

Table 18 Refrigerant 500 Properties of Superheated Vapor* (Continued)

Temp F	Abs Pressure 20 psi Gage Pressure 5.3 psi (Sat Temp -15.13 F)				Abs Pressure 22 psi Gage Pressure 7.3 psi (Sat Temp -10.96 F)				Abs Pressure 24 psi Gage Pressure 9.3 psi (Sat Temp -7.06 F)				Abs Pressure 26 psi Gage Pressure 11.3 psi (Sat Temp -3.40 F)				Abs Pressure 28 psi Gage Pressure 13.3 psi (Sat Temp +0.06 F)			
t	v	h	s		v	h	s		v	h	s		v	h	s		v	h	s	
(At Sat)	(0.2025)	(93.34)	(0.2103)		(2.1059)	(93.90)	(0.20975)		(1.9410)	(94.43)	(0.20920)		(1.8006)	(94.92)	(0.20881)		(1.0795)	(95.38)		(0.20842)
-10	2.8323	94.16	0.21215		2.1110	94.06	0.21010													
0	2.8303	95.78	0.21571		2.1042	95.68	0.21366		1.9757	95.58	0.21177		1.8181	95.47	0.21003		1.7218	97.02	0.21143	
10	2.8482	97.41	0.21927		2.1171	97.31	0.21818		2.0045	97.22	0.21530		1.8515	97.12	0.21356		1.7818	98.57	0.21493	
20	2.8658	99.08	0.22373		2.1299	98.96	0.22265		2.0332	99.07	0.22076		1.8804	98.97	0.21843		1.8104	100.05	0.21838	
30	2.8833	100.73	0.22824		2.1428	100.63	0.22712		2.0619	100.44	0.22523		1.9093	100.35	0.21838		1.8402	101.53	0.21838	
40	2.9008	102.38	0.23275		2.1557	102.30	0.23158		2.0906	102.21	0.22964		1.9382	102.12	0.22259		1.8692	102.03	0.22229	
50	2.9183	104.03	0.23726		2.1686	104.00	0.23604		2.1193	103.82	0.23410		1.9670	103.73	0.22666		1.8980	103.73	0.22666	
60	2.9358	105.68	0.24177		2.1815	105.58	0.24050		2.1480	105.49	0.23856		1.9958	105.40	0.23066		1.9270	105.40	0.23066	
70	2.9533	107.33	0.24628		2.1944	107.23	0.24496		2.1767	107.14	0.24302		2.0246	107.05	0.23466		1.9562	107.05	0.23466	
80	2.9708	108.98	0.25079		2.2073	108.88	0.24942		2.2054	108.79	0.24748		2.0534	108.70	0.23866		1.9854	108.70	0.23866	
90	2.9883	110.63	0.25530		2.2202	110.58	0.25388		2.2341	110.49	0.25194		2.0822	110.40	0.24266		2.0146	108.92	0.24266	
100	2.9958	112.28	0.25981		2.2331	112.18	0.25834		2.2628	112.09	0.25640		2.1110	112.00	0.24666		2.0440	110.14	0.24666	
110	3.0133	113.93	0.26432		2.2460	113.88	0.26280		2.2915	113.79	0.26046		2.1398	113.70	0.25066		2.0734	111.26	0.25066	
120	3.0308	115.58	0.26883		2.2589	115.48	0.26726		2.3202	115.60	0.26492		2.1686	115.50	0.25466		2.1026	112.38	0.25466	
130	3.0483	117.23	0.27334		2.2718	117.18	0.27172		2.3489	117.11	0.26938		2.1974	117.02	0.25866		2.1318	113.50	0.25866	
140	3.0658	118.88	0.27785		2.2847	118.78	0.27618		2.3776	118.62	0.27384		2.2262	118.53	0.26266		2.1610	114.62	0.26266	
150	3.0833	120.53	0.28236		2.2976	120.48	0.28064		2.4063	120.46	0.27830		2.2550	120.37	0.26666		2.1902	115.74	0.26666	
160	3.1008	122.18	0.28687		2.3105	122.13	0.28510		2.4350	122.29	0.28276		2.2838	122.20	0.27066		2.2194	116.86	0.27066	
