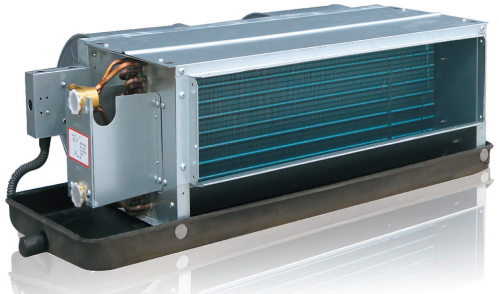
Ceiling Concealed FCU - TCR



AHRI CERTIFIED® www.ahridirectory.org
Central Station Air-Handling Unit Casings
AHRI Standard 1350

TCR 200 J LSSNNNTN

- TCR — Ceiling concealed FCU
- 200 — Specification code 200, 300……
- J — Design S/N: A, B, C
- LSSNNNTN — Feature code
  - L-Left water inlet / R-Right water inlet
  - S-Low static pressure / 3-30 Pa static pressure / 5-50 Pa static pressure
  - S-Standard drain pan / A-Extended to 150 mm
  - N-No air return plenum / D-Bottom return air plenum / B-Back return air plenum
  - N-No filter / A-Nylon filter / F-Mental filter
  - N-No electric heater
  - T-FCU with 3 rows of coils W-(4 pipes) FCU with hot water coil
  - C-FCU with 3 rows of coils (large temperature difference) E-(4 pipes) FCU with hot water coil (large temperature difference)
  - N-Capacitor motor

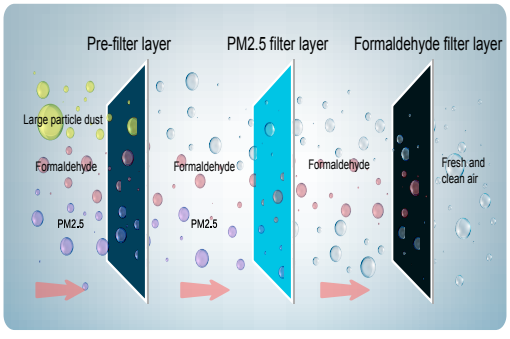
1. Different ESP for option

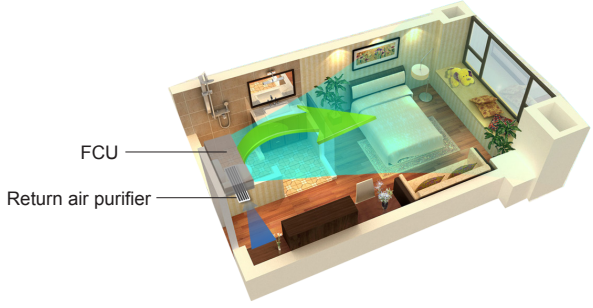
12Pa,30Pa,50Pa is standard,and 80Pa can be customized.

2. Multiple coils design

Two-pipe system (3 rows) and four-pipe system (3+1) are available.

3. Return air purifiers as optional to make environment clean





Operating principles:

The pre-filter layer removes hair, dust, and large particles from the air; the professional PM2.5 filter layer adopts the unique electrostatic technology to remove PM2.5 from the air through physical adsorption measures, without causing ozone hazard; the capture agent on the formaldehyde filter surface shows a formaldehyde removal capacity more powerful than that of the traditional activated carbon net, and converts the formaldehyde in air into a kind of safe and harmless substance through chemical reaction, instead of releasing it into the room with air and without leading to secondary pollution because of filtration adsorption and heating.

