhinje proizvod RUCK
tip: MPC 800D640
11- Ventilator za izbacivanje vazduha iz nemasnih napa kuhinje
proizvod RUCK
tip: EL 315 E210
12- Elektrostatički filteri proizvod PURIFIED , tip: ESP 4500EI
13- Patrone sa aktivnim ugljem
14- ELEKTRO ORMAN ZA TERMOTEHNIKU

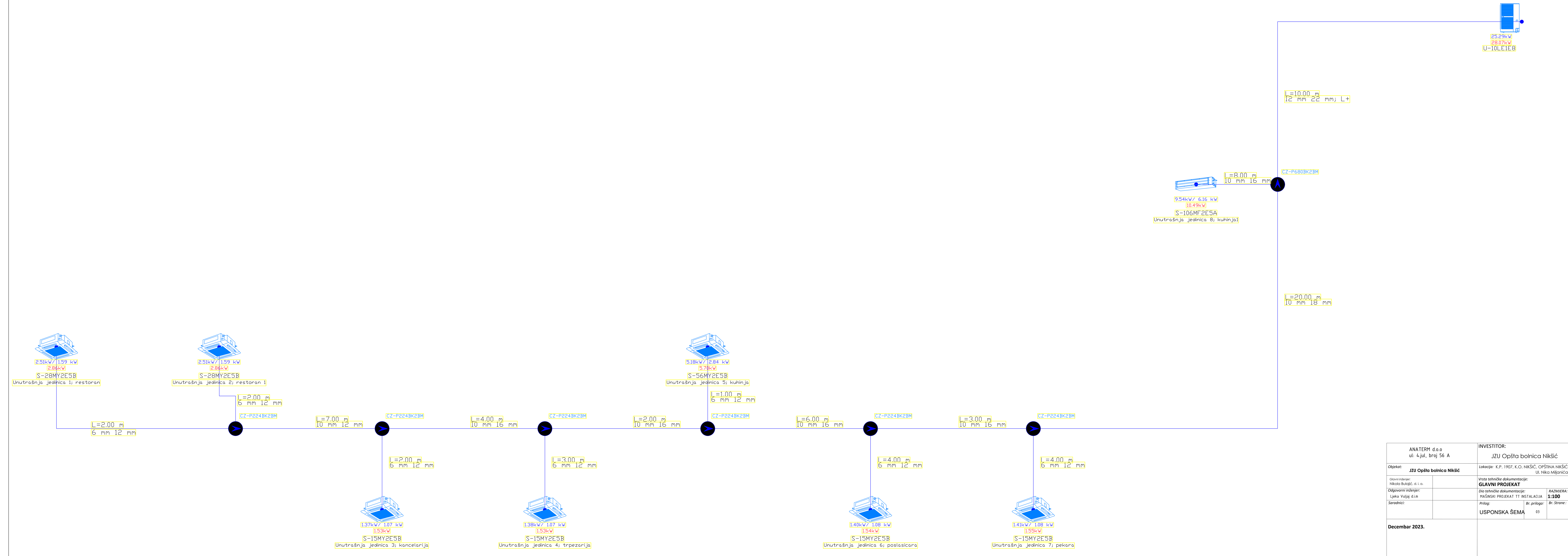
LEGENDA KANALA

- Kanali od crnog dekapiranog lima za odsis iz kuhinje
Kanali od pocinčanog lima za ubacivanje svežeg vazduha na nape
Kanali od pocinčanog lima za ubacivanje vazduha preko kanalca
Kanali od pocinčanog lima za izbacivanje vazduha-pranje posudja
Kanali od pocinčanog lima odsis vazduha iz WC
Kanali od pocinčanog lima za odsis vazduha izmagacina

ANATERM d.o.o ul: 4.jul, broj 56 A		INVESTITOR: JZU Opšta bolnica Nikšić	
Objekat: JZU Opšta bolnica Nikšić		Lokacija: K.P. 1907, K.O. NIKŠIĆ, OPŠTINA NIKŠIĆ Ul. Nika Miljanića	
Glavni inženjer: Nikola Bulajić, d. i. a.		Vrsta tehničke dokumentacije: GLAVNI PROJEKAT ADAPTACIJE	
Odgovorni inženjer: Ljeka Vuljaj d.i.m		Dio tehničke dokumentacije: MAŠINSKI PROJEKAT TT INSTALACIJA	RAZMJERA: 1:100
Saradnici:		Prilog: OSNOVA SUTRENA Dispozicija opreme i kanala	Br. priloga: 02
Decembar 2023.			

BILANS POVRŠINA - PLANIRANO STANJE					
BILANS POVRŠINA (hodnici, holovi i stepeništa)					
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13	Ostava za crno posude	Keramika	Keramika	Metalni linearni	4,30m²
14	Opća kuhinja / kuvanje / pečenje	Keramika	Keramika	Metalni linearni	26,79m²
15	Boks za pripremu povrća	Keramika	Keramika	Metalni linearni	5,80m²
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Br.	Naziv prostorije	Finalna obrada podova	Finalna obrada zidova	Finalna obrada plafona	P (neto)
27	Restoran sa izdavanjem hrane	Keramika	Keramika / Pd. boj, modularni g.k. sp. pl	Metalni linearni	47,48m²
Ukupna neto površina (restoran za medicinsko osoblje)					47,48m²
BILANS POVRŠINA (ostalo - nije tema projekta)					
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Ukupna neto površina (restoran za medicinsko osoblje)					74,27m²
UKUPNA NETO POVRŠINA SUTERENA					513,27m²

Projekat	Sistem	Zadati projekat	Sistem
Datum	12/18/2023 1:45:45 PM	Datum	12/18/2023 1:45:45 PM
Dinos kapaciteta	99.9 %	Dinos kapaciteta	99.9 %
Dodatno punjenje	0.2477 kg/m3	Dodatno punjenje	0.2477 kg/m3
Ugranicenje gustine	25.29 kW	Ugranicenje gustine	25.29 kW
Ispravljeno rasisceni kapacitet		Ispravljeno rasisceni kapacitet	
Model	Vrsta	Kod	Kolicina
CZ-P680BK2BM	Grama	47	1
CZ-P224BK2BM	Grama	46	6
I10	Cevi	C, E, G	50.00 (m)
I12	Cevi	B, C, y	35.00 (m)
I16	Cevi	E	23.00 (m)
I18	Cevi	G	20.00 (m)
I22	Cevi	y	10.00 (m)
I6	Cevi	B	18.00 (m)
Dodatno punjenje R410A	Dodatno punjenje R410A		4.55 kg
U-10LE1E8	Spoljna jedinica		1
S-28MY2ESB	4-smjerna 60x60 kaseta (MY2)		2
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
S-15MY2ESB	4-smjerna 60x60 kaseta (MY2)		4
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
S-56MY2ESB	4-smjerna 60x60 kaseta (MY2)		1
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
CZ-KPY3AW	Ploča		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1
S-106MF2E5A	Kanalna jedinica sa srednjim statičkim pritiskom (MF2)		1
CZ-RTCSB	Daljinski upravljač s brojačem vrenena (žičani)		1



ANATERM d.o.o. ul: 4.jul, broj 56 A	INVESTITOR: JZU Opšta bolnica Nikšić
Objekat: JZU Opšta bolnica Nikšić	Lokacija: K.P. 1907, K.O. NIKŠIĆ, OPŠTINA NIKŠIĆ Ul. Nika Mijanića
Glavni inženjer: Nikola Bulajić, d.i.o.	Vrsta tehničke dokumentacije: GLAVNI PROJEKAT
Odgovorni inženjer: Ljiljana Vukobratović, d.i.o.	Dio tehničke dokumentacije: NAČELNI PROJEKAT 11. INSTALACIJA 1100
Saradnik:	Prilog: USPONSKA ŠEMA 03
Decembar 2023.	

4.1.

LITERATURA I PROPISI

4.2.

KARAKTERISTIKE INSTALACIJA, OPREME I MATERIJALA

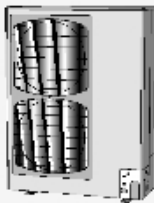
Broj sistema 1
Zadati projekat 1.pva
23 decembar 2023
VRF v 9.6.181

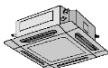


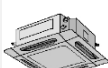

Bolnica u Nikšiću

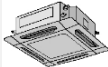
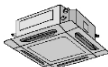



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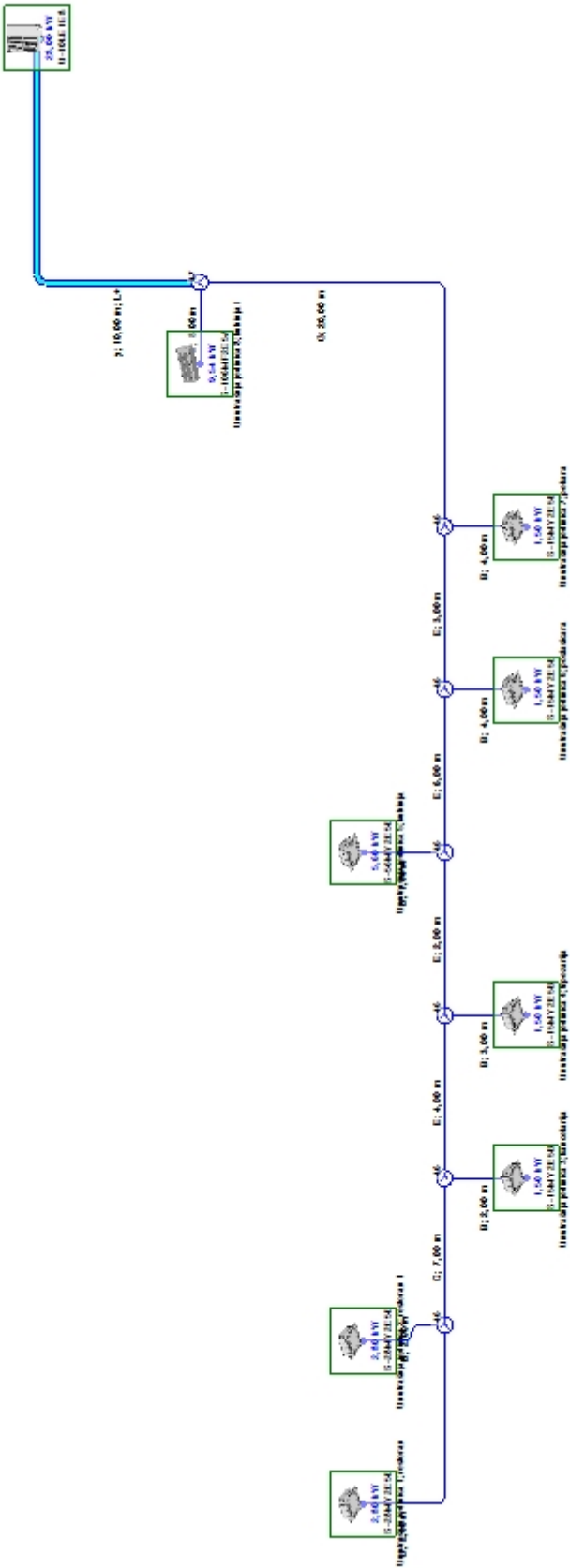
U-10LE1E8		Faktori korekcije
	Odnos kapaciteta:	99,3 %
	Nominalna ulazna snaga:	13,1 kW
	Distribuirani kapacitet hlađenja:	25,3 kW
	Distribuirani kapacitet grejanja:	28,1 kW
	Napon:	380-400-415V/3Ph + N/50Hz
	<u>Nemešovi ti način rada</u>	<u>Mešoviti način rada</u>
	EER (hlađenje):	2,70
	COP (grejanje):	3,74
	SEER (hlađenje):	4,16
	SCOP (grejanje):	4,98
<u>DIMENZIJE</u>		
Dužina:		980 mm
Visina:		1500 mm
Dubina:		370 mm
		<u>TEMPERATURA</u>
		REŽIM RADA HLAĐENJA REŽIM RADA GREJANJE
		Unutrašnja (WB): 19,00 °C Unutrašnja (DB): 20,00 °C
		Spoljna (DB): 35,00 °C Soljna (WB): 6,00 °C
		<u>DUŽINA I VISINA</u>
		Maksimalna dužina: 78,00 m Maksimalna visina: +0,00 m / -0,00 m
		Uključeni faktori korekcije defrost ciklusa

Naziv jedinice	Tip	Model	Korigovano hlađenje (kW)	Korigovano grejanje (kW)	UPRAVLJAČKI SISTEM	PRIBOR		
					RC, T10, RS, IA, X	Panel	Kontrola temperature van konvektora (VRF UR modeli)	Spoljni ekspanzioni ventil.
Unutrašnja jedinica 1		S-28MY2E5B	2,8	3,0	CZ-RTC5B	CZ-KPY3AW		
Unutrašnja jedinica 2		S-28MY2E5B	2,8	3,0	CZ-RTC5B	CZ-KPY3AW		
Unutrašnja jedinica 3		S-15MY2E5B	1,5	1,6	CZ-RTC5B	CZ-KPY3AW		
Unutrašnja jedinica 4		S-15MY2E5B	1,5	1,6	CZ-RTC5B	CZ-KPY3AW		
Unutrašnja jedinica 5		S-56MY2E5B	5,6	5,8	CZ-RTC5B	CZ-KPY3AW		

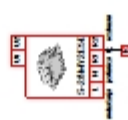
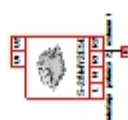
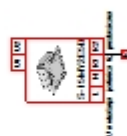
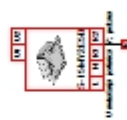
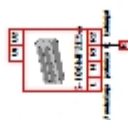
Naziv jedinice	Tip	Model	Korigovano hlađenje (kW)	Korigovano grejanje (kW)	UPRAVLJAČKI SISTEM	PRIBOR		
					RC, T10, RS, IA, X	Panel	Kontrola temperature van konvektora (VRF UR modeli)	Spoljni ekspanzioni ventil.
Unutrašnja jedinica 6		S-15MY2E5B	1,5	1,6	CZ-RTC5B	CZ-KPY3AW		
Unutrašnja jedinica 7		S-15MY2E5B	1,5	1,6	CZ-RTC5B	CZ-KPY3AW		
Unutrašnja jedinica 8		S-106MF2E5A	9,5	10,6	CZ-RTC5B		12	

Glavni nacrt cevovoda - Sistem 1

Grane		Cevi		Duzina
Kod	Model	Tečnost	Usisna strana	
47	CZ-P680BK2BM	6	12	18,0 m
46	CZ-P224BK2BM	10	12	7,0 m
		10	16	23,0 m
		10	18	20,0 m
		12	22	10,0 m



Glavna šema ožičenja - Sistem 1



Legenda **R** Daljinski upravljač sa tajmerom (žičani)

SP Paralelno

IA Adapter za interfejs

ZS Zigbee senzor

R1 R2 Daljinski upravljač *

S Jednostavan daljinski upravljač

RS Daljinski senzor

H Daljinski upravljač za hotel

X nanoe X

U1 U2 Kontrolne žice *

W Bežični daljinski upravljač

ES Econavi senzor

SH Schneider daljinski upravljač.

RY Releji priložen u polju

L N Napajanje

* obloženi kabl

Kablovi za napajanje sistema

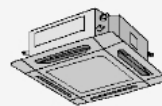
U-10LE1E8

Priključci: L1 L2 L3 N
 Napon: 380-400-415V/3Ph + N/50Hz
 Maksimalna radna struja: 19,6 A
 Maksimalna električna snaga: 19,6 kW
 Osigurač: 30 A



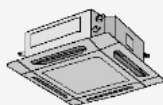
S-28MY2E5B

Priključci: L N
 Napon: 220-230-240V/1Ph/50Hz
 Maksimalna radna struja: 0,30 A
 Maksimalna električna snaga: 35,00 W
 Osigurač: 5 A



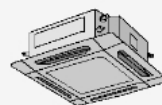
S-15MY2E5B

Priključci: L N
 Napon: 220-230-240V/1Ph/50Hz
 Maksimalna radna struja: 0,30 A
 Maksimalna električna snaga: 35,00 W
 Osigurač: 5 A



S-56MY2E5B

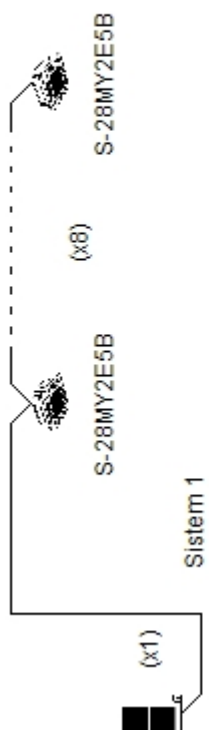
Priključci: L N
 Napon: 220-230-240V/1Ph/50Hz
 Maksimalna radna struja: 0,35 A
 Maksimalna električna snaga: 45,00 W
 Osigurač: 5 A



S-106MF2E5A

Priključci: L N
 Napon: 220-230-240V/1Ph/50Hz
 Maksimalna radna struja: 1,34 A
 Maksimalna električna snaga: 200,00 W
 Osigurač: 10-16 A





Oprema			
Model	Vrsta / naziv unutrašnje jedinice	Kod	Količina
Sistem 1			
U-10LE1E8	Spoljna jedinica		1
S-28MY2E5B	4-smjerna 60x60 kaseta (MY2) (Unutrašnja jedinica 1, Unutrašnja jedinica 2)		2
S-15MY2E5B	4-smjerna 60x60 kaseta (MY2) (Unutrašnja jedinica 3, Unutrašnja jedinica 4, Unutrašnja jedinica 6, Unutrašnja jedinica 7)		4
S-56MY2E5B	4-smjerna 60x60 kaseta (MY2) (Unutrašnja jedinica 5)		1
S-106MF2E5A	Kanalska jedinica sa srednjim statičkim pritiskom (MF2) (Unutrašnja jedinica 8)		1
CZ-RTC5B	Daljinski upravljač s brojačem vremena (žičani)		8
CZ-KPY3AW	Ploča		7
CZ-P680BK2BM	Grana	47	1
CZ-P224BK2BM	Grana	46	6
6 x 12	Cevi	B	18,00 (m)
10 x 12	Cevi	C	7,00 (m)
10 x 16	Cevi	E	23,00 (m)
10 x 18	Cevi	G	20,00 (m)
12 x 22	Cevi	y	10,00 (m)
	Dodatno punjenje R410A		4,55 kg
	Ograničenje gustine		0,248 kg/m ³
	Ukupna količina rashladnog sredstva R410A		11,15 kg

