Introduction: Retinopathy of prematurity (ROP) is a vasoproliferative disease that affects low birth weight preterm infants. The capture of wide-field digital imaging RetCam Shuttle provides objective information for screening and detection of ROP, thus identifying the preterm infants who require treatment. Purpose: To report on a 6-year experience with RetCam Shuttle on ROP screening. Methods: Retrospective study of the screening examinations of premature infants admitted to Hospital Espírito Santo de Évora Neonatal Intensive Care, meeting eligibility criteria of ROP screening, between August 1, 2007 and December 20, 2013. ROP cases were classified according to the International Classification of ROP Revisited. Premature infants with prethreshold Type 1 ROP were submitted to laser treatment and intravitreal bevacizumab in Hospital Prof. Doutor Fernando Fonseca. Results: ROP screening was performed in 197 premature infants (394 eyes), with a mean gestational age of 30.7 +/- 2.4 weeks and a mean birth weight of 1542 +/- 333g. 69 premature infants were diagnosed with ROP (ROP incidence of 35%), with a mean gestational age of 28.8 +/- 2.3 weeks and a mean birth weight of 1131 +/- 273g. The incidence of prethreshold type 1 ROP was 6.6%. All treated eyes had favorable structural and functional outcomes, except one. Conclusions: The screening strategy used in this premature infant population showed to be effective on timely identification of those who required treatment, allowing prompt transfer with no poor outcomes. RetCam is a valuable tool for ROP screening, share of clinical information between ophthalmology centers, as well as communication with parents.