Ceiling Concealed FCU (3 Rows)

Model: TCR			200J	300J	400J	500J	600J	700J	800J	1000J	1200J	1400J
Rated Air Flow (m^3/h)		High	340	510	680	850	1020	1190	1360	1700	2040	2380
		Medium	270	380	510	640	780	880	1030	1290	1540	1850
		Low	190	280	340	450	560	610	740	890	1040	1255
Cooling Capacity (W)		High	2210	3200	4150	5000	5950	6600	8100	9100	11250	13000
		Medium	1990	2782	3570	4197	5200	5600	6882	8200	9613	11700
		Low	1635	2304	2950	3298	4200	4600	5749	6700	7403	7560
Sensible Cooling Capacity (W)		High	1590	2285	2880	3570	4200	4700	5880	6700	8260	9750
		Medium	1400	1920	2420	2930	3570	3900	4880	5700	6935	8280
		Low	1050	1555	1930	2210	2900	3200	3935	4500	5120	5945
Heating Capacity (Water Inlet: 60°C) (W)		High	3500	5200	6500	7870	9800	10900	13570	14900	18800	22100
Heating Capacity (Water Inlet: 45°C) (W)		High	2210	3200	4150	5000	5950	6600	8100	9100	11250	13000
Power Input (W)	Low Static Pressure (12Pa)	High	30	45	55	72	93	100	128	147	183	221
		Medium	27	36	43	58	80	97	112	130	165	198
		Low	23	30	35	48	68	78	95	110	136	165
	30 Pa	High	38	55	65	82	100	120	148	169	206	245
		Medium	32	45	50	64	80	105	133	160	195	230
		Low	27	33	37	53	70	90	128	140	170	195
	50 Pa	High	45	64	75	91	114	130	165	200	243	290
		Medium	36	50	65	86	105	110	150	190	230	270
		Low	30	42	55	73	90	96	122	170	200	250
FCEER	Low Static Pressure (12Pa)	High	65	64	66	61	55	57	55	53	53	50
	30 Pa	High	53	53	57	55	51	48	48	47	48	45
	50 Pa	High	45	46	50	50	46	45	44	40	41	39
FCCOP (Water Inlet: 60°C)	Low Static Pressure (12Pa)	High	103	104	103	96	90	93	91	87	89	84
	30 Pa	High	84	87	89	86	85	80	80	77	80	77
	50 Pa	High	72	75	78	78	76	74	73	66	69	67
FCCOP (Water Inlet: 45°C)	Low Static Pressure (12Pa)	High	65	64	66	61	55	57	55	53	53	50
	30 Pa	High	53	53	57	55	51	48	48	47	48	45
	50 Pa	High	45	46	50	50	46	45	44	40	41	39
Sound Level (dB(A))	Low Static Pressure (12Pa)	High	35	38	39	41	45	46	46	47	49	51
		Medium	28.5	30	31	32	37	40	40	41	44	47
		Low	20.5	21	22	24	28	31	31	32	34	35
	30 Pa	High	38	41	42.5	45	46.5	48	47	49	51	52
		Medium	30.5	32	34	36.5	38.5	41	41	43	46	48
		Low	23	22	22	27.5	30	32	32	34	35	36
	50 Pa	High	42	43	45	47	49	50	50	52	53	53
		Medium	35.5	36	38	38.5	40	44	44	46	47.5	49
		Low	29	28	28	29	31	36	36	38	40	42
Sound Level* (dB(A))	30 Pa	High	36	39	40	43	44	46	46	47	49	50
		Medium	29	30	32	35	36	40	40	41	45	46
		Low	22	21	21	26	27	31	31	32	34	35
	50 Pa	High	40	41	43	45	47	48	48	49	51	51
		Medium	33.5	34	36	36.5	39	42	42	45	46	47
		Low	27	26	26	27	30	34	34	37	39	40
Fan	Type		Forward-curved multi-blade double inlet centrifugal fan									
Motor	Type		Single-phase capacitor motor									
Heat Exchanger	Structure Type		Efficient double-flanged aluminum fins and copper tubes, expanded into one									
	Maximum Operating Pressure (MPa)		1.6									
	Water Inlet/Outlet Pipe Diameter		Rc3/4 (Taper Pipe Female Threaded)									
	Water Flow (m^3/h)		0.42	0.55	0.72	0.87	1.05	1.12	1.39	1.67	1.9	2.23
Water Resistance	kPa		25	25	30	30	40	40	40	40	40	50
Drain Pan	Condensate Water Pipe Diameter		Rc3/4 (Taper Pipe Male Threaded)									
Dimensions (Without Return Air Plenum)	Length (mm)		695	845	930	995	1085	1235	1530	1530	1795	1795
	Width (mm)		470	470	470	470	470	470	470	470	490	490
	Height (mm)		230	230	230	230	230	230	230	230	250	250
Net Weight	Air Return Plenum (Excluded) (kg)		10.5	12.5	14.5	16	17	18.5	22	25	30	31.5
	Air Return Plenum (Included) (kg)		12.5	15.5	17.5	19	20	22.5	26	29	36	37.5

