**MUSE Basis of Estimate**

**Hamamatsu R13435 Photomultiplier Tubes WBS 7**

I. General Information

Task Name: PMT Purchase

Unique ID Number

Date of Estimate: 12/19/2015 (last update)

Estimate Generator: Steffen Strauch

Cost Category:

X M&S

SWF

Comments: I added additional 10% for contingency to account for possible exchange-rate fluctuations; these Hamamatsu PMTs have very long lead times: 6 Months ARO for 50 and then 50 per month

Vendor Quote Number if Applicable: Hamamatsu: QUO-20393- H8X7T4 (10/20/2015)

Drawing Reference Number or Attachment:

Costing Method: Vendor quote

Total Task Cost: $132,192

Total Contingency: $25,116

II. Cost Estimate Breakdown

Cost of each element, along with justification

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | QTY | Description | Unit Price USD | Total Price USD |
| 1 | 204 | Hamamatsu R13435 | $600 | $122,400 |
| 2 |  | 8% SC Tax |  | $9,792 |
|  |  | Total |  | **$132,192** |

III. Contingency and risk analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Technical | Design | Cost | Schedule | Contingency |
| Backing structure | 1 | 0 | 1 | 6 | 9% |

We will add a contingency of 10% for currency fluctuation risk, a total of **19%**.

IV. Time Estimates and contingency on time

Time estimate is (optimistic+pessimistic+4\*most-likely)/6.

Sigma is (pessimistic-optimistic)/6.

Be sure to indicate if work days or calendar days.



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