Oprema			
Model	Vrsta / naziv unutrašnje jedinice	Kod	Količina
Bolnica u Nikšiću			
U-10LE1E8	Spoljna jedinica		1
S-28MY2E5B	4-smjerna 60x60 kaseta (MY2) Sistem 1: Unutrašnja jedinica 1, Unutrašnja jedinica 2		2
S-15MY2E5B	4-smjerna 60x60 kaseta (MY2) Sistem 1: Unutrašnja jedinica 3, Unutrašnja jedinica 4, Unutrašnja jedinica 6, Unutrašnja jedinica 7		4
S-56MY2E5B	4-smjerna 60x60 kaseta (MY2) Sistem 1: Unutrašnja jedinica 5		1
S-106MF2E5A	Kanalska jedinica sa srednjim statičkim pritiskom (MF2) Sistem 1: Unutrašnja jedinica 8		1
CZ-RTC5B	Daljinski upravljač s brojačem vremena (žičani)		8
CZ-KPY3AW	Ploča		7
CZ-P680BK2BM	Grana	47	1
CZ-P224BK2BM	Grana	46	6
6 x 12	Cevi	B	18,00 (m)
10 x 12	Cevi	C	7,00 (m)
10 x 16	Cevi	E	23,00 (m)
10 x 18	Cevi	G	20,00 (m)
12 x 22	Cevi	y	10,00 (m)
	Dodatno punjenje R410A		4,55 kg
	Ukupna količina rashladnog sredstva R410A		11,15 kg

Uređaj broj	Soba/Model		Nominalni kapacitet (kW)	Korigovani kapacitet Ukupni/Distribuirani/Osetni (kW)	Uslovi (temp./rel. vlaga)	Dužina cevi i ekvivalentna dužina (m)	
						Visina	Ekv. dužina
Sistem 1							
Spoljne jedinice U-10LE1E8	Odnos kapaciteta unutrašnja/spoljna jedinica: 99,3 %		<u>Spoljna temperatura i vlažnost</u>		<u>Ukupno spoljnih jedinica</u>	<u>Ukupno unutrašnjih jedinica</u>	
	Dodatno punjenje: 4,55 kg		Hlađenje: 35,0 °C		Hlađenje: 25,29 kW	Hlađenje: 25,29 kW	
	Ograničenje: 0,25 kg/m3		Grejanje: 7,0 °C; 87 %		Grejanje: 28,07 kW	Osetno: 16,50 kW	
						Grejanje: 28,07 kW	
1	restoran S-28MY2E5B	Hlađenje	2,8	2,8 / 2,5 / 1,7	24,0 °C; 62,2 %	0,0	64,8
		Grejanje	3,2	3,0 / 2,9	22,0 °C		
2	restoran 1 S-28MY2E5B	Hlađenje	2,8	2,8 / 2,5 / 1,7	24,0 °C; 62,2 %	0,0	64,8
		Grejanje	3,2	3,0 / 2,9	22,0 °C		
3	kancelarija S-15MY2E5B	Hlađenje	1,5	1,5 / 1,4 / 1,1	24,0 °C; 62,2 %	0,0	56,4
		Grejanje	1,7	1,6 / 1,5	22,0 °C		
4	trpezarija S-15MY2E5B	Hlađenje	1,5	1,5 / 1,4 / 1,1	24,0 °C; 62,2 %	0,0	52,8
		Grejanje	1,7	1,6 / 1,5	22,0 °C		
5	kuhinja S-56MY2E5B	Hlađenje	5,6	5,6 / 5,2 / 3,0	24,0 °C; 62,2 %	0,0	48,0
		Grejanje	6,3	5,8 / 5,7	22,0 °C		
6	poslasticara S-15MY2E5B	Hlađenje	1,5	1,5 / 1,4 / 1,1	24,0 °C; 62,2 %	0,0	44,4
		Grejanje	1,7	1,6 / 1,5	22,0 °C		
7	pekara S-15MY2E5B	Hlađenje	1,5	1,5 / 1,4 / 1,1	24,0 °C; 62,2 %	0,0	40,8
		Grejanje	1,7	1,6 / 1,5	22,0 °C		
8	kuhinja1 S-106MF2E5A	Hlađenje	10,6	9,5 / 9,5 / 6,2	24,0 °C; 62,2 %	0,0	21,6
		Grejanje	11,4	10,6 / 10,5	22,0 °C		

Sistem 1							
Maximum possible refrigerant charge of the system: 19,80 kg Total actual refrigerant charge of the system: 11,15 kg $11,15 \leq 19,80 \text{ kg}$ ✓							
Rooms							
Room Name	Dužina	Širina	Visina	Area	Volume	Density	Limit
restoran	10,00	5,00	3,00	50,00	150,00	0,0743	66,0000
restoran 1	10,00	5,00	3,00	50,00	150,00	0,0743	66,0000
kancelarija	5,00	3,00	3,00	15,00	45,00	0,2477	19,8000
trpezarija	5,00	4,00	3,00	20,00	60,00	0,1858	26,4000
kuhinja	15,00	3,00	3,00	45,00	135,00	0,0826	59,4000
poslasticara	5,00	3,00	3,00	15,00	45,00	0,2477	19,8000
pekara	4,00	4,00	3,00	16,00	48,00	0,2323	21,1200
kuhinja1	20,00	5,00	4,00	100,00	400,00	0,0279	176,0000

Cenovnik				
Model	Tip	Kod	Količina	Cena (EUR)
Sistem 1				
U-10LE1E8	Spoljna jedinica		1	0,00 EUR
S-28MY2E5B	4-smjerna 60x60 kaseta (MY2)		2	0,00 EUR
S-15MY2E5B	4-smjerna 60x60 kaseta (MY2)		4	0,00 EUR
S-56MY2E5B	4-smjerna 60x60 kaseta (MY2)		1	0,00 EUR
S-106MF2E5A	Kanalska jedinica sa srednjim statičkim pritiskom (MF2)		1	0,00 EUR
CZ-RTC5B	Daljinski upravljač s brojačem vremena (žičani)		8	0,00 EUR
CZ-KPY3AW	Ploča		7	0,00 EUR
CZ-P680BK2BM	Grana	47	1	0,00 EUR
CZ-P224BK2BM	Grana	46	6	0,00 EUR
10	Cevi	C, E, G	50,00 (m)	0,00 EUR
12	Cevi	B, C, y	35,00 (m)	0,00 EUR
16	Cevi	E	23,00 (m)	0,00 EUR
18	Cevi	G	20,00 (m)	0,00 EUR
22	Cevi	y	10,00 (m)	0,00 EUR
6	Cevi	B	18,00 (m)	0,00 EUR
Dodatno punjenje R410A	Dodatno punjenje R410A		4,55 kg	0,00 EUR
	Ukupna cena			0,00 EUR

Opis spoljnih jedinica

Model: U-10LE1E8

Količina 1

Highly efficient air-cooled combined compressor/heat exchanger unit in heat pump design for heating or cooling, which can be connected to a maximum of 15 Panasonic ECOi indoor units Can only be used as a single outdoor unit.

Structure

Weatherproof sheet steel casing in Silky Shade colour (Munsell 1Y 8.5 / 0.5) with a torsionally rigid frame. Refrigeration cycle can be switched to heat pump mode. High-efficiency heat exchanger made of copper pipe with mechanically bonded aluminium fins. Two directly driven axial fans, statically and dynamically balanced for extremely smooth running, with internal thermal motor protection. Electronic fan speed control enables operation down to -10°C in cooling mode. Compressor with frequency control and anti-vibration equipment for extremely low noise levels and energy-saving operation. This system can maintain the rated (100%) capacity up to 37°C in cooling mode. Expansion valve controlling the correct amount of refrigerant during operation. Refrigeration cycle is factory pre-charged with safe R410A refrigerant.

Refrigeration Cycle

Refrigeration cycle, optimized for R410A refrigerant, comprising the following main components: compressor, electronic expansion valve, evaporator, condenser, liquid receiver, strainer, oil separator, 4-way-valve and the corresponding control and safety equipment, suction and liquid line stop valves, service ports with Schrader valves. Refrigeration cycle will be evacuated and charged with initial refrigerant load.

Compressor

One 2-piston rotary DC inverter compressor, optimized for R410A refrigerant. Complete with anti-vibration and noise reduction equipment, and crank case heater. Precise control with the system dynamically monitoring the building load and adjusting compressor speed to the prevailing conditions.

Condenser

High-efficiency heat exchanger made of copper pipe and aluminium fins with special cross-section profile and highly resistant surface protection against adverse environmental conditions. Optimized for use with R410A refrigerant.

Electronic expansion valve

Microprocessor-controlled high and low pressure valve, optimized for use with R410A, designed to ensure optimum evaporator charge and precise superheat control at the same time.

Fan

Two axial fans with variable speed drive for optimum pressure pattern within the heat exchanger and for high efficiency, especially in low speed operation. Horizontal air discharge for optimized uniform low-noise air flow even with high air volumes.

Microprocessor control

In addition to optimized full-load and part-load control during cooling and heating operation, the microprocessor also performs the following functions:

- Automatic detection and addressing of indoor units during initial system start-up
- Self-diagnosis of all connected indoor and outdoor units
- Subcooling control
- Refrigerant level control in the liquid receiver

- Inverter control for the compressor according to capacity needs by generating an optimized, smoothed sinusoidal control signal
- Electronic expansion valve control
- Variable evaporation and condensation temperature control (in cooling operation and heating operation respectively) for optimized low energy consumption and comfort based on real room load
- Fan control for optimum pressure pattern within the heat exchanger
- Automatic change-over between cooling and heating operation selectable
- Adjustable system pressure setting (33 – 38 bar) with VRF renewal kits, e.g. for conversion from R22 to R410A refrigerants
- Service function selectable with CZ-RTC4 standard remote control
- Safety functions to protect VRF system

Basic Features

- Cooling capacity: 28kW. (Calculated with an external dry temperature of 35 ° C and inside of 27 ° C)
- Heat capacity: 28kW. (Calculated with an external dry temperature of 7 ° C and interior of 20 ° C)
- Electrical power absorbed cooling: 9.00kW
- Electrical power absorbed heating: 7.13kW
- Airflow: 160m³/ min
- Sound pressure: 63dBA
- Coolant: 6.6Kg
- Cold operating range: -10° C to 46° C
- Operating range in heat: -20° C to 18° C
- Dimensions: H1500xW980xD370mm
- Weight: 133Kg
- Power supply: 400V

Additional Features

- Extended operating range for cooling down to -10 °C and heating down to -20 °C
- Connectible indoor/outdoor unit capacity ratio up to 130%
- Maximum total piping length is 150m
- Maximum actual piping length is 120m
- Light weight: 133 kg
- High static pressure: 35 Pa
- Non-stop operation, even during maintenance
- 8 different types of controllers

Compliance with EU Directives

The unit complies with the following EU Directives:

- Electromagnetic Compatibility Directive 2004/108/EC
- Machinery Directive 2006/42/EC
- Pressure Equipment Directive 97/23/EC

Tehnički podaci - U-10LE1E8

Režim rada hlađenje

Temperatura prostora ST	27 °C
Temperatura prostora VT	19 °C
Spoljna temperatura ST	35 °C

Nominalni rashladni kapacitet	28 kW
Nominalni EER	2,14
EER (hlađenje)	2,70
<u>Režim rada grejanje</u>	
Temperatura prostora ST	20 °C
Spoljna temperatura ST	7 °C
Spoljna temperatura VT	6 °C
Nominalni kapacitet grejanja	28 kW
Nominalni COP	3,93
COP (grejanje)	3,74
Odnos kapaciteta	99,3 %
Napon	380-400-415V/3Ph + N/50Hz
Nominalna ulazna snaga	13,1 kW
Maksimalna električna snaga	19,6 kW
Maks. visinska razlika između unutrašnje i spoljne jedinice	+40m/-50 m
Maks. ukupna dužina cevi	300 m
Maks. broj unutrašnjih jedinica	15
Jačina struje	19,6 A
Maksimalna radna struja	19,6 A
Konjske snage	10 hp
Težina	133 kg
Rashladno sredstvo	R410A
Cevi za gas	22,22 mm / 7/8"
Cevi za tečnost	9,52 mm / 3/8"
Nivo zvučnog pritiska (standardni režim)	63 dB(A)
Nivo zvučnog pritiska (tihi režim)	56 dB(A)
<u>DIMENZIJE</u>	
Visina	1500 mm
Širina	980 mm
Dubina	370 mm

Opis unutrašnjih jedinica

Model: S-106MF2E5A (Kanalska jedinica sa srednjim statičkim pritiskom)

Količina 1

Lightweight, compact and very shallow unit design of galvanised sheet steel, lined with noise-reducing and heat-insulating material.

Three centrifugal fans, directly driven by an electronically controlled DC inverter motor for super quiet operation. Designed specifically for applications requiring fixed square ducting. External static pressure and airflow volume can be adjusted to the prevailing conditions and needs. It is possible to increase the sensible cooling capacity by adjusting the air volume flow in order to almost completely eliminate latent losses. This is possible due to the outstanding big heat exchanger surface, increasing the air volume flow by a manual selection of higher fan speed curves together with the default active off-coil temperature control, and the room load based variable evaporation temperature control. Air intake via a horizontal suction-side duct connection located on the backside of the unit.

Microprocessor-controlled expansion valve, optimised for R410A refrigerant, for precise cooling and heating capacity control based on capacity needs. Heat exchanger made of copper pipe with mechanically bonded aluminium fins, drainage system with integrated drain pump (500 mm pump head from drain port) and safety float switch.

Microprocessor functions include the following:

- PID control of the outdoor unit expansion valves to adjust the amount of refrigerant depending on the readings of the room temperature sensor and the heat exchanger inlet and outlet temperature sensors
- Self-diagnosis system with memory function
- Fan control
- Drain pump control
- Display of all service parameters
- Free programming of E²-PROM device

External connectivity:

- Wireless (infra-red), wired or simplified remote controller
- P-Link bus system for System Controller, Intelligent Controller etc.

Inputs and outputs on unit PCB (directly available by use of connectors):

Inputs

- ON/OFF
- Remote controller prohibit
- Thermostat OFF on a mandatory basis (demand control)

Outputs

- Operation signal
- Alarm signal
- External fan On / Off
- Fan signal
- Heating mode signal
- Cooling mode signal
- Thermostat signal
- Defrost signal

Wide range of adjustment choices to set up the unit according to on-site requirements. Provision of

additional external inputs and outputs via optional adapter PCBs possible. Plant control via optional centralised Panasonic control systems is possible. Connection to superordinate control systems and Building Management Systems (BMS) is provided by optional communication interfaces.

Compliance with Directives and Standards

The unit complies with the following Directives and Standards:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2004/108/EC
- EN55014-1
- EN55014-2
- EN60335-1
- EN60335-2-40
- EN61000-3-2
- EN61000-3-3

Tehnički podaci - S-106MF2E5A

Nominalni rashladni kapacitet	10,6 kW
Nominalni kapacitet grejanja	11,4 kW
Napon	220-230-240V/1Ph/50Hz
Ulazna snaga	200,00 W
Jačina struje	1,34 A
Protok vazduha	1920 m ³ /h
Dimenzije jedinice (VxŠxD)	290 x 1400 x 700 mm
Težina	46 kg
Rashladno sredstvo	R410A
Cevi za gas	15,88 mm / 5/8"
Cevi za tečnost	9,52 mm / 3/8"
Veličina otvora za drenažu	32 mm
Nivo zvučnog pritiska (visok)	38 dB(A)
Nivo zvučnog pritiska (srednji)	34 dB(A)
Nivo zvučnog pritiska (nizak)	31 dB(A)

Model: S-28MY2E5B (4-smjerna 60x60 kaseta)**Količina 7****Tehnički podaci - S-28MY2E5B**

Nominalni rashladni kapacitet	2,8 kW
Nominalni kapacitet grejanja	3,2 kW
Napon	220-230-240V/1Ph/50Hz
Ulazna snaga	35,00 W
Jačina struje	0,30 A
Protok vazduha	558 m3/h
Dimenzije jedinice (VxŠxD)	319 x 700 x 700 mm
Težina	18 kg
Rashladno sredstvo	R32
Cevi za gas	12,7 mm / 1/2"
Cevi za tečnost	6,35 mm / 1/4"
Veličina otvora za drenažu	32 mm
Nivo zvučnog pritiska (visok)	35 dB(A)
Nivo zvučnog pritiska (srednji)	31 dB(A)
Nivo zvučnog pritiska (nizak)	25 dB(A)

Dodatna oprema

Grana: CZ-P680BK2BM

Količina 1

Design

The special design of the Branch Pipe Kit ensures optimum refrigerant flow, especially in part-load operation.

For indoor units (capacity after distribution joint is between 22.4 and 68.0 kW.)

Grana: CZ-P224BK2BM

Količina 6

Design

The special design of the Branch Pipe Kit ensures optimum refrigerant flow, especially in part-load operation.

For indoor units (capacity after distribution joint must be 22.4 kW or lower).

