

NM/NN Series

**Rectangular CAV air volume control terminals
with system powered mechanical regular**



Rectangular CAV air volume control terminals with system powered mechanical regulator

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Rectangular CAV air volume control terminals with system powered mechanical regulator

Type designation
Single wall (type NM...)
Double wall (type NN...)

Composition type designation:

N - M - O - A - O - V - O

N Position 1: **Product group**

O = not applicable

M Position 2: **Function**

O = not applicable
M = rectangular CAV terminal, single wall construction
N = rectangular CAV terminal, double wall construction
1 = non standard, specify separately

O Position 3: **Control**

O = system powered, regulator (standard)
1 = non standard, specify separately

B Position 4: **Outlet**

O = not applicable
A = rectangular outlet
1 = non standard, specify separately

O Position 5: **Reheat coil**

O = without reheat coil
1 = non standard, specify separately

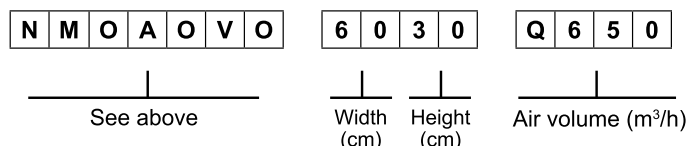
V Position 6: **Controls (type & function)**

O = not applicable
V = factory airflow setting with provision for on-site adjustment
1 = non standard, specify separately

O Position 7: **Finish**

O = standard finish (galvanised steel)
P = powder paint coating
1 = non standard, specify separately

Ordering example:



Ordering information:

Standard terminals:

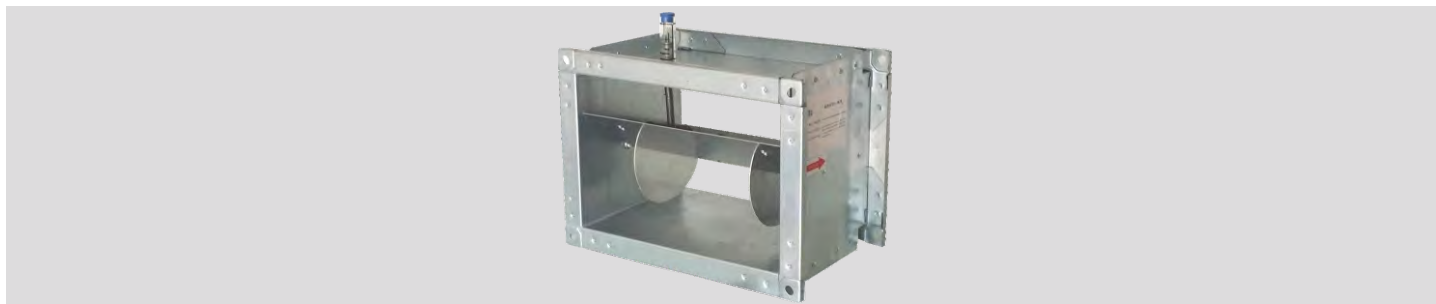
- quantity of terminals
- complete 7 digit code
- terminal size or model
- air volume setting (Q)

Non standard terminals:

- for non standard terminals a full description and/or drawing are requested

Rectangular CAV air volume control terminals with system powered mechanical regulator

Technical data
Single wall (type NM...)
Double wall (type NN...)



Application

NM / NN series of rectangular, constant volume terminals with system powered mechanical regulator are designed to keep a constant air flow, independent of the inlet static pressure without the use of a DDC CAV/VAV controller/ actuator. These terminals save commissioning time on site and are suitable either for supply or return air in new or refurbishment projects.

Features:

- Single wall or double wall.
- Pressure independent from 80 – 1000 Pa.
- Compact design.
- Low pressure loss over the terminal.
- Control accuracy $\pm 5\%$ (in the recommended flow range).
- Temperature insensitive (-15°C to $+100^{\circ}\text{C}$).
- Can be mounted in any position.
- Factory setting of airflow rate.
- Provision for on-site adjustment of airflow setting.
- Maintenance free.
- Low noise production.