170	3.1183	123.83	0.29138		2.3234	123.78	0.28956		2.4637	123.72	0.28722		2.3126	123.63	0.27466		2.2486	117.98	0.27466	
180	3.1358	125.48	0.29589		2.3363	125.43	0.29402		2.4924	125.36	0.29168		2.3414	125.27	0.27866		2.2778	119.10	0.27866	
190	3.1533	127.13	0.30040		2.3492	127.08	0.29848		2.5211	127.00	0.29614		2.3702	127.18	0.28266		2.3070	120.22	0.28266	
200	3.1708	128.78	0.30491		2.3621	128.63	0.30294		2.5498	128.62	0.30060		2.3990	128.59	0.28666		2.3362	121.34	0.28666	
210	3.1883	130.43	0.30942		2.3750	130.33	0.30740		2.5785	130.36	0.30506		2.4278	130.30	0.29066		2.3654	122.46	0.29066	
220	3.2058	132.08	0.31393		2.3879	131.98	0.31186		2.6072	131.99	0.30952		2.4566	131.91	0.29466		2.3946	123.58	0.29466	
230	3.2233	133.73	0.31844		2.4008	133.63	0.31632		2.6359	133.66	0.31398		2.4854	133.54	0.29866		2.4238	124.70	0.29866	
240	3.2408	135.38	0.32295		2.4137	135.28	0.32078		2.6646	135.29	0.31844		2.5142	135.26	0.30266		2.4530	125.82	0.30266	

Temp F	Abs Pressure 30 psi Gage Pressure 15.3 psi (Sat Temp 3.28 F)				Abs Pressure 32 psi Gage Pressure 17.3 psi (Sat Temp 6.39 F)				Abs Pressure 34 psi Gage Pressure 19.3 psi (Sat Temp 9.32 F)				Abs Pressure 36 psi Gage Pressure 21.3 psi (Sat Temp 12.16 F)				Abs Pressure 38 psi Gage Pressure 23.3 psi (Sat Temp 14.84 F)			
t	v	h	s		v	h	s		v	h	s		v	h	s		v	h	s	
(At Sat)	(0.3738)	(95.81)	(0.20803)		(4.806)	(96.22)	(0.20770)		(1.385)	(96.60)	(0.20738)		(1.3250)	(96.97)	(0.20710)		(1.2588)	(97.32)	(0.20682)	
-10	1.6006	96.92	0.21041		4.945	96.01	0.20898		1.4029	96.71	0.20763		1.3428	96.82	0.20735		1.2758	98.18	0.20883	
0	1.6046	98.56	0.21397		4.931	97.65	0.21254		1.4070	98.26	0.21119		1.3469	98.37	0.21090		1.2799	99.82	0.21233	
10	1.6086	100.20	0.21753		4.916	99.29	0.21610		1.4111	98.81	0.21475		1.3510	98.92	0.21441		1.2840	101.46	0.21588	
20	1.6126	101.84	0.22109		4.901	100.93	0.21965		1.4152	100.06	0.21830		1.3551	100.57	0.21806		1.2881	103.10	0.21735	
30	1.6166	103.48	0.22465		4.886	102.57	0.22320		1.4193	101.70	0.22185		1.3592	102.21	0.22161		1.2922	104.74	0.21882	
40	1.6206	105.12	0.22821		4.871	104.21	0.22675		1.4234	103.34	0.22540		1.3633	103.85	0.22516		1.2963	106.38	0.22029	
50	1.6246	106.76	0.23177		4.856	105.85	0.23030		1.4275	104.98	0.22895		1.3674	105.49	0.22871		1.3004	108.02	0.22186	
60	1.6286	108.40	0.23533		4.841	107.49	0.23385		1.4316	106.62	0.23250		1.3715	107.13	0.23227		1.3045	109.66	0.22343	
70	1.6326	110.04	0.23889		4.826	109.13	0.23740		1.4357	108.26	0.23605		1.3756	108.77	0.23582		1.3086	111.30	0.22499	
80	1.6366	111.68	0.24245		4.811	110.77	0.24095		1.4398	110.00	0.23960		1.3797	110.41	0.23937		1.3127	112.94	0.22656	