Kit consisting of:

- 1 distribution joint for the suction gas pipe
- 1 distribution joint for the liquid pipe
- 1 set of thermal insulation shells

Klima: Prosečno (Strazbur)

Snaga kod hlađenja sa 100% opterećenja:
24,92 kW

Snaga kod grejanja sa 100% opterećenja:
27,65 kW

Letnja temperatura sa 100% opterećenja: 39 °C

Zimska temperatura sa 100% opterećenja: -10 °C

Hlađenje (leto)				
Temperatura °C	Sati	Opterećenje %	Snaga (kW)	Ukupna snaga (kWh)
25	178	39,1	9,74	1734,38
26	158	43,5	10,84	1712,75
27	137	47,8	11,91	1631,91
28	109	52,2	13,01	1417,9
29	88	56,5	14,08	1239,02
30	63	60,9	15,18	956,11
31	39	65,2	16,25	633,67
32	31	69,6	17,34	537,67
33	24	73,9	18,42	441,98
34	17	78,3	19,51	331,71
35	13	82,6	20,58	267,59
36	9	87	21,68	195,12
37	4	91,3	22,75	91,01
38	3	95,7	23,85	71,55
39	1	100	24,92	24,92

Ukupna snaga (kWh): 11287 kWh

Konstantno hlađenje: 452,941

<25% hlađenje sa delimičnim opterećenjem: 0 %

Grejanje (zima)				
Temperatura °C	Sati	Opterećenje %	Snaga (kW)	Ukupna snaga (kWh)
-10	1	100	27,65	27,65
-9	25	96,2	26,6	664,98
-8	23	92,3	25,52	586,98
-7	24	88,5	24,47	587,29
-6	27	84,6	23,39	631,58
-5	68	80,8	22,34	1519,2
-4	91	76,9	21,26	1934,92
-3	89	73,1	20,21	1798,88
-2	165	69,2	19,13	3157,08
-1	173	65,4	18,08	3128,38
0	240	61,5	17	4081,14
1	280	57,7	15,95	4467,13

2	320	53,8	14,88	4760,22
3	357	50	13,82	4935,52
4	356	46,2	12,77	4547,65
5	303	42,3	11,7	3543,87
6	330	38,5	10,65	3512,93
7	326	34,6	9,57	3118,81
8	348	30,8	8,52	2963,64
9	335	26,9	7,44	2491,68
10	315	23,1	6,39	2011,95
11	215	19,2	5,31	1141,39
12	169	15,4	4,26	719,62
13	151	11,5	3,18	480,14
14	105	7,7	2,13	223,55
15	74	3,8	1,05	77,75

Ukupna snaga (kWh): 57114 kWh

Konstantno grejanje: 2065,604

<25% grejanje sa delimičnim opterećenjem: 8 %

Režim grejanja toplotne pumpe sa gasom pri <7 °C spoljašnje temperature: 77 %

Izvori energije

Izvor energije	Troškovi
Električna energija (dnevna tarifa)	0,14
Električna energija (noćna tarifa)	0,14
Od: 21:00	Do: 05:59
Električna energija (tarifa tokom vikenda)	0
Od: Subota 00:00	Do: Nedelja 23:59
Prirodni gas	0,05
TNG	0,15
Nafta	0
Centralno daljinsko grejanje	0

EM 200 E2M 01

127249

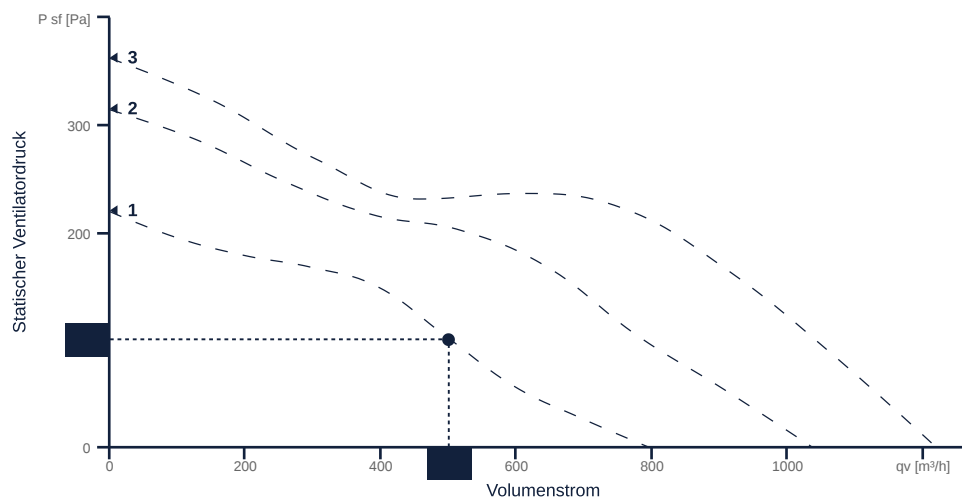
ruck

- Innovativer, hocheffizienter Diagonalventilator
- Optimal abgestimmte, CFD-optimierte Aerodynamik
- Gehäuse aus schlagfestem, verstärktem Polypropylen
- Robuster AC-Motor, 3-stufig steuerbar
- Fördermitteltemperatur bis 60 °C im Dauerbetrieb
- Seit 2012 der Maßstab für Effizienz



KENNFELD

Bezeichnung	Wert	Einheit
Volumenstrom	500	m³/h
Druck	100	Pa



zur Produktseite

EM 200 E2M 01

127249

ALLGEMEINE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
ERP konform	Ja		
Kanalmaß	-		WxH _{aukt}
Rohranschlussdurchmesser (DN)	DN200		DN



zur Produktseite

ALLGEMEINE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Nennspannung (Gesamtgerät)	230	V	U _{rated}
Anschluss-Phasen (Gesamtgerät)	1~		phase
Absicherung (Gesamtgerät)	6 A		fuse
Gehäusematerial	Kunststoff		mat _{casing}
Laufmaterial	Kunststoff		mat _{impeller}
IP-Schutzart (Gesamtgerät)	IPX4		IP _{compl}
IP-Schutzart (Klemmkasten)	IP44		IP _{ebox}
Gewicht	3.77	kg	m
Bauart	Diagonal		Fan _{type}
Kategorie / Einbausituation	A		cat

MAXIMALDATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Max. Leistungsaufnahme (Gerät)	117	W	P _{ed, max}
Max. Betriebsstrom (Gerät)	0.58	A	I _{ed, max}
Max. Drehzahl	2850	1/min	n _{max}
Max. stat. Wirkungsgrad	40.9	%	η _{ges}
Max. Ventilatorwirkungsgrad	45.5	%	η _e
Max. Volumenstrom	1220	m³/h	Q _{v, max}
Max. stat. Druck	360	Pa	p _{sf, max}
Max. Mediumtemperatur	60	°C	T _{m, max}
Max. Umgebungstemperatur	60	°C	T _{amb, max}
Min. Umgebungstemperatur	-25	°C	T _{amb, min}
Min. Spannung	230	V	U _{min}
Blockierstrom	0.96	A	I _{LRA}

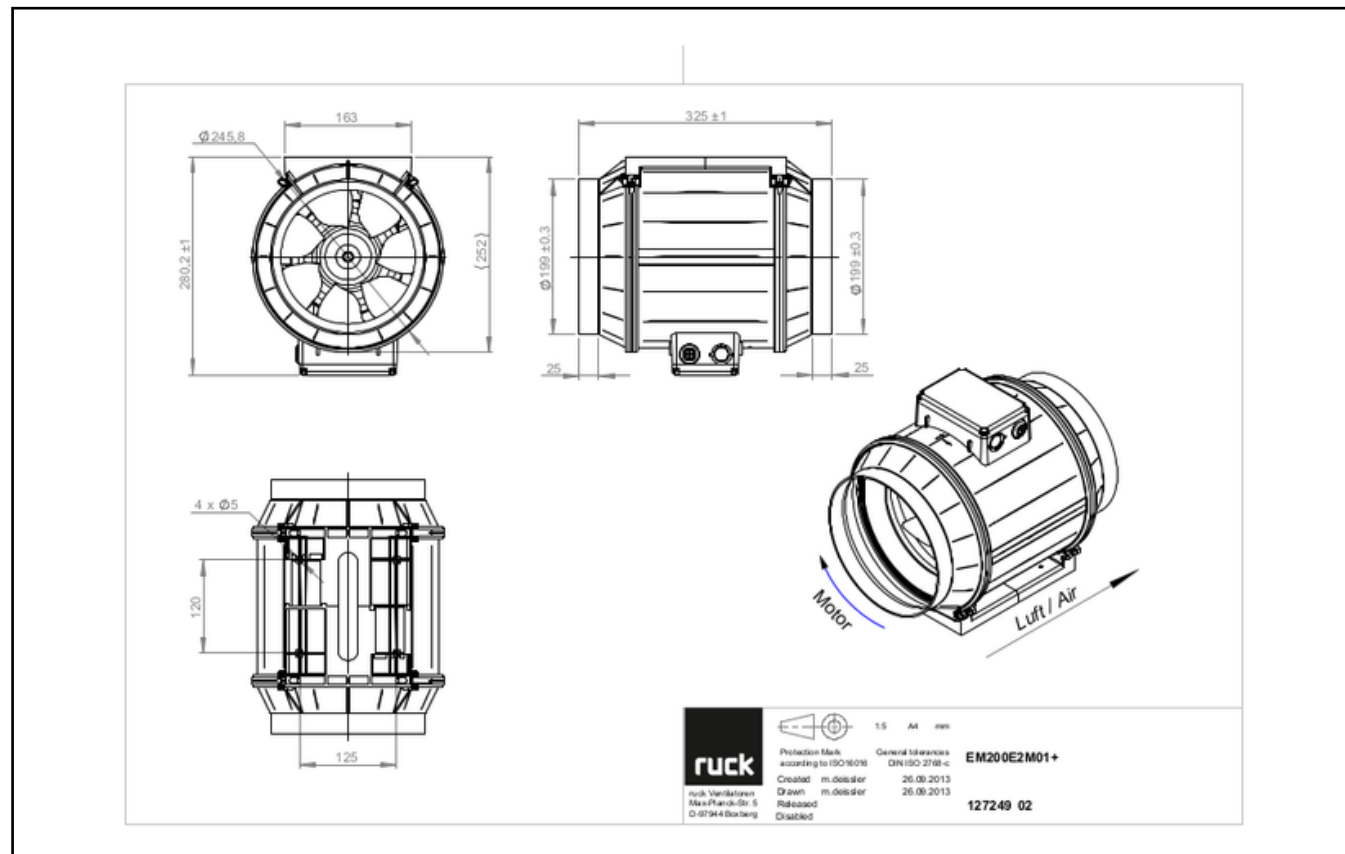
ERP DATEN (LOT11)

Bezeichnung	Wert	Einheit	Formelzeichen
Drehzahl am Energieeffizienzoptimum	2741	1/min	n _{opt}
Effizienzgrad	40.7	%	N
Effizienzkategorie	statisch		cat _{efficiency}
Eingangsleistung des Motors am Energieeffizienzoptimum	0.11	kW	P _{e, opt}
Gesamteffizienz	61.3	%	η _{ges}
Messkategorie	A		meas _{cat}
Ventilatordruck am Energieeffizienzoptimum	224	Pa	p _{f, opt}
Volumenstrom am Energieeffizienzoptimum	748	m³/h	Q _{v, opt}



zur Produktseite

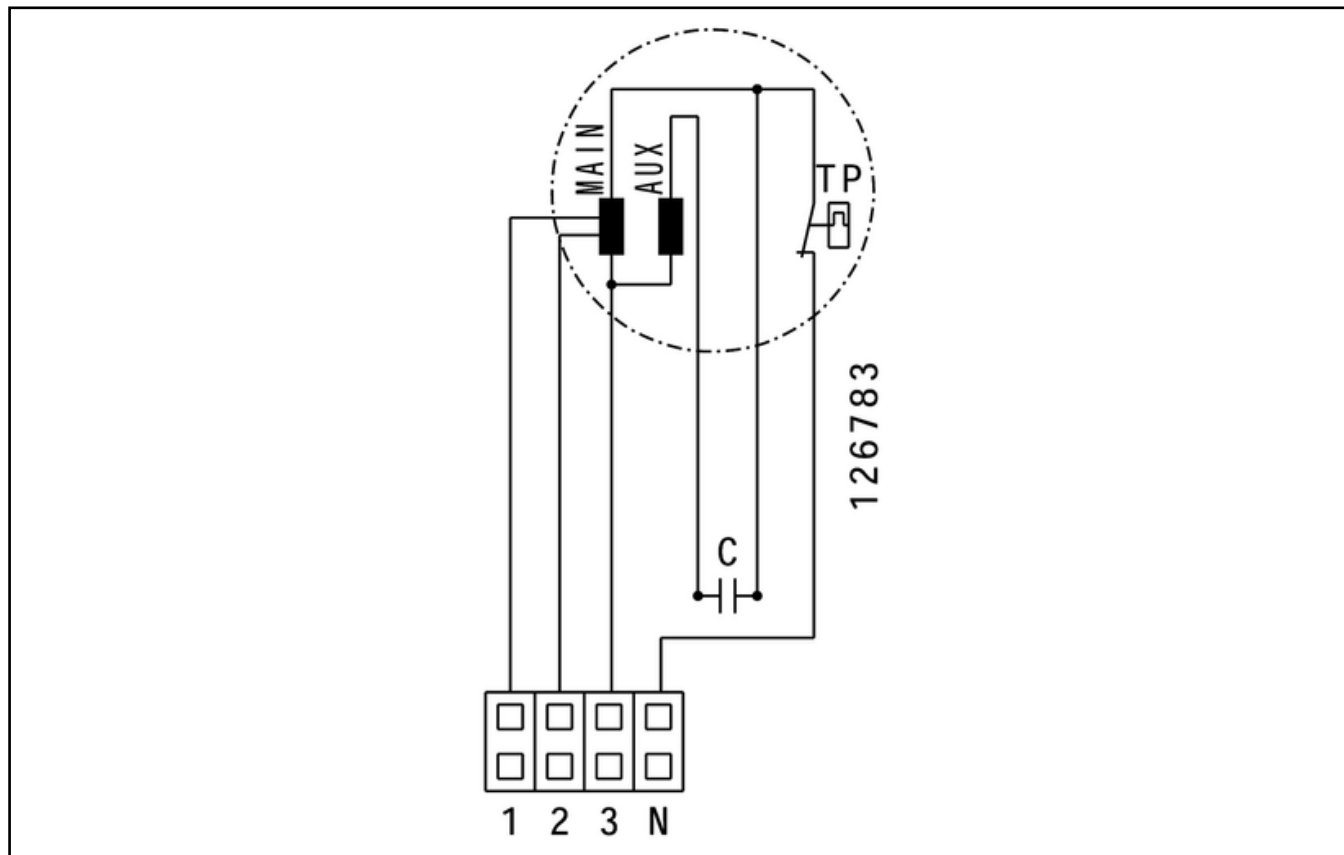
SCHALTPLÄNE / MASSZEICHNUNGEN



EM 200 E2M 01

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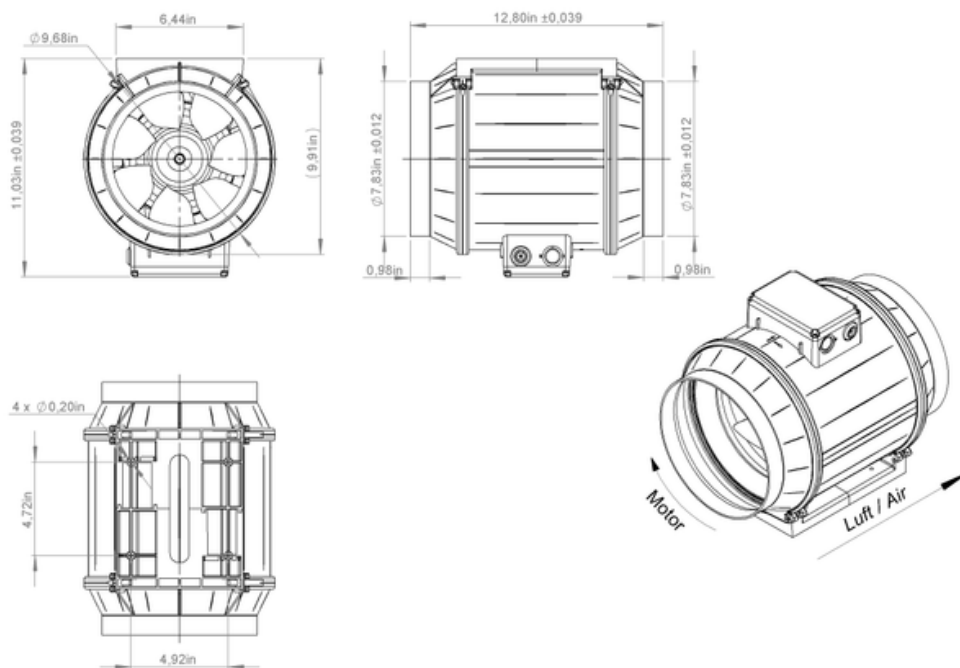


zur Produktseite

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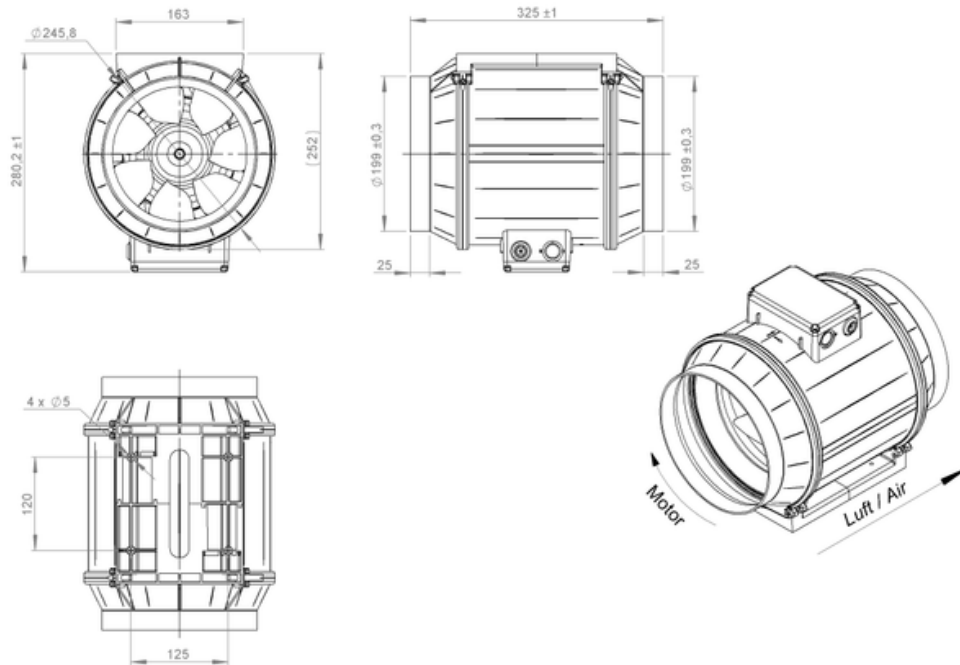


zur Produktseite

EM 200 E2M 01

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ruck



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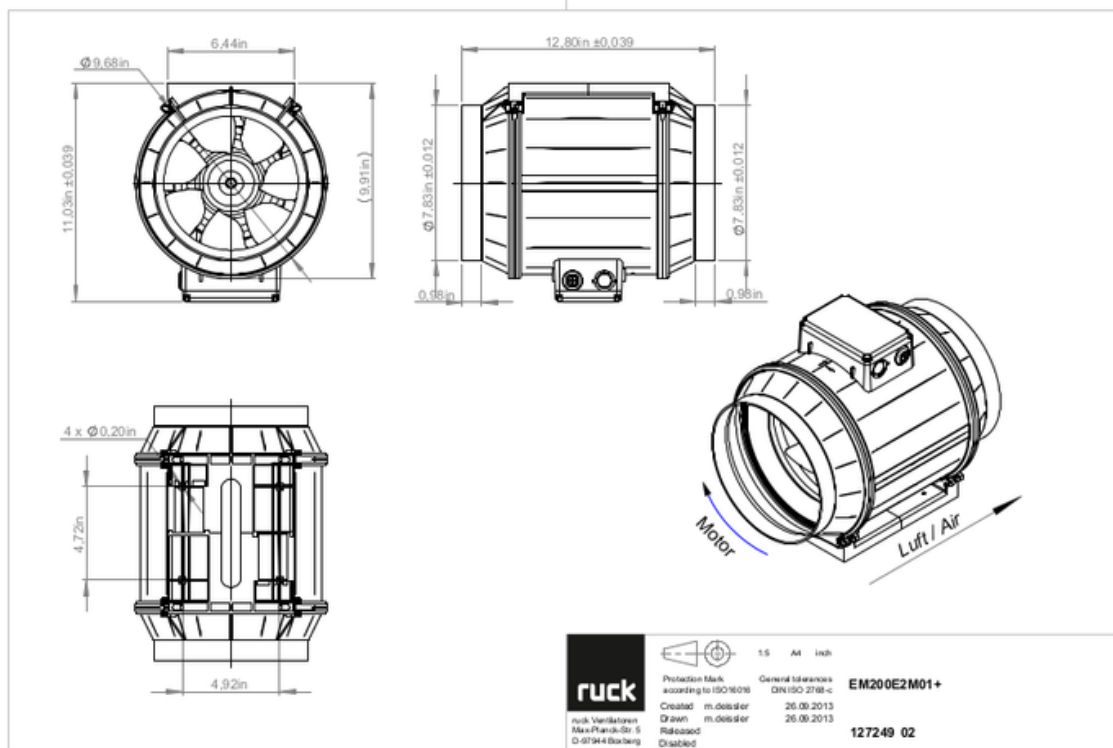


zur Produktseite

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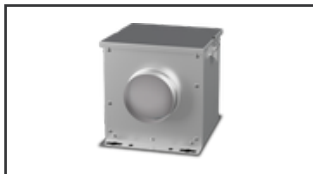
ruck



zur Produktseite

ZUBEHÖR MECHANISCH

FV 200 | 112832



- Luftfilterbox mit Vlies ISO Coarse 45 % (G3)
- Spannverschluss

FT 200 | 112840



- Luftfilterbox für Taschenfilter
- Spannverschluss
- Gehäuse aus verzinktem Stahlblech
- Ohne Filter