Technical information

Casing:

Terminal casing made of galvanized sheet steel with flange duct connections. Casing leakage rate to Class II VDI 3803 or DIN 24 194. Flange connections are 30mm wide. In case of double wall construction 25 mm insulation material is used completely enclosed by the double wall sheet metal construction.

Damper:

Damper blade: aluminum.
Damper shaft: steel with self lubricating nylon bearings.

Controls:

- The factory setpoint is indicated on the terminal.

Finish:

- Standard finish galvanized steel.
- Optional finish with powder painting is available upon request.

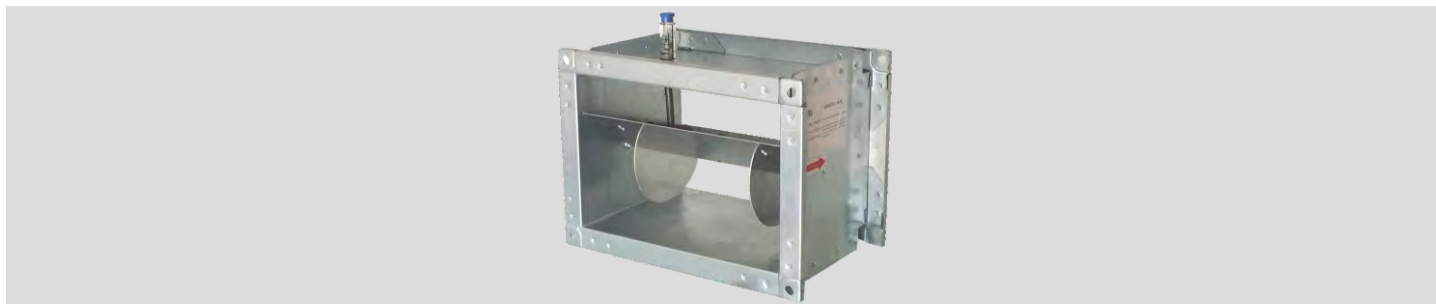
Delivery format

Delivery format:

- When ordering, the required air volume must be indicated.

Rectangular CAV air volume control terminals with system powered mechanical regulator

Technical data
Single wall (type NM...)
Double wall (type NN...)



Specify as:

Example:

Supply and install, rectangular, pressure independent constant air volume terminals with system powered mechanical regulator and control accuracy $\pm 5\%$. The construction shall be galvanized steel with a casing leakage rate classified according to class II, VDI 3803/ DIN 24 194. The CAV terminals shall have an aluminum damper blade with steel shaft rotating in self lubricating nylon bearings.

Required air volume to be factory set with provision for on-site adjustment (Barcol-Air type NMOAOVO).

Ordering example: type - model - airflow (m³/h) = NMOAOVO - 3020 - Q1296 (= 1296 m³/h)

Manufacturer: Barcol-Air

Air volume 360 l/s

Terminal size 300 x 200 mm

Max. pressure loss 60 Pa

Max. discharge sound index < NC35

(@250Pa Δp)

