

Whirlpool

- Gravity **13.1 BLG**
- ABV ---
- IBU **24**
- SRM **5.6**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **21.2 liter(s)**

Steps

- Temp **66 C**, Time **60 min**

Mash step by step

- Heat up **15.9 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Sparge using **14.7 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------|---------------|-------|-----|
| Grain | Viking Pale Ale malt | 5 kg (94.3%) | 80 % | 5 |
| Grain | Karmelowy Czerwony | 0.3 kg (5.7%) | 75 % | 59 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|------------|--------|--------|------------|
| Boil | Mosaic | 15 g | 60 min | 10 % |
| Boil | Centennial | 10 g | 10 min | 10.5 % |
| Boil | Amarillo | 10 g | 10 min | 9.5 % |
| Whirlpool | Citra | 20 g | 0 min | 12 % |
| Whirlpool | Amarillo | 20 g | 0 min | 9.5 % |
| Whirlpool | Centennial | 20 g | 0 min | 10.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-----------------------------------|------|------|--------|-----------------|
| Mangrove Jack's M44 US West Coast | Ale | Dry | 10 g | Mangrove Jack's |