★ **Note:**

1. Cooling: supply water and return water temperatures 7/12°C; the dry/wet bulb temperature of air inlet is 27/19.5°C;
2. Heating: supply water is 60°C or 45°C, water quantity being the same as during cooling; air return conditions: the dry bulb temperature of air inlet is 21°C;
3. In the table, low static pressure indicates the air outlet static pressure at 0Pa (with air outlet and filter) and at 12Pa (without air outlet and filter);
4. The air flow in the table is obtained when the unit is running in dry state and the dry bulb temperature of air inlet is 20°C;
5. In the table, noise is measured according to Figure C.2 in GB/T 19232-2019 in a semi-anechoic room where the background noise is 11.5 dB(A);
6. In the table, noise is measured according to GB/T 19232-2019 in a semi-anechoic room where the background noise is 11.5 dB(A);
7. Left & right swing manner can be adjusted on site. After adjustment, the cooling capacity and heating capacity should be multiplied by the correction factor 0.9;
8. The specifications may be changed due to product improvement without a prior notice. The parameters indicated on the unit nameplate should prevail.

Ceilling Concealed FCU (3+1 Rows)

Model: TCR			200J	300J	400J	500J	600J	700J	800J	1000J	1200J	1400J
Rated Air Flow (m^3/h)		High	340	500	680	830	1000	1140	1340	1700	2040	2380
		Medium	270	380	510	620	750	880	1030	1290	1540	1975
		Low	190	240	340	420	560	610	720	890	1040	1255
Cooling Capacity (W)		High	2210	3200	4150	4800	5950	6800	7900	9200	10275	12600
		Medium	1890	2782	3570	4150	5200	5900	6900	8000	8500	11000
		Low	1500	2304	2950	3400	4200	5000	5800	6700	7450	9500
Sensible Cooling Capacity (W)		High	1590	2285	2880	3400	4200	4700	5750	6600	7400	9400
		Medium	1350	1920	2420	2880	3570	3900	4800	5500	6200	7900
		Low	1050	1555	1930	2210	2900	3200	3700	4200	4930	6200
Heating Capacity (60/50°C) (W)		High	2050	3000	3850	4500	5200	6300	7550	8400	9800	10800
Heating Capacity (45/40°C) (W)		High	1300	1800	2300	2700	3200	3700	4500	5100	6100	6600
Power Input (W)	Low Static Pressure (12Pa)	High	30	45	55	72	93	100	128	147	183	221
		Medium	27	36	43	58	80	97	112	130	165	198
		Low	23	30	35	48	68	78	95	110	136	165
	30 Pa	High	38	55	65	82	100	120	148	169	206	245
		Medium	32	45	50	64	80	105	133	160	195	230
		Low	27	33	37	53	70	90	128	140	170	195
	50 Pa	High	45	64	75	91	114	130	165	200	243	290
		Medium	36	50	65	86	105	110	150	190	230	270
		Low	30	42	55	73	90	96	122	170	200	250