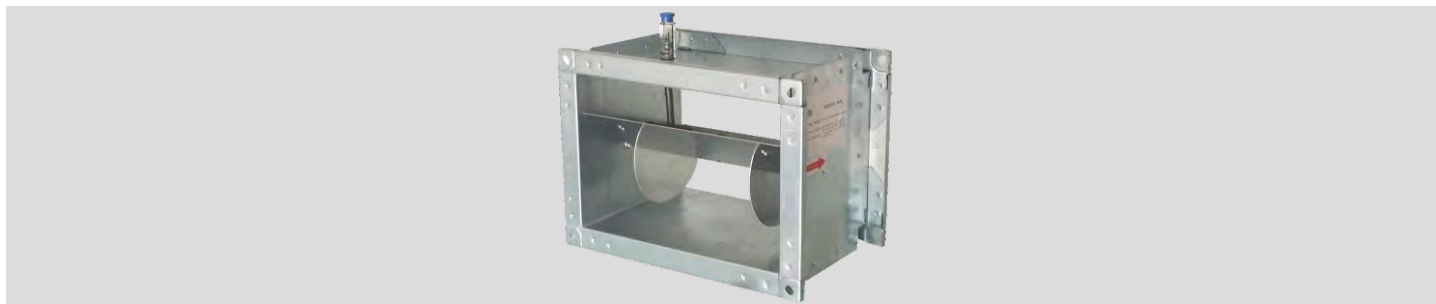
Max. radiated sound index < NC35

@250Pa Δp)

Model H x W	Recommended air volume							
	l/s		CFM			m ³ /h		
	Min	Max	Min	Max	Min	Max	Max	
100 x 200	60	180	120	383	220	650		
200 x 200	120	360	254	762	432	1296		
200 x 300	180	540	381	1144	648	1944		
200 x 400	240	720	508	1525	864	2592		
300 x 300	270	810	572	1715	972	2916		
300 x 400	360	1080	762	2290	1296	3888		
300 x 500	450	1350	950	2290	1620	4860		
300 x 600	540	1620	1144	3431	1944	5832		
400 x 400	480	1440	1016	3049	1728	5184		
400 x 500	600	1800	1271	3812	2160	6480		
400 x 600	720	2160	1525	4574	2592	7776		
500 x 500	750	2250	1588	4765	2700	8100		
500 x 600	900	2700	1906	5718	3240	9720		
500 x 800	1250	3600	2545	7633	4320	12960		
600 x 600	1080	3240	2291	8246	3890	14000		
600 x 800	1440	4320	3051	9159	5180	15550		
600 x 1000	1800	5400	3816	11450	6480	19440		
600 x 1200	2160	6480	4582	13740	7780	23330		

Rectangular air volume control terminals with system powered mechanical regulator

*Installation Instructions
Single wall (type NM)
Double wall (type NN)*



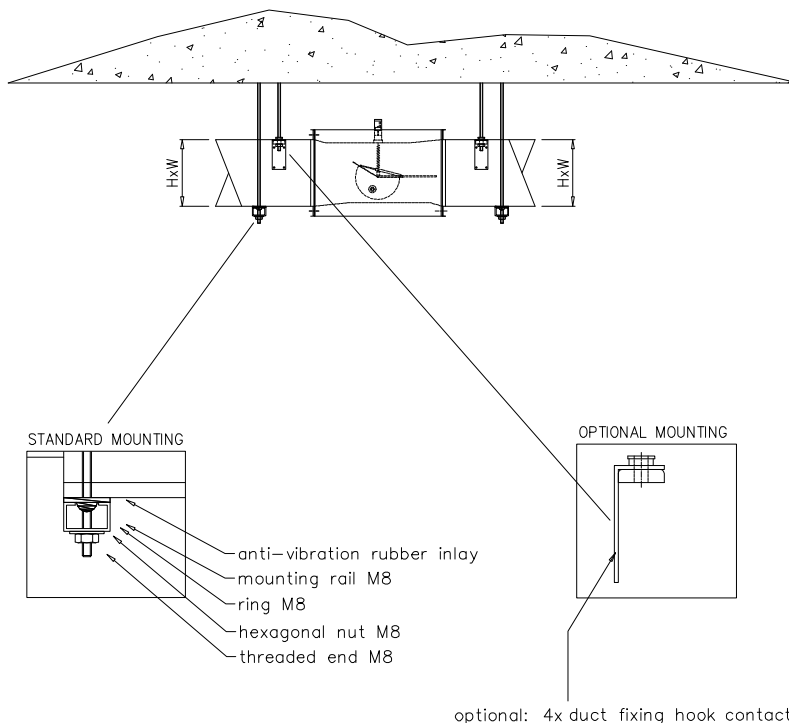
Installation Instructions:

The Barcol-Air CAV terminals shall be installed using at least two support brackets (DIN rail or L profile), with anti-vibration rubber under the terminal. Each of these brackets shall be fixed with two threaded rods to the ceiling slab above.

