

# CCT

ENERGY SAVING  
COMPRESSED AIR DRYERS



CRN APPROVED

20-5000 SCFM

# COMPAIR REFRIGERATED DRYERS

## ENERGY SAVING TECHNOLOGY

Compressed air is an effective and reliable source of power which is used in many operations and processes in industry. However compressed air does have some inherent problems, which if not treated properly, will create more trouble than it's worth. Use of contaminated compressed air can result in prematurely worn pneumatic machinery, blocked valves and orifices, spoiled spray paint applications and corroded piping systems due to moisture in the compressed air lines.

The solution to these problems is a Compair refrigerated compressed air dryer. After years of research and development Compair has introduced the new CCT dryer. This new dryer series incorporates a new aluminum heat exchanger technology designed to provide optimal drying performance and directly reduce energy consumption by lower pressure drop. The new CCT heat exchanger module produces very low pressure drop ratings compared to most of our competitors. The lower pressure drop results in energy savings allowing for a good return on investment. Combined with a new technology hot gas by-pass valve designed to deliver constant dew point, the CCT dryer will provide unmatched performance in the industry.

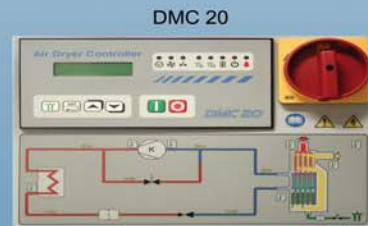
### CONTROL PANEL

The CCT dryer operation is controlled by our own custom design DMC controllers.

The DMC 15 incorporates a digital bar graph dewpoint read out. The DMC 15 is used on models CCT 10 thru CCT 100.

The DMC 14 controller incorporates a digital dew point read out selectable in degrees F and C scale. As a standard feature the controller also displays a visual alarm condition with the built in capability to send a remote alarm signal. The DMC 14 is utilized in our CCT 125 thru CCT 400 model dryers.

The DMC 20 version is the most advanced microprocessor controller in the industry and is incorporated as a standard controller for our larger range CCT 500 to 4000 model dryers.



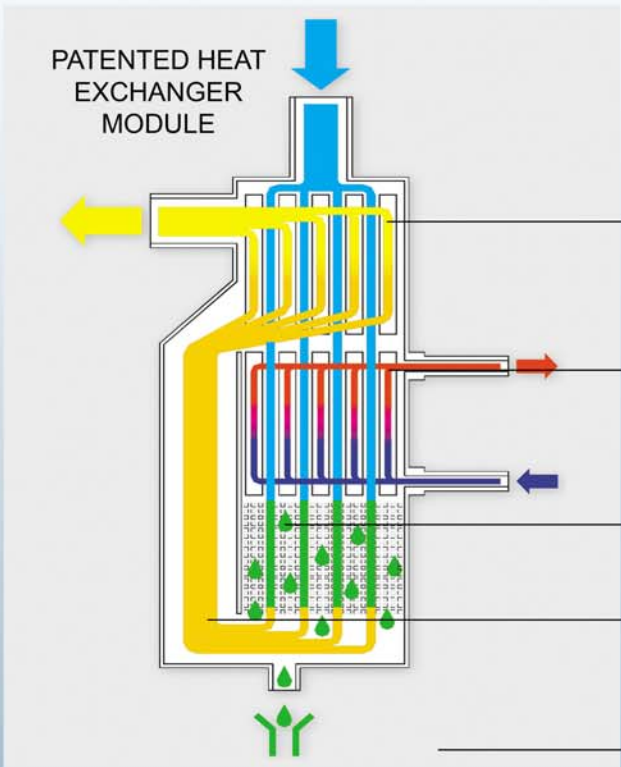
### HOT-GAS BY-PASS VALVE

All CCT dryers are fitted with a new stainless steel hot gas by-pass valve that underwent years of development. This valve is designed to prevent freezing and provide a constant dew point. Since this diaphragm valve is controlled by temperature and pressure, the accuracy of operation is unmatched in the industry. The valve is set during final factory testing and no further adjustments are required.



### CONDENSATE DRAIN

Dryers are all fitted with the industry leading Bekomat, no air loss drains as a standard. This intelligent drain provides energy saving operation which enhances an already energy saving dryer design.