FTW 200 | 112853



- Luftfilterbox mit Taschenfilter M5
- Integriertes Warmwasserheizregister
- Gehäuse aus verzinktem Stahlblech
- Spannverschluss

RSK 200 | 102662



- Rückstauklappe für Rohreinbau
- Gehäuse aus verzinktem Stahlblech
- Klappen aus Aluminium

RSK 200D | 113487



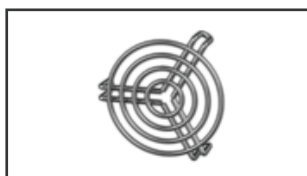
- Rückstauklappe für Rohreinbau
- Gehäuse aus verzinktem Stahlblech
- Klappen aus Aluminium
- Integrierte Dichtung

VM 200 | 102650



- Verbindungsmanschette zur Schallentkopplung und Abdichtung
- Verzinktes Stahlblech, 5 mm
- Neoprendichtung
- 1 Pack = 2 Stück

SG 200 01 | 102898



- Schutzgitter für Rohranschluss
- Verzinkter Draht

SDS 200 | 102719



- Starrer Rohrschalldämpfer
- Verzinktes Stahlblech
- Schalldämmpackung 50 mm (Mineralwolle)

SDF 200 | 102704



- Flexibler Rohrschalldämpfer
- Verzinktes Stahlblech
- Schalldämmpackung 50 mm

ZUBEHÖR ELEKTRISCH

GS 03 | 107633



- Geräteschalter
- Umax = 400 V, I_{max} = 25 A
- Schaltvermögen 400 V 3~ = 5,5 kW
- Schutzart IP 55

MTS 10 | 128145



- 3-Stufenschalter
- Max. Umgebungstemperatur 50 °C
- Auf- und Unterputzmontage
- Schutzart IP 44



zur Produktseite

ELKI 6035 E2 10

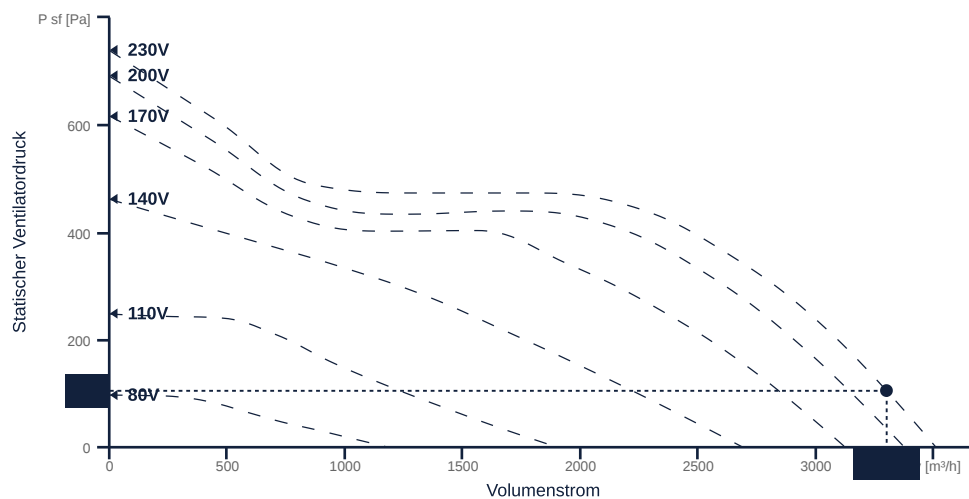
127736

- Energieeffizienter Diagonalventilator
- Optimal abgestimmte und CFD-optimierte Aerodynamik
- Schallisoliertes Gehäuse aus verzinktem Stahlblech
- Ventilatoreinheit ausbaubar
- Robuster einphasiger AC-Motor, spannungssteuerbar
- Integrierter ThermoSchalter



KENNFELD

Bezeichnung	Wert	Einheit
Volumenstrom	3300	m³/h
Druck	104	Pa



zur Produktseite

ELKI 6035 E2 10

127736

TECHNISCHE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Volumenstrom	3299	m³/h	qVcalc
Ventilatordruck	115	Pa	psf
Statischer Ventilatordruck	104	Pa	pf



zur Produktseite

ELKI 6035 E2 10

127736

ruck

TECHNISCHE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Stromaufnahme Motor	2	A	le
Stromaufnahme Elektrisch	2	A	led
Elektrische Leistungsaufnahme	517	W	Pek
Spannung	230	V	U
Drehzahl	2765	1/min	N
Statischer Gesamtwirkungsgrad	18	%	etaFaPeK
Gesamtwirkungsgrad	20	%	etatPeK
SFP (Gesamtgerät)	564	W/(m³/s)	sfp _{device}
Schallleistungspegel Ansaug	82	dB(A)	LwA5
Schallleistungspegel Ausblas	84	dB(A)	LwA6
Schallleistungspegel Abstrahl	59	dB(A)	LwA2

SCHALLDATEN

Schallleistung	Mittelfrequenzband										Einheit	Formelzeichen
	Σ	63	125	250	500	1000	2000	4000	8000	16000		
Ansaug	82	5	54	71	75	76	75	74	68	51	dB(A)	LwA5
Ausblas	84	5	52	67	77	79	78	75	68	48	dB(A)	LwA6
Abstrahl	59	48	47	48	51	53	51	50	38	19	dB(A)	LwA2

SCHALLDRUCKPEGELRECHNER

Bezeichnung	Wert	Einheit
Hüllfläche	Halbkugel	
Abstand	3	m

Schalldruck	NR	Mittelfrequenzband										Einheit	Formelzeichen
		Σ	63	125	250	500	1000	2000	4000	8000	16000		
Ansaug	60	64	0	36	54	57	59	57	56	50	34	dB(A)	LwA5
Ausblas	62	66	0	34	50	60	62	61	57	50	31	dB(A)	LwA6
Abstrahl	36	41	30	29	31	34	36	34	32	21	1	dB(A)	LwA2



zur Produktseite

ELKI 6035 E2 10

127736

ruck

ALLGEMEINE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
ERP konform	Ja		
Kanalmaß	600x350		WxH _{duct}
Rohranschlussdurchmesser (DN)	-		DN
Nennspannung (Gesamtgerät)	230	V	U _{rated}
Anschluss-Phasen (Gesamtgerät)	1~		phase
Absicherung (Gesamtgerät)	6 A		fuse
Gehäusematerial	Stahlblech verzinkt		mat _{casing}
Laufmaterial	Kunststoff		mat _{impeller}
IP-Schutzart (Gesamtgerät)	IPX4		IP _{compl}
IP-Schutzart (Klemmkasten)	IP44		IP _{ebox}
Gewicht	25.5	kg	m
Nennluftvolumenstrom, Nennpunkt m³/h	2869.2	m³/h	q _{v,nom}
Nennaußendruck, statisch	282	Pa	p _{s,nom}
Bauart	Diagonal		Fa _n type
Kategorie / Einbausituation	A		cat

ERP DATEN (LOT 6)

Bezeichnung	Wert	Einheit	Formelzeichen
Nennluftvolumenstrom, Nennpunkt m³/s	0.8	m³/s	q _{v,nom}
Tatsächliche elektrische Eingangsleistung, Nennpunkt	0.55	kW	P _{e,nom}
Anströmgeschwindigkeit, Nennpunkt	3.8	m/s	v _{nom}
Nennaußendruck, statisch	282	Pa	p _{s,nom}
statischer Wirkungsgrad des Zuluftventilators, Nennpunkt	47.5	%	η _{es,SUP}
Gehäuseschallpegel, Nennpunkt	64	dB(A)	L _{WA2}
Bewertung	Produkt ist konform 2018		



zur Produktseite

ELKI 6035 E2 10

127736



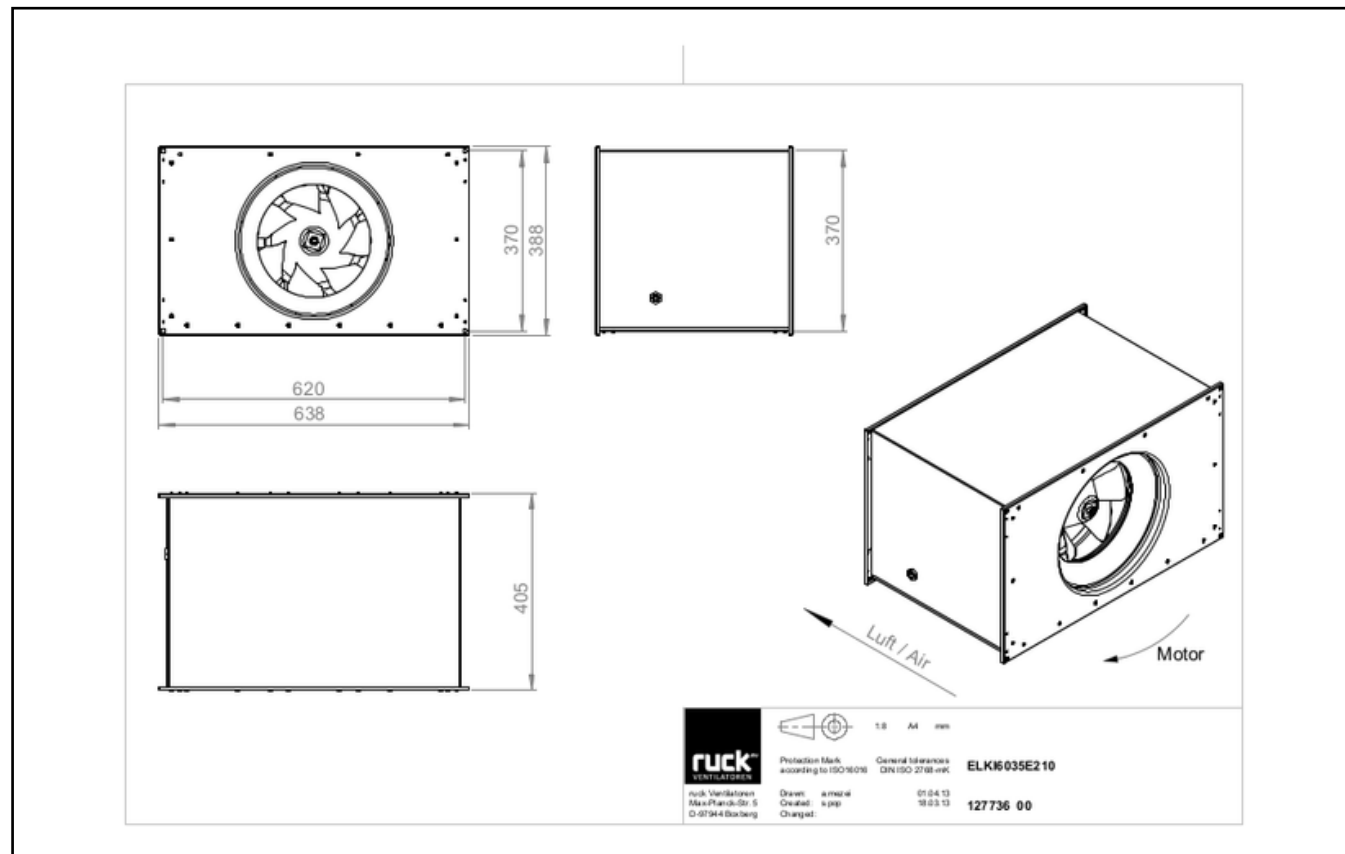
MAXIMALDATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Max. Leistungsaufnahme (Gerät)	547	W	P _{ed, max}
Max. Betriebsstrom (Gerät)	3.17	A	I _{ed, max}
Max. Drehzahl	2850	1/min	n _{max}
Max. stat. Wirkungsgrad	47.8	%	η _{es}
Max. Ventilatorwirkungsgrad	48.3	%	η _e
Max. Volumenstrom	3510	m³/h	Q _{v, max}
Max. stat. Druck	740	Pa	p _{sf, max}
Max. Mediumtemperatur	70	°C	T _{m, max}
Max. Umgebungstemperatur	70	°C	T _{amb, max}
Min. Umgebungstemperatur	-25	°C	T _{amb, min}
Min. Spannung	80	V	U _{min}