This installation method:

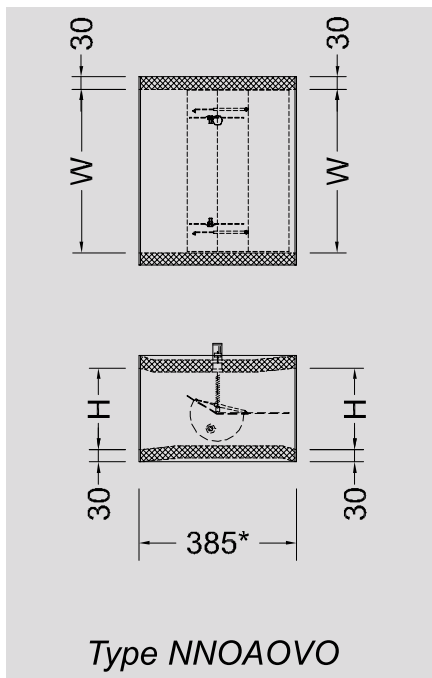
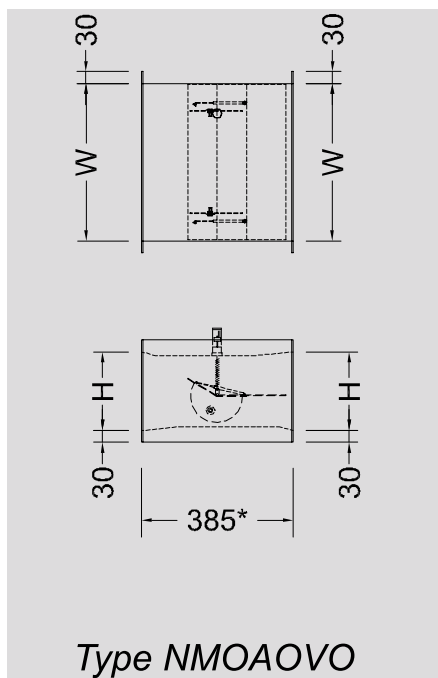
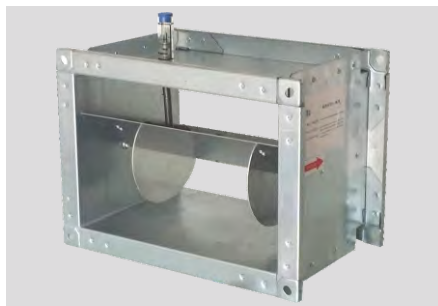
- 1 Shall prevent the body of the CAV terminal from high mechanical tension, which could damage the construction and performance of the terminal.
- 2 Shall prevent torsion on the CAV terminals, which could cause malfunction of the damper blades.
- 3 Provides some flexibility to the final location of the CAV terminals.
- 4 Use at least 1x diagonal straight duct length before the CAV inlet.
- 5 Additional manual volume control dampers (VCD's) before the inlet are not required or recommended!
6. All connections shall be thermally isolated.

Optional 4x fixing hooks can be used (see drawing).



Rectangular CAV air volume control terminals with system powered mechanical regulator

Model overview
Single wall (type NM...)
Double wall (type NN...)



* = Installed length.

Dimensions

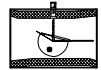
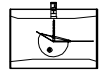
Height (H)	Width (W)									Length (L)
	100	200	300	400	500	600	800	1000	1200	
100		•								220
200		•	•	•						220
300			•	•	•	•				320
400				•	•	•				380
500					•	•	•			425
600						•	•	•	•	475

Remark:

All dimensions in mm.