**ALU-DRY HEAT EXCHANGER MODULE**

The patented air to air and air to refrigerant heat exchangers and the demister type condensate separator are housed in a uniquely designed vertical module

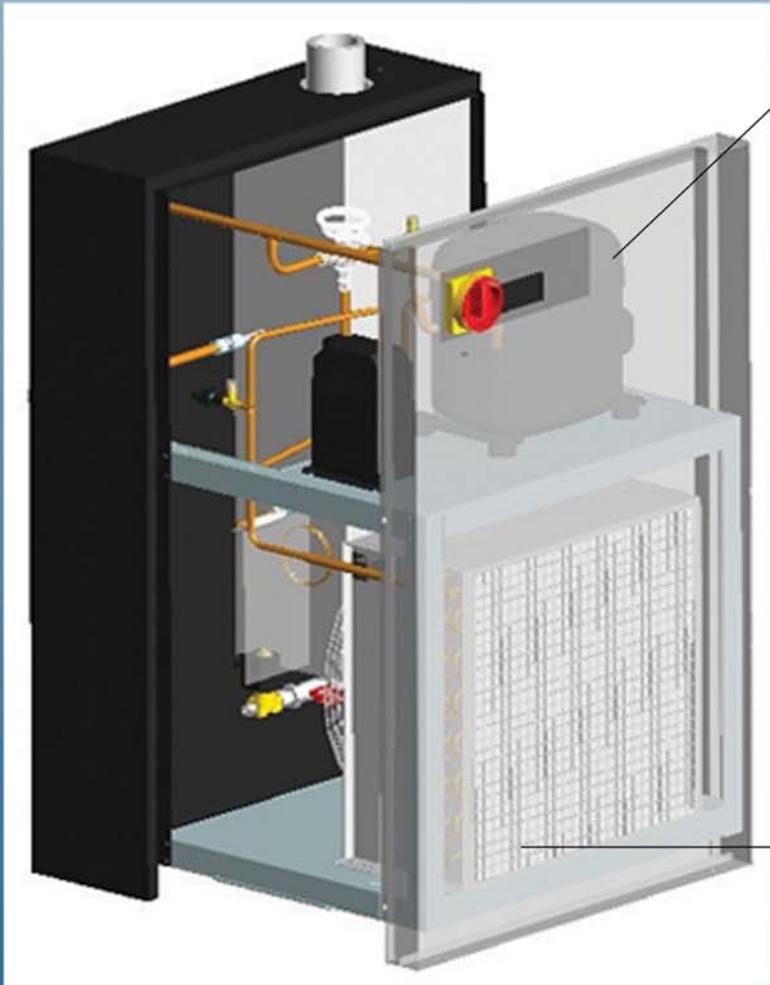
Maximum heat transfer is achieved in the air to air heat exchanger cross flow design.

The large surface areas coupled with the cross flow of the refrigerant exchanger ensure no liquid is returned to the refrigeration compressor.

The maintenance free separator is located in the heat exchanger module. This highly efficient coalescing separator provides superior moisture separation.

The large cross-section flow channel results in low velocities, producing low-pressure drop and reduced energy costs.

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**ROTARY REFRIGERANT COMPRESSOR**

Our mid range CCT dryer models from CCT 125 up to CCT 400, 230/1/60 utilize a rotary compressor. The rotary compressor advantage includes lower operating noise levels, high operating limits, longer life and high efficiency that ensures energy savings. Utilizing the rotary compressors adds to the overall energy saving design of the CCT dryers.



**CONDENSER COIL**

All CCT dryer condenser coils are generously sized in order to ensure maximum performance in extreme summer ambient conditions found in all compressor rooms.

