

APA

- Gravity **9.3 BLG**
- ABV **3.6 %**
- IBU **45**
- SRM **5**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **25.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.6 liter(s)**
- Total mash volume **20.8 liter(s)**

Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **15.6 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **18.6 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|---------------|-------|-----|
| Grain | Castle Pale Ale | 5 kg (96.2%) | 80 % | 8 |
| Grain | Castlemalting - Cara Clair | 0.2 kg (3.8%) | 78 % | 4 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------|--------|--------|------------|
| Boil | Amarillo | 20 g | 60 min | 17.4 % |
| Aroma (end of boil) | Centennial | 15 g | 5 min | 10.5 % |
| Aroma (end of boil) | Citra | 15 g | 5 min | 12 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------|------|------|--------|------------|
| Danstar BRY-97 | Ale | Dry | 11 g | danstar |