Rectangular CAV air volume control terminals with system powered mechanical regulator

Type NMOAOVO
NNOAOVO

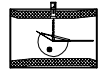
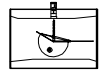


Sound data $\Delta p = 125 \text{ Pa}$

Model (HxW)	data referring to inlet spigot				Min ΔP_s	$\Delta P=125\text{Pa}$																										
						discharge sound						radiated sound single wall						radiated sound double wall														
	air volume					Lw in dB/Oct(re 1pW)			Lp values			Lw in dB/Oct(re 1pW)			Lp values			Lw in dB/Oct(re 1pW)			Lp values											
						125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	dB(A)	NC	NR	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	dB(A)	NC	NR	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	dB(A)	NC	NR
m/s	l/s	CFM	m3/h	Pa	dB																											
100x200	3.0	60	119	216	68	49	48	46	44	42	39	22	—	—	47	46	45	44	43	42	21	—	—	45	44	43	42	41	39	20	—	—
	6.0	120	254	432	100	55	54	52	51	49	48	28	21	24	53	52	50	49	48	46	26	—	—	51	50	48	47	46	45	25	—	—
	9.0	180	411	648	199	58	56	55	53	51	49	31	23	26	56	54	53	52	50	47	29	21	23	54	53	51	50	49	47	26	20	22
200x200	3.0	120	254	432	71	52	51	49	47	45	42	25	—	20	50	49	48	47	46	42	23	—	—	48	46	45	44	43	40	23	—	—
	6.0	240	508	864	100	58	56	55	53	51	49	31	23	26	56	54	53	52	50	47	29	21	23	54	53	51	50	49	47	26	20	22
	9.0	360	762	1296	175	63	62	60	58	55	53	37	30	32	60	58	57	56	53	50	33	26	28	58	56	55	53	51	50	30	23	25
200x300	3.0	180	381	648	71	54	52	50	48	46	43	27	—	23	52	50	48	47	45	42	25	—	—	50	48	46	45	44	40	23	—	—
	6.0	360	762	1296	100	59	58	56	54	52	50	32	26	28	57	56	54	52	51	48	30	24	25	55	54	52	51	48	45	28	22	23
	9.0	540	1143	1944	175	65	63	62	59	58	54	38	30	33	62	60	59	57	55	53	34	28	29	60	58	56	55	53	51	30	25	26
200x400	3.0	240	508	864	71	54	53	51	49	47	44	28	—	23	52	51	49	47	45	43	25	—	21	50	48	47	45	43	40	25	—	21
	6.0	480	1016	1728	100	60	58	57	55	53	50	33	26	28	58	56	55	53	51	48	31	24	26	56	54	53	52	50	47	29	23	24
	9.0	720	1524	2592	175	65	64	63	60	58	54	39	30	34	63	61	59	57	55	53	35	28	30	61	59	57	55	53	51	32	25	26
250x300	3.0	225	476	810	71	53	52	50	49	47	44	26	—	21	51	49	47	46	45	43	23	—	—	49	47	46	45	43	41	21	—	—
	6.0	450	953	1620	100	59	58	56	54	53	50	32	24	27	57	56	54	52	51	49	30	22	25	54	52	50	49	47	45	28	21	23
	9.0	675	1429	2430	175	65	64	63	60	58	54	39	30	34	63	61	59	57	55	53	35	28	30	61	59	57	55	53	51	32	25	26
250x400	3.0	300	635	1080	71	54	53	51	49	47	44	28	—	23	52	51	49	47	46	43	25	—	21	50	48	47	46	44	40	22	—	21
	6.0	600	1270	2160	100	60	58	57	55	53	50	33	26	28	58	57	55	54	52	50	30	23	25	56	54	53	51	50	46	27	20	21