# CCT-ENERGY SAVING TECHNOLOGY

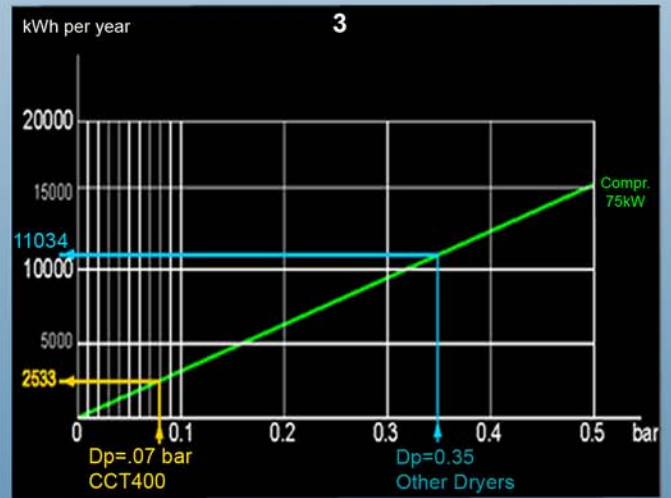
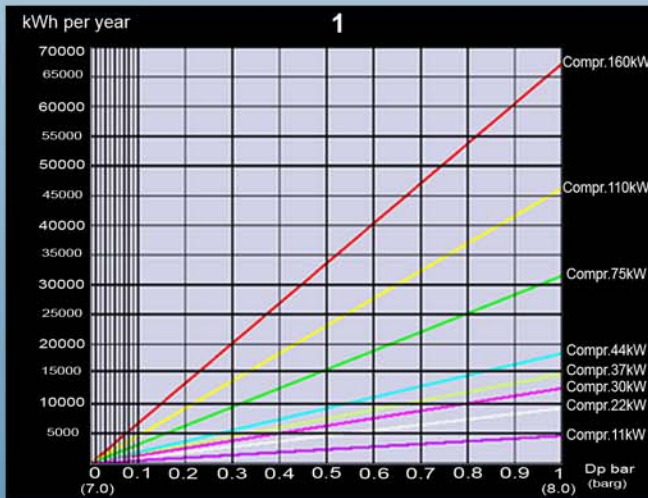
Along with the improved drying performance of the CCT dryers we have also dramatically improved the energy saving capabilities of a compressed air dryer via significantly lower pressure drop. Many of our competitors boast energy savings achieved by cycling the refrigerant compressor. The refrigerant compressor represents only 2% to 3% of the total absorbed power of a typical air compressor system. CCT low pressure drop dryers are designed to turn off your air compressor instead; this results in much higher overall energy savings. By utilizing our new technology low pressure drop heat exchangers we can reduce pressure drop by more than 50% on most models versus our competition. This results in dramatic energy savings.

## ADDITIONAL ENERGY CONSUMPTION

The pressure drop created by the compressed air treatment system must be considered as an additional load that the air compressor must absorb in order to ensure the required line pressure. If you install a dryer with a pressure drop of 5 psig, the compressor must run at 105 psig in order to deliver a line pressure of 100 psig. Most manufacturers of dryers produce dryers with a pressure drop of 3 to 6 psig at a 100 psi operating pressure. The pressure drop is often undisclosed by our competitors unless requested by the customer. We state our pressure drop in our brochure so you can compare ours against our competition. We have provided graphs below to substantiate our claims.

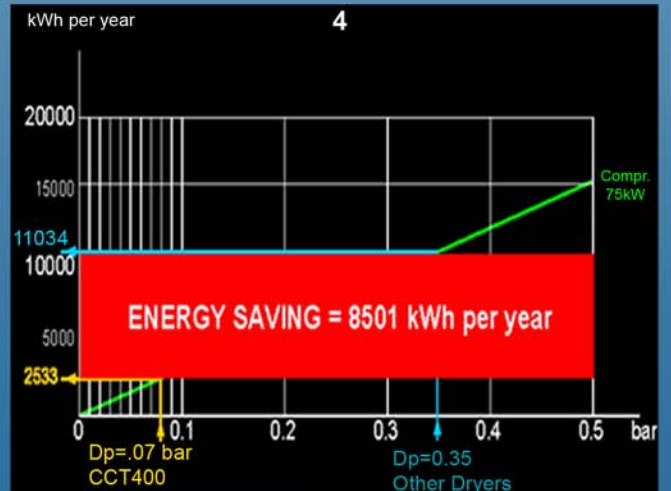
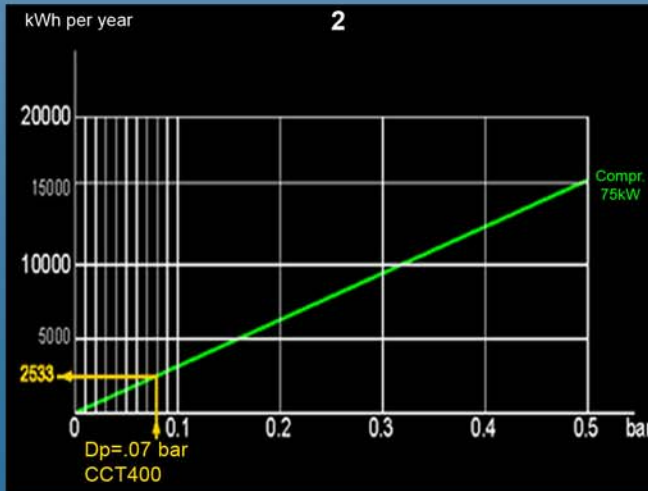
The graph represents the increase in power consumption ( kWh per year ), of most screw compressors, with the increase in pressure required, in the range from 7 to 8 barg and with 6000 h annual running time.

