**APPENDIX**

Tables 1-3 give the coupling efficiencies as well as ratio of air holes (r1, a1, r2, a2, w1, w2, h) w.r.t the hole parameters (r = 130 nm, a = 360 nm) of the photonic crystal.

TABLE 1

2-WAY ENERGY DEMUX AND SPLITTER

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEMUX | SPLITTER |
| % Transmission: cav1 | [41.9% @ λ = 1.008μm](mailto:28.2%25@λ=1.008um) | [41.4% @ λ = 1.005μm](mailto:35.1%25@λ=1.008um) |
| % Transmission: cav2 | [42% @ λ = 1.010μm](mailto:30.7%25@λ=1.005um) | [31.2% @ λ = 1.005μm](mailto:43.2%25@λ=1.008um) |
| r1/r (r1 = r2 for both i/p & o/p cavities) | 0.8 | 0.8 |
| a1/a(a1=a2) | 1.11 | 1.11 |
| w1/r | 1.115 | 1.115 |
| w2/r | 1.038 | 1.115 |
| h/r | 0.769 | 1.0 |

TABLE 2

3-WAY ENERGY DEMUX AND SPLITTER

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEMUX | SPLITTER |
| % Transmission: cav1 | 19.8% @ λ = 1.013 μm | 7.2% @ λ = 1.004 μm |
| % Transmission: cav2 | 59.7% @ λ = 1.016 μm | 29.6% @ λ = 1.004 μm |
| % Transmission: cav3 | 23% @ λ = 1.011 μm | 5.6% @ λ = 1.004 μm |
| r1/r (r1 = r2 for both i/p & o/p cavities) | 0.808 | 0.808 |
| a1/a (a1 = a2) | 1.11 | 1.11 |
| w1/r | 1.115 | 1.115 |
| w2/r | 1.115 | 1.038 |
| w3/r | 1.115 | 1.153 |
| h/r | 1.076 | 0.846 |

TABLE 3

6-WAY ENERGY DEMUX AND SPLITTER

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEMUX | SPLITTER |
| %Transmission: cav1 | 2.7% @ λ = 1.186 μm | [8.5%@λ=1.223μm](mailto:8.5%25@λ=1.223μm) |
| %Transmission: cav2 | [3.5% @ λ=1.184 μm](mailto:3.5%25@λ=1.184μm) | [9.3%@λ=1.223μm](mailto:9.3%25@λ=1.223μm) |
| %Transmission: cav3 | 7.1% @ λ = 0.982 μm | [8.8%@λ=1.223μm](mailto:8.8%25@λ=1.223μm) |
| %Transmission: cav4 | [12.6% @ λ = 0.979 μm](mailto:12.6%25@λ=0.979μm) | [36.8%@λ=1.223μm](mailto:36.8%25@λ=1.223μm) |
| %Transmission: cav5 | [10.6% @ λ = 0.984 μm](mailto:10.6%25@λ=0.984μm) | [27.05%@λ=1.223μm](mailto:27.05%25@λ=1.223μm) |
| %Transmission: cav6 | [13.44% @ λ = 1.169 μm](mailto:13.44%25@λ=1.169μm) | [7.6%@λ=1.223μm](mailto:7.6%25@λ=1.223μm) |
| r1/r ( i/p cavity) | 0.923 | 0.8 |
| r2/r (o/p cavity) | 0.923 | 0.615 |
| a1/r (a1 = a2) | 1.11 | 1.11 |
| w1/r | 0.923 | 1.0 |
| w2/r | 1.038 | 0.538 |