	9.0	900	1906	3240	175	65	64	63	62	60	56	39	31	35	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	51	31	25
250x500	3.0	375	794	1350	71	55	54	53	52	50	48	29	22	24	53	51	50	48	46	45	27	20	21	51	49	47	45	43	40	25	20	22
	6.0	750	1588	2700	100	61	58	56	55	52	50	34	26	28	59	57	55	53	52	50	31	23	25	57	55	54	53	51	49	28	20	22
	9.0	1125	2382	4050	175	66	65	64	62	60	56	39	31	35	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	51	31	25
300x300	3.0	270	572	972	71	55	54	52	49	47	45	29	—	23	53	51	49	48	46	43	26	—	20	51	49	47	45	44	42	23	—	21
	6.0	540	1143	1944	100	60	59	57	56	53	51	33	27	29	58	56	55	53	51	50	30	24	26	56	54	53	51	49	47	29	23	25
	9.0	810	1715	2916	175	65	64	62	59	56	53	37	30	32	62	60	58	57	55	51	33	26	28	60	58	56	55	53	50	30	23	25
300x400	3.0	360	762	1296	71	56	54	52	50	47	45	29	21	24	54	52	51	49	48	46	26	—	21	52	50	49	47	46	42	23	—	—
	6.0	720	1524	2592	100	62	60	59	57	54	52	35	28	30	60	58	56	54	53	50	32	25	27	58	56	55	53	51	49	29	21	25
	9.0	1080	2287	3888	175	67	66	64	62	60	56	39	31	35	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	51	31	25
300x500	3.0	450	953	1620	71	56	55	53	51	48	46	30	22	26	54	53	51	50	48	43	27	—	22	52	50	49	48	47	45	25	—	—
	6.0	900	1906	3240	100	62	61	60	58	55	53	36	29	31	60	59	57	56	55	53	33	26	28	58	57	56	54	53	51	30	23	25
	9.0	1350	2858	4860	175	67	65	64	63	61	56	39	31	36	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
300x600	3.0	540	1143	1944	71	57	55	53	51	48	45	30	22	25	55	54	53	51	49	42	27	—	21	53	51	49	48	46	40	27	—	—
	6.0	1080	2287	3888	100	62	61	59	57	55	52	35	29	31	60	58	56	55	53	50	32	26	28	58	56	54	52	50	47	29	23	27
	9.0	1620	3430	5832	175	67	66	64	63	61	58	40	31	39	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
400x400	3.0	480	1016	1728	71	57	55	53	51	48	45	30	22	25	55	53	52	50	48	43	28	—	22	53	51	49	47	46	41	25	—	—
	6.0	960	2033	3456	100	62	61	59	57	55	52	35	29	31	60	58	57	56	53	50	32	26	28	58	57	55	53	51	49	29	21	25
	9.0	1440	3049	5184	175	68	67	64	63	61	58	39	31	38	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
400x500	3.0	600	1270	2160	71	58	56	53	51	48	45	33	27	29	56	54	53	50	47	43	30	24	25	52	50	48	46	45	40	26	21	22
	6.0	1200	2541	4320	100	63	62	60	58	55	53	37	30	32	60	58	57	56	53	50	33	26	28	58	56	55	53	51	50	30	23	25
	9.0	1800	3811	6480	175	68	67	65	63	61	59	39	32	38	66	64	62	61	59	56	35	27	32	63	62	61	58	57	54	32	23	28
400x600	3.0	720	1524	2592	71	58	57	54	52	49	46	34	28	30	56	54	52	51	48	43	30	25	27	53	52	50	48	46	43	28	21	22
	6.0	1440	3049	5184	100	63	62	61	59	56	54	38	31	33	60	58	57	56	54	51	35	28	30	58	56	55	53	51	48	31	22	27
	9.0	2160	4573	7776	175	69	69	67	65	63	61	38	32	38	66	64	62	61	59	56	35	27	32	63	62	61	58	57	54	32	23	28