FCEER	Low Static Pressure (12Pa)	High	66	63	66	59	55	58	53	54	49	49
	30 Pa	High	53	53	57	52	52	50	47	48	44	45
	50 Pa	High	45	46	50	48	46	46	43	41	38	38
FCCOP (Water Inlet: 60°C)	Low Static Pressure (12Pa)	High	67	65	67	59	54	61	56	55	51	46
	30 Pa	High	53	54	57	52	51	51	49	48	45	42
	50 Pa	High	45	46	50	47	45	47	44	41	39	36
FCCOP (Water Inlet: 45°C)	Low Static Pressure (12Pa)	High	42	39	39	35	33	35	32	33	31	27
	30 Pa	High	33	32	33	31	31	29	28	29	28	25
	50 Pa	High	28	27	29	28	27	27	26	25	24	21
Sound Level (dB(A))	Low Static Pressure (12Pa)	High	36.5	38	39	42	45	46	46	47	49	51
		Medium	30	30	31	33	38	41	41	41	44	47
		Low	21	21	22	25	29	32	32	33	34	36
	30 Pa	High	38.5	41	42.5	45	46.5	48	47	49	51	52.5
		Medium	32	32.5	34	37.5	39	42	41	43	46	48
		Low	23	23	24	28.5	30	33	32	34	35.5	37
	50 Pa	High	42	43.5	45	47	49	50	50	52	53	53.5
		Medium	36	37	38	39.5	41	45	45	46.5	47.5	50
		Low	29	29	30	30	32	36	36	38	41	43
Sound Level* (dB(A))	30 Pa	High	37	39	40	43	44	46	46	47	49	50.5
		Medium	30	31	32	36	37	41	40	41	45	46
		Low	22.5	22	23	27	28	32	31	32	35	36
	50 Pa	High	40	41.5	43	45	47	48	48	49	51	51.5
		Medium	34	35	36	37	40	43	43	45	46	48
		Low	27	27	27.5	28	31	34	34	37	40	41
Fan	Type		Forward-curved multi-blade double inlet centrifugal fan									
Motor	Type		Single-phase capacitor motor									
Heat Exchanger	Structure Type		Efficient double-flanged aluminum fins and copper tubes, expanded into one									
	Maximum Operating Pressure (MPa)		1.6									
	Water Inlet/Outlet Pipe Diameter		Rc3/4 (Taper Pipe Female Threaded)									
Water Flow	Cooling Mode (m^3/h)		0.39	0.63	0.73	0.86	1.04	1.17	1.39	1.65	1.9	2.04
	Heating Mode (60/50°C) (m^3/h)		0.21	0.29	0.33	0.42	0.47	0.55	0.66	0.72	0.88	0.95
	Heating Mode (45/40°C) (m^3/h)		0.22	0.31	0.41	0.47	0.53	0.63	0.76	0.86	1.04	1.13
Water Resistance	Cooling Mode (kPa)		25	25	30	30	40	40	40	40	40	50
	Heating Mode (60/50°C) (kPa)		10	10	20	25	15	20	30	20	30	35
	Heating Mode (45/40°C) (kPa)		10	15	25	30	20	25	40	25	40	50
Drain Pan	Condensate Water Pipe Diameter		Rc3/4 (Taper Pipe Male Threaded)									
Dimensions (Without Return Air Plenum)	Length (mm)		695	845	930	995	1085	1235	1530	1530	1795	1795
	Width (mm)		470	470	470	470	470	470	470	470	490	490
	Height (mm)		230	230	230	230	230	230	230	230	250	250
Net weight	Air Return Plenum (Excluded) (kg)		11.5	13.5	15.5	17	19	20	24	27	33	35
	Air Return Plenum (Included) (kg)		13.5	16.5	18.5	20	22	24	28	31	39	41

