

PPA

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **39**
- SRM **4.7**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **3 %**
- Size with trub loss **28.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **33 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.5 liter(s)**
- Total mash volume **26 liter(s)**

Steps

- Temp **68 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **19.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **45 min** at **68C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **20 liter(s)** of **76C** water or to achieve **33 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------|----------------|-------|-----|
| Grain | Pilzneński Malteurop | 1.5 kg (23.1%) | 81 % | 4 |
| Grain | Pale Ale Malteurop | 5 kg (76.9%) | 81 % | 7 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|-------------------|--------|----------|------------|
| Boil | Marynka | 50 g | 45 min | 8.7 % |
| Boil | Lublin (Lubelski) | 15 g | 15 min | 4.7 % |
| Aroma (end of boil) | Lublin (Lubelski) | 15 g | 10 min | 4.7 % |
| Whirlpool | Lublin (Lubelski) | 20 g | 10 min | 4.7 % |
| Dry Hop | Lublin (Lubelski) | 50 g | 4 day(s) | 4.7 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 11.5 g | Safale |

Extras

| Type | Name | Amount | Use for | Time |
|------|------|--------|---------|------|
|------|------|--------|---------|------|

| | | | | |
|--------|-------------|-------|------|--------|
| Fining | WHRLIFLOC T | 0.5 g | Boil | 10 min |
|--------|-------------|-------|------|--------|