For comparison purposes, we have analysed the pressure drop of other dryers available on the market with the same flow rate. For this graph we have selected a competitors model with the next lowest pressure drop rating of 0.35 bar. It reveals an annual energy consumption of 11034 kWh.

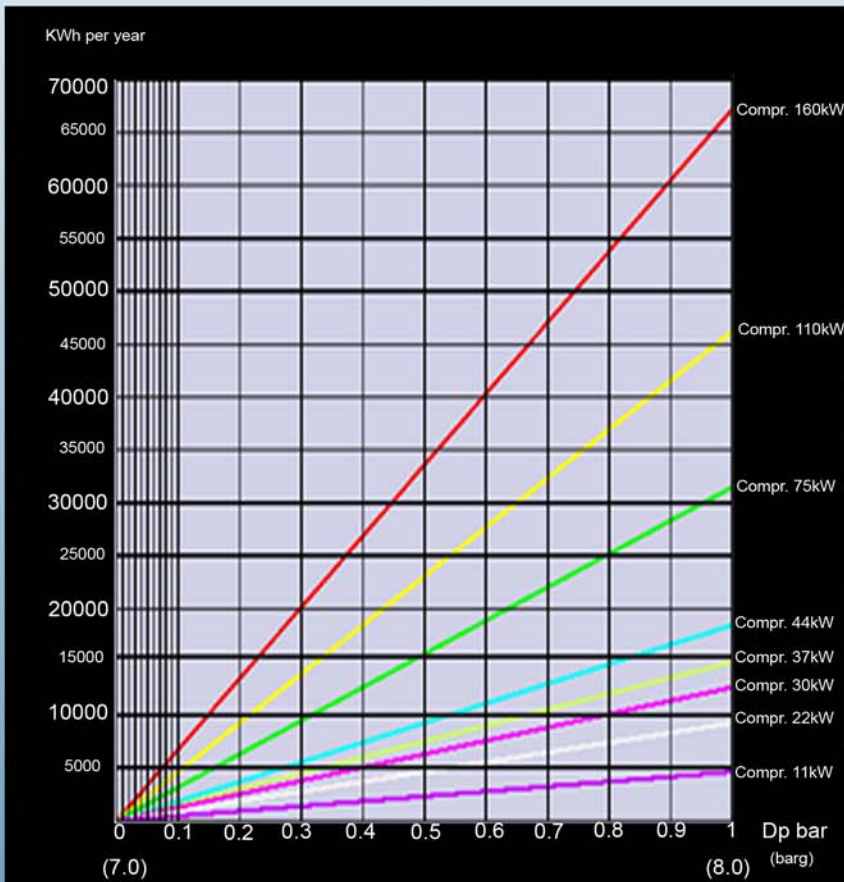


In order to quantify the annual power consumption for a CCT400 dryer installation, we use the graph below and read the horizontal axis with the pressure drop ( 0.07 bar ), to obtain the annual consumption ( in 6000 h per year ), which is 2533 kWh.