90	1.6406	113.32	0.24601		4.796	112.41	0.24450		1.4439	111.64	0.24315		1.3838	112.05	0.24292		1.3168	114.58	0.22812	
100	1.6446	114.96	0.24957		4.781	114.05	0.24805		1.4480	113.28	0.24670		1.3879	113.69	0.24647		1.3209	116.22	0.22969	
110	1.6486	116.60	0.25313		4.766	115.69	0.25160		1.4521	114.92	0.25025		1.3920	115.33	0.25002		1.3250	117.86	0.23125	
120	1.6526	118.24	0.25669		4.751	117.33	0.25515		1.4562	116.56	0.25380		1.3961	116.97	0.25357		1.3291	119.50	0.23282	
130	1.6566	119.88	0.26025		4.736	118.97	0.25870		1.4603	118.20	0.25735		1.4002	118.61	0.25712		1.3332	121.14	0.23438	
140	1.6606	121.52	0.26381		4.721	120.61	0.26225		1.4644	119.84	0.26090		1.4043	120.25	0.26067		1.3373	122.78	0.23595	
150	1.6646	123.16	0.26737		4.706	122.25	0.26580		1.4685	121.48	0.26445		1.4084	121.89	0.26424		1.3414	124.42	0.23751	
160	1.6686	124.80	0.27093		4.691	123.89	0.26935		1.4726	123.12	0.26800		1.4125	123.50	0.26780		1.3455	126.06	0.23908	
170	1.6726	126.44	0.27449		4.676	125.53	0.27290		1.4767	124.76	0.27155		1.4166	125.14	0.27139		1.3496	127.70	0.24064	
180	1.6766	128.08	0.27805		4.661	127.17	0.27645		1.4808	126.40	0.27510		1.4207	126.78	0.27494		1.3537	129.34	0.24221	
190	1.6806	129.72	0.28161		4.646	128.81	0.28000		1.4849	128.04	0.27865		1.4248	128.42	0.27849		1.3578	130.98	0.24377	
200	1.6846	131.36	0.28517		4.631	130.45	0.28355		1.4890	129.68	0.28220		1.4289	130.06	0.28203		1.3619	132.62	0.24534	
210	1.6886	133.00	0.28873		4.616	132.09	0.28710		1.4931	131.32	0.28575		1.4330	131.70	0.28557		1.3660	134.26	0.24690	
220	1.6926	134.64	0.29229		4.601	133.73	0.29065		1.4972	132.96	0.28930		1.4371	133.34	0.28912		1.3701	135.90	0.24847	
230	1.6966	136.28	0.29585		4.586	135.37	0.29420		1.5013	134.60	0.29285		1.4412	134.98	0.29267		1.3742	137.54	0.25003	
240	1.7006	137.92	0.29941		4.571	137.01	0.29775		1.5054	136.24	0.29640		1.4453	136.62	0.29620		1.3783	139.18	0.25160	

Temp F	Abs Pressure 40 psi Gage Pressure 25.3 psi (Sat Temp 17.44 F)				Abs Pressure 42 psi Gage Pressure 27.3 psi (Sat Temp 19.93 F)				Abs Pressure 44 psi Gage Pressure 29.3 psi (Sat Temp 22.35 F)				Abs Pressure 46 psi Gage Pressure 31.3 psi (Sat Temp 24.67 F)				Abs Pressure 48 psi Gage Pressure 33.3 psi (Sat Temp 26.92 F)			
t	v	h	s		v	h	s		v	h	s		v	h	s		v	h	s	
(At Sat)	(0.1269)	(97.65)	(0.20366)		(1.1447)	(97.97)	(0.20623)		(1.0952)	(98.29)	(0.20610)		(1.0498)	(98.57)	(0.20588)		(1.0080)	(98.85)	(0.20565)	
-10	1.2999	98.08	0.20746		1.1449	97.88	0.20633		1.1159	99.01	0.20678		1.0643	99.48	0.20717		1.0181	99.76	0.20676	
0	1.2977	99.77	0.21096		1.1444	99.58	0.20884		1.1169	99.58	0.20875		1.0643	99.48	0.20717		1.0181	99.76	0.20676	
10	1.2955	101.46	0.21446		1.1439	101.27	0.21135		1.1179	101.19	0.21120		1.							

