

CBD Purification



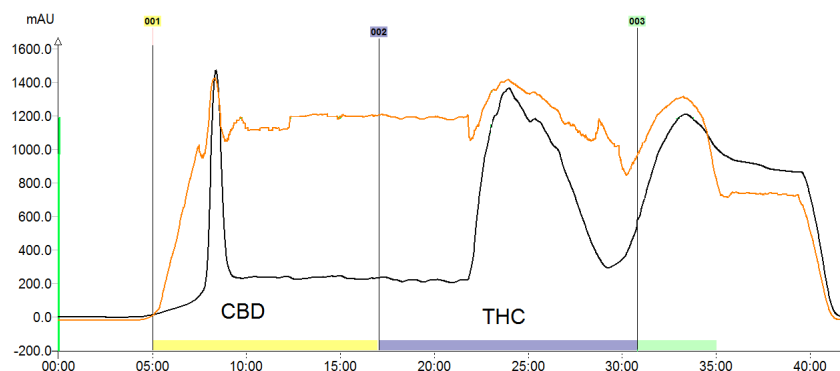
3.9 - 12.6 kg Per Day

CBD purification is achieved using reverse phase flash chromatography. The bench-top unit supports this technique with ease and simplicity. The large touch screen interface displays all operating parameters of the method in progress. A UV diode array detects the cannabinoids which are collected in 1 liter flasks or diverted to high capacity carboys with a funnel rack.

In this example a 180 gram hemp distillate (80% CBD) sample is purified in under 40 minutes.

Model	Daily Output	Flow Rate
ITM-420	3.9 kg	1 - 300 ml/min
ITM-800	12.6 kg	1 - 825 ml/min

Continuous processing is achieved using sequence programming. The following output data is based on running 24 hours a day. Due to the variability in the cultivation and manufacturing processes the CBD output value is a realistic expectation but does not constitute a guarantee.



Pilot and process scale instruments are built to specification and utilize hydraulic piston columns with inner diameters up to from 20 cm to 100 cm.

ITM-420 12.8 cm Column

Load per Run	270 g
Load per Day	6.5 kg
CBD Output	3.9 kg

ITM-800 20 cm Column

Load per Run	700 g
Load per Day	21.0 kg
CBD Output	12.6 kg

MP-5XL 45 cm Column

Load per Run	3.5 kg
Load per Day	106.2 kg
CBD Output	63.8 kg

MP25-XL, 100 cm Column

Load per Run	16.7 kg
Load per Day	484 kg
CBD Output	290 kg

Interchim is a well established manufacturer of low and high pressure chromatography instruments. The company was founded in 1970 to manufacture innovative products for pharmaceutical R&D. Years of experience have been applied to provide the CBD market with a simple and cost effective purification solution.



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CBD Daily Throughput and Solvent Consumption

ITM420 12.8 cm Column

Load per Run	270 g
Load per Day	6.5 kg
CBD Output	3.9 kg

ITM800, 20 cm Column

Load per Run	700 g
Load per Day	21.0 kg
CBD Output	12.6 kg

MP-5XL, 45 cm Column

Load per Run	3.5 kg
Load per Day	106.2 kg
CBD Output	63.8 kg

MP-25XL, 100 cm Column

Load per Run	16.7 kg
Load per Day	484 kg
CBD Output	290 kg

Solvent	Liters	Gallons
Water	54	14
Methanol	246	65
Acetone	95	25

Liters	Gallons
186	49
731	193
174	46

Liters	Gallons
941	248
3699	977
880	233

Liters	Gallons
3,946	1,042
18,922	5,003
5,714	1,516

24Hr Total	395	104
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1091	288
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5520	1457
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28,582	7,561
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Pricing based on media life of 100 cycles

	C18 Media	Column Price	Cost/g
ITM420 Polypropylene, 300 ml/min		\$9,950	\$0.61
ITM800 Steel 825 ml/min 20 cm column	\$1300/kg 7 kg	\$9,100	\$0.22
MP-5XL Steel 4.6 L/min, 45 cm column	\$1250/kg 35 kg	\$43,750	\$0.21
MP-25XL Steel, 22.3 L/min, 100 cm column	\$1200/kg 175 kg	\$210,000	\$0.21

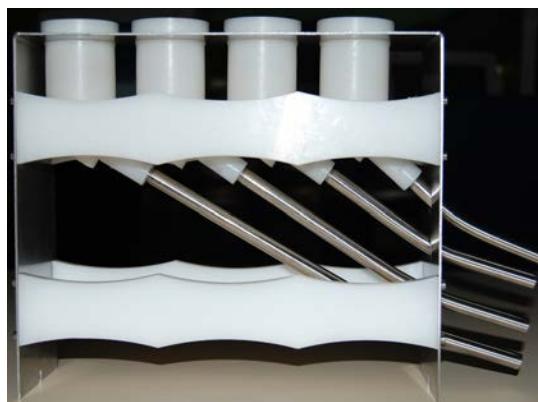
Daily throughput is running three shifts for 24 hours. The feedstock is a third pass distillate with >80% CBD and 2-4% THC. The funnel rack is placed in the collector which diverts fractions into carboys beneath the instrument. A typical fraction scheme is 1) CBG/CBD 2) CBD 3) CBD/CBN/THC 4) CBC/THC.

Continuous operation is achieved by programming the instrument using the sample queue. The only limitation is the solvent (mobile phase) and collection capacity. Due to the variability in the cultivation and manufacturing processes the CBD output value is a realistic expectation but does not constitute a guarantee.

Sample Queue									
N°	Title	Sample	Column	Inj. Vol.	Cycles	Flow Rate	Signal 1	Signal 2	
1	THC Removal	Hemp Distillate 700 g, Lot 13-4	1	1750.0 ml	32	800.0	254 nm	200-400	

Collection Racks Collection Table Synoptic Sample Queue

Funnel Collection for Continuous Operation



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