# Tested By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_

# ASC (WFS) Style Single Frequency Detector Measured Parameters

All transimpedance measurements are referred to plane of the physical output connector and include the effect of the voltage divider created by the 50 Ω termination. The notch rejection ratios are relative to the magnitude of the transimpedance at the respective RF detection center frequency of the given RF output port. The notation, Q1 to Q4 refers to the specific quadrant of a four section (Quad) diode.

*Table 1: Identification*

|  |  |
| --- | --- |
| **Unit identification** | **Value** |
| Photodetector serial number |  |
| Detector schematic D# and revision |  |
| Diode element manufacturer’s Partand serial number |  |

*Table 2: Supply data*

|  |  |
| --- | --- |
| **DC Parameters** | **Value** |
| Quiescent DC current (amps at +18 VDC) |  |
| Quiescent DC current (amps at -18 VDC) |  |
| PD bias regulator output voltage (VDC) |  |
| RF opamp positive voltage regulator (VDC) |  |
| RF opamp negative voltage regulator (VDC) |  |
| Audio opamp positive voltage regulator (VDC) |  |
| Audio opamp negative voltage regulator (VDC) |  |

*Table 3: DC outputs*

|  |  |  |
| --- | --- | --- |
| **Quadrant number** | **DC readout transimpedance** **(Ω at differential output)** | **Zero light DC offset (VDC)** |
| Q1 |  |  |
| Q2 |  |  |
| Q3 |  |  |
| Q4 |  |  |

*Table 4: Tuning*

|  |  |
| --- | --- |
| **Global RF parameters** | **Value** |
| RF detection center frequency (MHz) |  |
| 2ω Notch frequency (MHz) |  |

*Table 5: Notch depth*

|  |  |  |
| --- | --- | --- |
| **Quadrant number** | **Rejection at 2ω notch, relative to center frequency response (dB)** | **DC photocurrent for notch measurement (mA)** |
| Q1 |  |  |
| Q2 |  |  |
| Q3 |  |  |
| Q4 |  |  |

*Table 6: Response at detection frequency*

|  |  |
| --- | --- |
| **Quadrant number** | **RF transimpedance (Ohms)** |
| Q1 |  |
| Q2  |  |
| Q3  |  |
| Q4  |  |

*Table 7: Output Noise at detection frequency (dark)*

|  |  |
| --- | --- |
| RF Preamp Gain (dB) |  |
| **Quadrant number** | **Noise into 50 ohm (dBm/Hz)** |
| Q1 |  |
| Q2 |  |
| Q3 |  |
| Q4 |  |

*Table 8: Equivalent shot-noise limited DC photocurrent (calculated)*

|  |  |
| --- | --- |
| **Quadrant number** | **IDC** |
| Q1 (mA) |  |
| Q2 (mA) |  |
| Q3 (mA) |  |
| Q4 (mA) |  |