Rectangular CAV air volume control terminals with system powered mechanical regulator

Type NMOAOVO
NNOAOVO



Sound data $\Delta p = 250 \text{ Pa}$

Model (HxW)	data referring to inlet spigot				Min ΔP_s	$\Delta P=250\text{Pa}$																										
						discharge sound												radiated sound single wall						radiated sound double wall								
	velocity		air volume			Lw in dB/Oct(re 1pW)						Lp values			Lw in dB/Oct(re 1pW)						Lp values			Lw in dB/Oct(re 1pW)						Lp values		
						125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	dB(A)	NC	NR	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	dB(A)	NC	NR	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	dB(A)	NC	NR
100x200	3.0	60	119	216	68	55	54	52	49	47	45	29	23	53	51	49	48	46	43	26	20	51	49	47	45	42	23	—	21			
	6.0	120	254	432	100	61	58	56	55	52	50	34	26	28	59	57	55	53	52	50	31	23	25	57	55	54	53	51	49	28	20	22
	9.0	180	411	648	199	65	64	62	59	56	53	37	30	32	62	60	58	57	55	51	33	26	28	60	58	56	55	53	50	30	23	25
200x200	3.0	120	254	432	71	58	57	54	52	49	46	34	28	30	56	54	52	51	48	43	30	25	27	54	52	50	48	46	43	28	21	22
	6.0	240	508	864	100	64	62	60	58	56	53	37	30	32	62	60	58	56	54	52	33	26	28	60	58	56	55	53	51	30	23	25
	9.0	360	762	1296	175	66	65	64	62	60	56	39	31	35	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	31	25	28
200x300	3.0	180	381	648	71	60	58	57	55	53	50	33	26	28	58	56	55	53	51	48	31	24	26	56	54	53	52	50	47	29	23	24
	6.0	360	762	1296	100	65	63	62	59	58	54	38	30	33	62	60	59	57	55	53	34	28	29	60	58	56	55	53	51	30	25	26
	9.0	540	1143	1944	175	68	67	64	63	61	58	39	31	38	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
200x400	3.0	240	508	864	71	60	59	58	56	52	51	34	25	29	58	57	55	53	51	48	30	21	25	56	54	53	51	50	48	26	—	21
	6.0	480	1016	1728	100	66	65	64	62	60	56	39	31	35	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	31	25	28
	9.0	720	1524	2592	175	69	68	67	65	63	61	38	32	38	66	64	62	61	59	56	35	27	32	63	62	61	58	57	54	32	23	28
250x300	3.0	225	476	810	71	59	58	57	54	50	49	33	26	29	57	55	53	51	48	45	30	23	26	55	53	51	50	48	45	27	20	23
	6.0	450	953	1620	100	63	62	61	59	56	54	38	31	33	60	58	57	56	54	51	35	28	30	58	56	55	53	51	48	31	22	27
	9.0	675	1429	2430	175	67	66	64	63	61	58	40	31	39	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
250x400	3.0	300	635	1080	71	61	60	59	57	53	52	25	26	30	59	58	56	54	52	50	22	23	28	57	56	55	53	51	49	21	22	24
	6.0	600	1270	2160	100	64	63	61	58	56	53	37	30	32	62	60	58	57	55	51	33	26	28	60	58	56	55	53	50	30	23	25
	9.0	900	1906	3240	175	68	66	64	63	61	56	39	31	36	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
250x500	3.0	375	794	1350	71	61	58	56	55	52	50	34	26	28	59	57	55	53	52	50	31	23	25	57	55	53	51	49	28	20	22	22
	6.0	750	1588	2700	100	65	63	62	59	56	54	38	31	33	63	61	59	57	55	53	35	28	30	61	59	57	55	53	51	32	25	26