The difference in energy consumption provides the real overall energy saving :  
 $11034 \text{ kWh} - 2533 \text{ kWh} = 8501 \text{ kWh per year.}$



# COMPARE CCT DRYERS AGAINST OUR COMPETITORS PRESSURE DROP FOR REAL ENERGY SAVINGS



MODEL	Bar/psig
CCT 10	.15/2.1 psig
CCT 15	.04/0.6 psig
CCT 20	.11/1.6 psig
CCT 27	.09/1.3 psig
CCT 35	.14/2.0 psig
CCT 50	.32/4.6 psig
CCT 75	.24/3.4 psig
CCT 100	.16/2.2 psig
CCT 125	.18/2.6 psig
CCT 150	.23/3.3 psig
CCT 200	.12/1.7 psig
CCT 250	.25/3.6 psig
CCT 300	.10/1.5 psig
CCT 350	.13/1.9 psig
CCT 400	.07/1.0 psig
CCT 500	.10/1.5 psig
CCT 600	.15/2.2 psig
CCT 800	.20/2.9 psig
CCT 1000	.19/2.8 psig
CCT 1250	.25/3.6 psig
CCT 1500	.19/2.8 psig
CCT 1750	.13/1.9 psig
CCT 2000	.18/2.6 psig
CCT 2500	.25/3.6 psig
CCT 3000	.19/2.8 psig
CCT 4000	.19/2.8 psig
CCT 5000	.26/4.1 psig

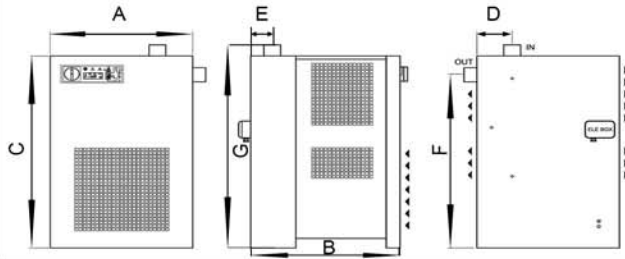
## COMPAIR DRYER FEATURES

- Conforms to TSSA and CSA standards
- CRN approved nationally
- Electrically certified by Entela
- Environmentally friendly refrigerant R134A/R404A
- Energy saving design
- Unique design aluminum heat exchanger with low pressure drop
- New state-of-the-art stainless steel hot gas by-pass valve
- Compact design with easily removable steel panels
- Powder paint coated finish
- Robust inlet/outlet NPT connections, flanged on larger models
- Water proof electrical junction box
- Six foot three pronged power cord on 115/1/60 models
- Insulated electrical power wiring
- Digital controller on small models up to CCT 400, LCD on larger models
- No air-loss Bekomat drains on all models
- Illuminated on/off switch on models CCT 20 to CCT 100
- Disconnect on/off switch on models CCT 125 to CCT 500
- Disconnect and on/off buttons on larger models
- Compressors include thermal overload protection
- Air to air heat exchanger and evaporator in one module
- Heat exchanger includes a high efficiency moisture separator
- Thermally protected condenser fan
- Generously sized condenser

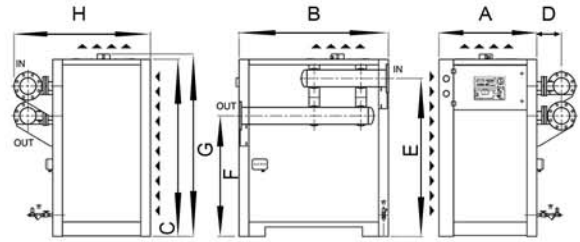
Flow rates are based on the following operating conditions:  
 100 F inlet compressed air temp, 100 F ambient temp.  
 100 psig operating pressure and 37.4 F dewpoint.

Maximum operating conditions:  
 130 F inlet compressed air temp, 115 F ambient temp.  
 200 psig operating pressure.