Refrigerant Tables and Charts

Table 18 Refrigerant 500 Properties of Superheated Vapor* (Continued)

Temp F	Abs Pressure 50 psi Gage Pressure 35.3 psi (Sat Temp 29.09 F)			Abs Pressure 52 psi Gage Pressure 37.3 psi (Sat Temp 31.20 F)			Abs Pressure 54 psi Gage Pressure 39.3 psi (Sat Temp 33.25 F)			Abs Pressure 56 psi Gage Pressure 41.3 psi (Sat Temp 35.26 F)			Abs Pressure 58 psi Gage Pressure 43.3 psi (Sat Temp 37.21 F)		
t	v	h	s	v	h	s	v	h	s	v	h	s	v	h	s
(At Sat)	(0.9694)	(99.12)	(0.20549)	(0.9337)	(99.38)	(0.20530)	(0.9005)	(99.64)	(0.20513)	(0.8696)	(99.88)	(0.20496)	(0.8408)	(100.12)	(0.20480)
-10	0.9717	99.28	0.20530	0.9337	99.38	0.20537	0.9165	100.80	0.20748	0.8806	100.71	0.20662	0.8470	100.61	0.20378
0	0.9700	101.00	0.20529												
10	0.9721	102.73	0.21272	0.9375	102.84	0.21181	0.9401	102.55	0.21093	0.9024	102.45	0.21007	0.8593	102.38	0.20994
20	0.9742	104.46	0.22012	0.9413	104.39	0.21921	0.9635	104.30	0.21834	0.9249	104.21	0.21752	0.8822	104.14	0.20982
30	0.9763	106.19	0.22752	0.9451	106.12	0.22661	0.9867	106.03	0.22573	0.9476	105.94	0.22492	0.9051	105.86	0.21004
40	0.9784	107.92	0.23492	0.9489	107.85	0.23401	1.0103	107.76	0.23384	0.9710	107.67	0.23303	0.9349	107.67	0.21937
50	0.9805	109.65	0.24232	0.9527	109.58	0.24140	1.0339	109.49	0.24123	0.9946	109.40	0.24042	0.9545	109.41	0.22870
60	0.9826	111.38	0.24972	0.9565	111.31	0.24889	1.0575	111.22	0.24872	1.0182	111.13	0.24791	0.9789	111.17	0.23725
70	0.9847	113.11	0.25712	0.9603	113.04	0.25638	1.0811	112.95	0.25621	1.0418	112.86	0.25540	1.0035	112.89	0.24679
80	0.9868	114.84	0.26452	0.9641	114.77	0.26388	1.1047	114.68	0.26402	1.0654	114.59	0.26321	1.0263	114.63	0.25633
90	0.9889	116.57	0.27192	0.9679	116.50	0.27134	1.1283	116.41	0.27147	1.0890	116.32	0.27062	1.0491	116.37	0.26587
100	0.9910	118.30	0.27932	0.9717	118.23	0.27874	1.1519	118.14	0.27900	1.1126	118.05	0.27817	1.0719	118.10	0.27542
110	0.9931	120.03	0.28672	0.9755	120.00	0.28616	1.1755	120.01	0.28639	1.1362	119.92	0.28554	1.0947	119.97	0.28397
120	0.9952	121.76	0.29412	0.9793	121.69	0.29356	1.1991	121.60	0.29379	1.1598	121.51	0.29294	1.1175	121.56	0.29152
130	0.9973	123.49	0.30152	0.9831	123.42	0.30096	1.2227	123.33	0.30102	1.1834	123.24	0.30019	1.1403	123.29	0.29910
140	0.9994	125.22	0.30892	0.9869	125.15	0.30836	1.2463	125.06	0.30848	1.2070	124.97	0.30736	1.1631	124.92	0.30668
150	1.0015	126.95	0.31632	0.9907	126.88	0.31576	1.2699	126.79	0.31589	1.2306	126.70	0.31603	1.1859	126.65	0.31599
160	1.0036	128.68	0.32372	0.9945	128.61	0.32316	1.2935	128.52	0.32321	1.2542	128.43	0.32337	1.2087	128.38	0.32550
170	1.0057	130.41	0.33112	0.9983	130.34	0.33056	1.3171	130.25	0.33061	1.2778	130.16	0.33077	1.2315	130.11	0.33561
180	1.0078	132.14	0.33852	1.0021	132.07	0.33796	1.3407	131.98	0.33801	1.3014	131.89	0.33817	1.2543	131.84	0.34572
