

| Date     | User    | Material | Recipe  | Subs. T | Thickness | Dep.time | Dep.time | JAW EC-400<br>(Woolam Spectroscopi |                     | Avg index<br>@632.8 nm | Index+1% | Index-1% | Dep.rate | Target<br>Thick. | Target+1<br>0% | Target-1<br>10% | HF<br>etch<br>rate<br>wafer | Stress  | LPD ( light<br>point defects) |            | Avg<br>dep.rate | Avg+10<br>% | Avg-<br>10% | Additional<br>Notes |
|----------|---------|----------|---------|---------|-----------|----------|----------|------------------------------------|---------------------|------------------------|----------|----------|----------|------------------|----------------|-----------------|-----------------------------|---------|-------------------------------|------------|-----------------|-------------|-------------|---------------------|
|          |         |          |         |         |           |          |          | Index at<br>632.8nm                | Index at<br>655.0nm |                        |          |          |          |                  |                |                 |                             |         | before dep.                   | after dep. |                 |             |             |                     |
| 01/06/14 | Biljana | SiO2     | SiO2_10 | 250     | 1013.74   | 2'56.6"  | 176.6    | 1.463                              | 1.459               | 1.457                  | 1.472    | 1.443    | 34.44    | 1000.00          | 1100.00        | 900.00          | 1.457                       | -401.73 | 284                           | 1059       | 35.35           | 38.89       | 31.82       | 4" Si wafer         |
| 01/23/14 | Biljana | SiO2     | SiO2_10 | 250     | 1069.74   | 2'56.6"  | 176.6    | 1.456                              | 1.446               | 1.457                  | 1.472    | 1.443    | 36.34    | 1000.00          | 1100.00        | 900.00          | 604.28                      | -375.92 | 159                           | 290        | 35.35           | 38.89       | 31.82       | 4" Si wafer         |
| 02/03/14 | Biljana | SiO2     | SiO2_10 | 250     | 1047.82   | 2'56.6"  | 176.6    | 1.456                              | 1.451               | 1.457                  | 1.472    | 1.443    | 35.60    | 1000.00          | 1100.00        | 900.00          | 604.71                      | -346.54 | 304                           | 451        | 35.35           | 38.89       | 31.82       | 4" Si wafer         |
| 02/18/14 | Biljana | SiO2     | SiO2_10 | 250     | 1031.00   | 2'56.6"  | 176.6    | 1.454                              | 1.444               | 1.457                  | 1.472    | 1.443    | 35.03    | 1000.00          | 1100.00        | 900.00          | 545.75                      | -397.61 | 48                            | 274        | 35.35           | 38.89       | 31.82       | 4" Si wafer         |

|            |         |           |       |           |       |            |         |
|------------|---------|-----------|-------|-----------|-------|------------|---------|
| Avg. Thick | 1040.58 | Avg Index | 1.457 | Avg Rate  | 35.35 | Target Th. | 1000.00 |
| Th+10%     | 1144.83 | Index+1%  | 1.472 | Avg +10%  | 38.89 | Target+10% | 1100.00 |
| Th-10%     | 936.52  | Index-1%  | 1.443 | Avg - 10% | 31.82 | Target-10% | 900.00  |