	9.0	1125	2382	4050	175	70	68	67	66	65	63	45	38	46	68	66	65	63	61	60	40	33	42	66	65	63	62	60	58	38	36	30
300x300	3.0	270	572	972	71	61	60	59	57	53	52	25	26	30	59	58	56	54	52	50	22	23	28	57	56	55	53	51	49	21	22	24
	6.0	540	1143	1944	100	66	65	64	62	60	56	39	31	35	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	31	25	28
	9.0	810	1715	2916	175	70	68	67	66	65	63	45	38	46	68	66	65	63	61	60	40	33	42	66	65	63	62	60	58	38	36	30
300x400	3.0	360	762	1296	71	62	61	59	57	55	52	35	29	31	60	58	56	55	53	50	32	26	28	58	56	54	52	50	47	29	23	27
	6.0	720	1524	2592	100	68	66	64	63	61	58	39	31	36	65	63	62	60	58	55	35	27	32	63	62	60	58	56	53	31	23	28
	9.0	1080	2287	3888	175	71	70	68	67	64	61	44	38	47	69	68	66	65	63	61	40	34	41	67	65	63	62	60	58	35	30	36
300x500	3.0	450	953	1620	71	63	62	61	59	56	54	38	31	33	60	58	57	56	54	51	35	28	30	58	56	55	53	51	48	31	22	27
	6.0	900	1906	3240	100	68	66	65	62	60	58	38	30	33	64	62	60	59	57	55	35	28	32	62	60	58	57	55	53	31	25	28
	9.0	1350	2858	4860	175	72	71	70	69	68	67	40	34	41	70	68	67	65	64	62	36	30	37	68	66	65	64	62	60	33	27	34
300x600	3.0	540	1143	1944	71	63	62	61	58	56	53	37	30	32	62	60	58	57	55	51	33	26	28	60	58	56	55	53	50	30	23	25
	6.0	1080	2287	3888	100	68	67	66	64	61	59	37	31	36	66	64	62	60	58	56	35	28	32	63	61	58	57	55	53	31	25	28
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400x400	3.0	480	1016	1728	71	63	62	60	58	55	53	37	30	32	60	58	57	56	53	50	33	26	28	58	56	55	53	51	50	30	23	25
	6.0	960	2033	3456	100	68	67	65	63	61	59	39	32	38	66	64	62	61	59	56	35	27	32	63	62	61	58	57	54	32	23	28
	9.0	1440	3049	5184	175	72	71	70	68	66	65	42	35	43	70	69	68	66	65	63	38	31	39	68	67	66	65	63	61	35	28	36
400x500	3.0	600	1270	2160	71	64	62	60	58	56	53	37	30	32	62	60	58	56	54	52	33	26	28	60	58	56	55	53	51	30	23	25
	6.0	1200	2541	4320	100	69	68	67	65	63	61	38	32	38	66	64	62	61	59	56	35	27	32	63	62	61	58	57	54	32	23	28
	9.0	1800	3811	6480	175	72	71	70	68	66	65	42	35	43	70	69	68	66	65	63	38	31	39	68	67	66	65	63	61	35	28	36
400x600	3.0	720	1524	2592	71	64	63	61	58	56	53	37	30	32	62	60	58	57	55	51	33	26	28	60	58	56	55	53	50	30	23	25
	6.0	1440	3049	5184	100	70	68	67	66	65	63	45	38	46	68	66	65	63	61	60	40	33	42	66	65	63	62	60	58	38	36	30
	9.0	2160	4573	7776	175	73	72	71	70	69	67	44	37	45	71	70	69	68	66	65	40	33	41	69	68	67	66	65	64	36	30	37
500x500	3.0	750	1588	2700	71	64	63	61	58	56	53	37	30	32	62	60	58	57	55	51	33	26	28	60	58	56	55	53	50	30	23	25
	6.0	1500	3176	5400	100	70	68	67	66	65	63	45	38	46	68	66	65	63	61	60	40	33	42	66	65	63	62	60	58	38	36	30
	9.0	2250	4764	8100	175	73	72	71	70	69	67	44	37	45	71	70	69	68	66	65	40	33	41	69	68	67	66	65	64	36	30	37
500x600	3.0	900	1906	3240	71	65	63	62	59	56	54	38	31	33	63	61	59	57	55	53	35	28	30	61	59	57	55	53	51	32	25	26
	6.0	1800	3811	6480	100	70	68	67	66	65	63	45	38	46	68	66	65	63	61	60	40	33	42	66	65	63	62	60	58	38	36	30
	9.0	2700	5717	9720	175	74	73	72	71	70	68	45	38	46	71	70	69	68</														