190	1.0099	133.87	0.34592	1.0059	133.80	0.34536	1.3643	133.71	0.34541	1.3250	133.62	0.34557	1.2771	133.57	0.35583
200	1.0120	135.60	0.35332	1.0097	135.53	0.35276	1.3879	135.44	0.35281	1.3486	135.35	0.35297	1.2999	135.30	0.36594
210	1.0141	137.33	0.36072	1.0135	137.26	0.36016	1.4115	137.17	0.36021	1.3722	137.08	0.36037	1.3227	137.03	0.37605
220	1.0162	139.06	0.36812	1.0173	139.19	0.36756	1.4351	139.10	0.36761	1.3958	139.01	0.36777	1.3455	138.96	0.38616
230	1.0183	140.79	0.37552	1.0211	140.72	0.37496	1.4587	140.63	0.37501	1.4194	140.54	0.37517	1.3683	140.45	0.39627
240	1.0204	142.52	0.38292	1.0249	142.45	0.38236	1.4823	142.36	0.38241	1.4430	142.27	0.38251	1.3911	142.32	0.40638

Temp F	Abs Pressure 60 psi Gage Pressure 45.3 psi (Sat Temp 39.10 F)			Abs Pressure 62 psi Gage Pressure 47.3 psi (Sat Temp 40.94 F)			Abs Pressure 64 psi Gage Pressure 49.3 psi (Sat Temp 42.79 F)			Abs Pressure 66 psi Gage Pressure 51.3 psi (Sat Temp 44.51 F)			Abs Pressure 68 psi Gage Pressure 53.3 psi (Sat Temp 46.24 F)		
t	v	h	s	v	h	s	v	h	s	v	h	s	v	h	s
(At Sat)	(0.8138)	(100.55)	(0.20465)	(0.7894)	(100.57)	(0.20449)	(0.7647)	(100.79)	(0.20437)	(0.7423)	(101.00)	(0.20421)	(0.7211)	(101.20)	(0.20408)
-10	0.8157	100.51	0.20406												
10	0.8374	102.85	0.21843	0.8475	102.16	0.20794	0.7795	102.06	0.20688	0.7522	101.97	0.20613	0.7284	101.87	0.20540
20	0.8392	104.58	0.22583	0.8513	104.39	0.21534	0.7939	104.30	0.21428	0.7666	104.21	0.21353	0.7426	104.14	0.21268
30	0.8411	106.31	0.23323	0.8551	106.12	0.22274	0.8081	106.03	0.22168	0.7808	105.94	0.22093	0.7588	105.86	0.22194
40	0.8430	108.04	0.24063	0.8589	107.85	0.23014	0.8223	107.76	0.22908	0.7950	107.67	0.22833	0.7730	107.59	0.22895
50	0.8449	109.77	0.24803	0.8627	109.58	0.23754	0.8365	109.49	0.23648	0.8082	109.40	0.23573	0.7860	109.32	0.23800
60	0.8468	111.50	0.25543	0.8665	111.31	0.24494	0.8507	111.22	0.24388	0.8214	111.13	0.24313	0.8000	111.05	0.24811
70	0.8487	113.23	0.26283	0.8703	113.04	0.25234	0.8649	112.95	0.25128	0.8356	112.86	0.25053	0.8140	112.78	0.25822
80	0.8506	114.96	0.27023	0.8741	114.77	0.25974	0.8791	114.68	0.25868	0.8498	114.59	0.25793	0.8282	114.51	0.26833
90	0.8525	116.69	0.27763	0.8779	116.50	0.26714	0.8933	116.41	0.26608	0.8645	116.32	0.26533	0.8466	116.24	0.27844
100	0.8544	118.42	0.28503	0.8817	118.23	0.27454	0.9075	118.14	0.27348	0.8782	118.05	0.27273	0.8602	117.97	0.28855
110	0.8563	120.15	0.29243	0.8855	120.00	0.28194	0.9217	120.01	0.28088	0.8920	119.92	0.28013	0.8742	119.84	0.29866
120	0.8582	121.88	0.29983	0.8893	121.69	0.28934	0.9359	121.60	0.28828	0.9062	121.51	0.28753	0.8884	121.43	0.30877
130	0.8601	123.61	0.30723	0.8931	123.42	0.29674	0.9501	123.33	0.29568	0.9204	123.24	0.29493	0.9026	123.16	0.31888
140	0.8620	125.34	0.31463	0.8969	125.15	0.30414	0.9643	125.06	0.30308	0.9346	124.97	0.30233	0.9168	124.89	0.32899