★ **Note:**

1. Cooling: supply water and return water temperatures 7/12°C; the dry/wet bulb temperature of air inlet is 27/19.5°C;
2. Heating: supply water is 60°C or 45°C, water quantity being the same as during cooling; air return conditions: the dry bulb temperature of air inlet is 21°C;
3. In the table, low static pressure indicates the air outlet static pressure at 0Pa (with air outlet and filter) and at 12Pa (without air outlet and filter);
4. The air flow in the table is obtained when the unit is running in dry state and the dry bulb temperature of air inlet is 20°C;
5. In the table, noise is measured according to Figure C.2 in GB/T 19232-2019 in a semi-anechoic room where the background noise is 11.5 dB(A);
6. In the table, noise is measured according to GB/T 19232-2019 in a semi-anechoic room where the background noise is 11.5 dB(A);
7. Left & right swing manner can be adjusted on site. After adjustment, the cooling capacity and heating capacity should be multiplied by the correction factor 0.9;
8. The specifications may be changed due to product improvement without a prior notice. The parameters indicated on the unit nameplate should prevail.

Ceiling Concealed FCU (Large Temperature Difference, 3 Rows)

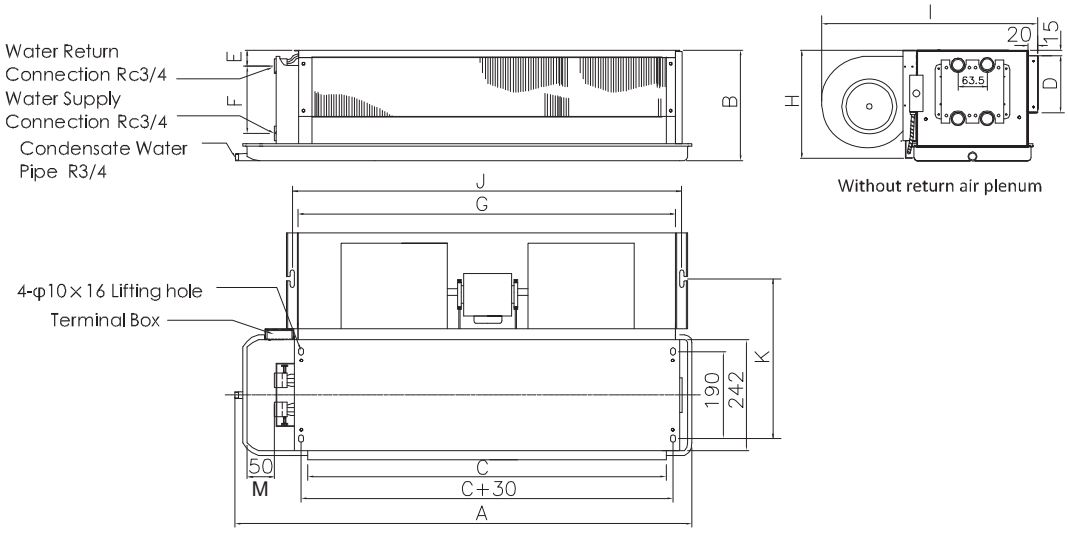
Model: TCR			200J	300J	400J	500J	600J	700J	800J	1000J	1200J	1400J
Rated Air Flow (m^3/h)		High	340	510	680	850	1020	1190	1360	1700	2040	2380
		Medium	270	380	510	640	780	880	1030	1290	1540	1850
		Low	190	280	340	450	560	610	740	890	1040	1255
Cooling Capacity (W)		High	2200	3100	4000	4800	5750	6500	8000	9100	11250	12800
		Medium	1900	2700	3500	4100	5000	5500	6800	8200	9600	11000
		Low	1600	2250	2900	3200	4000	4500	5700	6700	7400	7500
Sensible Cooling Capacity (W)		High	1500	2200	2800	3500	4100	4700	5800	6700	8200	9700
		Medium	1400	1900	2400	2900	3500	3900	4800	5700	6900	8200
		Low	1050	1500	1900	2200	2800	3200	3900	4500	5100	5900
Heating Capacity (60/50°C) (W)		High	3400	4850	6100	7500	9000	10200	12300	14500	17500	19900
Heating Capacity (45/40°C) (W)		High	2100	3000	3850	4600	5500	6300	7700	8800	10800	12300
Power Input (W)	Low Static Pressure (12Pa)	High	30	45	55	72	93	100	128	147	183	221
		Medium	27	36	43	58	80	97	112	130	165	198
		Low	23	30	35	48	68	78	95	110	136	165
	30 Pa	High	38	55	65	82	100	120	148	169	206	245