zur Produktseite

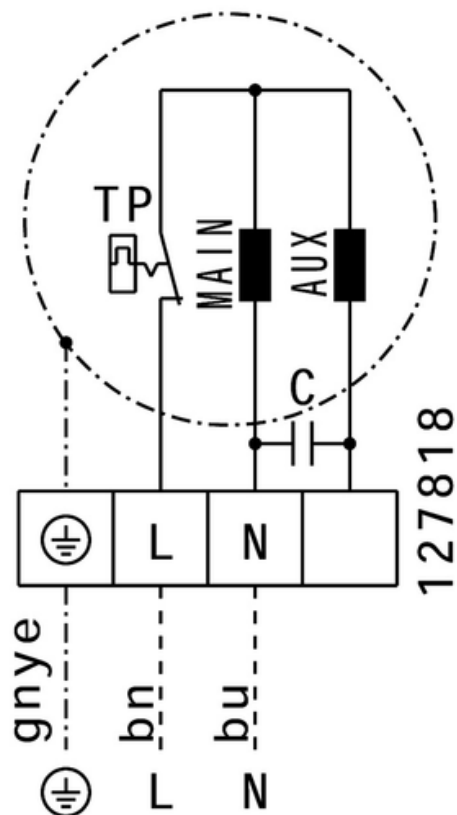
SCHALTPLÄNE / MASSZEICHNUNGEN



ELKI 6035 E2 10

127736

ruck

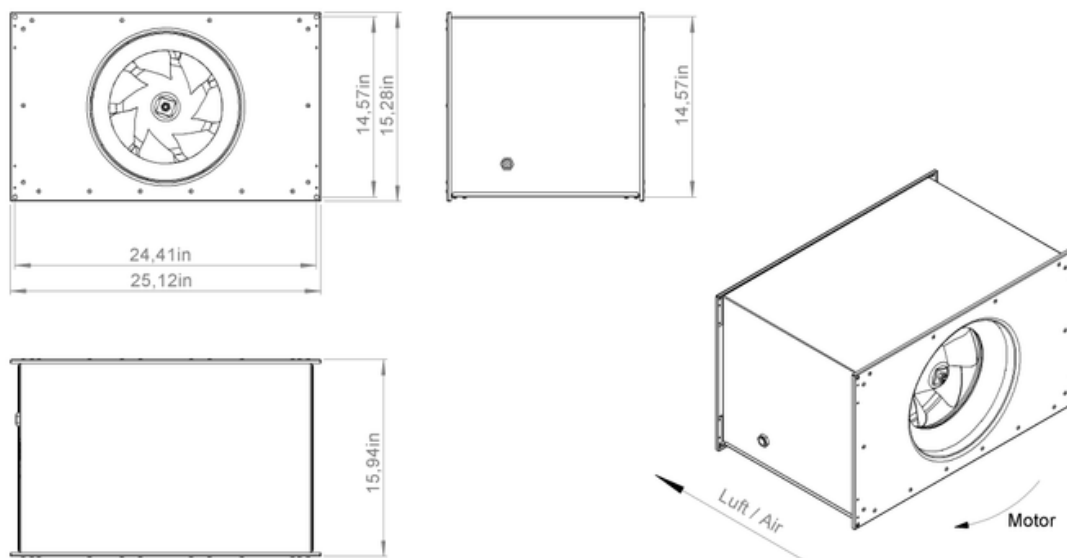


zur Produktseite

ELKI 6035 E2 10

127736

ruck



127736 00

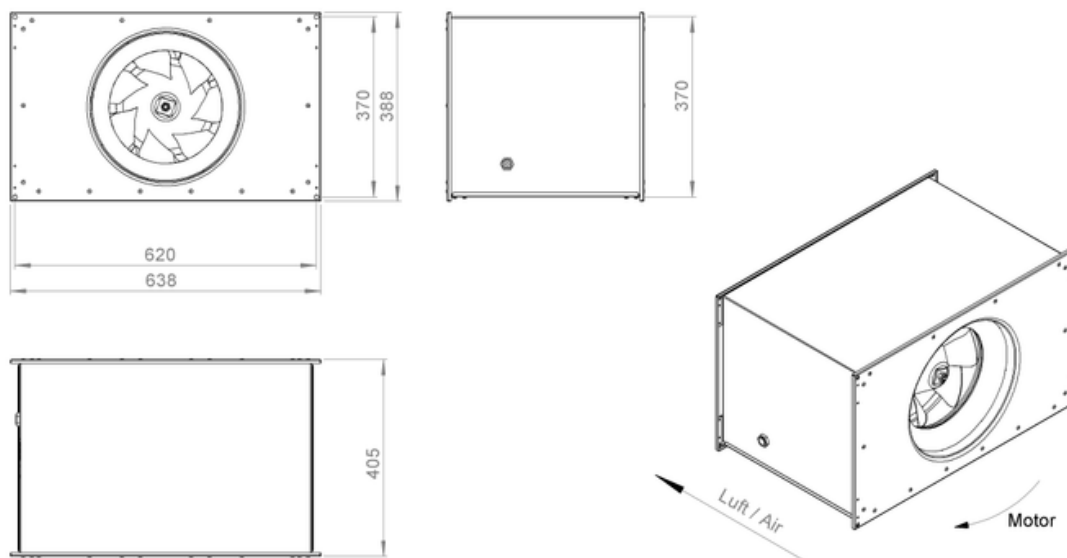


zur Produktseite

ELKI 6035 E2 10

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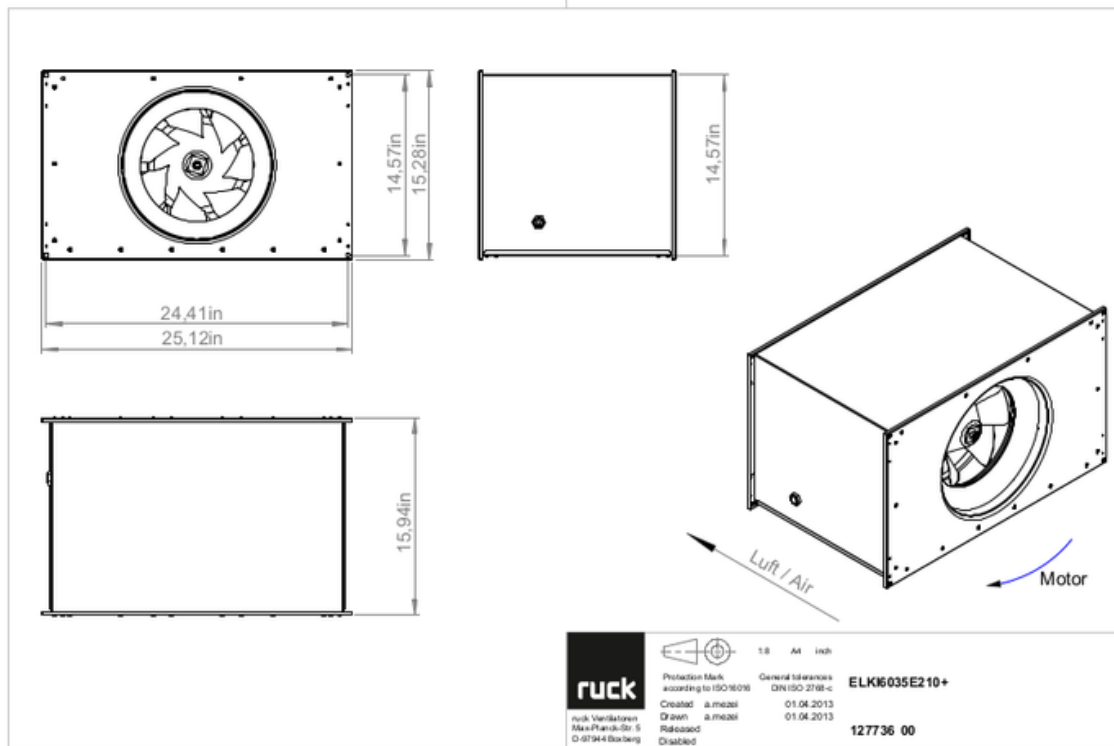
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127736 00



zur Produktseite



ZUBEHÖR MECHANISCH

VS 6035 | 102808



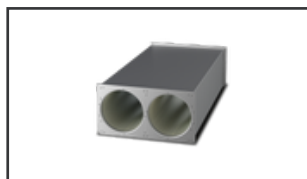
- Verbindungsstutzen, flexibel
- Normprofilflansch P20
- Verzinktes Stahlblech, Kunststoffband (PVC)
- Temperaturbeständig bis 70 °C

VKK 6035 | 103892



- Selbsttätige Verschlussklappe
- Kunststoff, witterungsbeständig
- Temperaturbeständig bis 70 °C

SDE 6035 L02 | 127751



- Kanalschalldämpfer
- Gehäuse aus Sendzimir verzinktem Stahlblech
- Schalldämpfung durch Mineralwolle mit Vliesabdeckung luftseitig
- 20 mm Flanschprofile



ZUBEHÖR ELEKTRISCH

GS 01 | 102787



- Geräteschalter
- $U_{max} = 400 \text{ V}$, 50/60 Hz
- Schaltvermögen 400 V 3~ = 5,5 kW
- $I_{max} = 16 \text{ A}$

TEM 035 | 103502



- 5-Stufentrafo
- 230 V, 50/60 Hz, 3,5 A
- Ausgangsspannung: 230-190-170-140-110-80-0 V
- Schutzart IP 54

TES 035 02 | 146195



- 5-Stufentrafo
- 230 V, 50/60 Hz, 3,5 A
- Ohne Gehäuse, Schaltschrankeinbau
- Schutzart IP 20



zur Produktseite

EL 315 E2 10

130320

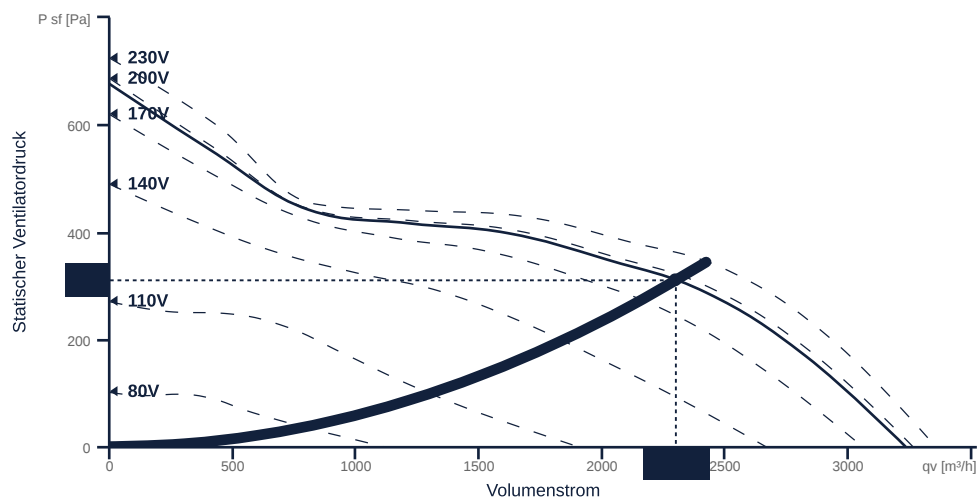
ruck

- Innovativer, hocheffizienter Diagonalventilator
- Optimal abgestimmte, CFD-optimierte Aerodynamik
- Seit 2007 der Maßstab für Effizienz
- Robuster einphasiger AC-Motor
- Fördermitteltemperatur bis 60 °C im Dauerbetrieb
- Gehäuse aus verzinktem Stahlblech
- Motor fremdbelüftet



KENNFELD

Bezeichnung	Wert	Einheit
Volumenstrom	2300	m³/h
Druck	310	Pa



zur Produktseite

EL 315 E2 10

130320

ruck

TECHNISCHE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Volumenstrom	2300	m³/h	q _{vcalc}
Ventilatordruck	350	Pa	psf
Statischer Ventilatordruck	310	Pa	pf



zur Produktseite

TECHNISCHE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Stromaufnahme Motor	2	A	I _e
Stromaufnahme Elektrisch	2	A	I _{ed}
Elektrische Leistungsaufnahme	462	W	P _{ek}
Spannung	194	V	U
Drehzahl	2625	1/min	N
Statischer Gesamtwirkungsgrad	43	%	etaFaPeK
Gesamtwirkungsgrad	48	%	etatPeK
SFP (Gesamtgerät)	724	W/(m³/s)	sfp _{device}
Schallleistungspegel Ansaug	78	dB(A)	L _{wA5}
Schallleistungspegel Ausblas	82	dB(A)	L _{wA6}
Schallleistungspegel Abstrahl	63	dB(A)	L _{wA2}

SCHALLDATEN

Schallleistung	Mittelfrequenzband										Einheit	Formelzeichen
	Σ	63	125	250	500	1000	2000	4000	8000	16000		
Ansaug	78	45	60	68	73	73	71	67	59	42	dB(A)	L _{wA5}
Ausblas	82	44	58	69	76	78	74	68	59	41	dB(A)	L _{wA6}
Abstrahl	63	45	46	50	55	57	59	53	43	25	dB(A)	L _{wA2}

SCHALLDRUCKPEGELRECHNER

Bezeichnung	Wert	Einheit
Hüllfläche	Halbkugel	
Abstand	3	m

Schalldruck	NR	Mittelfrequenzband										Einheit	Formelzeichen
		Σ	63	125	250	500	1000	2000	4000	8000	16000		
Ansaug	55	61	28	42	50	55	55	53	50	41	25	dB(A)	L _{wA5}
Ausblas	60	64	27	40	51	59	60	57	51	42	23	dB(A)	L _{wA6}
Abstrahl	43	45	28	29	32	37	40	41	36	26	8	dB(A)	L _{wA2}



zur Produktseite

ALLGEMEINE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
ERP konform	Ja		
Kanalmaß	-		WxH _{duct}
Rohranschlussdurchmesser (DN)	DN315		DN
Nennspannung (Gesamtgerät)	230	V	U _{rated}
Anschluss-Phasen (Gesamtgerät)	1~		phase
Absicherung (Gesamtgerät)	6 A		fuse
Gehäusematerial	Stahlblech verzinkt		mat _{casing}
Laufmaterial	Kunststoff		mat _{impeller}
IP-Schutzart (Gesamtgerät)	IPX4		IP _{compl}
IP-Schutzart (Klemmkasten)	IP44		IP _{ebox}
Gewicht	15	kg	m
Bauart	Diagonal		Fan _{type}
Kategorie / Einbausituation	A		cat

MAXIMALDATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Max. Leistungsaufnahme (Gerät)	511	W	P _{ed, max}
Max. Betriebsstrom (Gerät)	3.07	A	I _{ed, max}
Max. Drehzahl	2860	1/min	n _{max}
Max. stat. Wirkungsgrad	44.9	%	η _{es}
Max. Ventilatorwirkungsgrad	49.3	%	η _e
Max. Volumenstrom	3360	m³/h	Q _{v, max}
Max. stat. Druck	720	Pa	p _{sf, max}
Max. Mediumtemperatur	80	°C	T _{m, max}
Max. Umgebungstemperatur	60	°C	T _{amb, max}
Min. Umgebungstemperatur	-25	°C	T _{amb, min}
Min. Spannung	80	V	U _{min}
Blockierstrom	8.5	A	I _{LRA}



zur Produktseite

EL 315 E2 10

130320

ruck

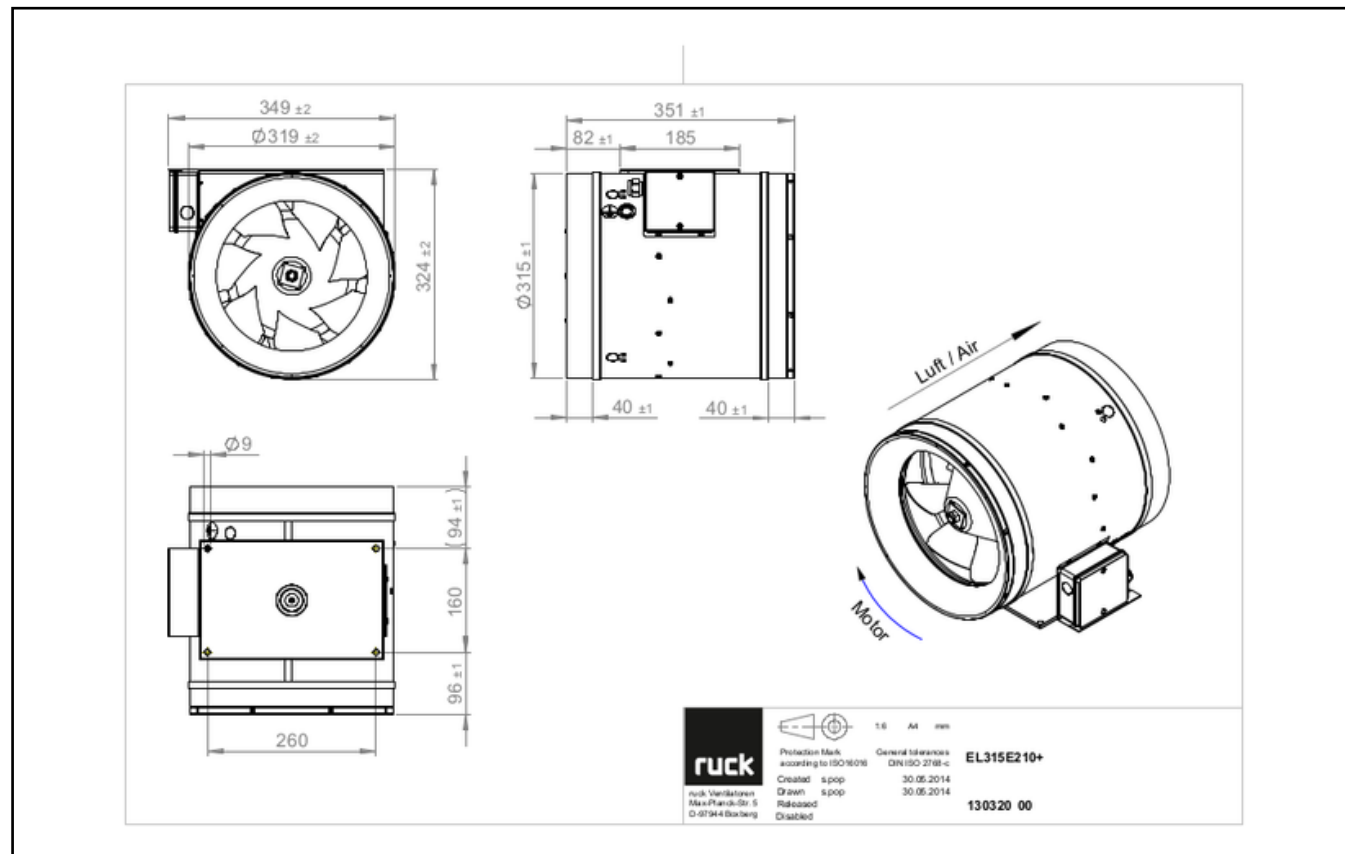
ERP DATEN (LOT11)

Bezeichnung	Wert	Einheit	Formelzeichen
Drehzahl am Energieeffizienzoptimum	2781	1/min	n_{opt}
Effizienzgrad	45.2	%	η
Effizienzkategorie	statisch		$\eta_{efficiency}$
Eingangsleistung des Motors am Energieeffizienzoptimum	0.47	kW	$P_{e, opt}$
Gesamteffizienz	59.2	%	η_{ges}
Messkategorie	A		$\eta_{meas cat}$
Ventilatordruck am Energieeffizienzoptimum	389	Pa	$p_{f, opt}$
Volumenstrom am Energieeffizienzoptimum	2076	m ³ /h	$Q_{v, opt}$



zur Produktseite

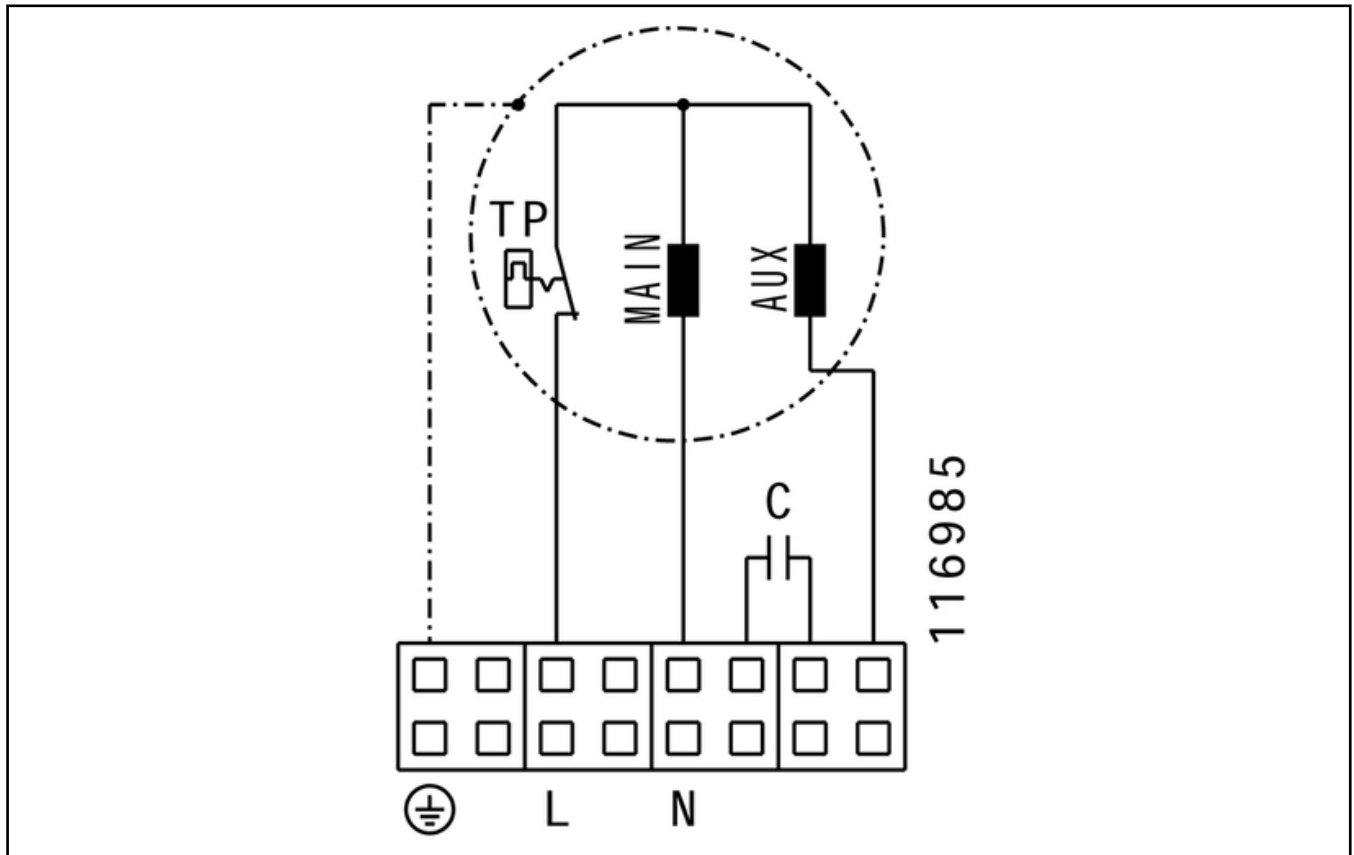
SCHALTPLÄNE / MASSZEICHNUNGEN



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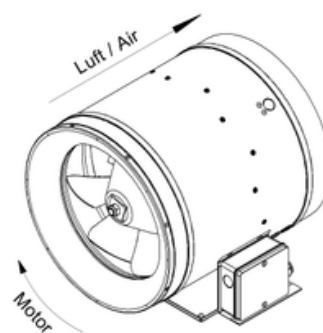
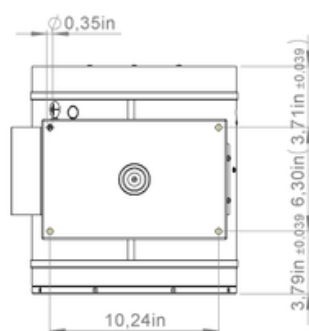
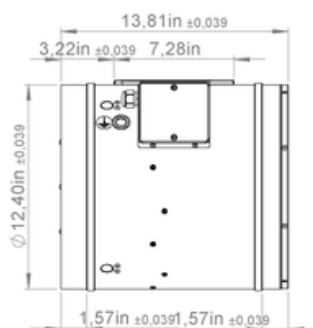
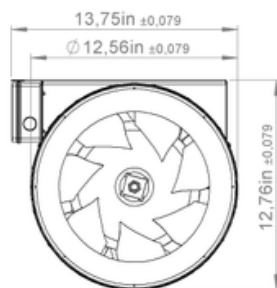