150	0.8639	127.07	0.32203	0.9007	126.88	0.31154	0.9785	126.79	0.31048	0.9488	126.70	0.30968	0.9310	126.62	0.33910
160	0.8658	128.80	0.32943	0.9045	128.61	0.31894	0.9927	128.52	0.31788	0.9630	128.43	0.31693	0.9452	128.35	0.34921
170	0.8677	130.53	0.33683	0.9083	130.34	0.32634	1.0069	130.25	0.32528	0.9772	130.16	0.32503	0.9594	130.08	0.35932
180	0.8696	132.26	0.34423	0.9121	132.07	0.33374	1.0211	131.98	0.33268	0.9914	131.89	0.33178	0.9736	131.81	0.36943
190	0.8715	133.99	0.35163	0.9159	133.80	0.34114	1.0353	133.71	0.34008	1.0056	133.62	0.34003	0.9878	133.54	0.37954
200	0.8734	135.72	0.35903	0.9197	135.53	0.34854	1.0495	135.44	0.34752	1.0198	135.35	0.34903	1.0020	135.27	0.38965
210	0.8753	137.45	0.36643	0.9235	137.26	0.35594	1.0637	137.17	0.35648	1.0340	137.08	0.35803	1.0162	137.00	0.39976
220	0.8772	139.18	0.37383	0.9273	139.19	0.36334	1.0779	139.10	0.36392	1.0482	139.01	0.36853	1.0304	138.93	0.40987
230	0.8791	140.91	0.38123	0.9311	140.72	0.37074	1.0921	140.63	0.37146	1.0624	140.54	0.37603	1.0446	140.46	0.41998
240	0.8810	142.64	0.38863	0.9349	142.45	0.37814	1.1063	142.36	0.37810	1.0766	142.27	0.38153	1.0588	142.19	0.43009

Temp F	Abs Pressure 70 psi Gage Pressure 55.3 psi (Sat Temp 49.70 F)			Abs Pressure 80 psi Gage Pressure 65.3 psi (Sat Temp 55.81 F)			Abs Pressure 90 psi Gage Pressure 75.3 psi (Sat Temp 63.02 F)			Abs Pressure 100 psi Gage Pressure 85.3 psi (Sat Temp 69.65 F)			Abs Pressure 110 psi Gage Pressure 95.3 psi (Sat Temp 75.83 F)		
t	v	h	s	v	h	s	v	h	s	v	h	s	v	h	s
(At Sat)	(0.7010)	(100.55)	(0.30315)	(0.6154)	(100.30)	(0.30335)	(0.5482)	(100.11)	(0.30283)	(0.4439)	(100.82)	(0.30236)	(0.4490)	(100.46)	(0.30192)
-10	0.7080	100.55	0.30315												
10	0.7341	103.55	0.30815	0.6226	102.65	0.30481	0.5611	103.05	0.30328	0.4944	103.05	0.30248	0.4547	103.05	0.30240
20	0.7429	105.54	0.31165	0.6307	104.67	0.30826	0.5801	104.68	0.30729	0.5136	104.68	0.30649	0.4739	104.68	0.30641
30	0.7516	107.54	0.31515	0.6387	106.67	0.31171	0.5991	106.68	0.31030	0.5328	106.68	0.30950	0.4931	106.68	0.31032
40	0.7603	109.54	0.31865	0.6467	108.67	0.31516	0.6181	108.68	0.31381	0.5520	108.68	0.31261	0.5123	108.68	0.31413
50	0.7690	111.54	0.32215	0.6547	110.67	0.31861	0.6371	110.68	0.31742	0.5712	110.68	0.31642	0.5315	110.68	0.31794
60	0.7777	113.54	0.32565	0.6627	112.67	0.32206	0.6561	112.68	0.32083	0.5904	112.68	0.32023	0.5507	112.68	0.32175
70	0.7864	115.54	0.32915	0.6707	114.67	0.32551	0.6751	114.68	0.32428	0.6096	114.68	0.32369	0.5699	114.68	0.32556
80	0.7951	117.54	0.33265	0.6787	116.67	0.32896	0.6941	116.68	0.32763	0.6288	116.68	0.32704	0.5891	116.68	0.32937
90	0.8038	119.54	0.33615	0.6867	118.67	0.33241	0.7131	118.68	0.33104	0.6480	118.68	0.33045	0.6083	118.68	0.33318
100	0.8125	121.54	0.33965	0.6947	120.67	0.33586	0.7321	120.68	0.33445	0.6672	120.68	0.33386	0.6275	120.68	