		Medium	32	45	50	64	80	105	133	160	195	230
		Low	27	33	37	53	70	90	128	140	170	195
	50 Pa	High	45	64	75	91	114	130	165	200	243	290
		Medium	36	50	65	86	105	110	150	190	230	270
		Low	30	42	55	73	90	96	122	170	200	250
FCEER	Low Static Pressure (12Pa)	High	68	65	67	63	56	60	58	56	56	53
	30 Pa	High	55	53	57	55	53	51	51	50	50	48
	50 Pa	High	47	46	50	50	47	47	46	42	43	41
FCCOP (Water Inlet: 60°C)	Low Static Pressure (12Pa)	High	106	101	102	98	88	95	90	90	87	82
	30 Pa	High	85	84	87	87	83	80	78	79	78	75
	50 Pa	High	72	72	76	78	73	74	71	68	67	64
FCCOP (Water Inlet: 45°C)	Low Static Pressure (12Pa)	High	65	62	64	60	54	58	56	54	54	51
	30 Pa	High	52	52	55	53	50	49	49	48	48	46
	50 Pa	High	44	45	48	48	45	46	44	41	41	40
Sound Level (dB(A))	Low Static Pressure (12Pa)	High	35	38	39	41	45	46	46	47	49	51
		Medium	28.5	30	31	32	37	40	40	41	44	47
		Low	20.5	21	22	24	28	31	31	32	34	35
	30 Pa	High	38	41	42.5	45	46.5	48	47	49	51	52
		Medium	30.5	32	34	36.5	38.5	41	41	43	46	48
		Low	23	22	22	27.5	30	32	32	34	35	36
	50 Pa	High	42	43	45	47	49	50	50	52	53	53
		Medium	35.5	36	38	38.5	40	44	44	46	47.5	49
		Low	29	28	28	29	31	36	36	38	40	42
Sound Level* (dB(A))	30 Pa	High	36	39	40	43	44	46	46	47	49	50
		Medium	29	30	32	35	36	40	40	41	45	46
		Low	22	21	21	26	27	31	31	32	34	35
	50 Pa	High	40	41	43	45	47	48	48	49	51	51
		Medium	33.5	34	36	36.5	39	42	42	45	46	47
		Low	27	26	26	27	30	34	34	37	39	40
Fan	Type		Forward-curved multi-blade double inlet centrifugal fan									
Motor	Type		Single-phase capacitor motor									
Heat Exchanger	Maximum Operating Pressure (MPa)		Efficient double-flanged aluminum fins and copper tubes, expanded into one									
	Water Inlet/Outlet Pipe Diameter		1.6									
	Water Inlet/Outlet Pipe Diameter		Rc3/4 (Taper Pipe Female Threaded)									
	Water Flow m^3/h		0.24	0.33	0.45	0.5	0.61	0.7	0.83	0.99	1.2	1.42
Water Resistance	kPa		25	25	30	25	40	30	30	40	40	40
Drain Pan	Condensate Water Pipe Diameter		Rc3/4 (Taper Pipe Male Threaded)									
Dimensions (Without Return Air Plenum)	Length (mm)		695	845	930	995	1085	1235	1530	1530	1795	1795
	Width (mm)		470	470	470	470	470	470	470	470	490	490
	Height (mm)		230	230	230	230	230	230	230	230	250	250
Net weight	Air Return Plenum (Excluded) (kg)		10.5	12.5	14.5	16	17	18.5	22	25	30	31.5
	Air Return Plenum (Included) (kg)		12.5	15.5	17.5	19	20	22.5	26	29	36	37.5