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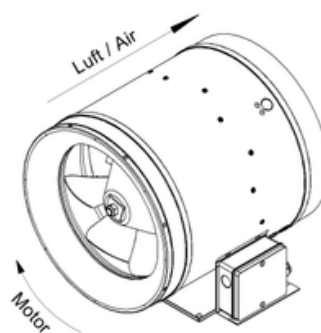
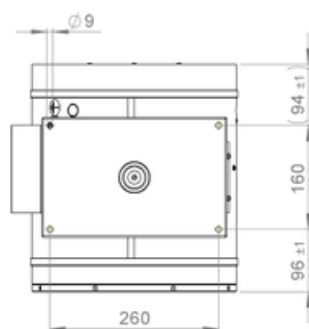
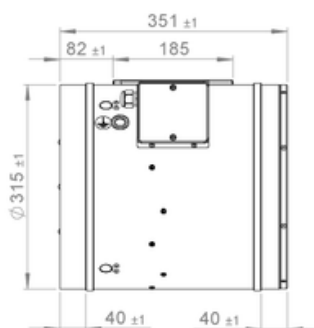
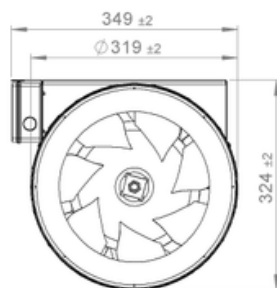


zur Produktseite

EL 315 E2 10

130320

ruck



130320 00

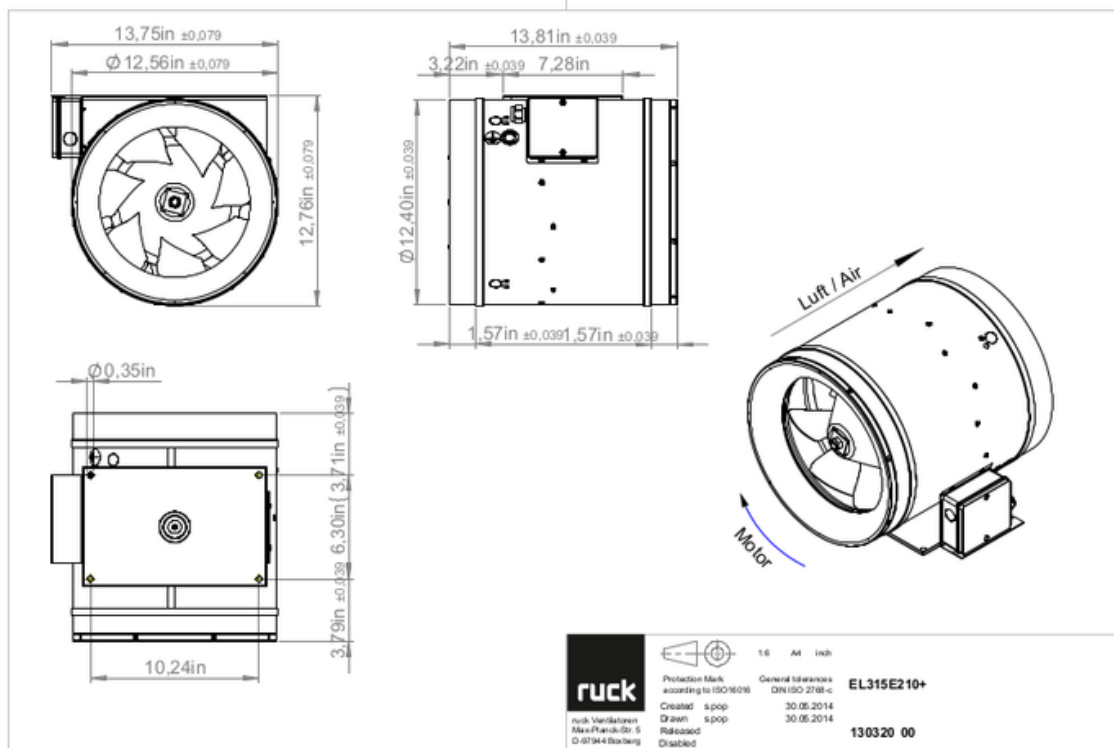


zur Produktseite

EL 315 E2 10

130320

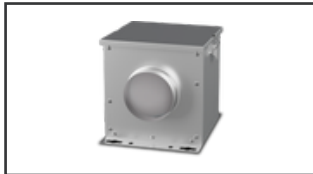
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zur Produktseite

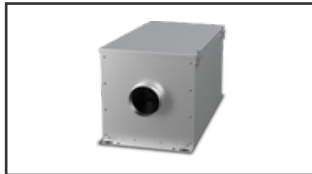
ZUBEHÖR MECHANISCH

FV 315 | 112834



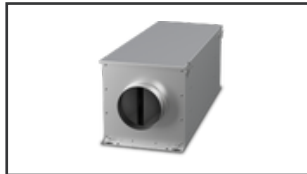
- Luftfilterbox mit Vlies ISO Coarse 45 % (G3)
- Spannverschluss

FT 315 | 112846



- Luftfilterbox für Taschenfilter
- Spannverschluss
- Gehäuse aus verzinktem Stahlblech
- Ohne Filter

FTW 315 | 112855



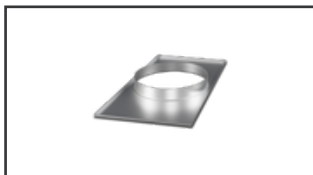
- Luftfilterbox mit Taschenfilter M5
- Integriertes Warmwasserheizregister
- Gehäuse aus verzinktem Stahlblech
- Spannverschluss

RSK 315 | 102664



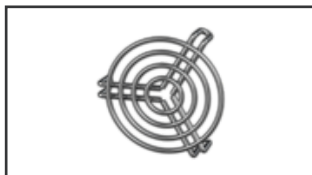
- Rückstauklappe für Rohreinbau
- Gehäuse aus verzinktem Stahlblech
- Klappen aus Aluminium

UKR 6030 03 | 114640



- Übergang Kanal / Rohr
- Stahlblech, verzinkt
- 600 x 300 mm / NW 315

SG 315 01 | 102900



- Schutzgitter für Rohranschluss
- Verzinkter Draht

SDF 315 | 102706



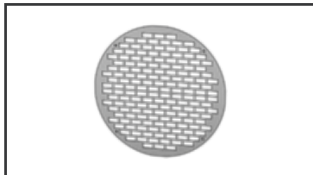
- Flexibler Rohrschalldämpfer
- Verzinktes Stahlblech
- Schalldämmpackung 50 mm

SDS 315 | 102723



- Starrer Rohrschalldämpfer
- Verzinktes Stahlblech
- Schalldämmpackung 50 mm (Mineralwolle)

SG 315 02 | 112675



- Ansaugschutzgitter für Etaline
- Verzinktes Stahlblech

RSK 315D | 113489



- Rückstauklappe für Rohreinbau
- Gehäuse aus verzinktem Stahlblech
- Klappen aus Aluminium
- Integrierte Dichtung

VM 315 | 102652



- Verbindungsmanschette zur Schallentkopplung und Abdichtung
- Verzinktes Stahlblech, 5 mm
- Neoprendichtung
- 1 Pack = 2 Stück

ZUBEHÖR ELEKTRISCH

GS 01 | 102787



- Geräteschalter
- $U_{max} = 400 \text{ V}$, 50/60 Hz
- Schaltvermögen 400 V 3~ = 5,5 kW
- $I_{max} = 16 \text{ A}$

TEM 035 | 103502



- 5-Stufentrafo
- 230 V, 50/60 Hz, 3,5 A
- Ausgangsspannung: 230-190-170-140-110-80-0 V
- Schutzart IP 54

TES 035 02 | 146195



- 5-Stufentrafo
- 230 V, 50/60 Hz, 3,5 A
- Ohne Gehäuse, Schaltschrankinbau
- Schutzart IP 20



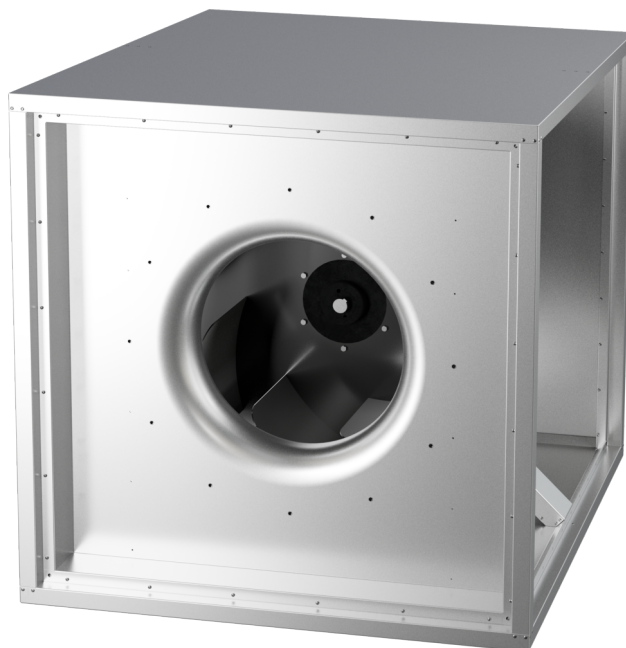
zur Produktseite

MPC 800 D6 40

150961

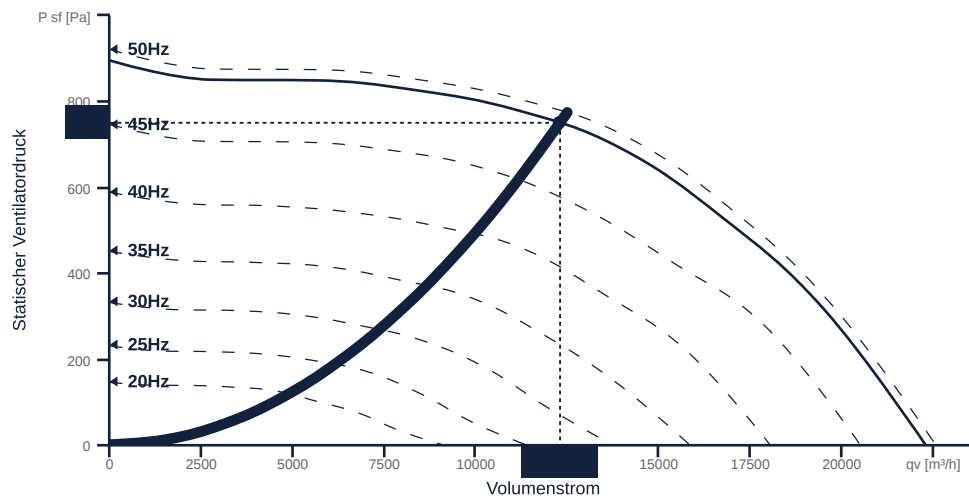
ruck

- Radialventilator mit rückwärts gekrümmtes Laufrad
- Variable Ausblasrichtung rechts / links / linear
- Doppelwandiges Gehäuse aus verzinktem Stahlblech, isoliert
- Effizienter IE3-Motor, frequenzsteuerbar
- Motorschutz über FU oder Motorschutzschalter
- Mit Bodenwanne



KENNFELD

Bezeichnung	Wert	Einheit
Volumenstrom	12300	m³/h
Druck	750	Pa



zur Produktseite

MPC 800 D6 40

150961

ruck

TECHNISCHE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Volumenstrom	12300	m³/h	qV _{calc}
Ventilatordruck	756	Pa	psf
Statischer Ventilatordruck	750	Pa	pf



zur Produktseite

MPC 800 D6 40

150961

ruck

TECHNISCHE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Stromaufnahme Motor	9	A	I _e
Elektrische Leistungsaufnahme	4262	W	P _{ek}
Frequenz	49	Hz	f _{rq}
Drehzahl	954	1/min	N
Statischer Gesamtwirkungsgrad	60	%	etaFaPeK
Gesamtwirkungsgrad	61	%	etatPeK
SFP (Gesamtgerät)	1247	W/(m³/s)	sfp _{device}
Schallleistungspegel Ansaug	86	dB(A)	L _{WA5}
Schallleistungspegel Ausblas	90	dB(A)	L _{WA6}
Schallleistungspegel Abstrahl	69	dB(A)	L _{WA2}

SCHALLDATEN

Schallleistung	Mittelfrequenzband										Einheit	Formelzeichen
	Σ	63	125	250	500	1000	2000	4000	8000	16000		
Ansaug	86	60	73	75	77	81	81	75	68	56	dB(A)	L _{WA5}
Ausblas	90	56	72	78	83	85	85	78	66	51	dB(A)	L _{WA6}
Abstrahl	69	57	63	66	58	58	60	50	43	31	dB(A)	L _{WA2}

SCHALLDRUCKPEGELRECHNER

Bezeichnung	Wert	Einheit
Hüllfläche	Halbkugel	
Abstand	3	m

Schalldruck	NR	Mittelfrequenzband										Einheit	Formelzeichen
		Σ	63	125	250	500	1000	2000	4000	8000	16000		
Ansaug	64	69	43	56	58	59	64	64	57	51	38	dB(A)	L _{WA5}
Ausblas	68	72	39	55	61	65	67	67	60	49	33	dB(A)	L _{WA6}
Abstrahl	47	52	40	45	48	41	40	43	33	26	13	dB(A)	L _{WA2}

zur Produktseite



MPC 800 D6 40

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ruck

ALLGEMEINE DATEN

Bezeichnung	Wert	Einheit	Formelzeichen
ERP konform	Ja		
Kanalmaß	-		WxH _{duct}
Rohranschlussdurchmesser (DN)	-		DN
Nennspannung (Gesamtgerät)	400	V	U _{rated}
Anschluss-Phasen (Gesamtgerät)	3~		phase
Absicherung (Gesamtgerät)	10 A		fuse
Gehäusematerial	Stahlblech verzinkt		mat _{casing}
Laufmaterial	Stahlblech		mat _{impeller}
Gewicht	248	kg	m
Nennluftvolumenstrom, Nennpunkt m³/h	13543.2	m³/h	q _{v,nom}
Nennaußendruck, statisch	733.1	Pa	p _{s,nom}
Bauart	Radial		F _{an} type
Kategorie / Einbausituation	A		cat

ERP DATEN (LOT 6)

Bezeichnung	Wert	Einheit	Formelzeichen
Nennluftvolumenstrom, Nennpunkt m³/s	3.76	m³/s	q _{v,nom}
Tatsächliche elektrische Eingangsleistung, Nennpunkt	4.5	kW	P _{e,nom}
Anströmgeschwindigkeit, Nennpunkt	3.3	m/s	v _{nom}
Nennaußendruck, statisch	733.1	Pa	p _{s,nom}
statischer Wirkungsgrad des Zuluftventilators, Nennpunkt	61.3	%	η _{es,SUP}
Höchste Äußere Leckluft rate	0.01	%	
Gehäuseschallpegel, Nennpunkt	74	dB(A)	L _{WA2}
Bewertung	Produkt ist konform 2018		

