

# lichtenhainer v1

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- Gravity **8.3 BLG**
- ABV **3.2 %**
- IBU **12**
- SRM **3.8**
- Style **Grodziskie/Graetzer**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **1 %**
- Size with trub loss **23.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.8 liter(s)**

## Mash information

- Mash efficiency **78 %**
- Liquor-to-grist ratio **5.5 liter(s) / kg**
- Mash size **18.1 liter(s)**
- Total mash volume **21.4 liter(s)**

## Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **18.1 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **12 liter(s)** of **76C** water or to achieve **26.8 liter(s)** of wort

## Fermentables

| Type  | Name                               | Amount        | Yield | EBC |
|-------|------------------------------------|---------------|-------|-----|
| Grain | Grodziski pszeniczny wędzony dębem | 1 kg (30.3%)  | 80 %  | 3   |
| Grain | Strzegom Wiedeński                 | 2 kg (60.6%)  | 79 %  | 10  |
| Grain | Żytni                              | 0.3 kg (9.1%) | 85 %  | 8   |

## Hops

| Use for             | Name     | Amount | Time   | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil                | Cashmere | 15 g   | 30 min | 7.3 %      |
| Aroma (end of boil) | Cashmere | 10 g   | 5 min  | 7.3 %      |
| Whirlpool           | Cashmere | 5 g    | 0 min  | 7.3 %      |

## Yeasts

| Name         | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale  | Dry  | 11 g   | Fermentis  |

## Notes

- Zakwaszanie w kotle.  
*Feb 27, 2018, 7:47 PM*