★ **Note:**

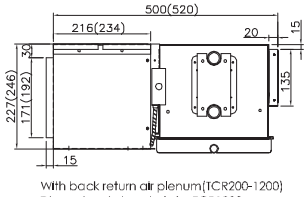
1. Cooling: supply water and return water temperatures 5/13°C; the dry/wet bulb temperature of air inlet is 27/19.5°C;
2. Heating: supply water is 60°C or 45°C, water quantity being the same as during cooling; air return conditions: the dry bulb temperature of air inlet is 21°C;
3. In the table, low static pressure indicates the air outlet static pressure at 0Pa (with air outlet and filter) and at 12Pa (without air outlet and filter);
4. The air flow in the table is obtained when the unit is running in dry state and the dry bulb temperature of air inlet is 20°C;
5. In the table, noise is measured according to Figure C.2 in GB/T 19232-2019 in a semi-anechoic room where the background noise is 11.5 dB(A);
6. In the table, noise is measured according to GB/T 19232-2019 in a semi-anechoic room where the background noise is 11.5 dB(A);
7. Left & right swing manner can be adjusted on site. After adjustment, the cooling capacity and heating capacity should be multiplied by the correction factor 0.9;
8. The specifications may be changed due to product improvement without a prior notice. The parameters indicated on the unit nameplate should prevail.

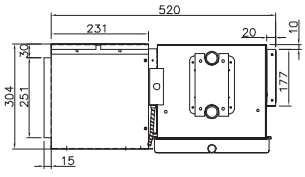
Dimension

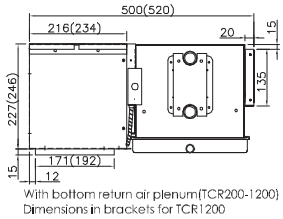
Ceiling Concealed FCU (3 Rows/Large Temperature Difference, 3 Rows)

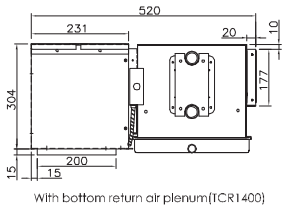


TCR	A	B	C	D	E	F	G	H	I	J	K	M	Motor Quantity	Fan Quantity
200	695	230	435	135	54	118	477	225	470	504	346	50	1	1
300	845	230	570	135	54	118	610	225	470	637	346	65	1	2
400	930	230	670	135	54	118	712	225	470	739	346	50	1	2
500	995	230	730	135	54	118	772	225	470	799	346	55	1	2
600	1085	230	825	135	54	118	867	225	470	894	346	50	1	2
700	1235	230	970	135	54	118	1012	225	470	1039	346	55	1	2
800	1530	230	1215	135	54	118	1257	225	470	1284	346	105	1	3
1000	1530	230	1255	135	54	118	1297	225	470	1324	346	65	2	3
1200	1795	250	1510	135	54	118	1552	240	490	1579	357	45	2	4
1400	1795	250	1510	135	54	118	1552	240	490	1579	357	45	2	4