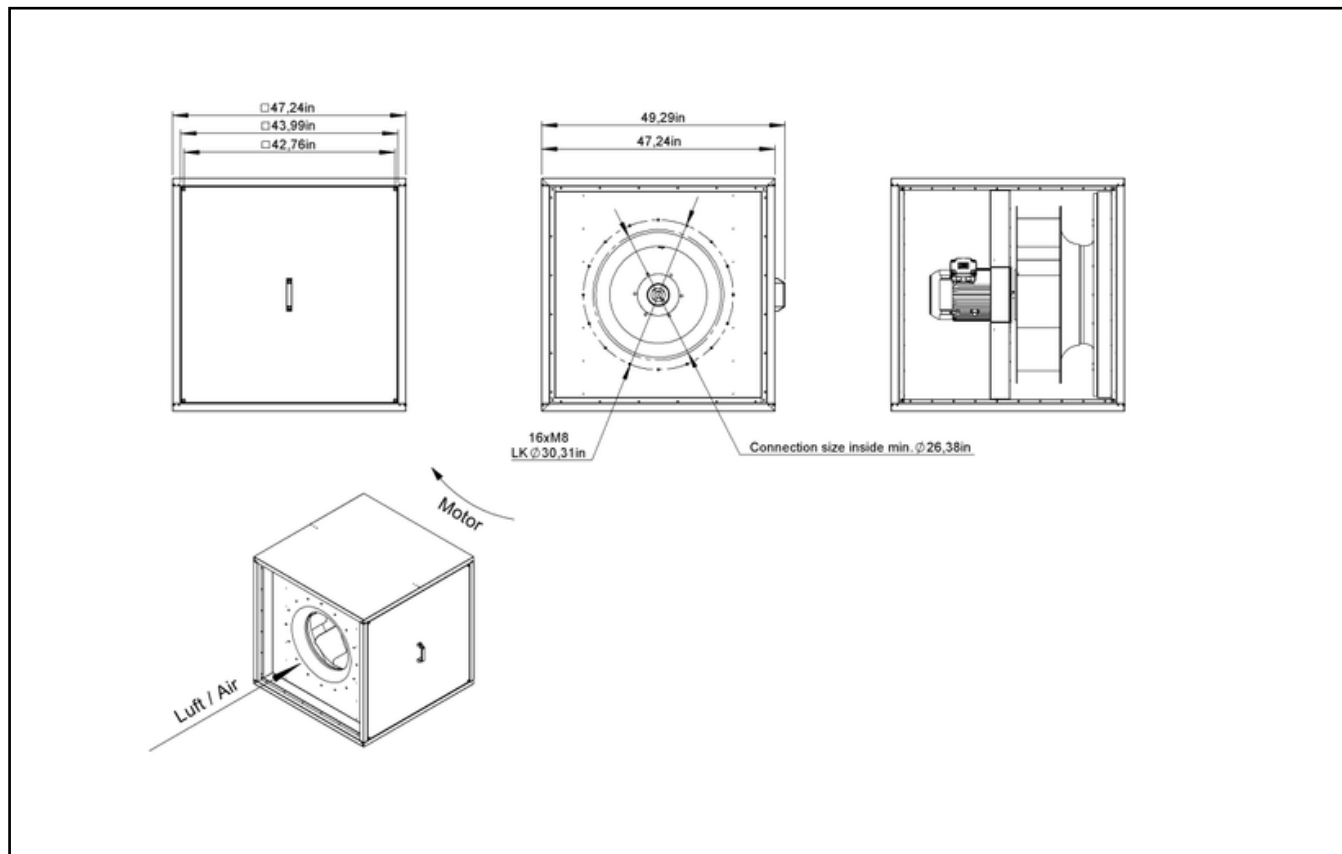
MAXIMALDATEN

Bezeichnung	Wert	Einheit	Formelzeichen
Max. Leistungsaufnahme (Gerät)	4600	W	P _{ed, max}
Max. Betriebsstrom (Gerät)	9.7	A	I _{ed, max}
Max. Drehzahl	990	1/min	n _{max}
Max. stat. Wirkungsgrad	59.3	%	η _{es}
Max. Ventilatorwirkungsgrad	59.8	%	η _e
Max. Volumenstrom	22560	m³/h	q _{v, max}
Max. stat. Druck	920	Pa	p _{sf, max}
Max. Mediumtemperatur	60	°C	T _{m, max}
Max. Umgebungstemperatur	60	°C	T _{amb, max}
Min. Umgebungstemperatur	-20	°C	T _{amb, min}



zur Produktseite

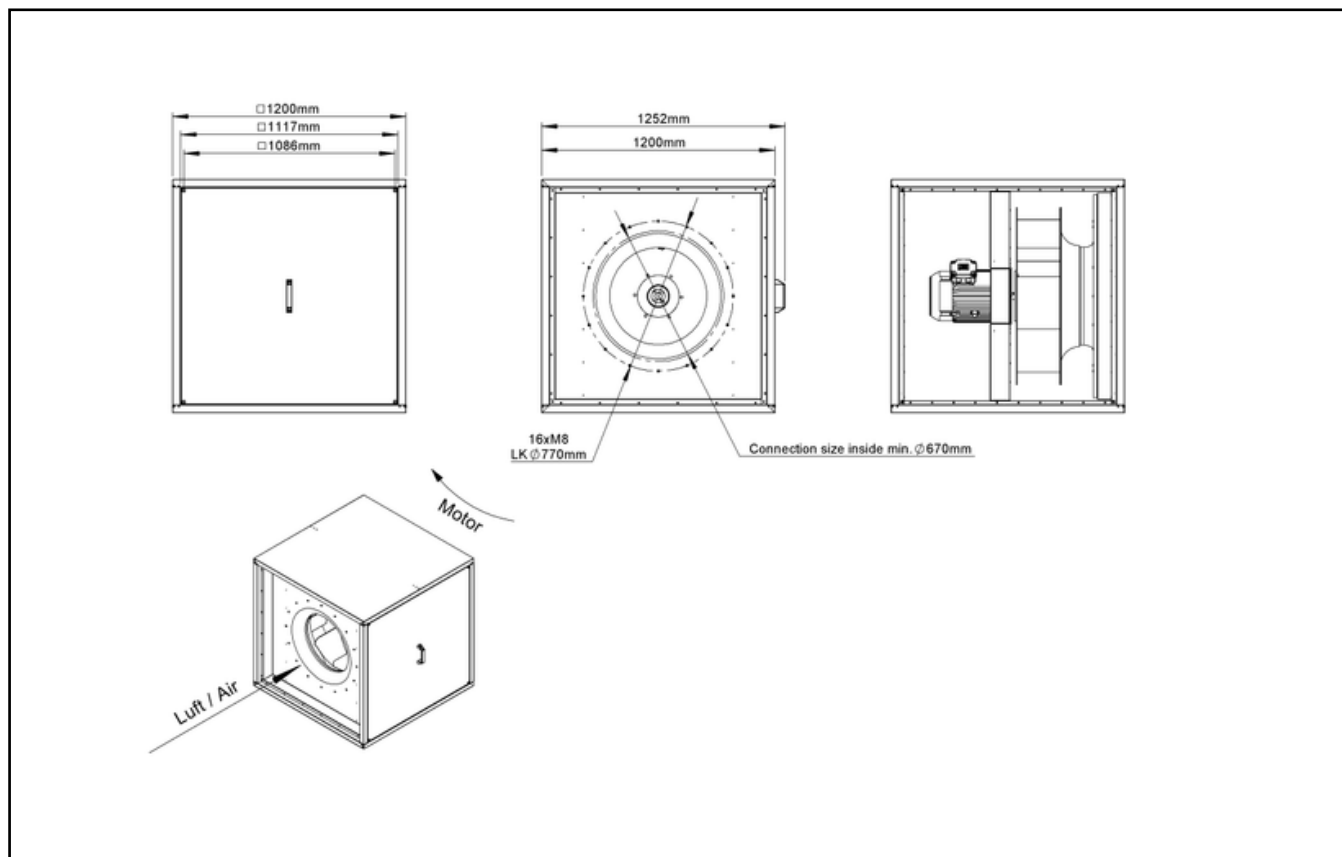
SCHALTPLÄNE / MASSZEICHNUNGEN



MPC 800 D6 40

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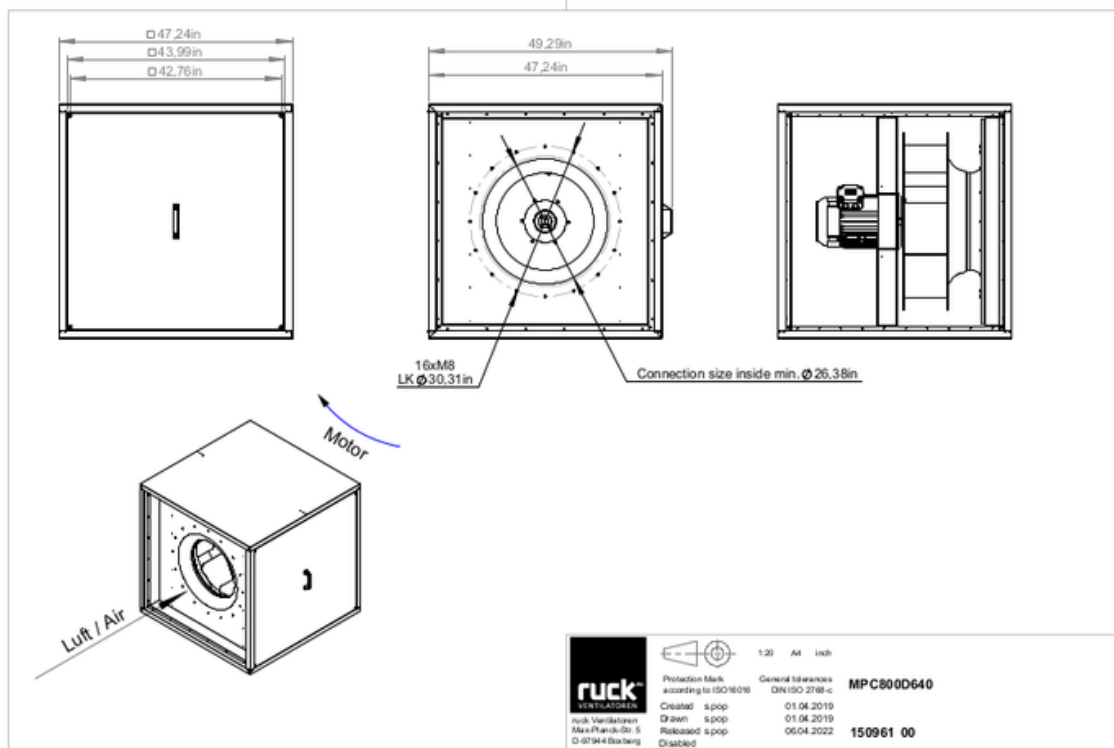


zur Produktseite

MPC 800 D6 40

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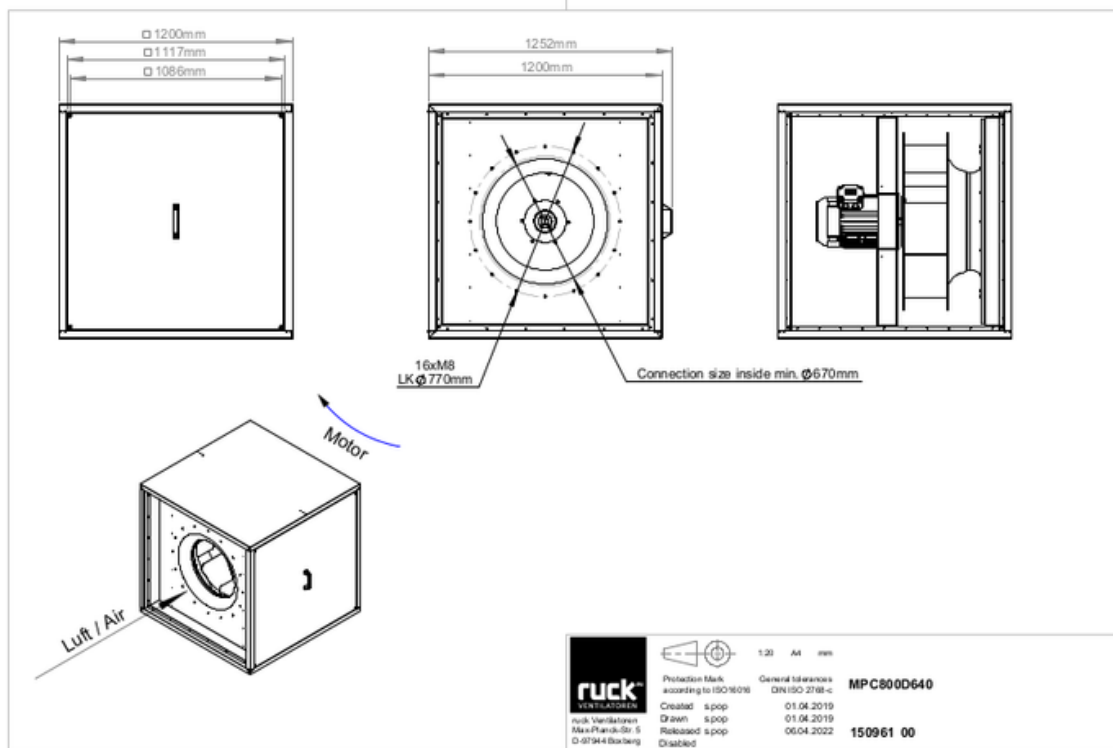


zur Produktseite

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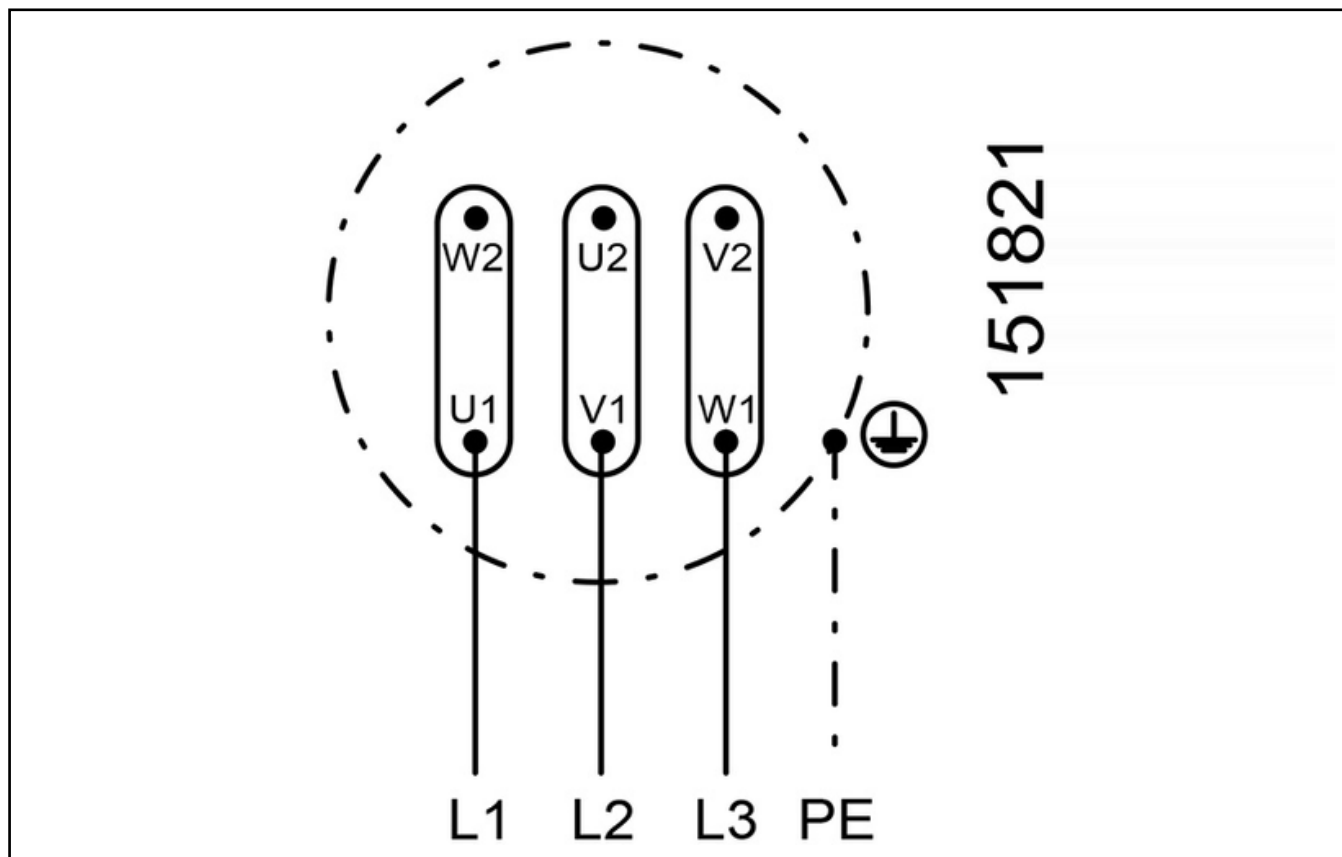


zur Produktseite

MPC 800 D6 40

150961

ruck



zur Produktseite

ZUBEHÖR MECHANISCH

USM 1200 710 | 152657



- Übergangsstutzen
- Verzinktes Stahlblech
- Isoliert

USM 1200 630 | 152665



- Übergangsstutzen
- Verzinktes Stahlblech
- Isoliert

GR MPC 04 | 152696



- Grundrahmen für MPC
- Verzinktes Stahlblech

RVK 710 | 153914



- Selbsttätige Rohrverschlussklappe
- Stahlblech, pulverbeschichtet
- Für vertikal Einbau
- Flanschmontage

RVK H 710 | 154879



- Selbsttätige Rohrverschlussklappe
- Stahlblech, pulverbeschichtet
- Für horizontal Einbau
- Flanschmontage

UQR 1200 710 01 | 152628



- Übergang Kanal/Rohr
- Verzinktes Stahlblech
- Inkl. 4 Zylinderschrauben (M8 x 16 mm), 4 Fächerscheiben für Nennweite M8

UQR 1200 630 01 | 152633



- Übergang Kanal/Rohr
- Verzinktes Stahlblech
- Inkl. 4 Zylinderschrauben (M8 x 16 mm), 4 Fächerscheiben für Nennweite M8

AS MPC 710 | 152672



- Ansaugstutzen
- Verzinktes Stahlblech

RVS 710 | 154201



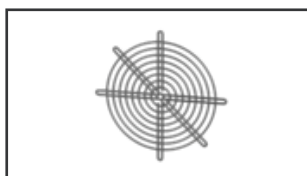
- Rohrverbindungsstutzen
- Stahlblech, pulverbeschichtet
- Für Außenaufstellung geeignet
- Flanschmontage

ESD 710 | 153939



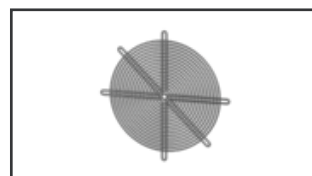
- Einströmdüse
- Stahlblech, pulverbeschichtet
- Flanschmontage

SGW 710 | 154056



- Schutzgitter, weitmaschig
- Stahlblech, verzinkt
- Flanschmontage

SGE 710 | 154083



- Schutzgitter, engmaschig
- Stahlblech, verzinkt
- Flanschmontage

WSG MPC 1200 | 152716



- Wetterschutzgitter
- Verzinktes Stahlblech

RD MPC 1200 | 152745



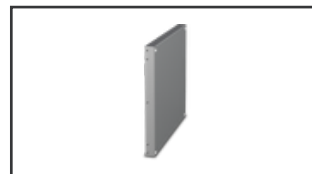
- Regendach für Außenaufstellung
- Stahlblech, verzinkt

FB 1200 | 160870



- Luftfilterbox für Paneel-Filter
- Für MPC Box 1200
- Für 1 oder 2 Filter (nicht enthalten)
- Gehäuse aus verzinktem Stahlblech

UCP 1200 | 152667



- Geschlossenes Paneel
- Verzinktes Stahlblech

WSH MPC 04 | 152682

RAF 710 | 154024

RAS 710 | 154253



MPC 800 D6 40

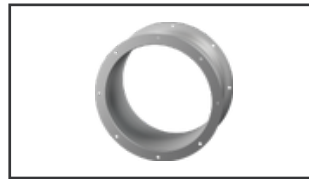
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- Wetterschutzhaube
- Stahlblech, verzinkt



