

# Manhattan APA Refresh

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **53**
- SRM **6.3**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **170 liter(s)**
- Trub loss **2 %**
- Size with trub loss **176.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **194.6 liter(s)**

## Mash information

- Mash efficiency **73 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **132 liter(s)**
- Total mash volume **176 liter(s)**

## Steps

- Temp **68 C**, Time **720 min**

## Mash step by step

- Heat up **132 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **720 min** at **68C**
- Sparge using **106.6 liter(s)** of **76C** water or to achieve **194.6 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	30 kg (68.2%)	80 %	5
Grain	Strzegom Pszeniczny	8 kg (18.2%)	81 %	6
Grain	Strzegom Monachijski typ II	3 kg (6.8%)	79 %	22
Grain	Fawcett - Dark Crystal	0.5 kg (1.1%)	71 %	300
Grain	Acid Malt	0.5 kg (1.1%)	58.7 %	6
Grain	Płatki owsiane	2 kg (4.5%)	60 %	3
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## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Apollo	100 g	60 min	17 %
Boil	Columbus/Tomahawk/Zeus	50 g	30 min	12.5 %
Boil	Chinook	50 g	5 min	13 %
Boil	Waimea	50 g	5 min	17 %
Whirlpool	Simcoe	100 g	30 min	13.2 %
Whirlpool	Mosaic	100 g	30 min	10 %
Dry Hop	Galaxy	100 g	7 day(s)	15 %
Dry Hop	Waimea	150 g	7 day(s)	17 %

Dry Hop	Chinook	150 g	7 day(s)	13 %
Whirlpool	Galaxy	100 g	30 min	15 %
Dry Hop	Mosaic	100 g	3 day(s)	10 %
Dry Hop	Simcoe	100 g	3 day(s)	13.2 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Fermentis US-05	Ale	Culture	200 g	Safale