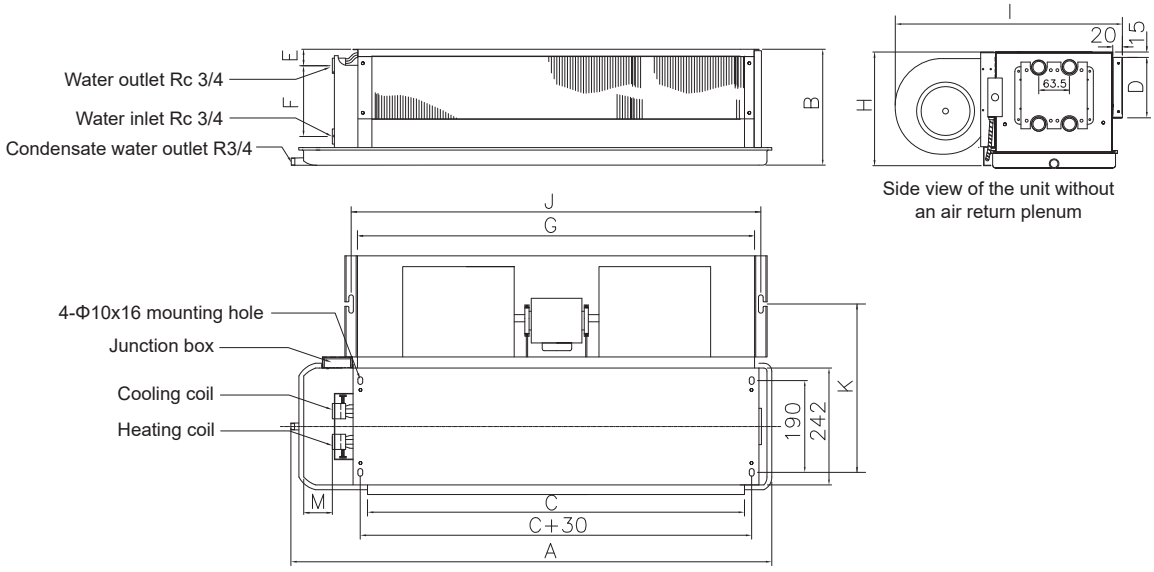




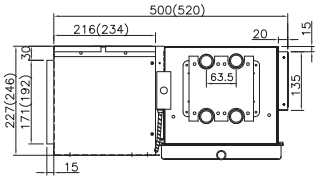


TCR	Length of return air plenum	Length of plenum wind-gap
200	483.6	422
300	615.6	557
400	725.6	657
500	775.6	717
600	870.6	812
700	1015.6	957
800	1260.6	1202
1000	1300.6	1242
1200	1555.6	1497
1400	1634	1596

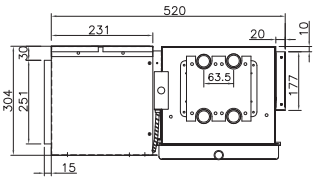
Ceiling Concealed FCU (3+1 Rows/Large Temperature Difference, 3+1 Rows)



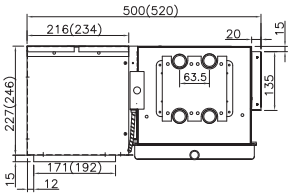
Side view of the unit without an air return plenum



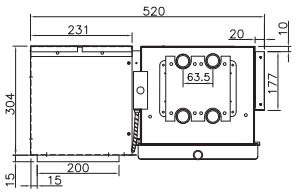
Side view of the unit with a rear air return plenum (models 200-1200)
Side view of the unit with a rear air return plenum (model 1400)



Side view of the unit with a rear air return plenum (models1400)



Side view of the unit with a bottom air return plenum (models 200-1200) (Dimensions in brackets are dimensions of model 1200)



Side view of the unit with a bottom air return plenum (model 1400)

Model: TCR	A	B	C	D	E	F	G	H	I	J	K	M
200	695	230	435	135	54	118	477	225	470	504	346	50
300	845	230	570	135	54	118	610	225	470	637	346	65
400	930	230	670	135	54	118	712	225	470	739	346	50
500	995	230	730	135	54	118	772	225	470	799	346	55
600	1085	230	825	135	54	118	867	225	470	894	346	50
700	1235	230	970	135	54	118	1012	225	470	1039	346	55
800	1530	230	1215	135	54	118	1257	225	470	1284	346	105
1000	1530	230	1255	135	54	118	1297	225	470	1324	346	65
1200	1795	250	1510	135	54	118	1552	240	490	1579	357	45
1400	1795	250	1510	135	54	118	1552	240	490	1579	357	45

★ **Note:**

1. The air return plenum unit with a filter screen does not have an air return flange only, with other dimensions remaining the same.
2. When vibration-absorbing lifting hooks are used for lifting the unit, tell the factory about it.