- Rundflansch
- Stahlblech, pulverbeschichtet



- Rundstutzen, flexibel
- Verzinktes Stahlblech, Kunststoffband (PES)
- Temperaturbeständig bis 75 °C
- Flanschmontage

ZUBEHÖR ELEKTRISCH

GS 03 | 107633



- Geräteschalter
- $U_{max} = 400 \text{ V}$, $I_{max} = 25 \text{ A}$
- Schaltvermögen $400 \text{ V } 3\sim = 5,5 \text{ kW}$
- Schutzart IP 55

MS 04 | 140413



- Motorschutzschalter mit Geräteschalterfunktion
- $I_{max} = 400 \text{ V}$, $50/60 \text{ Hz}$
- $P_{max} = 4 \text{ kW}$
- Schutzart IP 55

MTP 20 | 128146



- Potentiometer 10 kΩ
- Schaltkontakt 1A/250V AC - 2,5A/12V DC
- Max. Umgebungstemperatur 50 °C
- VDE

MTP 30 | 143289



- Stufiger Potentiometer 10 kΩ
- Stufe 1 + 2 einstellbar 10 % - 100 % Vdc
- Stufe 3 100 % Vdc
- Versorgungsspannung +10Vdc

MTP 40 | 147359



- Potentiometer 10 kΩ
- Anschluss im Klemmkasten
- Max. Umgebungstemperatur 50 °C
- VPE: 20 Stück

SEN AIR | 148641



- Luftstrom- und Temperatur-Messumformer
- Messbereich Temperatur 0...+50 °C
- Einstellbarer Schaltschwelle (Luftgeschwindigkeit)
- Messbereich Luftgeschwindigkeit bis 20 m/s

CON P1000 | 115259



- Konstantdruckregelung
- Istwertdarstellung über optionales Bedienteil möglich
- Ausgang 0-10 V DC + Freigabe FU + Sollwert erreicht
- Druckeinstellung mittels Dekadenschalter

FU 55 18 | 155989



- Frequenzumrichter
- Versorgungsspannung 400 V 3~ 50/60 Hz
- Ausgangsspannung 0 - 400 V 3~
- Fire Mode Funktion (Brandgasventilatoren)

FU 55 17 | 155988



- Frequenzumrichter
- Versorgungsspannung 400 V 3~ 50/60 Hz
- Ausgangsspannung 0 - 400 V 3~
- Schutzart IP 20, für Schaltschrankbau

MTP 50 | 153133

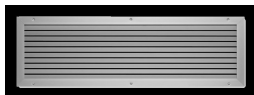


- Potentiometer mit Multifunktionsausgang
- 230 VAC $\pm 10 \%$ / 50-60 Hz
- Wählbarer Ausgang: 1-10 VDC / 2-20 mA / 10-100 % PWM
- Min. und max. Ausgangswert einstellbar



zur Produktseite

AGS-T/325x225



Rear assemblies
Length
Height
Total amount

T
325
225
1

Matching rear frame for door installation

Input Data

Strategy: Air transfer

Volume flow q_v 100 m³/h

Results

Geometric air velocity v_{geo} 0,97 m/s

Geometric area A_{geo} 0,0287 m²

Acoustic results

	p_t [Pa]	LWA [dB(A)]
damper blade position open	3	22

Description

Non-vision ventilation grille, made of aluminium, rectangular, suitable for air transfer applications. Rectangular profile border. Preferably for wall and door installation. Ready-to-install component which consists of a border and fixed horizontal blades. Fixing holes for screw-fixing the grille to the installation surface. Sound power level of the air-regenerated noise measured according to EN ISO 5135.

X-GRILLE-Basic-AG/425x225/B1/VS

Rear assemblies	AG	Opposed blade action volume control damper
Length	425	
Height	225	
Installation subframe	B1	With
Fixing variants	VS	Hidden screw fixing
Total amount	1	

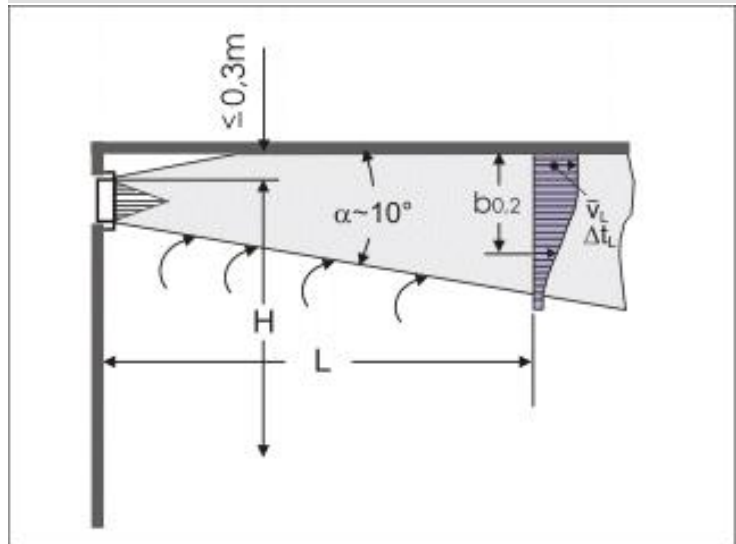
Input Data

Strategy: Supply air	
Ceiling effect	Yes
Volume flow q_v	500 m³/h
Distance l	3,0 m
Spacing b in a line of outlets	$b > 0,45$ m
Supply air to room air temperature	-1 K

Results

Velocity at free are v_{fr}	2,17 m/s
Velocity at l $v_{l, max}$	1,2 m/s
Temperature difference at l t_l	-0,41 K
Induction ratio i	4,2
Distance to centre $b_{0,2}$	0,4 m
Airstream drop or rise y	N.A. m
Thermal output – cooling \dot{Q}_c	-167 W

Side view with ceiling effect



Acoustic results

	p_t [Pa]	LWA [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	LWNC [dB]	LWNR [dB]
damper blade position open	6	< 15	25	20	16	< 15	< 15	< 15	< 15	< 15	< 15	< 15
damper blade position 50 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
damper blade position 25 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Description

Ventilation grilles with gently sloped border, rectangular, for supply and extract air. Function combined with an appealing design. Gently sloped border. Preferably for wall and sill installation but also suitable for rectangular ducts. Ready to install component which consists of a border and symmetrically and aerodynamically profiled, horizontal blades with a concealed linkage that allows for adjusting the blades simultaneously.

X-GRILLE-Basic-AG/425x125/B1/VS

Rear assemblies	AG	Opposed blade action volume control damper
Length	425	
Height	125	
Installation subframe	B1	With
Fixing variants	VS	Hidden screw fixing
Total amount	1	

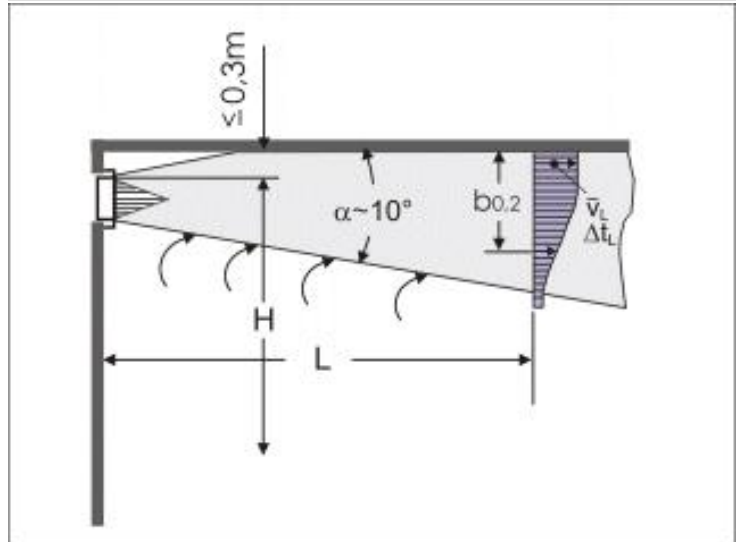
Input Data

Strategy: Supply air	
Ceiling effect	Yes
Volume flow q_v	300 m³/h
Distance l	3,0 m
Spacing b in a line of outlets	$b > 0,45$ m
Supply air to room air temperature	-4 K

Results

Velocity at free are v_{fr}	2,63 m/s
Velocity at l $v_{l, max}$	1,0 m/s
Temperature difference at l t_l	-1,16 K
Induction ratio i	5,9
Distance to centre $b_{0,2}$	0,3 m
Airstream drop or rise y	N.A. m
Thermal output – cooling Q_c	-402 W

Side view with ceiling effect



Acoustic results

	p_t [Pa]	LWA [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	LWNC [dB]	LWNR [dB]
damper blade position open	11	16	28	24	21	< 15	< 15	< 15	< 15	< 15	< 15	< 15
damper blade position 50 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
damper blade position 25 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Description

Ventilation grilles with gently sloped border, rectangular, for supply and extract air. Function combined with an appealing design. Gently sloped border. Preferably for wall and sill installation but also suitable for rectangular ducts. Ready to install component which consists of a border and symmetrically and aerodynamically profiled, horizontal blades with a concealed linkage that allows for adjusting the blades simultaneously.

X-GRILLE-Basic-AG/425x225/B1/VS

Rear assemblies	AG	Opposed blade action volume control damper
Length	425	
Height	225	
Installation subframe	B1	With
Fixing variants	VS	Hidden screw fixing
Total amount	1	

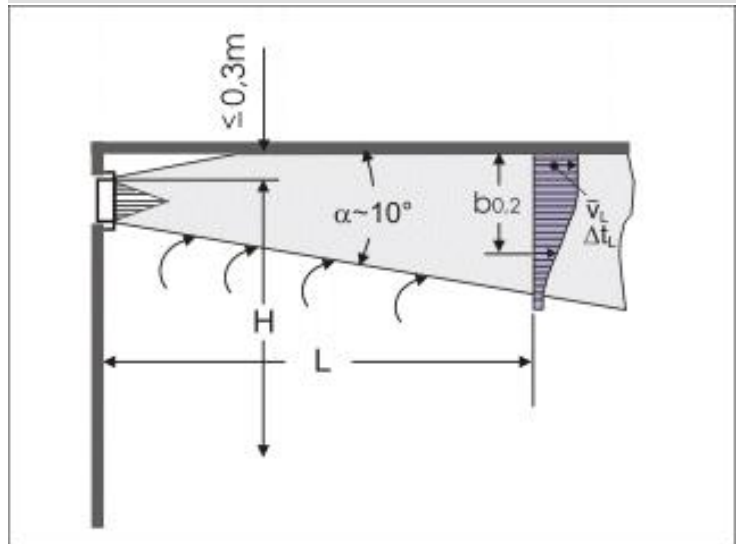
Input Data

Strategy: Supply air	
Ceiling effect	Yes
Volume flow q_v	500 m³/h
Distance l	3,0 m
Spacing b in a line of outlets	$b > 0,45$ m
Supply air to room air temperature	-1 K

Results

Velocity at free are v_{fr}	2,17 m/s
Velocity at l $v_{l, max}$	1,2 m/s
Temperature difference at l t_l	-0,41 K
Induction ratio i	4,2
Distance to centre $b_{0,2}$	0,4 m
Airstream drop or rise y	N.A. m
Thermal output – cooling \dot{Q}_c	-167 W

Side view with ceiling effect



Acoustic results

	p_t [Pa]	LWA [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	LWNC [dB]	LWNR [dB]
damper blade position open	6	< 15	25	20	16	< 15	< 15	< 15	< 15	< 15	< 15	< 15
damper blade position 50 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
damper blade position 25 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Description

Ventilation grilles with gently sloped border, rectangular, for supply and extract air. Function combined with an appealing design. Gently sloped border. Preferably for wall and sill installation but also suitable for rectangular ducts. Ready to install component which consists of a border and symmetrically and aerodynamically profiled, horizontal blades with a concealed linkage that allows for adjusting the blades simultaneously.

X-GRILLE-Basic-AG/825x225/B1/VS

Rear assemblies	AG	Opposed blade action volume control damper
Length	825	
Height	225	
Installation subframe	B1	With
Fixing variants	VS	Hidden screw fixing
Total amount	1	

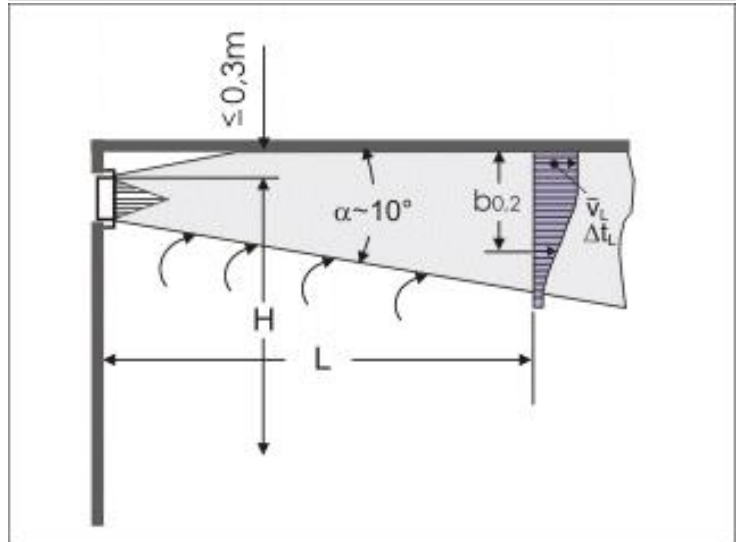
Input Data

Strategy: Supply air	
Ceiling effect	Yes
Volume flow q_v	1.000 m³/h
Distance l	3,0 m
Spacing b in a line of outlets	$b > 0,45$ m
Supply air to room air temperature	-1 K

Results

Velocity at free are v_{fr}	2,20 m/s
Velocity at l $v_{l, max}$	1,7 m/s
Temperature difference at l t_l	-0,58 K
Induction ratio i	3,1
Distance to centre $b_{0,2}$	0,3 m
Airstream drop or rise y	N.A. m
Thermal output – cooling q_c	-335 W

Side view with ceiling effect



Acoustic results

	p_t [Pa]	LWA [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	LWNC [dB]	LWNR [dB]
damper blade position open	4	< 15	26	21	17	< 15	< 15	< 15	< 15	< 15	< 15	< 15
damper blade position 50 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
damper blade position 25 %	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Description

Ventilation grilles with gently sloped border, rectangular, for supply and extract air. Function combined with an appealing design. Gently sloped border. Preferably for wall and sill installation but also suitable for rectangular ducts. Ready to install component which consists of a border and symmetrically and aerodynamically profiled, horizontal blades with a concealed linkage that allows for adjusting the blades simultaneously.



WG/300x200

Width 300
Height 200
Total amount 1

Input Data

Strategy: Given volume flow
Installation type Ducted, exhaust air
Volume flow q_v 500 m³/h

Results

Airflow velocity v 2,31 m/s
Free area A_{fr} 0,0180 m²
Width of installation opening b_{inst} 315 mm
Height of installation opening h_{inst} 215 mm

Acoustic results

	p_t [Pa]	$L_{W,A}$ [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	$L_{W,NC}$ [dB]	$L_{W,NR}$ [dB]
Air-regenerated noise	71	50	49	52	50	47	46	40	30	19	45	46

Description

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.



WG/600x400

Width 600
Height 400
Total amount 1

Input Data

Strategy: Given volume flow
Installation type Ducted, exhaust air
Volume flow q_v 2.000 m³/h

Results

Airflow velocity v 2,31 m/s
Free area A_{fr} 0,0975 m²
Width of installation opening b_{inst} 615 mm
Height of installation opening h_{inst} 415 mm

Acoustic results

	p_t [Pa]	$L_{W,A}$ [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	$L_{W,NC}$ [dB]	$L_{W,NR}$ [dB]
Air-regenerated noise	39	48	47	49	47	45	44	37	25	15	43	44

Description

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.



WG/600x495

Width 600
Height 495
Total amount 1

Input Data

Strategy: Given volume flow
Installation type Ducted, exhaust air
Volume flow q_v 2.300 m³/h

Results

Airflow velocity v 2,15 m/s
Free area A_{fr} 0,1266 m²
Width of installation opening b_{inst} 615 mm
Height of installation opening h_{inst} 510 mm

Acoustic results

	p_t [Pa]	$L_{W,A}$ [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	$L_{W,NC}$ [dB]	$L_{W,NR}$ [dB]
Air-regenerated noise	31	45	47	46	44	43	41	33	20	< 15	40	41

Description

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.



WG/800x495

Width 800
Height 495
Total amount 1

Input Data

Strategy: Given volume flow
Installation type Ducted, exhaust air
Volume flow q_v 3.300 m³/h

Results

Airflow velocity v 2,31 m/s
Free area A_{fr} 0,1688 m²
Width of installation opening b_{inst} 815 mm
Height of installation opening h_{inst} 510 mm

Acoustic results

	p_t [Pa]	$L_{W,A}$ [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	$L_{W,NC}$ [dB]	$L_{W,NR}$ [dB]
Air-regenerated noise	36	48	49	49	48	46	44	37	25	< 15	43	44

Description

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.



WG/800x495

Width 800
Height 495
Total amount 1

Input Data

Strategy: Given volume flow
Installation type Ducted, exhaust air
Volume flow q_v 3.000 m³/h

Results

Airflow velocity v 2,10 m/s
Free area A_{fr} 0,1688 m²
Width of installation opening b_{inst} 815 mm
Height of installation opening h_{inst} 510 mm

Acoustic results

	p_t [Pa]	$L_{W,A}$ [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	$L_{W,NC}$ [dB]	$L_{W,NR}$ [dB]
Air-regenerated noise	29	45	48	47	45	44	42	34	20	< 15	40	42

Description

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.



WG/1000x660

Width 1000
Height 660
Total amount 1

Input Data

Strategy: Given volume flow
Installation type Ducted, exhaust air
Volume flow q_v 5.000 m³/h

Results

Airflow velocity v 2,10 m/s
Free area A_{fr} 0,2955 m²
Width of installation opening b_{inst} 1.015 mm
Height of installation opening h_{inst} 675 mm

Acoustic results

	p_t [Pa]	$L_{W,A}$ [dB(A)]	63Hz [dB]	125Hz [dB]	250Hz [dB]	500Hz [dB]	1kHz [dB]	2kHz [dB]	4kHz [dB]	8kHz [dB]	$L_{W,NC}$ [dB]	$L_{W,NR}$ [dB]
Air-regenerated noise	26	46	51	47	46	44	41	33	20	< 15	40	41

Description

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings. Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.