10 to 1250 SCFM MODELS



1500 to 5000 SCFM MODELS



MODEL	FLOW RATE SCFM	POWER SUPPLY	REFRIG.	PIPE SIZE	WEIGHT (lbs)	DIMENSIONS IN INCHES							
						A	B	C	D	E	F	G	H
CCT10	10	115/1/60	R134a	3/8" NPT	50	12.00	13.58	17.12	5.31	5.31	15.35	N/A	N/A
CCT15	15	115/1/60	R134a	3/8" NPT	52	12.00	13.58	17.12	5.31	5.31	15.35	N/A	N/A
CCT20	20	115/1/60	R134a	1/2" NPT	55	14.38	20.27	18.70	6.30	2.16	16.93	N/A	N/A
CCT27	27	115/1/60	R134a	1/2" NPT	60	14.38	20.27	18.70	6.30	2.16	16.93	N/A	N/A
CCT35	35	115/1/60	R134a	1/2" NPT	68	14.38	20.27	18.70	6.30	2.16	16.93	N/A	N/A
CCT50	50	115/1/60	R134a	1/2" NPT	70	14.38	20.27	18.70	6.30	2.16	16.93	N/A	N/A
CCT75	75	115/1/60	R134a	1" NPT	77	13.58	16.53	29.13	5.31	2.63	27.28	N/A	N/A
CCT100	100	115/1/60	R134a	1 1/4" NPT	80	13.58	17.51	29.13	5.31	2.63	27.28	N/A	N/A
CCT125	125	230/1/60	R404a	1 1/4" NPT	121	19.00	18.00	32.50	5.13	2.63	29.38	34.00	N/A
CCT150	150	230/1/60	R404a	1 1/4" NPT	126	19.00	18.00	32.50	5.13	2.63	29.38	34.00	N/A
CCT200	200	230/1/60	R404a	1 1/2" NPT	159	21.88	22.88	34.88	5.38	3.38	31.50	36.88	N/A
CCT250	250	230/1/60	R404a	1 1/2" NPT	165	21.88	22.88	34.88	5.38	4.00	31.50	40.50	N/A
CCT300	300	230/1/60	R404a	2" NPT	249	21.88	24.63	38.38	9.63	4.00	34.13	40.50	N/A
CCT350	350	230/1/60	R404a	2" NPT	258	21.88	24.63	38.38	9.63	7.50	34.13	45.50	N/A
CCT400	400	230/1/60	R404a	2 1/2" NPT	364	26.13	28.50	43.50	14.75	7.50	36.63	45.50	N/A
CCT500	500	575/3/60	R404a	2 1/2" NPT	406	26.13	28.50	43.50	14.75	8.63	36.63	58.63	N/A
CCT600	600	575/3/60	R404a	3" 150# FL.	602	30.88	37.38	55.50	19.63	8.63	45.50	58.63	N/A
CCT800	800	575/3/60	R404a	3" 150# FL.	613	30.88	37.38	55.50	19.63	9.13	45.50	58.63	N/A
CCT1000	1000	575/3/60	R404a	3" 150# FL.	717	30.88	37.38	55.50	19.63	9.13	45.50	58.63	N/A
CCT1250	1250	575/3/60	R404a	3" 150# FL.	816	30.88	45.25	55.50	19.63	10.38	45.50	58.13	N/A
CCT1500	1500	575/3/60	R404a	4" 150# FL.	1455	39.50	60.50	70.25	8.63	62.63	47.88	72.50	52.50
CCT1750	1750	575/3/60	R404a	4" 150# FL.	1570	39.50	60.50	70.25	8.63	62.63	47.88	72.50	52.50
CCT2000	2000	575/3/60	R404a	4" 150# FL.	1598	39.50	60.50	70.25	8.63	62.63	47.88	72.50	52.50
CCT2500	2500	575/3/60	R404a	4" 150# FL.	1653	39.50	60.50	70.25	8.63	62.63	47.88	72.50	55.13
CCT3000	3000	575/3/60	R404a	6" 150# FL.	1730	39.50	73.00	70.25	10.00	59.63	47.88	72.50	55.13
CCT4000	4000	575/3/60	R404a	6" 150# FL.	2150	39.50	88.75	70.25	10.00	59.63	47.88	72.50	55.13
CCT5000	5000	575/3/60	R404a	8" 150# FL.	3090	39.53	107.64	70.37	8.51	62.13	47.85	72.50	54.73

### CORRECTION FACTORS

Inlet air pressure	psig	60	80	100	120	140	160	180	200
	barg	4	5.5	7	8	10	11	12.5	14
Factor		0.79	0.91	1.00	1.07	1.13	1.18	1.23	1.27

Correction factor for ambient temperature changes ( Air-cooled ):						
Ambient temperature	F	80	90	100	105	110
	C	27	32	38	40	43
Factor		1.22	1.11	1.00	0.94	0.89

Correction factor for inlet air temperature changes:							
Air temperature	F	90	100	105	110	120	130
	C	32	38	40	43	49	55
Factor		1.16	1.00	0.85	0.85	0.73	0.63

Correction factor for DewPoint changes:					
DewPoint	F	33-39	40-44	45-49	50-54
	C	0.5-4	4.1-7	7.1-9.5	9.6-12
Factor		1.00	1.09	1.22	1.40



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